

Environmental Injustice, Environmental Racism, and the Framework for Socio-Racial Stratification in Sacrificial Zones: The Case of the Santa Cruz Neighborhood in Rio de Janeiro

Thula Rafaela de Oliveira Pires¹

Virginia Totti Guimarães²

This paper is related to research carried out under the auspices of the Constitutional Studies and Interdisciplinary Environmental focus groups at the Catholic University of Rio de Janeiro (PUC-Rio). The research project, still underway, seeks to analyze the factors involving legislative elaboration and application that sustain the centuries-old models of socio-racial stratification in the city of Rio de Janeiro. The objective of this paper is to present the preliminary data gathered on the Santa Cruz neighborhood of the Rio de Janeiro municipality in order to begin work on some of the theoretical issues of environmental injustice and racism.

Discussions of environmental injustice in Brazil can be considered recent. The creation of the Brazilian Network for Environmental Justice dates back to 2001, a marks the beginning of challenges to the thesis that environmental risks and harms are suffered equally by all human beings independent of social class, race, or gender in the sense that we are all affected by the degradation of the environment. The literature of this network focusing on situations of environmental injustice, on the other hand, argues that the universality of harms is not verified in practice and shows that the distribution of environmental harms and risks is in fact selective.

The disproportionate distribution of these effects appears linked to the degree of vulnerability of specific social groups. In the city of Rio de Janeiro, the poorest segments of the population (black and members of traditional communities such as fishermen, shellfish gatherers,

¹ Professor of Constitutional Law at PUC-Rio.

² Professor of Environmental Law at PUC-Rio.

or riverbank scavengers) most seriously suffer the impact of highly contaminant enterprises and the depletion of natural resources. The more precarious an area becomes, the greater its chances of becoming a dumping ground for the city's garbage.

The revelation of detailed, alarming information regarding the level of indignity and lack of infrastructure should lead authorities to direct public health, education, social assistance, hygiene and other risk-mitigating measures to the area in question. On the contrary, the social and economic precarity in fact intensifies the political fragility of these populations, preventing them from resisting the installation of extremely dangerous enterprises that further worsen the levels of precarity and political weakness, in addition to the complete, irresponsible degradation of the environment.

Through the construction of the Santa Cruz neighborhood as a *sacrificial zone*, we intend to illustrate some of the mechanisms involved in the creation of this kind of scheme in Rio – “The Marvelous City.” We intend to focus on the role in this process of federal and other public organs in order to reveal their participation in this configuration of environmental injustice.

While avoiding the perpetuation of interpretations that exclusively link Brazilian afflictions to concepts such as personalism and patrimonialism, we intend to offer elements in this study that allow for another way to confront structural inequality and violence.

1. Racial and Environmental (In)justice: some theoretical considerations

To confront the factors that corroborate and perpetuate socio-racial stratification and expose the Santa Cruz neighborhood to negative environmental consequences, three concepts are central: *environmental injustice*, *environmental racism*, and *sacrificial zones*.

As mentioned above, space for the discussion of environmental injustice opened up in the early 2000s with the creation of the Brazilian Network for Environmental Justice (RBJA). Representatives from social movements, trade unions, NGOs, environmental groups, fishermen, and black and indigenous movements participated in the definition of the concept of environmental justice as the “mechanism by which unequal societies, from an economic or social point of view, allocate the greatest share of the environmental damage resulting from development to low income groups, to social groups that suffer discrimination, to traditional ethnic communities, to neighborhoods for laborers, to marginalized, vulnerable populations.”³

Conservative ecological thinking spread the belief that environmental damages were born out universally on the basis of the global effects produced by the failure to preserve natural resources. The break, of neo-Malthusian and ultra-liberal inspiration,⁴ from the conservative understanding made it possible to see the cruel reality of the living conditions of vulnerable social groups. In addition to the precarious conditions in terms of housing, employment, income inequality, lack of access to health and education services, the subaltern bodies also disproportionately suffered the brunt of the most serious environmental harms.⁵

The adoption of a development model that reinforces the Brazilian “tradition” of treating its “masses as slave labor that produce what they do not consume and only marginally exist in

³ Manifesto de Lançamento da Rede Brasileira de Justiça Ambiental. Available at <http://www.mma.gov.br/destaques/item/8077>.

⁴ ACSERALD, 2009.

