

# Analysis of public participation in public hearings during the environmental licensing process of Nova Ferroeste

## Análise da participação social nas audiências públicas no processo de licenciamento ambiental da Nova Ferroeste

José Alex Portes\*, Simone de Paula Miranda Abreu\*\*, Henrique Cesar Lemos Jucá\*\*\*, Ruth Elias de Paula Laranja\*\*\*\*

\*Brazilian Institute of Environment and Renewable Natural Resources (Ibama), Department of Geography, University of Brasilia (UnB), josegeosp@gmail.com

\*\*Institute of the Environment and Water Resources in the Federal District Institute (Brasília Ambiental); Department of Geography, University of Brasilia (UnB), simone.miranda.ibram@gmail.com

\*\*\*Brazilian Institute of Environment and Renewable Natural Resources (Ibama), henrique.juca@gmail.com

\*\*\*\*Department of Geography, University of Brasilia (UnB), laranja.ruth@unb.br

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### Abstract

Public participation in Environmental Licensing is essential and is primarily expressed through Public Hearings conducted prior to project implementation. Although these are not deliberative spaces, the public has the freedom to present criticisms or suggestions, influencing the licensing authority's decision-making process. Through an exploratory documentary study with a qualitative approach, this research aims to analyze the contributions arising from the Public Hearings held by Ibama during the environmental licensing process for the 'Nova Ferroeste' railway project, located between the states of Mato Grosso do Sul and Paraná. Approximately 3.000 participants attended the seven hearings conducted, with 184 statements or remarks recorded, divided into 416 interventions or topics addressed, including questions, requests, or the presentation of information. Due to the project's large scale, varying public interests were observed depending on the region affected. Three main themes emerged as key concerns for participants: the crossing of the Serra do Mar mountain range, the impacts on small properties in the São José dos Pinhais/PR region, and the effects on traditional communities in the Dourados/MS region. Despite criticisms about the effectiveness of the current format of public hearings, allegedly due to their limited capacity to influence decision-making, it is concluded that analyzing social participation and the contributions received—particularly the three aforementioned themes—supported the technical feasibility analysis of Nova Ferroeste and the decision to return the initial version of the EIA/RIMA. This underscores the importance of this instrument in assessing the feasibility of projects with significant socio-environmental complexity.

#### Keywords:

Assessment of Socio-environmental Impacts, Railway Projects, Public Participation, Decision-Making.

## Resumo

A participação social no Licenciamento Ambiental é essencial e se manifesta, principalmente, por meio das Audiências Públicas, realizadas previamente à implantação dos projetos. Embora não sejam espaços deliberativos, a população tem a liberdade de apresentar críticas ou sugestões, influenciando as decisões do Órgão licenciador. Por meio de um estudo documental exploratório de abordagem qualitativa, este trabalho objetiva analisar as contribuições oriundas das Audiências Públicas promovidas pelo Ibama no licenciamento ambiental da “Ferrovia Nova Ferroeste”, empreendimento localizado entre os estados de Mato Grosso do Sul e do Paraná. Constatou-se a presença de aproximadamente três mil participantes nas sete audiências realizadas, com 184 falas ou manifestações, divididas em 416 intervenções ou assuntos tratados, entre questionamentos, requerimentos ou apresentação de informações. Devido à extensão do empreendimento, foi possível observar distintos interesses da população, a depender da região interceptada. Três temáticas se destacaram como de interesse dos participantes, a saber: a transposição da Serra do Mar; os impactos sobre pequenas propriedades na região de São José dos Pinhais/PR e as interferências sobre comunidades tradicionais na região de Dourados/MS. Apesar das críticas quanto à efetividade no formato atual de realização das audiências públicas, supostamente pela baixa capacidade de influenciar a tomada de decisão, conclui-se que a análise da participação social e das contribuições recebidas, em especial as três temáticas supracitadas, subsidiaram a análise técnica de viabilidade da Nova Ferroeste e a decisão de devolver a primeira versão do Estudo de Impacto Ambiental e respectivo Relatório de Impacto Ambiental (EIA/RIMA), validando a importância do instrumento no processo de análise de viabilidade de projetos de elevada complexidade socioambiental.

