EXECUTIVE SUMMARY ENVIRONMENTAL LICENSING-PHASE PL

2703

Corredor Oeste de Exportação - Nova Ferroeste Trecho: Paranaguá (PR) - Maracaju (MS) Ramal: Cascavel (PR) - Foz do Iguaçu (PR)

Paranacidade



. .



Maracaju



Paranaguá

Curitiba



PARANÁ STATE GOVERNMENT

PARANACIDADE

EXECUTIVE SUMMARY

ENVIRONMENTAL LICENSING – PRIOR LICENSE PHASE

WESTERN EXPORT CORRIDOR – NOVA FERROESTE

SECTION: PARANAGUÁ (PR) – MARACAJU (MS) BRANCH: CASCAVEL (PR) – FOZ DO IGUAÇU (PR)

SÃO PAULO

JUNE/2021



SUMMARY

1.	INTRODUCTION	2
2.	METHODOLOGY	4
2.1	GEOGRAPHICAL LOCATION AND STUDY AREA	4
3.	WORKS IN PROGRESS	6
3.1	EIA-RIMA	6
3.1.1	Physical Environment	6
3.1.2	Biotic Environment	10
3.1.3	Socioeconomic Environment	16
3.2	ARCHAEOLOGICAL STUDIES AND CULTURAL HERITAGE	18
3.3	INDIGENOUS COMPONENT STUDY	19
3.4	QUILOMBOLA COMPONENT STUDY	21
3.5	ASSESSMENT OF MALARIAL POTENTIAL	22
4.	FINAL CONSIDERATIONS	24



ENVIRONMENTAL LICENSING – PHASE PL

Corredor Oeste de Exportação - Nova Ferroeste

1



1. INTRODUCTION

This document presents a summary of the activities being carried out by the Institute of Economic Research Foundation (Fipe) in the context of the environmental licensing of the Western Export Corridor – Nova Ferroeste, phase of requesting a Preliminary License (LP). The largest railway undertaking under study in Brazil, with about 1,285 km in length, crosses 49 municipalities in the states of Paraná and Mato Grosso do Sul; and it aims to connect important producing regions to the Port of Paranaguá by means of a new railway, with a modern layout and with a high capacity to transport cargo. In addition to the environmental licensing, Fipe also carries out Due Diligence and Valuation studies for the Paraná Oeste S.A. Railroad (Ferroeste).

The environmental licensing of the project, in order to comply with the current environmental legislation, involves several bodies as listed in Table 1. Each of these has its competence of action defined and the centralization of information, manifestations and opinions is carried out by IBAMA within the process No. 02001.017497/ 2020-72.

Aiming to bring transparency to the environmental licensing process, this executive summary is presented to society, which briefly describes the work carried out so far.

EXECUTIVE SUMMARY

ENVIRONMENTAL LICENSING - PHASE PL

Corredor Oeste de Exportação - Nova Ferroeste Ramal: Cascavel





Table 1 – Agencies involved in the environmental licensing of the WesterExport Corridor – Nova Ferroeste

Agency	Acronym	Competence	
Brazilian Institute for the Environment and Renewable Natural Resources	IBAMA	Central environmental licensing body responsible for analyzing the Environmental Impact Study and Environmental Impact Report (EIA/RIMA)	
National Historical and Artistic Heritage Institute	IPHAN	Analysis of archaeological studies and others required in the context of cultural heritage	
National Indigenous Foundation	FUNAI	Analysis of the Indigenous Component Study	
National Institute of Colonization and Agrarian Reform	INCRA	Analysis of the Quilombola Component Study	
Ministry of Health, Health Surveillance Secretariat	SVS	Analysis of the Malarial Potential Assessment	
Chico Mendes Institute for Biodiversity Conservation	ICMBio	Analysis of the affectation of federal protected areas	
Water and Land Institute	IAT	Analysis of the affectation of state conservation units	
Mato Grosso do Sul Environmental Institute	IMASUL	Analysis of the affectation of state conservation units	
City Governments	-	Analysis regarding municipal legislation on land use and occupation and municipal conservation units	

Source: Fipe (2021).