⁵ Although not the object of this paper, the phenomenon can be observed not only within states but also in the relationship between them. The ‘dirty work’ of the nations referred to as developed is taken on by those nations who have sustained the rich countries’ development repeatedly through invasion, exploitation, extermination, bloodletting and now by polluting and trashing what is left of Latin America, Africa, and the other areas on the frontier of capitalist expansion.

cultural terms”⁶ reproduces the model of domination secularly maintained in Brazil since its origin in the 16th century.

Racially stratified capitalist economies were organized so that the risks, disadvantages, and harms stemming from an economic system based on dispossession (of lands, work, cultural capital, etc.), on discipline (of bodies and mentalities), and on exploitation to produce goods and riches for the enjoyment of others would be selectively borne by non-white bodies (or bodies treated as black by virtue of their poverty).⁷ With regards this unequal distribution, the term *sacrificial zone* is used to denominate locations reserved for the city’s waste and contaminated activity. Acselrad puts it this way:

[C]ertain areas can be distinguished by their high concentration of environmentally aggressive activities that affect low income populations. The inhabitants of these areas must live with industrial pollution of the air and water, toxic waste deposits, soil contamination, lack of water supply, deforestation, and risks associated with floods, landfills, and quarries. In addition to the presence of sources of environmental risk, a tendency can be observed to choose these locations for new potentially highly polluting projects. Environmental inequality scholars call these areas “sacrificial zones” or “pollution paradises” where environmental deregulation favors predatory economic interests, just as areas favorable for tax evasion are commonly known as “fiscal paradises.”⁸

Sacrificial zones are characterized as such after identifying the profile of their inhabitants and the concentration, with the approval of public authorities, of activities that cause considerable pollution or serious environmental risks. Another very relevant factor, in addition to the indicators related to income level, work and housing conditions, education, birth and mortality rates, access to basic hygiene and health services, in identifying the social groups directly affected by such activities in areas designated for degradation, is race.

⁶ RIBEIRO, 2006.

⁷ ACSERLAD, 2009.

⁸ ACSELRAD, 2004, p. 12-13.

In countries with traditions of slavery, Brazil being the last country in the Americas to abolish it officially, waste production and disposable bodies largely comprise an adequate representation of what people seek to hide from sight. Contemplating the disproportional distribution of environmental damage without explicitly recognizing the racial element means failing to confront adequately the model of domination that was erected, which thereby contributes to perpetuating the invisibility of certain bodies, ways of living, and world visions. It is for this reason that the concept of *environmental racism* is fundamental. The term, as defined by Robert Bullard,⁹ refers to a form of institutional discrimination that materializes through policies, practices, or directives that affect differently and disadvantageously individuals, groups, or communities on the basis of their ethnic or racial identity.

In Brazil, the environmental justice movement sought to reinforce the idea that the central preoccupations should transcend questions of race and the specific locations of chemical environmental risks, questions of fundamental importance in the debates that took place in the United States. In the Brazilian context, the need to incorporate other variables in addition to race and income level was stressed for the sake of more appropriate comprehension of the reality. Inserted into analyses were aspects such as access to services, urban infrastructure, education levels, and other indicators that might more broadly capture the relationship between environmental risk and vulnerability, rights, and citizenship.¹⁰

Despite the references to marginalized, vulnerable populations, we consider it necessary to make explicit the true impact of environmental injustice on black and indigenous people and members of traditional communities in order to stimulate the production of racially relevant data

⁹ BULLARD, 2002.

¹⁰ CARTIER, BARCELLOS, HÜBNER E PORTO, 2009.

by the Brazilian academy. The influence of scientific racism in the 19th century and of the 20th century's myth of racial democracy promoted an academic context that resisted the incorporation of ethnic or racial criteria in the analysis and diagnosis of social and physical realities.¹¹ The insufficient production of social indicators reflecting the ethnic-racial profile of the Brazilian population make it impossible to discuss with the desired level of intellectual rigor the degree of stratification in the population. Even though the distribution of subaltern social spaces along ethnic-racial lines can be easily observed, the inequalities inherent in these aspects were persistently ignored.

