



## Carajás Railroad affects traditional communities in Pará, Maranhão and Tocantins

### DATE

01/08/2012

### DISTRICT

MA - Açailândia  
MA - Bacabeira  
MA - Pindaré-Mirim  
MA - São Luís  
PA - Marabá  
PA - Parauapebas

### LATITUDE

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### LONGITUDE

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### SUMMARY

*Despite bringing foreign currencies for the States of Pará and Maranhão, the Carajás Iron Project, which integrates the Great Carajás Project, has been causing a lot of environmental impacts, not only in the vicinity of the mines, but also throughout the Carajás Railroad Corridor (EFC).*

(SAMPAIO; JULIANELLI; PENNA, 2002).



## CASE DESCRIPTION

The discovery of iron ore deposits, in 1967, in Serra dos Carajás, situated in the municipality of Parauapebas, at the eastern end of the State of Pará in the northern region, led to the elaboration of a comprehensive program of geological research in the Brazilian Amazon, where a vast mineral potential was identified, opening prospects for the region's development (OLIVEIRA, 2004).

With reserves of 18 billion tons of high-content iron ore (66%), of which 13 billion are minable, as well as extensive reserves of manganese, gold, copper, nickel and other minerals, Serra dos Carajás was evaluated as being the largest deposit of iron ore in the world, with capacity to ensure production for 250 years (SAMPAIO; JULIANELLI; PENNA, 2002). Because of these characteristics, it is considered a "Mineral Province" (CHAVES, 2004).

Of the total iron ore present in Carajás, 1 billion tons are in Serra Sul, and 6 billion tons are in Serra Norte, first selected region for mining because of the greater ease for rail access and low levels of contaminating substances, which reduces production costs. The N4E, name of the mine situated in Serra Norte, has 1.2 billion tons of minable mineral reserves

With 153,908 inhabitants and 6,957 km<sup>2</sup> (IBGE, 2010a), Parauapebas shares borders with Marabá to the North, with the municipality of Curionópolis to the South and with the municipality of São Félix do Xingu to the West (PARAUPEBAS ONLINE, 2010). Parauapebas has one of the largest budgets of the State due to the royalties and taxes generated by Vale's activities in its territory. However, the city suffers from disordered growth. The periphery has rapidly increased, and most of the people from very poor regions of Maranhão have settled in precarious dwellings (BARROS, 2007a).

Aiming at the economic exploitation of mineral resources present in Carajás, the Brazilian Government started the Great Carajás Project (PGC). The idea was to economically develop part of the Legal Amazon, which covers the States of Pará, Maranhão and Tocantins (VERDE, 2009). The PGC was a junction of some programs towards the development of the area that currently sets the arc of deforestation in the Legal Amazon, where the Carajás Iron Project (PFC) is the main one, and includes the Carajás Railroad (EFC), the

hydroelectric plant of Tucuruí, the Trombetas Project and Alunorte Company (LAMOSO, 2001). The PFC consolidation had as its main requirement the construction of an integrated mine-railroad-port system in Southeast Pará (VALE, 2008).

The railroad became necessary to enable safe transportation of the ore with low cost, and the port terminal was mandatory so that the country could drain production. Thus, in July 1978, company Companhia Vale do Rio Doce (CVRD), as Vale was called at the time, began building the Carajás Railroad (EFC), connecting the Carajás Mineral Province to the Maritime Terminal of Ponta da Madeira, in São Luís, Maranhão (SAMPAIO; JULIANELLI; PENNA, 2002). The enterprise operated by Vale was inaugurated on February 28, 1985 (MINISTÉRIO DOS TRANSPORTES, 2007).

The Carajás Railroad is Brazil's most modern and productive railway. Along its tracks more than sixty products are transported, such as cement, wood, fuel, vehicles, steel and agricultural products as well as iron ore and manganese. The EFC route traverses a total of 22 municipalities, of which three are located in Pará and 19 in Maranhão. In general, the railway represents the only means of transportation for thousands of families in the region, being commonly combined with some population-targeted programs, such as "Education on the Tracks" ("Educação nos Trilhos") and "The Citizenship Train" ("Trem da Cidadania") (ANTF, 2008 apud VERDE, 2009).

Being 892 km long, the Carajás Railroad has interconnection points with the North-South Railway - Ferrovia Norte-Sul (in Açailândia, Maranhão) and the Northeast Railway Company S.A. - Companhia Ferroviária Nordeste S.A. (in Itaqui, also in Maranhão). Another important connection is with the Ponta da Madeira Terminal (MA), which facilitates the transportation of production abroad (BRANDÃO, 2008).