### Palavras-chave:

Avaliação de Impactos Socioambientais, Empreendimentos Ferroviários, Participação Pública, Tomada de Decisão.

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## I. INTRODUCTION

Law No. 6.938/1981 established two important instruments for the implementation of the National Environmental Policy (PNMA): Environmental Licensing (EL) and Environmental Impact Assessment (AIA, in its Portuguese acronym). EL is a state administrative procedure designed to authorize activities that may cause environmental degradation. On the other hand, AIA is a technical process, of a prospective and preventive nature, for analyzing the environmental impacts associated with the planning, installation, operation and decommissioning of projects and activities (Brasil, 1981; Brasil, 1997; Sánchez, 2013; Trennepohl, 2024).

PNMA can be understood in the context of the political reopening of the final phase of the civil-military dictatorship and the redemocratization of Brazil (Justino De Oliveira, 1997). An innovative model of public environmental management was created, exemplified by the National Environmental Council (CONAMA, in

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Portuguese), with seats for civil society and Environmental Education, playing an important role in educating and preparing the population for public participation.

The same law created the National Environmental System (SISNAMA, in its Portuguese acronym), with distribution of responsibilities among federal, state and municipal bodies. In this model, at the federal level, AIA and EL are carried out by the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA, in portuguese) (Brasil, 1981; Brasil, 2011).

Between 1986 and 1987, CONAMA regulated the need to ensure the public access to environmental studies, as well as public participation throughout the process through holding Public Hearings (PHs) (Brasil, 1986, Brasil, 1987). According to CONAMA resolution 09/1987, the hearings held within the scope of the EL have two purposes: to allow the interested public to learn about and clarify any doubts regarding the environmental studies developed, and to allow the Environmental Licensing Authority to collect criticisms and suggestions, which will be incorporated into the analysis of the project being evaluated (Brasil, 1987).

In 1988, the Federal Constitution incorporated the main guidelines of the PNMA in its article 225, making transparency in AIA and EL a constitutional matter, by the means of the mandatory disclosure of the content of the Environmental Impact Study (AIA) to the interested public (Brasil, 1988).

Moreira Neto (1992) states that public hearings aim to strengthen public administration by allowing interest groups to take part in decisions that affect specific issues. These events are open to any interested party, within a collective and participatory environment, with oral debates among the various actors involved (Fonseca et al., 2013). Although these are not deliberative spaces, the public has the freedom to present criticisms or suggestions, influencing the licensing authority's decision-making process, especially in defining mitigating or compensatory measures resulting from the adverse impacts of the project or activity that is being licensed (Sánchez, 2013).

Pinheiro (2015) emphatically criticizes the format of these events in the EL, arguing that they are limited to technical presentations that are incomprehensible to participants, resulting in insufficient space for debate and superficial reflections, which compromises the improvement of both the planning and implementation of environmental public policies.

Another important point regarding these events involves discussions on the definition of the limits of action of the State, as a provider of public services and equipment, and of the project proponent, responsible for mitigating and/or compensating the impacts of its activity or project (Bronz, 2013).

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The absence of more effective instruments for environmental assessment of sectoral policies or plans can lead to deviations in the scale of discussion in a public hearing of EL (Sánchez, 2008; Sánchez, 2017). It is not uncommon, during a hearing of a hydroelectric plant, for example, to discuss the reasons for not implementing a wind or solar project; or in a highway hearing, the motivation for not implementing a railway or waterway project.

Silva and Pedra (2016) discuss the importance of administrative principles, such as transparency and publicity in environmental matters. The authors emphasize the need for the Proponent to present all environmental information in a clear and objective manner, avoiding superficial or overly complex approaches that may be difficult for the interested public to understand.