The amplification of the scope of analysis that the concept of environmental injustice carries out is extremely positive and the incorporation of factors related to health, housing, education, hygiene and social assistance make it possible to elucidate the mechanisms of subalternization and corporal determination in the city. Notwithstanding, this amplification must not hide the ethno-racial component by subsuming it to the dimension of social inequality or to the notion of vulnerability. In this sense, the principles that comprise the notion of *environmental justice* as defended by the RBJA are endorsed because they:

- a) effectuate a break with the models of distribution of negative environmental consequences disproportionately borne by social, ethnic, and racial groups in situations of vulnerability for centuries;
- b) promote equitable access to the environmental resources of the country;
- c) guarantee access to information on the use of natural resources, on the destination of waste products, and the areas of environmental risk;

¹¹ The first census carried out in Brazil in 1872 classified inhabitants according to color/race and there was still a category for free people and slaves. In 1900 and 1920 the racial categories were left out, in 1910 and 1930 no census was taken. In 1940, 1950, and 1960 the collection of information was reestablished, but in 1970, with the creation of the myth of racial democracy as one of the ideological elements of the military dictatorship, questions of race and color were suppressed from the questionnaires. In 1980, 1991, 2000, and 2010 those categories were reinserted into the census. See also ANJOS, 2013.

d) amplify the participation of affected social groups in the democratic processes of policy definition, planning, programs, and projects that involve the alteration of those groups' territories or territorialities;

e) stimulate the creation of alternative development models that ensure democratic access to and sustainable exploitation of environmental resources.¹²

It is understood that one of the aspects that should be discussed regarding the choices made by authorities for the Santa Cruz neighborhood involves the presupposition of environmental injustice and racism, given its burden of the selective distribution of the environmental risks and harms within the city of Rio de Janeiro.

2. From slaughterhouse to industrial zone: Santa Cruz as location for the city's "dirty work."

The neighborhood of Santa Cruz is located at the western end of the Rio de Janeiro municipality and its standard of living indexes are among the very worst of the city – among which stand out: basic sanitation services, housing standards, life expectation, and school enrollment rates. In this section we would like to briefly describe three moments that we consider decisive in the transformation of the neighborhood into a sacrificial zone: the 1881 construction of a large slaughterhouse, the creation of an industrial zone in the mid-1970s, and the installation of a plant to make steel from the iron ore of Minas Gerais to the north. Construction of the *Companhia Siderúrgica do Atlântico do Sul*, a subsidiary of Thyssenkrupp Steel, began in 2006 and the plant went into operation in 2010.

Originally the location of indigenous villages, the area was colonized by the Portuguese in the 16th century. Its present name derives from the large agricultural estate run by Jesuits that was established in 1718 – the *Fazenda de Santa Cruz*. When the Jesuits were expelled from

¹² See also *Manifesto de Lançamento da Rede Brasileira de Justiça Ambiental*. Available at: <http://www.mma.gov.br/destaques/item/8077>.

Brazil in 1759, the estate became royal property and a period of economic degradation began.¹³ Then, as one author describes it, “at the end of the 18th century, the Fazenda Santa Cruz was recuperated with livestock and the cultivation of manioc and sugarcane, which became the primary product of the site, which still possessed two mills.” During this period, the Fazenda Santa Cruz became a popular summer residence for the royal family, and the name was changed to the Royal Fazenda de Santa Cruz.¹⁴

This area dedicated to agricultural activity underwent significant alterations as a result of the political, economic, and social transformations that were part of the efforts to modernize the Brazilian ‘slavocratic’ society that began in the mid-19th century. One of the many effects of the city’s expansion was the displacement of waste-producing activities further from the city center. Moreover, as the coffee plantation economy in the province of Rio de Janeiro declined, capital moved into the city through investments in urban activities: paved streets, sidewalks, and sewers were built¹⁵ and the population density increased sharply.¹⁶ In fact, “in the period between 1850 and 1870, the housing crisis, understood in terms of scarcity and high cost of lodging for the poor emerged as one of the most characteristic and recurrent aspects of urban life in Rio de Janeiro.”¹⁷

¹³ FUNDAÇÃO PARA O DESENVOLVIMENTO DA REGIÃO METROPOLITANA DO RIO DE JANEIRO, loc. cit.

¹⁴ GUIMARÃES, 2011, p. 16.

¹⁵ GUIMARÃES, 2011, p. 17.

¹⁶ SCHULTZ, 2008, pp. 161-163. According to RABHA (2008, p. 35.), the internal migratory flux to the coasts from disaffected coffee plantations, the immigration of unskilled foreign workers, and, later, freed slaves, put Rio de Janeiro in a housing dilemma that would only intensify, even though it was identified as early as the arrival of the Portuguese royal family when they fled Napoleon.