EXECUTIVE SUMMARY

ENVIRONMENTAL LICENSING – PHASE PL



2. METHODOLOGY

2.1 GEOGRAPHICAL LOCATION AND STUDY AREA

The project under study is designed to connect Maracaju/MS to the port of Paranaguá/PR, passing through the regional hubs of Dourados/MS, Guaíra/PR, Toledo/PR Cascavel/PR, Guarapuava/PR, Metropolitan Region of Curitiba, also counting on a branch between Cascavel and Foz do Iguaçu.

Therefore, study areas were defined for each theme of environmental licensing. For example, in the EIA/RIMA, the Study Area (AE) is being characterized using secondary data from official databases, and priority is being given to obtaining primary data in the area closest to the planned axis for the railway (Figure 1 and Figure 2).



Figure 1 – Proposed Study Area for the EIA/RIMA physical and biotic environment

Source: Fipe (2021)

EXECUTIVE SUMMARY

ENVIRONMENTAL LICENSING – PHASE PL







Figure 2 - Study Area proposed for the EIA/RIMA socioeconomic environment

Source: Fipe (2021).

Each area of knowledge defines its specific areas of study based on technical particularities. For example, archaeological field studies address the railway's right-of-way with observation points and walkways. The studies of the indigenous and quilombola component, after the manifestation by FUNAI and INCRA, address the Rio das Cobras Indigenous Land and the Manoel Ciríaco dos Santos Quilombola Community, respectively. The assessment of malarial potential only addresses the municipality of Dourados/MS, as this is the only one classified by the SVS as a risk area for malaria throughout the project.

EXECUTIVE SUMMARY ENVIRONMENTAL LICENSING - PHASE PL

Corredor Oeste de Exportação - Nova Ferroeste

Trecho: Paranaguá (PR) - Maracaju (MS) Ramal: Cascavel (PR) - Foz do Iguaçu (PR) 5



3. WORKS IN PROGRESS

3.1 EIA-RIMA

The works in progress for the Environmental Impact Study and Environmental Impact Report (EIA/RIMA) are at the stage of environmental diagnosis. At this stage, different topics are studied by a multidisciplinary technical team composed of professionals from the physical, biotic and socioeconomic environments.

The following items present the work being carried out within each environment.

3.1.1 Physical Environment

In addition to a vast bibliographical survey, field steps were carried out to recognize the main geomorphological, geological, pedological and geotechnical characteristics of the study area. The entire railway was covered by existing accesses during field activities carried out between February and May 2021.

The field surveys were carried out to prospect data *in loco*, with emphasis on the axis planned for the railway. The collection, analysis of material and landscape aimed to consolidate information from indirect data, with a detailed description of the geomorphological units of the study area, contemplating the forms and processes involved, the declivity of the slopes and the presence or propensity for the occurrence of erosive processes or from siltation and seasonal flooding.

The geological and geotechnical survey of the study area encompassed the main lithostratigraphic units and their structural features, degree of alteration and deformation, mass movements, hydromorphic and collapsible soils, among others. After the survey, the areas of greatest geotechnical risk will be indicated, mainly associated with areas with high declivity, such as Serra do Mar.



The soil diagnosis was carried out by means of field reconnaissance, covering the main access roads that lead to the axis planned for the railway.

The representative sampling profiles were described according to the methodology for class description and identification, recording their main characteristics, including the delimitation of horizons with identification and recording of morphological characteristics, characterizing the transition between horizons, transition topography, depth and thickness, color, texture, structure, size and degree of structure, porosity, waxiness, consistency, plasticity and stickiness and other characteristics that are representative. Photo 1 shows an example of relief while Photo 2 shows the expert team analyzing a soil profile.

Photo 1 – Example of Serra do Mar relief



Source: Rosângela T. Lima, 26/05/2021.

Photo 2 – Description of soil profile in São José dos Pinhais/PR



Source: Daniel M. Neto, 10/03/2021.

During field reconnaissance, the main rivers associated with the project's layout were characterized (Photo 3), and sampling was also carried out at 65 points for the purpose of characterizing the quality of surface water (Photo 4). Data from the first sampling campaign (held in February/2021) were processed and the Water Quality Index (IQA) was calculated for the sampling points. Of the 65 points analyzed, 85% have a "good" IQA category and 15% have a "regular" IQA, with no point classified in the other categories. Points classified as "regular" are located close to urban centers, which represents the influence of this type of land occupation on the decrease in water quality.