Regarding the public's interest in this type of event, Morais and Viana (2018) evaluated the hearings of port projects in Rio de Janeiro, conducted by the state environmental agency, in which aspects of the socioeconomic environment were the focus of interest of the population. De Sousa and De Oliveira (2020), when analyzing the public hearing conducted by Ibama for an oil project in the state of Amapá, found that the main interests of the participants were the impacts on local fishing, employment generation and the risks associated with the possibility of environmental accidents and oil spills.

Della Nina (2016) evaluated hearings conducted by Ibama in 23 hydroelectric licensing processes, noting that participants demonstrated greater concern regarding the socioeconomic impacts in the affected areas and had general doubts about the construction phase of the projects.

Regarding the dynamics of the hearings, Cirne and Fernandes (2020) analyzed the public hearings for the presentation of environmental studies for the Serra do Facão Hydroelectric Power Plant (between Minas Gerais and Goiás), and found low public participation and, therefore, few technical input was received by the licensing agency, negatively impacting the assessment of the project's feasibility.

The opposite was observed by De Lemos (1999), who, when analyzing the dynamics of the public hearings for the Tijuco Alto Hydroelectric Power Plant, located in the Ribeira Valley (between São Paulo and Paraná), found active participation by social movements, with input that led the environmental agency's technical team to conclude that this project was socially and environmentally unviable.

Regarding the issues related to the public interest in this type of event, Pinheiro and Trigueiro (2014) evaluated the PHs carried out for a pelletizing project in the city of Vitória (ES) and its relationship with air pollution, finding low public participation and little public interest in this topic. On the other hand, Christmann

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(2013) identified limitations and difficulties in public access to environmental licensing information from a shipyard in the state of Santa Catarina.

In this context, this study aims to analyze the contributions received by Ibama in the form of presentation of information, requests and questions, which originated from the public participation process in seven public hearings as part of the environmental licensing process for the “Nova Ferroeste” railway project, planned to be implemented between the states of Mato Grosso do Sul and Paraná.

## **II. MATERIAL AND METHODS**

### **CONTEXT OF THE NOVA FERROESTE PROJECT**

The Nova Ferroeste project, submitted for Ibama’s assessment, is divided into 5 (five) sections: Section I — Cascavel/PR to Maracaju/MS, with 501.7 km; Section II — Santa Terezinha de Itaipu/PR to Cascavel/PR, with 165.5 km; Section III — Cascavel/PR to Guarapuava/PR, with 230.4 km (an existing part to be refurbished); Section IV — Guarapuava/PR to São José dos Pinhais/PR, with 335.7 km and Section V — São José dos Pinhais/PR to Paranaguá/PR, with 57.6 km, totaling 1,291 kilometers (Figure 1).