The Ponta da Madeira/Itaqui Port Complex is composed of a terminal area equipped with two railcar dumpers, two forklifts, a stockyard, a screening plant, and two carriers that feed two ship loaders, installed on the two piers (COELHO et al., 2006).

The terminal operates and embarks iron - in its practically natural form - and iron pellets produced at Vale's pelletizing plant, whose operations initiated in 2003 (COELHO et al., 2006); pig iron produced by steel mills installed along the Railroad Corridor - at the Açailândia Manufacturing Complex (PAD) and the Marabá Manufacturing Complex (PMB) - and several types of grains (FERREIRA et al., 2006)

In spite of bringing foreign currencies to the States of Pará and Maranhão, PFC caused a series of environmental impacts, not only in the vicinity of the mines but also throughout the EFC Corridor. The strong urbanization and the drastic reduction of the original forest can be associated to the impacts arising from the construction of the railway. PFC has also transformed the socio-spatial structure previously existing. One of the indications of this transformation was the rise of real estate speculation (BRANDÃO, 2008), as well as the rapid growth of the region's population, which went from

40,370 inhabitants in the 1970s, to 129,115 in the 1980s; to 245,593 in the 1990s and to 377,533 in 2000 (BUNKER; COELHO; LOPES, 2002, p. 35 apud COELHO et al., 2006).



At first, the road facilitated the deforestation of the native forests that continue to meet the energy needs of the steel industry. Later, the area devastated became object of greed, fueled by interest of ranchers and reforestation companies. Squatters' interests and the greed for the indigenous lands have improved in the region (MAPA DA INJUSTIÇA AMBIENTAL E SAÚDE NO BRASIL, 2009).

The railway has also encouraged, among other things, the association of arable areas with steel mills, because pig iron plants, steel's main raw material, need charcoal to work. This need led to the creation of thousands of primitive ovens, which burn the forest to produce charcoal (BARROS, 2007b).

This is what happens in Açailândia. With 5,806 km<sup>2</sup> and 104,047 inhabitants (IBGE, 2010b), the municipality is 445 km from São Luís, in the West of Maranhão. With the decline of the timber industry, the steel industry has been the sector that generates jobs and foreign currency to the municipality (PREFEITURA MUNICIPAL DE AÇAILÂNDIA, 2010). In Açailândia, in addition to the pastures - which go along the railroad - some eucalyptus plantations can also be seen. Years ago, Vale considered investing in a cellulose plant in the area, but the idea did not succeed. The thin-trunk trees, in comparison with the Amazonian native species, are intended for the production of charcoal to fuel the steel mills that produce pig iron (BARROS, 2007b).

In all, 14 mills in Pará and Maranhão comprise the Carajás Steel Complex. Half of them are in Marabá, and the other seven are in Maranhão, of which five are in Pequiá, district of Açailândia. These industries use the railroad to receive their main raw material, iron ore, and to drain pig iron to São Luís. The dependence on Vale, the only provider, forces steel mills to accept the adjustments imposed by the company, on behalf of the international appreciation of the iron. In February 2005, the ore price was increased by 71.5% and in June 2007, the readjustment index, agreed after a lengthy negotiation process, was 19% (BARROS, 2007b).



The problems generated by the steel mills settled along the Carajás Railroad are not limited to environmental issues. There are also labor irregularities by its suppliers and reports on cases of slavlike labor. Pressed by the public opinion and by the Government itself, the Carajás Complex plants founded, in 2005, the Citizen's Charcoal Institute (ICC), whose main function is to monitor the working environment in the almost 1.2 thousand charcoal kilns that gravitate around the pig iron plants (BARROS, 2007b).

The construction of the railroad has also reached urban and rural populations throughout eastern Amazon, especially those involved in land conflicts associated with violent occupation of the land, triggering events of confrontations between Indians, landless peasants and agents of capitalism in the countryside (SAMPAIO; JULIANELLI; PENNA, 2002). The construction of the railroad went on tracing a picture of desolation in the localities affected, due not only to the deforestation and the use of wood in the sawmills created, but also to the expulsion of populations living in the field, forcing them to seek their livelihood from mining (CHAVES, 2004).

Reports published by both the Brazilian and the international press on researchers and non-governmental organizations engaged in the fight for indigenous people's rights, addressed the Brazilian Government's indifference towards the indigenous communities and managed to make the World Bank – one of PGC's main financiers - influence the granting of new resources for the continuation of the project to State actions that ensure the basic surviving conditions of indigenous peoples (VERDE, 2009).