Corredor Oeste de Exportação - Nova Ferroeste



EXECUTIVE SUMMARY ENVIRONMENTAL LICENSING - PHASE PL

Corredor Oeste de Exportação - Nova Ferroeste

In a future stage, the data collected will be analyzed and the maps associated with the hydrological study and their respective themes will be generated, such as: hydrographic basins, water bodies intercepted or tangent by the railway, springs, hydrologically sensitive areas, water abstractions and other relevant uses of water bodies. The second water quality campaign is also scheduled to take place in July 2021.

Photo 3 – Paraná River between the states of Mato Grosso do Sul and Paraná



Source: Jackson Goldbach, 06/05/2021.

Photo 4 – Water sampling made in the Iguatemi River in Eldorado/MS



Source: Renan L. Boebel, 08/02/2021.

As for air quality, a diagnosis around the railway is initially being prepared, that is, the determination of environmental concentrations of certain parameters before the railway is operated. For this purpose, air quality sampling was carried out at 07 sampling points, taking into account the main urban areas planned in the vicinity of the route, prioritizing the health of the population and the environment in the vicinity of the project. The samples were taken with the purpose of diagnosing the current air quality conditions ("background concentration" or background). Photo 5 shows one of the sampled points (Paranaguá/PR).

The environmental concentrations generated by the implementation and operation of the railway should be added to what already exists in its surroundings. Thus, the diagnosis is important so that the concentrations resulting from this sum remain at levels below the limits imposed by health organizations and environmental legislation.

Trecho: Paranaguá (PR) - Maracaju (MS)

Ramal: Cascavel (PR) - Foz do Iguaçu (PR)



For the characterization of environmental noise and vibration, field measurements were also carried out (Photo 6), in order to validate the sound levels and natural vibrations currently present on the locations where the railway layout is projected, prior to its installation and operation (residual noise and vibration or ambient level, that is, without passage of train composition).

The measurement campaigns at each of the 21 selected points took place during the day (between 7:00 am and 10:00 pm) and at night (between 10:00 pm and 7:00 am the following day) in accordance with specific legislation. The measurements had a minimum duration of 60 min for the daytime and 30 min for the nightime.





Source: Roberto N. Botelho, 20/04/2021.





Source: Felipe do Valle, 12/04/2021.

For the speleological studies, a Cavity Prospecting Area (APC) was defined, consisting of the sum of the 50m strip from the railroad axis plus a strip of over 250m, in compliance with CONAMA Resolution No. 347/2004, totaling 300m (for each side) from the guideline of the route, in order to protect any negative interference with the speleological heritage.

Based on a map of potentialities for the formation of caves, 07 Sensitive Areas for the Development of Caves (ASDC) were defined, which were the target of field surveys.

EXECUTIVE SUMMARY ENVIRONMENTAL LICENSING - PHASE PL

Corredor Oeste de Exportação - Nova Ferroeste



Detailed investigations are being carried out through exokarstic walks (Photo 7 and Photo 8), both on land, through walks, and by air, using a Remotely Piloted Aircraft (RPA), in addition to speleological interviews with residents of the prospected regions, in order to know in detail, the lithological, structural and geomorphological characteristics of the areas traversed by the railway line.

Photo 7 – Speleological prospecting in Serra do Mar



Source: João P. Adolfo, 25/04/2021.





Source: João P. Adolfo, 27/02/2021.

Biotic Environment 3.1.2

Due to its extension, Nova Ferroeste covers a wide range of environments and, consequently, protected areas. Regarding Conservation Units (UCs), the surveys show, so far, a total of 45 UCs within a 10 km radius of the Nova Ferroeste axis, among which seven (07) intersect the project, namely, none within from the Full Protection (PI) use category.