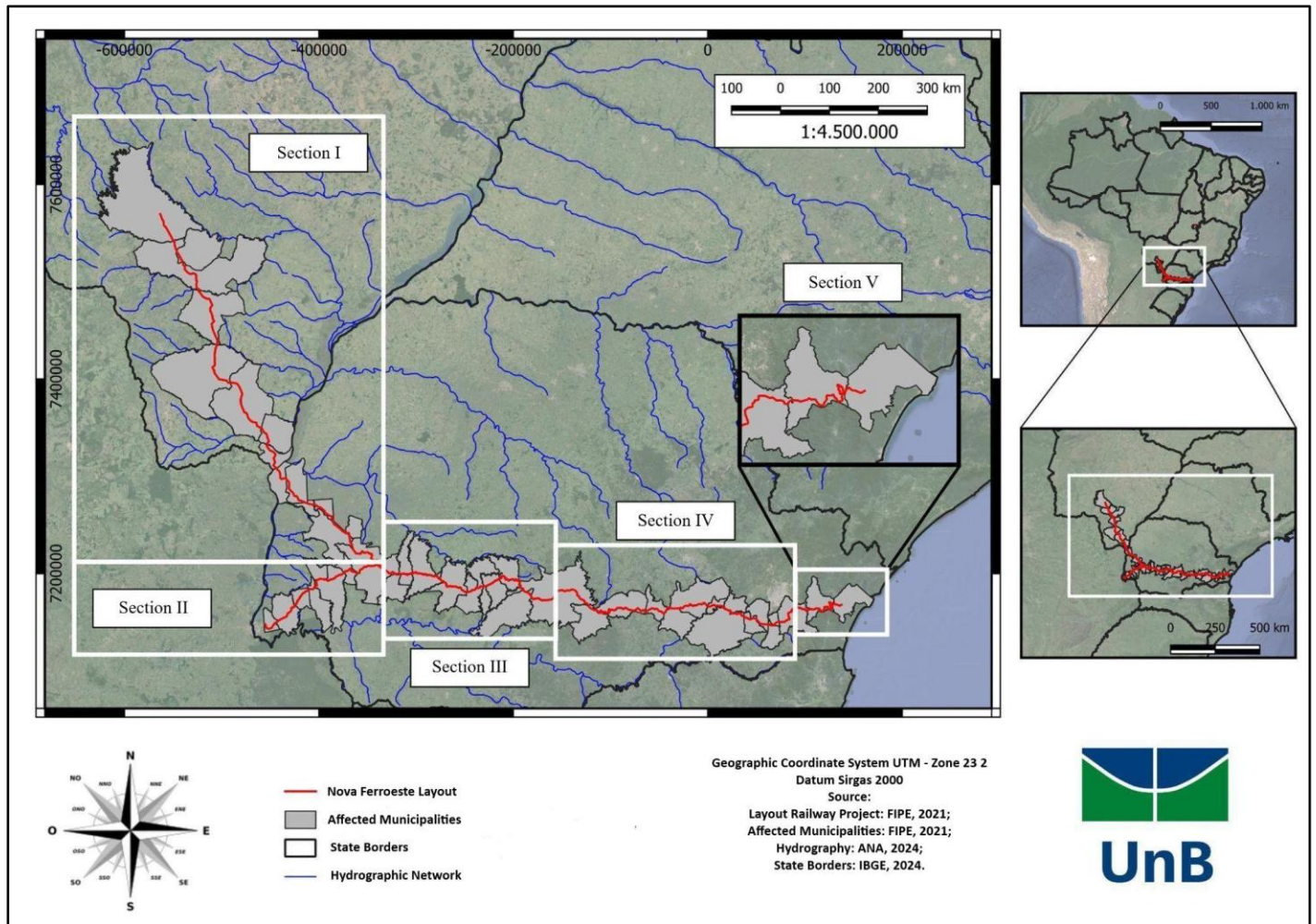


Figure 1 – Layout of the Western Export Corridor.

Source: Adapted from Fundação Instituto de Pesquisas Econômicas, 2021.

The justification for choosing this project is that it is one of the most important transportation infrastructure projects being planned in the country, currently under consideration by IBAMA. In addition, it reflects the effort to restore the importance of the railway model in the Brazilian transportation matrix.

The proposal for implementation of the Ferroeste project dates back to the 1980s. By means of Decree No. 96,913/1988, the Government of the State of Paraná (GPR) was granted the concession for the construction and operation of this railway, connecting the municipality of Guarapuava/PR to Cascavel/PR, in addition to a branch line to the region of Dourados/MS (Fundação Instituto De Pesquisas Econômicas, 2021).

However, only the section between Guarapuava and Cascavel (approximately 248 km) was built and inaugurated in 1994. In 1996, this railway was granted to a private group, which operated it until 2006, when it was taken over by the state government, which has been operating it commercially up to the date of this study (Estrada De Ferro Paraná Oeste S.A., 2024).