¹⁷ BENCHIMOL, 1992, p. 124.

The expansion of the city was also enabled by the construction of railways¹⁸ which led to population increases in the connected suburbs and outlying areas that had conserved their rural character without being integrated into the city.¹⁹ The D. Pedro II Railway, later named the Central Railway of Brazil, began operating in 1855. The stations on the Santa Cruz line of the Central Railway of Brazil were opened in 1878. This railroad line played a decisive role in the population increase of the region and the changes in the ways the land in Santa Cruz was used.²⁰

It was in this context that the Santa Cruz Slaughterhouse was inaugurated in 1881. It replaced the Sao Cristovao Slaughterhouse which had replaced the Central Slaughterhouse²¹: “in the measure that the city limits expand, the so-called ‘dirty functions’²² will be displaced further from the center.”²³ By the end of the 19th century, Santa Cruz had “an estimated resident population of 3,445 inhabitants,²⁴ was economically stagnant, had little urban infrastructure, but was served by a train line, and housed the municipal slaughterhouse responsible for a situation of flagrant insalubrity.”²⁵

The 20th century begins with a period of intense activity in Rio de Janeiro during which large plots are divided into smaller parcels, especially in the areas that had been rural, such as the western part of Rio de Janeiro. This activity culminates in both the expansion of the cities and, notwithstanding, an intensification of the housing crisis for low-income groups. “Beside the great

¹⁸ GUIMARÃES, 2011, p. 18-19.

¹⁹ RABHA, 2008.

²⁰ FROES; GELABERT, 2004.

²¹ GUIMARÃES, 2011, p. 19.

²² The term ‘dirty work’ refers to urban functions carried out in central áreas that, because of the sound, visual, or other pollution they occasion, end up confined to limited plots sometimes called ‘devalued terrain’ or ‘degraded areas.’ Cf. RABHA, 2008, p. 41.

²³ RABHA, 2008.

²⁴ The figure corresponds to the year 1870. It should be noted that the neighborhood showed a -6% growth rate from 1838 on, when the resident population was 3,6777. Cf. RABHA, 2008, p. 39.

²⁵ GUIMARÃES, 2011, p. 20.

public investment projects carried out in the areas where the most favored classes resided, especially in the city center and southern zone, the occupation of suburban developments, characterized by the lack of state planning and adequate urban infrastructure, intensified.”²⁶

At the beginning of the century the industrial sector was concentrated in the São Cristóvão region by virtue of its proximity to the port, while small scale businesses still preferred locations close to the city center. Then a new phase of demographic and industrial growth began, especially around 1930, when the State began to intervene directly in the localization of industries. An industrial zone was defined in the city for the first time by Law decree 6.000/37.²⁷ Originally excluded from the industrial area, the parts of Santa Cruz considered “inactive” started to attract attention during the expansion of the 1960s when the displacement of industry from the central urban zones to the periphery intensified:²⁸ “The western zone was seen as an adequate site for the installation of an industrial zone and a new nucleus for residential occupation to decompress the already saturated southern and central zones.”²⁹ Once again, the ‘dirty work’ was displaced to more distant locations that were occupied by vulnerable populations.

During the time Rio de Janeiro formed part of the state of Guanabara (1960 – 1975), following the move of the national capital from Rio de Janeiro to Brasília, the process of industrialization was driven by the creation of industrial districts along Avenida Brasil and in Santa Cruz and incentives for the construction of housing projects for workers. During the Chagas Freitas administration the expansionist initiatives towards the west were increased,

²⁶ GUIMARÃES, 2011, p. 20.

²⁷ GUIMARÃES, 2011, p. 21.

²⁸ DOMÍNGUEZ PEREZ, 2007.