Subsequently, within the 3,000-meter range (delimited by CONAMA Resolution No. 428/2010) or Buffer Zone, this number is 12 UCs: 11 Full Protection and one Special Area of Tourist Interest (AEIT) of Marumbi. It is important to emphasize that, according to the regulations of the states of Paraná and Mato Grosso do Sul, Private Natural Heritage Reserves (RPPNs) are in the category of Full Protection, different

10

EXECUTIVE SUMMARY ENVIRONMENTAL LICENSING - PHASE PL



from the federal approach of the National System of Conservation Units (SNUC), a situation that occurs for all UCs within this mentioned range.

Table 2 presents the consolidated list of UCs identified within a radius of up to 3,000 meters.

Nº	Nova Ferroeste/UC	UF	UC	Category	Sphere	Area (ha)
1	Intercept	PR/MS	APA Ilhas e Várzeas do Rio Paraná	Sustainable use	Federal	1.005.188,39
2	Intercept	MS	APA da Bacia do Rio Iguatemi	Sustainable use	Municipal	804.594,00
3	Intercept	MS	APA do Rio Amambai	Sustainable use	Municipal	66.619,00
4	Intercept	PR	APA Estadual da Escarpa Devoniana	Sustainable use	State	392.780,63
5	Intercept	PR	APA Estadual da Serra da Esperança	Sustainable use	State	204.350,47
6	Intercept	PR	APA Estadual de Guaratuba	Sustainable use	State	199.455,22
7	Intercept	PR	APA Estadual do Pequeno	Sustainable use	State	7.363,07
8	Until 3km	PR	PARNA de Saint- Hilaire/Lange	Full Protection	Federal	24.352,43
9	Until 3km	PR	AEIT do Marumbi	Não SNUC	State	67.093,35
10	Until 3km	PR	PARNA Guaricana	Full Protection	Federal	49.286,87
11	Until 3km	PR	PARNA do Iguaçu	Full Protection	Federal	185.262
12	Until 3km	PR	RPPN Paulo Ivan dos Santos (Fazenda Penelope)	Full Protection	State	220,29
13	Until 3km	PR	RPPN Leon Sfeir Von Linseng	Full Protection	State	466,04

Table 2 – Conservation Units registered within 3 km of the West Export Corridor – Nova Ferroeste

EXECUTIVE SUMMARY

ENVIRONMENTAL LICENSING – PHASE PL

Corredor Oeste de Exportação - Nova Ferroeste

11

F



Nº	Nova Ferroeste/UC	UF	UC	Category	Sphere	Area (ha)
14	Until 3km	PR	PARNA de Ilha Grande	Full Protection	Federal	76.138,19
15	Until 3km	PR	Parque Estadual do Pau Oco	Full Protection	State	905.582
16	Until 3km	PR	RPPN Fazenda Santa Maria	Full Protection	State	242,00
17	Until 3km	PR	RPPN Perna do Pirata	Full Protection	Federal	18,55
18	Until 3km	PR	RPPN Donel	Full Protection	State	68,66
19	Until 3km	PR	Parque Municipal Ambiental Linear Rio Emboguaçu	Full Protection	Municipal	27,27

Source: ICMBIO (2021); IMASUL (2021); IAT (2021) e Prefeituras Municipais (2021).

Priority Areas for Conservation (APCs) were also identified in the route and in the buffer up to 3 km of the route. Four APCs are intercepted by the project (MA061, MA064, MA067, MA114) and four are within a radius of up to 3 km (MA073, MA062, MA063 and MA060).

With regard to flora, bibliographical research and compilation of information from the Study Area are being carried out based on secondary data, including scientific studies and available surveys carried out throughout the region of interest. The texts are also being written with the methodology of the surveys carried out in the field and calculations to be carried out in the data processing stage.

Based on satellite images and their interpretation, the classification of native formations was based on the stage of succession, domains and existing Phyto physiognomies, integrating them with items of land use and occupation, also serving as a basis for field activities.

12

EXECUTIVE SUMMARY ENVIRONMENTAL LICENSING - PHASE PL



In the field, floristic and phytosociological surveys are being carried out through the installation of plots in all native vegetation formations (trees and herbaceous), prioritizing those intercepted by the railroad axis, covering all existing habits and strata. Photo 9 and Photo 10 show the activities of the team of experts in the field.