An agreement established in 1982 between the mining company Vale and the National Indian Foundation (Funai) inserted the indigenous groups into the Indigenous Communities Support (ACI) project, which stipulated the application of US\$ 13.6 million to compensate the indigenous people of Maranhão, Pará and Northeast of Tocantins for the impacts of the PFC implementation (OLIVEIRA, 2004).

The program, developed until 1986, involved the following indigenous groups: Apinayé (Tocantins); Gavião-Parkatêjê, Parakanã, Suruí, and Kayapó-Xikrin (Pará); Gavião-Pukobyê, Guajá, Guajajara, Krikatí and Urubu-Kaapor (Maranhão). Initially, only the indigenous lands located inside the "Carajás Corridor", a PFC direct-impact zone, were contemplated by the agreement. In 1985, indigenous people from the Midwest of Maranhão, in particular those in the municipalities of Grajaú and Barra da Corda, located in the indirect-impact zone of the enterprise, were also contemplated. In total, ACI has reached approximately 90 villages, 24 indigenous stations, covering a population of about 12,500 Indians, present in the States of Maranhão, Pará and Tocantins (OLIVEIRA, 2004).

Still, several social struggles involving the Indians and Vale have taken place since the beginning of PFC (VERDE, 2009). In 2003, Indians of the Galvão tribe interdicted EFC, causing the interruption of Vale's activities. The aim was to put pressure on the mining company to pass on a greater amount

of financial resources to the traditional communities (BRASIL MINERAL ONLINE, 2003). On October 17, 2006, there was another emblematic incident: 200 Xikrin Indians, from the Catete indigenous land, occupied Vale's production facilities in Carajás for 48 hours. Consequently, EFC had its operations suspended (VERDE, 2009). After an agreement between Funai and the leaders of the Xikrins, the Indians left the scene divided into groups, but promised to continue fighting for the rate increase above the R\$ 9 million that Vale annually pays to the tribe for exploiting ore in the region and passing with its wagons along the Carajás Railroad, which cuts through the Indian Reserve (O ESTADO DE SÃO PAULO, 2006).



Exportações brasileiras de ferro são recordes

The extent of the negative impacts on the surroundings of the so-called Carajás Corridor has been motivating civil society organizations for their confrontation. In October 2007, the Landless Workers Movement (MST) also occupied the rail tracks to protest against the negative impacts to the environment and the accidents involving the surrounding communities (MAPA DA INJUSTIÇA AMBIENTAL E SAÚDE NO BRASIL, 2009).

At the end of the same year, it was launched the "Justice on the Tracks" campaign by the Comboni Catholic missionaries. The campaign aims to bring to light the great impacts caused by the Carajás Railroad to the populations living in the region of its influence. In October 2008, along with other social organizations in the region, the seminar "Justice on the Tracks" was held. The campaign was also responsible for the programming of an international seminar and for the workshops held during the World Social Forum in Belém, in January 2009, to discuss the influences and impacts of Vale's activities (MAPA DA INJUSTIÇA AMBIENTAL E SAÚDE NO BRASIL, 2009).

In 2010, Vale announced the construction of a new pier at the Ponta da Madeira Maritime Terminal (BRASIL MINERAL ONLINE, 2010) and the addition of 100 km to the EFC extension to Canaã dos Carajás, southeastern Pará, where a new mine will be installed. Named S11D, the mine (POLONI, 2010) should allow the initial extraction of 90,000 tons/year of iron ore until 2015 (BRASIL MINERAL ONLINE, 2010).

To exploit the new mine, Vale will spend US\$ 11.3 billion (R\$ 19.9 billion), double its profit in 2009. The high investment is explained by a report, released in July 2010, showing that, over the next five years, the world consumption of iron ore should reach 1.7 billion tons per year, i.e. it will have increased 70% compared to this year. Performed by Global Industry Analysts (GIA), the study indicates that the increase in iron ore consumption has been boosted by the economic growth of emerging countries, especially China, with its utilization in the automotive and construction sectors (BRASIL MINISG SITE, 2010).

Also in 2010, in spite of the several environmental impacts caused by EFC, Vale officially started the Carajás Railroad works of duplication. The project had been designed in 2007 and had been shelved until reheating of the ore market and the exhaustion of the railroad capacity. Duplication, which would increase the railroad capacity to transport ore from Carajás, was scheduled for 604 km of the 892 km of the railroad, between São Luís and Carajás (GRANDES CONSTRUÇÕES, 2010) and would be inaugurated in 2016 (PORTOGENTE, 2012).