²⁹ GUIMARÃES, 2011, p. 21.

notably in Jacarepagua and Santa Cruz, locations made attractive by their proximity to the port at Sepetiba.³⁰ According to the Government Plan for Urban Development elaborated by the Guanabara state government in 1974:

The area was initially characterized by fishing and agricultural activity. With the development and growth of agglomerations that expanded through the region, light industry, commerce, and residential areas arose, and the region, little by little, lost its initial pastoral and agricultural character. [...] The regional slaughterhouse polarized all the regional potential for a long time. The government intervention that created an industrial zone gave the region a new character, creating the need to diversify the area's activities. [...] The Industrial Zone of Santa Cruz will constitute the principal pole of the state's secondary activity. Completion of its basic infrastructure is predicted for mid-1974. The commencement of the operation of COSIGUA and White Martins will mark the beginning of activity in the Industrial Zone of Santa Cruz.³¹

Santa Cruz became an industrial zone “because of the availability of large open spaces that were connected to the municipal exits, such as ports, roadways, and railways, and, especially, because of the distance that separated it from the populations who would be heard by public and private authorities responsible for the project.”³²

Still, a more recent chapter in the history of Santa Cruz warrants attention: the installation of a steel making plant whose majority shareholder is Thyssenkrupp Steel. The plant covers approximately 10,000,000 square meters on a plot around 65 kilometers from the city center. The complex is composed of a steel plant and a private port for the exportation of the steel produced. According to the company, 5 million tons of steel sheet are produced annually, all of which are

³⁰ RABHA, 2006, p. 182 . Built in the 1970s, the port of Sepetiba, located in the municipality of Itaguaí, was inaugurated in 1982.

³¹ GUANABARA (Estado), 1974, p. 12 e 13.

³² GUIMARÃES, 2011, p. 26

meant for export.³³ The Companhia Siderurgica do Atlantico Sul is the result of a partnership between Thyssenkrupp and the Brazilian mining company Vale.³⁴

The construction of the complex enjoyed significant support from both the state and federal governments, support expressed through the concession of loans from the National Economic and Social Development Bank (BNDES) and the exemption of state and local taxes.³⁵ The heads of the executive branches at the federal, state, and local level at the time all publicly manifested their support for the business. The President of the Republic and the State Governor attended the inauguration.³⁶

It should be noted that the support manifested by the Republic, State, and Municipality did not make reference to the environmental viability of the enterprise or to the impact its operation would cause. On the contrary, the need for a rapid environmental license procedure

³³ GUIMARÃES, 2011, p. 59.

³⁴ Information available at: <http://www.thyssenkrupp-csa.com.br/institucional/>. Last accessed on 15 March 2016.

³⁵ The National Economic and Social Development Bank (BNDES) conceded a loan of 1.4 billion Brazilian Reais to the company.

A Lei estadual 4.529/2005 aprovou o enquadramento das sociedades CSA Companhia Siderúrgica do Atlântico, Thyssenkrupp Stahl A.G e Companhia Vale do Rio Doce e das sociedades integrantes do Complexo Siderúrgico, das quais elas participem, ainda que minoritariamente, no Programa de Atração de Investimentos Estruturantes (RIOINVEST), instituído pelo Decreto 23.012/1997, para utilizar os recursos do Fundo de Desenvolvimento Econômico e Social (FUNDES), para a construção e operação de um Complexo Siderúrgico no Estado do Rio de Janeiro. Além disso, a Lei ainda conferiu isenção de Imposto sobre Operações relativas à Circulação de Mercadorias e sobre Prestações de Serviços de Transporte Interestadual ou Intermunicipal e de Comunicação (ICMS), ou outro tributo que o substitua, nas fases de construção, pré-operação e operação do Complexo Siderúrgico, incidente sobre (i) importação e aquisição interna de máquinas, equipamentos, partes, peças, componentes e demais bens destinados a compor o ativo fixo das sociedades, para o momento da alienação ou eventual saída desses bens; (ii) aquisição interestadual dos bens referidos no inciso anterior, relativamente ao diferencial de alíquota, para o momento da alienação ou eventual saída desses bens; (iii) importação e aquisição interna de minério de ferro, pelotas, ferro-ligas, carvão, coque e sucata destinados às fases pré-operacional e operacional do Complexo Siderúrgico.

A Lei municipal 4.372/2006 concedeu isenção do Imposto sobre Serviços de Qualquer Natureza (ISS), ou de outro imposto que venha a substituí-lo, durante o período de cinco anos a contar de primeiro de janeiro de 2006, à construção e à operação de terminais portuários relacionadas à implementação de complexo siderúrgico na zona oeste do Município do Rio de Janeiro. O prazo foi prorrogado, por mais cinco anos, pela Lei municipal 5.133/2009.