Photo 9 – Collection of botanical material in São José dos Pinhais/PR



Source: Felipe F. de Lima, 11/03/2021.

Photo 10 – Plot for herbaceous species, municipality of Morretes/PR



Source: Felipe F. de Lima, 11/03/2021.

The number of plots obtained so far is 91 (10 in the Cerrado; 35 in the Dense Ombrophilous Forest, 43 in the Mixed Ombrophilous Forest and 03 in the Semideciduous Seasonal Forest). These plots were used for the analysis of arboreal, shrubby and herbaceous components, in addition to 42 plots implanted in rural areas.

Through these field collections, the sample sufficiency analyzes were started using the species accumulation curve and the species richness estimators, demonstrating that, until now, the curves are tending towards stability, that is, based on the records of field, most of the expected species have already been registered. Photo 11 shows a rural area where data collection was carried out. Photo 12 presents material collected in the field that will be identified in the office.

13

EXECUTIVE SUMMARY ENVIRONMENTAL LICENSING - PHASE PL

Corredor Oeste de Exportação - Nova Ferroeste



Photo 11 – Sampling in a rural area, municipality of Dourados/MS



Source: Felipe F. de Lima, 05/05/2021.

Photo 12 – Processing of collected botanical material



Souce: Felipe F. de Lima, 15/03/2021.

The fauna studies were started in October/2019 with the elaboration of the Work Plan to request authorization for the capture, collection and transport of biological material (Abio). With the obtainment of Abio n° 20/2021, the field work began, and so far, two campaigns of terrestrial and aquatic fauna have been completed.

The first campaign was carried out during a period of excessive rainfall, between the months of January and February 2021. The second took place at the time when low temperatures begin to reach southern Brazil (April and May). It is noteworthy that, even with varied climatic conditions, a high percentage of species with potential occurrence had its confirmation in the sampled units inventoried. All applied methods generated relevant results, which will be presented in the diagnosis that is being prepared to compose the EIA/RIMA. More than 10 thousand registrations were made in these two campaigns, a very representative value.

For the aquatic fauna, based on the data obtained so far, it is worth highlighting the number of fish species sampled in the Alto Iguaçu and Amambai region. And in relation to aquatic invertebrates, the diversity of groups represents a large portion of the aquatic biota surveyed for the region through secondary data, revealing that the community is dominated by aquatic immature stages and insect adults.



Finally, the surveys of fauna in natural cavities are covering the municipalities of Piraquara, Balsa Nova, Campo Largo, Palmeira, Lapa, Teixeira Soares and Cruz Machado, all in the state of Paraná. So far harvestmen, spiders, crickets and moths have been observed in the cavities. The interval between Photo 13 and Photo 16 shows the activities of biologists in the field.

Photo 13 – Patinho-gigante (*Platyrinchus leucoryphus*)



Source: Raphael E. F. Santos, 23/01/2021.





Source: Raphael E. F. Santos, 24/01/2021.

EXECUTIVE SUMMARY

ENVIRONMENTAL LICENSING – PHASE PL



Photo 15 – Use of equipment during primary data collections



Source: Roger H. Dalcin, 24/01/2021.

Photo 16 - Bat (*Chiroptera*) being removed from mist net, Piraquara/PR



Source: Daniela A. S. Bolla, 24/01/2021.

3.1.3 Socieconomic Environment

The field work for the socioeconomic diagnosis is being carried out based on planning previously carried out in an office, where, through satellite images, the visiting points and respective access points are pre-defined.

Field work has been completed in 41 of the 49 municipalities affected by the project. The areas to be affected by the railroad in the intermediate geographic regions of Curitiba (9 municipalities), Ponta Grossa (5 municipalities), Guarapuava (5 municipalities), Cascavel (14 municipalities) and Dourados (8 municipalities) were researched. The combined population of these municipalities, according to the IBGE estimate for 2020, is 2.25 million people, of which 38.1% reside in the 9 municipalities of the Intermediate Region of Curitiba and 27.9% in the 14 municipalities of the Intermediate Region of Cascavel. The third most populated region is the Intermediate Region of Dourados, with 18.5% of the total population in 8 municipalities in Mato Grosso do Sul.