In the second half of the 2010s, the GPR revisited the project proposal, establishing a Working Group whose objective was to prepare the State Railway Plan. As one of the results of this initiative, the Technical-Operational, Economic-Financial, Environmental and Legal Feasibility Study (EVTEA-J, in its Portuguese acronym) and the Environmental Impact Study and respective Environmental Impact Report (EIA/RIMA, in Portuguese) were contracted (Fundação Instituto De Pesquisas Econômicas, 2021).

After opening the administrative process with Ibama, it was determined that conducting the licensing was federal responsibility, since the project affected more than one state (Brasil, 2011). The Terms of Reference (TR) were issued, and the preparation of the Environmental Impact Study and respective Environmental Impact Report (EIA/RIMA) was determined. The environmental studies, developed by the Economic Research Institute Foundation (FIPE, in the Portuguese acronym), were completed in 2021 (Brasil, 2021) and, after a request for additional information, the studies were accepted by Ibama in January 2022, beginning the stage of presenting the studies to interested public, through Public Hearings (PHs).

It is worth noting that within the scope of Ibama's activities, Normative Instruction 184/2008 governs the internal procedures for EL, including the holding of public hearings (Brasil, 2008). Discussions on conducting hearings for Nova Ferroeste were developed considering what was provided for in Conama Resolution No. 494/2020, which, due to the global COVID-19 pandemic, allowed hearings to be held remotely (Brasil, 2020).

The definition of the events location considered the suggestions presented by the project proponent (proposal for 6 PHs), by civil entities (for holding the events in 5 municipalities) and by the Public Prosecutor's Office (proposal for events in all affected municipalities). Thus, Ibama presented a proposal for conducting the PHs, based on the following criteria, gathered in Table 1.

Table 1 – Criteria for the choice of the municipalities to the seven Public Hearings.

Criteria	1	Requests for public hearings in accordance with art. 2nd, caput, of CONAMA Resolution No. 9/1987
	2	Municipalities where the railway's right-of-way directly interferes with urban areas
	3	Municipality with the highest number of residents within a 1 km wide corridor on each side of the railway alignment
	4	Municipalities that will host construction sites
	5	Municipalities where the railway project affects Conservation Areas
	6	Municipalities that are hubs in their region
	7	Municipalities proposed by the proponent

Source: Adapted from Brazil, 2022a.

The criteria above are not defined in specific regulatory frameworks, but are the result of internal discussions within Ibama, considering the experience of technical teams in conducting environmental licensing for linear projects (Brasil, 2022a). In this sense, Ibama determined the conduction of seven events, both in-

person and remote formats, in May 2022, in the cities of Dourados/MS, Guaíra/PR, Cascavel/PR, Paranaguá/PR, São José dos Pinhais/PR, Guarapuava/PR and Irati/PR.

After the public hearings, Ibama's technical team considered the information presented in the hearings and issued a Technical Report, in which it was suggested that the EIA/RIMA be returned and that complementary data be presented (Brasil, 2022b). As of the date of completion of this study, the project was still under evaluation by Ibama, without the issuance of the Preliminary License (PL), which, according to Brazilian environmental legislation, attests to the socio-environmental feasibility of the project.

## **ANALYSIS METHODOLOGY**

This work is an exploratory documentary research, applied in nature and qualitative in approach (Gil, 2024). The documentary research was conducted using documents included in the administrative process SEI! No. 02001.017497/2020-72 and supplementary processes, in progress with the Environmental Licensing Directorate (Dilic/Ibama in Portuguese).

The key documents examined were: (i) the Environmental Impact Assessment (Of. nº 923/GS, SEI! protocol 11363453 and annexes), as a source of information on the technical specifications of the project, the environmental impacts and the measures and programs proposed to mitigate or compensate for the impacts; (ii) the video recordings and transcriptions of the participants' remarks (Official Letter nº 639/GS, SEI! protocol 13073916 and annexes), the main source of information examined in this study, and the document (iii) "Technical Report - request for LP with request for additional data" (SEI! protocol 12450389), which analyzed how the contributions were received by Ibama's technical team in the analysis of the socio-environmental feasibility of the project.