However, in July 2012, the duplication of the road was stopped by the Federal Court of Maranhão, for it understood that the licensing granted by the Brazilian Institute of Environment and Renewable Natural Resources (Ibama) to Vale was irregular because it was done without prior achievement of the Environmental Impact Study and the Environmental Impact Report (EIA/Rima) (PORTOGENTE, 2012).

## GEOGRAPHIC LOCATION

## BIBLIOGRAPHIC REFERENCES

BARROS, Carlos Juliano. Parauapebas: entre o céu e o inferno. In: Repórter Brasil, 02 jan. 2007a. Disponível em: <http://www.reporterbrasil.com.br/exibe.php?id=831>. Acesso em: 27 out. 2010.

\_\_\_\_\_. O efeito colateral do progresso. In: Repórter Brasil, 04 jan. 2007b. Disponível em: <http://www.reporterbrasil.com.br/exibe.php?id=833>. Acesso em: 27 out. 2010.

BRANDÃO, Luiz Alberto. O sistema ferroviário brasileiro - Estrada de Ferro Carajás, 19 mar. 2008. Disponível em: <http://www.webartigos.com/articles/2194/1/Transporte-Ferrovioario/pagina1.html>. Acesso em: 27 out. 2010.

BRASIL MINERAL ONLINE. Estrada de Ferro Carajás - Justiça dá reintegração de posse à Vale do Rio Doce. In: Brasil Mineral OnLine n. 118, 02 jul. 2003. Disponível em: <http://www.brasilmineral.com.br/BM/default.asp?COD=549&busca=&numero=118>. Acesso em: 27 out. 2010.

\_\_\_\_\_. Logística: Vale anuncia investimento de R\$ 13,8 bilhões. In: Brasil Mineral OnLine, n. 462, 29 jul. 2010. Disponível em: <http://www.brasilmineral.com.br/BM/default.asp?COD=5036&busca=&numero=462>. Acesso em: 27 out. 2010.

BRASIL MINISG SITE. Vale explora nova mina com as mesmas dimensões de Carajás. In: Instituto Brasileiro de Mineração (IBRAM), 13 out. 2010. Disponível em: [http://www.ibram.org.br/150/15001002.asp?ttCD\\_CHAVE=125765](http://www.ibram.org.br/150/15001002.asp?ttCD_CHAVE=125765). Acesso em: 29 out. 2010.

CHAVES, Edna Maria de Carvalho. Projeto Grandes Carajás. Revista Nova

Atenas, volume 7, n. 2, jul-dez, 2004.

Disponível em:

[http://www.ifma.edu.br/SiteCefet/publicacoes/artigos/revista13.7.2/Cap\\_XVIII.pdf](http://www.ifma.edu.br/SiteCefet/publicacoes/artigos/revista13.7.2/Cap_XVIII.pdf). Acesso em: 27 out. 2010.

COELHO, Maria Célia Nunes; MONTEIRO, Maurílio de Abreu; FERREIRA, Bernardo Costa; BUNKER, Stephen. Impactos ambientais da Estrada de Ferro Carajás no sudeste do Pará. Parte IV. In: Carajás: Geologia e Ocupação Humana, 2006.

Disponível em:

<http://www3.ufpa.br/projetomineracao/docs/estrut/Arq%2017-%20Impactos.pdf>. Acesso em: 31/07/2012.

FERREIRA, Gilson Ezequiel; CALAES, Gilberto Dias; AMARAL, José Alexandre Gurgel do; KRUGER, Paulo Von. A indústria brasileira de gusa de mercado. Série Estudos e Documentos. CETEM/MC, 2006.

Disponível em:

<http://www.cetem.gov.br/publicacao/CTs/CT2006-071-00.pdf>. Acesso em: 31/07/2012.

GRANDES CONSTRUÇÕES. Duplicação da Estrada de Ferro Carajás começa em junho, 14 jun. 2010.

Disponível em:

[http://www.grandesconstrucoes.com.br/br/index.php?option=com\\_contenido&task=viewMateria&id=115](http://www.grandesconstrucoes.com.br/br/index.php?option=com_contenido&task=viewMateria&id=115). Acesso em: 27 out. 2010.

IBGE, Instituto Brasileiro de Geografia e Estatística. Parauapebas, 2010a.

Disponível em:

<http://www.ibge.gov.br/cidadesat/topwindow.htm?1>. Acesso em: 06 jan. 2011.

\_\_\_\_\_. Açailândia, 2010b.