³⁶ GUIMARÃES, 2011, p. 63.

was emphasized, with the objective of reaffirming government commitments to the installation of the industry.³⁷

Regarding the procedure for obtaining an environmental license, yet another moment in which the behavior of the public authorities favored the enterprise can be observed. This case reveals a pattern involving the use of capital in the region and the behavior of public institution where, through an analysis of the procedure followed for obtaining the environmental license,³⁸ certain aspects of the environmental law were modified or interpreted in a flexibly way to justify the concession of the license. One example is the modification of the state industrial zoning, which was justified with specious reasoning that lacked any grounding in a holistic, deep evaluation seeking to improve the rationality behind the use of the local space and, in particular, of the environmental conditions. No studies were conducted to assess the risks to the health, well-being, or security of the residential populations. Furthermore, an edict was issued to permit the intervention in an area at the time designated for permanent preservation.

The studies presented by the company were deficient and the socioeconomic effects identified in previous environmental impact studies were not duly analyzed by the competent environmental organ. The approved proposals for measures to mitigate the harms basically involved social communication programs that did not determine the precautions to be taken for

³⁷ GUIMARÃES, 2011, p. 65. Neste sentido, a desconsideração dos aspectos da sustentabilidade nas decisões políticas sobre a atividade pode ser expressão da forma como o meio ambiente entrou na esfera política, marcada pela contradição, tal como analisado por ACSELRAD. Nas palavras do autor, as duas formulações sobre a entrada do meio ambiente na esfera política advêm “de um movimento contracultural, do questionamento do consumismo e da contaminação associada ao modelo de produção industrial de alimentos (o grande movimento em torno dos agrotóxicos); enfim, uma contestação dos sentidos para os quais se veio dando a acumulação de riqueza” e “de uma formulação absolutamente distinta, originária do Clube de Roma, que se preocupa mais com a continuidade da acumulação capitalista, com as possibilidades de que algum tipo de ruptura nas fontes de aprovisionamento de insumos viesse colocar em risco a continuidade do próprio capital” (ACSELRAD, 2007, pp. 2-3).

³⁸ Sobre a escolha da localização da empresa e a descrição completa dos casos relacionados às alterações na legislação elaboradas para permitir a concessão da licença ambiental prévia v. GUIMARÃES, 2011.

the most affected communities, such as fishing communities, which warranted special attention in the diagnoses carried out by consultants.

Neither the question of alternative locations nor the hypothesis of abandoning the project was analyzed by the environmental organ, which only discussed technological alternatives. Just as serious was the failure to consider the effect of the project in terms of noise and air pollution when the plant would be in operation or the emergency situations that could arise from the generation of what was called metal dust, or the negative effects of the plant on small scale activities such as, among others, fishing and agriculture. In this sense:

The technical deficiency of the project presented and the failure to consider the impacts of it on the local population are evidence of a political decision taken prior to the analysis of the environmental impact. The issuance of edicts that made the concession of the state environmental license possible, the celerity with which the analyses were conducted, the state financing and exemptions conceded to the company, among other factors, suggest the presence of political pressure to make approval of the project viable.³⁹

Through the three historical moments described (the Santa Cruz Slaughterhouse, the creation of the industrial zone, and the installation of the steel plant), the objective was illustrating the tendency to locate the ‘dirty work’ of the city in zones considered ‘empty’ or distant that coincide, not coincidentally, with regions inhabited by the poorest classes who, in the majority, are black, a fact which evokes the concept of sacrificial zone which will now be considered.

3. Santa Cruz as sacrificial zone.

The displacement of Rio de Janeiro’s primary slaughterhouse to Santa Cruz marked the start of the practice of housing the city’s dirty work there, where dirty work is understood as “those [activities] that lead to the discomfort of or prejudice – of all types – against those who live

³⁹ GUIMARÃES, 2011, p. 108.

nearby, and that contribute to further devalue the location. Previously with the municipal slaughterhouse and currently with heavy industry, the practices of locating intensely pollutant and degrading activities in the area are replicated.”⁴⁰

The economic development of the neighborhood, which was the principal argument employed in favor of locating the steel plant in it, for example, did not significantly alter the material reality of the population directly affected by the risks and harms generated by the industrial activity. The neighborhood population continued to represent one of the poorest in the municipality on top of which they now had to bear worse levels of pollution and the resulting health problems. The incentives for installing heavy industry in Santa Cruz, accompanied by a lack of equivalent promotion for infrastructure investment, failed to improve the quality of living of the area’s inhabitants. It still possesses one of the worst rankings in terms of minimum living conditions as reflected by life expectancy and income in the municipality of Rio de Janeiro. According to the Social Development Index of 2000, calculated by the Pereira Passos Institute based on figures for basic sanitation, housing, housing quality and income, Santa Cruz ranks 147 out of the 158 neighborhoods analyzed.⁴¹ According to the Human Development Index of 2000, calculated by the United Nations Development Program (UNDP),⁴² the neighborhood’s rank was 119:

⁴⁰ GUIMARÃES, 2011, p. 28

⁴¹ INSTITUTO MUNICIPAL DE URBANISMO PEREIRA PASSOS, 2008.