EXECUTIVE SUMMARY ENVIRONMENTAL LICENSING - PHASE PL

Corredor Oeste de Exportação - Nova Ferroeste



The territorial division referred to in the analyzes carried out for this socioeconomic diagnosis is based on the characterization of the Brazilian urban network carried out by the IBGE, which takes into account the area of influence of the municipalities covering intermediate and immediate geographic regions, as can be seen in Table 3.

Intermediate region	Immediate region	Total number of municipalities	Affected municipalities
	Cascavel	23	9
	Dois Vizinhos	6	0
	Foz do Iguaçu	7	3
	Francisco Beltrão	21	0
Cascavel	Laranjeiras do Sul - Quedas do Iguaçu	8	3
	Marechal Cândido Rondon	6	1
	Pato Branco	15	0
	Toledo	14	6
	Curitiba	29	7
Curitiba	Paranaguá	7	2
	União da Vitória	9	0
	Amambai	5	1
	Dourados	13	4
Dourados	Naviraí - Mundo Novo	6	3
	Nova Andradina	7	0
	Ponta Porã	3	0
Guarapuaya	Guarapuava	12	5
Guarapuava	Pitanga	7	0
	Irati	7	2
Ponta Grossa	Ponta Grossa	12	3
	Telêmaco Borba	7	0
	Total	224	49

 Table 3 – Total number of municipalities and number of municipalities affected by Nova

 Ferroeste by intermediate and immediate regions

Source: Fipe (2021).

EXECUTIVE SUMMARY

ENVIRONMENTAL LICENSING – PHASE PL

Corredor Oeste de Exportação - Nova Ferroeste



For the Study Area of the socioeconomic environment, information such as: population dynamics, health and infrastructure conditions, economic organization, territorial dynamics and etc. are collected. For the territorial strip closest to the railroad, interviews and field sampling surveys are carried out to identify buildings to be affected by the Nova Ferroeste domain strip. Photo 17 and Photo 18 show the activities of the socio-economics team during field interviews.

Photo 17 – Interviews conducted with social distance



Source: Carolina A. Iarosz, 13/03/2021.





Source: Carolina A. Iarosz, 22/01/2021.

3.2 ARCHAEOLOGICAL STUDIES AND CULTURAL HERITAGE

The archeological and cultural heritage studies began with the elaboration of the Activity Characterization Form (FCA) and subsequent classification of the project at level IV by IPHAN. This level means medium and high interference on the prevailing soil conditions, and that the precise layout and location will only be possible to define after the Preliminary License phase.

The start of field work was authorized by IPHAN through Ordinance No. 12/2021, after the analysis and approval of the Project for the Assessment of Potential Impact on Archaeological Heritage (PAPIPA).

EXECUTIVE SUMMARY ENVIRONMENTAL LICENSING - PHASE PL

Corredor Oeste de Exportação - Nova Ferroeste Ramal



In the field, 646 observation points were pre-established, distributed at more or less regular distances from each other, of approximately 2 km. These points and their surroundings were inspected on foot, always by a pair of researchers, and when it was not possible to access the pre-established point, the registration was carried out at the place from which access became unfeasible. Photo 19 shows an archaeologist walking, while Photo 20 shows an artifact found in the municipality of Cascavel/PR.

Photo 19 – Walking on existing Ferroeste section



Source: Jonathan S. Caiano, 26/03/2021.





Source: Lilia B. Guedes, 15/04/2021.

The results of the field work are reported to IPHAN through the Potential Impact Assessment Report on Archaeological Heritage (RAPIPA) accompanied by the Impact Assessment Report on Intangible Heritage (RAIPI).

4. INDIGENOUS COMPONENT STUDY

The study regarding the Indigenous Component complies with the Specific Terms of Reference of FUNAI received through Official Letter No. 571/2021/CGLIC/DPDS/FUNAI issued on May 04, 2021, which indicated the need to study the Indigenous Land (TI) Rio das Cobras, about 1.48 km away from the existing section of the railway.

19

EXECUTIVE SUMMARY ENVIRONMENTAL LICENSING - PHASE PL

Corredor Oeste de Exportação - Nova Ferroeste



It is important to mention that FUNAI's Specific Reference Term is the basis for the guidelines for carrying out the future study of the Indigenous Component that will be an integral part of the environmental licensing process with the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA).