Disponível em:

<http://www.ibge.gov.br/cidadesat/xtras/perfil.php?codmun=210005&r=2>. Acesso em: 06 jan. 2011.

LAMOSO, Lisandra Pereira. A exploração de minério de ferro no Brasil e no Mato Grosso do Sul. Tese (Doutorado em Geografia), 309f, Universidade de São Paulo (USP). São Paulo/SP, 2001.

Disponível em:

<http://www.ourinhos.unesp.br/gedri/biblioteca/gedripublica/teses/lamoso.pdf>. Acesso em: 27 out. 2010.

MAPA DA INJUSTIÇA AMBIENTAL E SAÚDE NO BRASIL. Estrada de Ferro e Projeto Grande Carajás avançam sobre Terras Indígenas, 05 out. 2009.

Disponível em:

<http://www.conflitoambiental.icict.fiocruz.br/index.php?pag=ficha&cod=71>.

Acesso em: 29 out. 2010.

MINISTÉRIO DOS TRANSPORTES. Estrada de Ferro Carajás – EFC, 2007.

Disponível em:

<http://www.transportes.gov.br/bit/ferro/efc/inf-efc.htm>. Acesso em: 29 out. 2010.

O ESTADO DE SÃO PAULO. Índios saem de Carajás, mas Funai cobra acordo da Vale. In: Instituto Brasileiro de Mineração, 19 out. 2006.

Disponível em:

[http://www.ibram.org.br/150/15001002.asp?ttCD\\_CHAVE=26873](http://www.ibram.org.br/150/15001002.asp?ttCD_CHAVE=26873). Acesso em: 29 out. 2010.

OLIVEIRA, Adalberto Luiz Rizzo de. Projeto Carajás, práticas indigenistas e os povos indígenas no Maranhão. In: Revista Antropológicas, ano 8, volume 15(2). 2004.

Disponível em:

[http://www.ufpe.br/revistaantropologicas/internas/volume15\(2\)/Artigo%206.pdf](http://www.ufpe.br/revistaantropologicas/internas/volume15(2)/Artigo%206.pdf).

Acesso em: 27 out. 2010.

PARAUAPEBAS ONLINE. Localização.

Disponível em:

<http://parauapebas.vilabol.uol.com.br/historia.html>. Acesso em: 29 out. 2010.

POLONI, Gustavo. Vale prepara maior expansão da história em Carajás. In: Economia.ig, 26 jul. 2010.

Disponível em:

<http://economia.ig.com.br/empresas/industria/vale+prepara+maior+expansao+d+a+historia+em+carajas/n1237726862142.html>. Acesso em: 29 out. 2010.

PORTOGENTE. Duplicação da Estrada de Ferro Carajás é paralisada pela justiça. Dia-a-Dia Blog, 31 jul. 2012.

Disponível em:

<http://www.portogente.com.br/comente/index.php?cod=68589>. Acesso em: 01 ago. 2012.

PREFEITURA MUNICIPAL DE AÇAILÂNDIA. Histórico da cidade.

Disponível em:

<http://www.acailandia.ma.gov.br/2010/index.php?op=historia>. Acesso em: 29 out. 2010.

SAMPAIO, João Alves. JULIANELLI, Kesley Medeiros; PENNA, Márcio Tórres Moreira. Ferro – Mina N5 – Carajás/CVRD. Comunicação Técnica elaborada

para o livro Usina de Beneficiamento de Minérios do Brasil. Rio de Janeiro/RJ, dez. 2002.

Disponível em:

<http://www.cetem.gov.br/publicacao/CTs/CT2002-159-00.pdf>. Acesso em: 05 mai. 2010.

VALE. Transporte Ferroviário. Portal virtual da mineradora Vale. Nossos Negócios; Logística. 2008.

Disponível em:

<http://saladeimprensa.vale.com/pt/noticias/interna.asp?id=20235>. Acesso em: 06 out. 2008.

VERDE, Rodrigo Braga da Rocha Villa. Parauapebas (PA): a mão de ferro do Brasil na implantação do Projeto Grande Carajás. XII Encontro de Geógrafos da América Latina – EGAL, Montevideu, Província de Montevideu: Uruguai, 2009, p. 1-15.

Disponível em:

[http://egal2009.easyplanners.info/area07/7656\\_VERDE\\_RODRIGO\\_BRAGA\\_DA\\_ROCHA\\_VILLA.pdf](http://egal2009.easyplanners.info/area07/7656_VERDE_RODRIGO_BRAGA_DA_ROCHA_VILLA.pdf). Acesso em: 27 mar. 2010.