⁴² **Índice de Desenvolvimento Humano Municipal.** Disponível em http://www.pnud.org.br/pdf/Tabela%206.2.22%20IDH%20bairro%2091_00-15_12_03.xls. Acesso em 09 de julho de 2011.

HDI rank	Life expectancy at birth (in years)	Adult literacy (%)	Gross school enrollment rate (%)	Monthly income per capita (in R\$ as of 2000)	Longevity Index (IDH-L)	Education Index (IDH-E)	Income Index (IDH-R)	Municipal HDI
119	65.52	93.19	79.82	206.23	0.675	0.887	0.662	0.742

It is important to note that the neighborhood has suffered from an intense pollution since the installation of the first heavy industries and culminating in the critical situation occasioned by the Inga Industrial Mercantile Company, one of the greatest environmental liabilities in the country of which we are aware. Freitas and Porto have attested to:

the contamination of the Sepetiba Bay in Rio de Janeiro by heavy metals such as lead, cadmium, and zinc, which, in high levels, can affect the nervous system, bone marrow, and kidney functions, causing several kinds of illnesses. Cadmium and zinc were produced until 1997 by the now bankrupt Inga Industrial Mercantile Company and the pollution by that company have been documented in analysis of marine life (fish, mollusks, and crustaceans), soil, and water.⁴³

The very study carried out by the Thyssenkrupp subsidiary TKCSA itself noted the high level of pollutants in the area, holding the area in question to be polluted,⁴⁴ including in terms of air quality,⁴⁵ which would become of extreme concern following episodes of silver rain provoked by the metal dust emitted by the plant.⁴⁶

The social, economic, and environmental vulnerability that reinforced political weakness does not lessen the strength and will of the local population to resist. Opposition to the installation of the plant in the area by fishermen, local inhabitants, teachers and other social

⁴³ FREITAS; PORTO, 2006, p.107.

⁴⁴ FUNDAÇÃO ESTADUAL DE ENGENHARIA DO MEIO AMBIENTE (RJ), 2006b, p. 8-9.

⁴⁵ FUNDAÇÃO ESTADUAL DE ENGENHARIA DO MEIO AMBIENTE (RJ), 2006b, 13-15. No entanto, na sua conclusão, o Parecer Técnico afirma que os sistemas de controle da poluição do ar propostos são adequados e atendem aos padrões estabelecidos na legislação vigente (p. 60).

⁴⁶ GUIMARÃES, 2011, p. 27.

movements in solidarity has led to six civil lawsuits currently in state court against the TKCSA, broad discussions with the Brazilian bar association (OAB), the Oswaldo Cruz Foundation (FIOCRUZ), the Regional Council of Economists (CORECON), the Regional Council of Engineering and Agriculture (CREA), and the Institute of Development and Human Rights (IDDH), and to a complaint lodged with the Permanent People's Tribunal in Lima, Peru.⁴⁷

The company was not willing to engage in dialogue with the fishermen and their associations.⁴⁸ Only during the course of the licensing process were forums organized in which those affected could participate in the debate over the enterprise.⁴⁹

After carrying out studies of the ways environmental conflicts impact low income populations, Acselrad identifies the region studies as one of the State's sacrificial zones which he characterizes as "the conjunction of location decisions for environmentally harmful installations together with the presence of political and economic agents striving to attract investments of any type to the area, regardless their social and environmental costs."⁵⁰ We are therefore dealing with a case of environmental injustice in which one social group bears a disproportionate share of the negative environmental consequences of economic operations, policy and program decisions at the federal, state, and local levels, or of the absence or omission of adequate policies.⁵¹ As the population of Santa Cruz is 64.87% black, it can be affirmed that situation qualifies as a case of environmental racism.⁵²

⁴⁷ CARVALHO, 2011.

⁴⁸ CARVALHO, 2011.