Figure 3 shows the location of the Rio das Cobras Indigenous Land.



Figure 3 – Location of Rio das Cobras Indigenous Land

Source: Fipe (2021).

EXECUTIVE SUMMARY

ENVIRONMENTAL LICENSING – PHASE PL



The Rio das Cobras TI is considered the largest TI in the state, with more than 3200 indigenous people, mostly from the Kaingang ethnic group, with family groups and villages from the Guarani ethnic group. Currently, the TI is politically divided into 11 villages, namely: Headquarters, Vila Nova, Jacutinga, Campo do Dia, Encruzilhada, Água Santa, Taquara, Missão, Trevo, Pinhal and Lebre, the last two being Guarani.

The TI population carries out various economic activities, mainly domestic swiddens, commercial mechanized farming, contract services, public service, in addition to resources from retirement, pensions and income distribution programs.

5. QUILOMBOLA COMPONENT STUDY

Through Technical Note No. 904/2021/DFQ/DF/SEDE/INCRA, of March 25, 2021, INCRA established the need to prepare a study of the Quilombola Community of Manoel Ciríaco dos Santos. The study will serve as a subsidy to the Brazilian Institute for the Environment - IBAMA, as well as to INCRA to understand the project's interventions and assess its social and environmental impacts and interactions in the Quilombola Community.

In relation to the families that make up the remaining quilombo community of Manoel Ciríaco dos Santos, in the municipality of Guaíra, the origins of the processes of slavery and resistance that directly affected their ancestors date back to the exploration of minerals during the period of colonial Brazil in Minas Gerais, specifically in the vicinity of Pico do Itambé, then belonging to the region of Serro. There are currently nine remaining quilombo communities in this region certified by the Palmares Foundation. Figure 4 shows the location of the territory of the remaining quilombo community of Manoel Ciríaco dos Santos.

21

EXECUTIVE SUMMARY ENVIRONMENTAL LICENSING - PHASE PL Corredor Oeste de Exportação - Nova Ferroeste





Figure 4 – Location of the territory of the remaining quilombo community of Manoel Ciríaco dos Santos

Source: Fipe (2021).

5.1 MALARIAL POTENTIAL ASSESSMENT

A disease transmitted by female mosquitoes of the *Anopheles* genus, malaria is the endemic with the greatest potential for dispersal due to the opening of roads, railways, colonization projects, mining, agricultural expansion and construction of hydroelectric plants. It is of fundamental importance that the epidemiological situation of malaria is well defined, and its control fully equated before the beginning of the implementation of these types of projects.

EXECUTIVE SUMMARY ENVIRONMENTAL LICENSING - PHASE PL



For the studies that make up the Malarial Potential Assessment (APM), the specialized team makes contacts with the Coordination of the Center for Zoonoses in the city of Dourados/MS to record epidemiological information. Campaigns are also carried out in 8 sampling points located within the municipal limits of Dourados/MS, aiming at capturing winged and immature individuals (Photo 21, Photo 22).



Photo 21 – Field sampling for the

Source: Cezar Santos, 05/05/2021.





Source: Cezar Santos, 05/05/2021.

EXECUTIVE SUMMARY

ENVIRONMENTAL LICENSING – PHASE PL



6. FINAL CONSIDERATIONS

Preliminary demand studies demonstrate the existence of a large volume of cargo that can be transported along the Western Export Corridor - Nova Ferroeste, which may contribute to the new railway being one of the largest in the country in handling agricultural solid bulk and containers.

The works in progress presented in this executive summary are part of the Preliminary License (LP) request stage for the Western Export Corridor - Nova Ferroeste. Considering the partial nature of the works presented, it is necessary to register that the final results are being generated and evaluated by a multidisciplinary technical team.

All studies necessary for environmental licensing (LP stage) are being prepared within the quality standards required for the size and complexity of the project. These studies will serve as a technical basis for the assessment of the project's socio-environmental viability by the various bodies and actors involved.

EXECUTIVE SUMMARY

ENVIRONMENTAL LICENSING – PHASE PL