⁴⁹ GUIMARÃES, 2011, p. 108.

⁵⁰ ACSELRAD, 2004, p.13.

⁵¹ ACSELRAD, 2009, p. 41

⁵² Dados retirados do último CENSO realizado pelo Instituto Brasileiro de Geografia e Estatística (IBGE) em 2010. Não foram encontrados indicadores sociais de expectativa de vida, taxa de alfabetização e escolaridade, renda per capita, taxa de ocupação e condições de moradia por corte de cor/raça. Pelo CENSO de 2010, no entanto, é possível perceber que enquanto quase 65% da população de Santa Cruz é composta de negros, na Barra da Tijuca – área

The area, frequently characterized as a zone apt for industry possesses (or possessed) recognized ecological value and great natural beauty in addition to being home to a very diverse ecosystem in which fishing and agriculture were always important activities.⁵³ In spite of the traditional utilization of the land and sea by the neighborhood's population, it has become natural for public authorities to favor it as the location for activities and businesses that generate discomfort for those who live nearby, a fact which seems repeated in the more recent case of the TKCSA steel plant.

4. Final considerations

The Santa Cruz neighborhood was chosen to represent the model for distributing the burden of negative environmental harms and illustrate how that distribution selectively affects a majority black population and severely impacts the fishermen who have drawn sustenance from the region's rivers for centuries. The unequal distribution of the natural resources and the insufficient access to information about environmental alterations that are advanced in the interest of certain industrial activities that generate waste and pollution in the area submit the population directly affected to risks that are even more serious. By obscuring the harms that derive from such economic activity, access to means to prevent, mitigate, or compensate for damages is also obscured.

This case draws attention to the State's role in guaranteeing that the enterprises would be installed in the sacrificial zones with the concession of fiscal incentives and public financing to make the enterprise viable, going so far as to unjustifiable distortions of environmental protection legislation and requirements for the necessary licenses. At the same time, the failure

nobre localizada igualmente na zona oeste no município do Rio de Janeiro - o percentual de negros não chega a 30%.

⁵³ GUIMARÃES, 2011, p. 29.

of the public organs to equip the region with adequate infrastructure for public health is flagrant, and public oversight of the business activity highly deficient, notably in the auditing of the company's measures to prevent and mitigate damages. Such behavior runs afoul of the organs' constitutional duty to protect the environment, respect the concept of environmental democracy, as well as its own environmental norms whose application must aim for improved protection.

Another aspect which makes it possible to qualify the neighborhood as a sacrificial zone is the impossibility of adequate participation for the afflicted population, whose demands are ignored. The afflicted population should be able to directly influence, through the participatory mechanisms called for in the Master Plan, the elaboration of policies, plans, programs, and projects involving the alteration of their territories and territorialities.

In the subsequent phases of this research project, it is our intention to racialize the discussion of environmental justice in Brazil. The history of Rio de Janeiro is marked by the marginalization and stigmatization of black communities and their lands.⁵⁴ This side of Rio's history must be drawn out through analyses of the physical, territorial, and urban appropriation of the city. We propose an investigation of the unequal distribution of natural resources and environmental risks in the Santa Cruz neighborhood of Rio de Janeiro from a decolonizing approach.⁵⁵ This approach makes it possible to discuss the structural dimensions of inequality that were forged in the Brazilian reality, establishing the necessary relationships between global capitalism and the control, domination, and subordination of bodies and peoples through the idea of *race* (WALSH, 2009), as is found in critical studies of coloniality.

⁵⁴ ROLNIK, 1989.

⁵⁵ Assim como Walsh (2009) o uso da expressão decolonial (no lugar de descolonial) indica mais do que uma proposta de reverter a colonialidade, determina uma postura e atitude contínua de transgredir, intervir e insurgir-se contra os padrões de dominação naturalizados por ela e visibilizar construções alternativas.

The decolonial approach offers an epistemological perspective that allows us to mediate the concerns of environmental movements and those of the black and indigenous movements starting with the interrogation of the model of domination that produced the colonality of power,⁵⁶ of being,⁵⁷ of knowledge,⁵⁸ of nature,⁵⁹ and, hence, the disrespect that racism represents and the disproportionate expropriation of natural resources.

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⁵⁶ QUIJANO, 2000

⁵⁷ FANON, 2010.

⁵⁸ MALDONADO-TORRES, 2008.

⁵⁹ WALSH, 2007.

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