The recordings (totaling approximately 23 hours of content) and their transcription were examined based on the individual statements of the participants who exercised their right to speak (whether orally, using a microphone, or in written format, where the hearing chair read out the content), following the methodological guide in Table 2.

Table 2 – Methodological script of Statements’ analysis in public hearings (PHs).

Format*	Typologies**	Topics***	Technical and Environmental Aspect ****
(i) Oral; (ii) Written	(i) "Information"; (ii) "Requests"; (iii) "Questions".	Project (Information)	(i) Railway Layout
			(ii) Complementary Structure
			(iii) Physical-financial Schedule
			(i) Alternative Locations and Technological Alternatives
			(v) General Project Information
		Environmental Licensing and Environmental impact assessment (Information)	(i) Environmental licensing and Environmental studies
			(ii) Environmental licensing deadlines and Procedural Rite
			(iii) Environmental Compensation
			(iv) General Project Information (Beneficities and Drawbacks)
		Physical Environment (Interference)	(i) Water Resources
			(ii) Air Quality
			(iii) Climate and Microclimate
			(iv) Noise and Vibration
			(v) Environmental Risk Assessment
		Biotic Environment (Interference)	(i) Flora – Suppression of Plant Species
			(ii) Fauna (Habitat loss; Passages of fauna; Fauna Trampling).
			(iii) Conservation Areas
		Socioeconomic Environment (Interference)	(i) Expropriations
			(ii) Social/Cultural/Economic/Urban Dynamics
			(iii) The Historical, Artistic, Archaeological and Landscap Heritage
(iv) Labor Market (Job Generation Potential)			
(v) Traditional Communities (Indigenous and Quilombola Component)			

\* The structure of the hearings allowed remote participants to express their opinions only in writing .  
 \*\* An individual participation may fall into more than one type of Statement  
 \*\*\* The topics refer to the subject addressed by the participants in the public hearings, which may be included in each of the three types of statements  
 \*\*\*\* The aspects are the link between the activity related to the project and the potential impacts resulting from it (Brasil, 2021), structured around each of the five selected topics.

Source: The Authors, 2024.

Based on each participant’s individual remark, whether in oral or written format (referred to in this study as a Statement), the different topics approached by the participants were examined (referred to as Interventions). Each intervention was classified into three typologies: (i) “Information”, (ii) “Requests” ou (iii) “Questions”.

This methodology can be exemplified through a participant’s remark, in which they manifested support for the project (classified in the typology “Presentation of Information”). In the same remark, the participant suggested the implementation of a complementary structure (railroad yard) in their municipality (classified in the typology “Requests”). In other words, on the participant’s Statement, there were two Interventions in total.

Another participant may have exercised their right to speak, without clearly indicating their opinion regarding the project (whether positive or negative), but by raising five questions regarding the project layout or the content of the manifested AIA. Considering the methodological proposal, one Statement and five Interventions were identified, all of them in the “Questions” typology.

Finally, through the individual analysis of each participation, the data tabulation was performed using the program LibreOffice (version 24.2.2.2). The thematic map was created using the software QGis (version 3.34.0).

### III. RESULTS AND DISCUSSION

The seven hearings had approximately three thousand participants, either in-person or online. In Guaíra and Cascavel, the highest numbers of in-person and online participants, respectively, were recorded, while the Guarapuava event had the fewest participants in both formats (Figure 2a). The hearing held in São José dos Pinhais was the longest one (lasting over 5 hours), while the Guarapuava hearing, with fewer participants, also had the shortest duration (around 2 hours and 40 minutes) (Figure 2b).

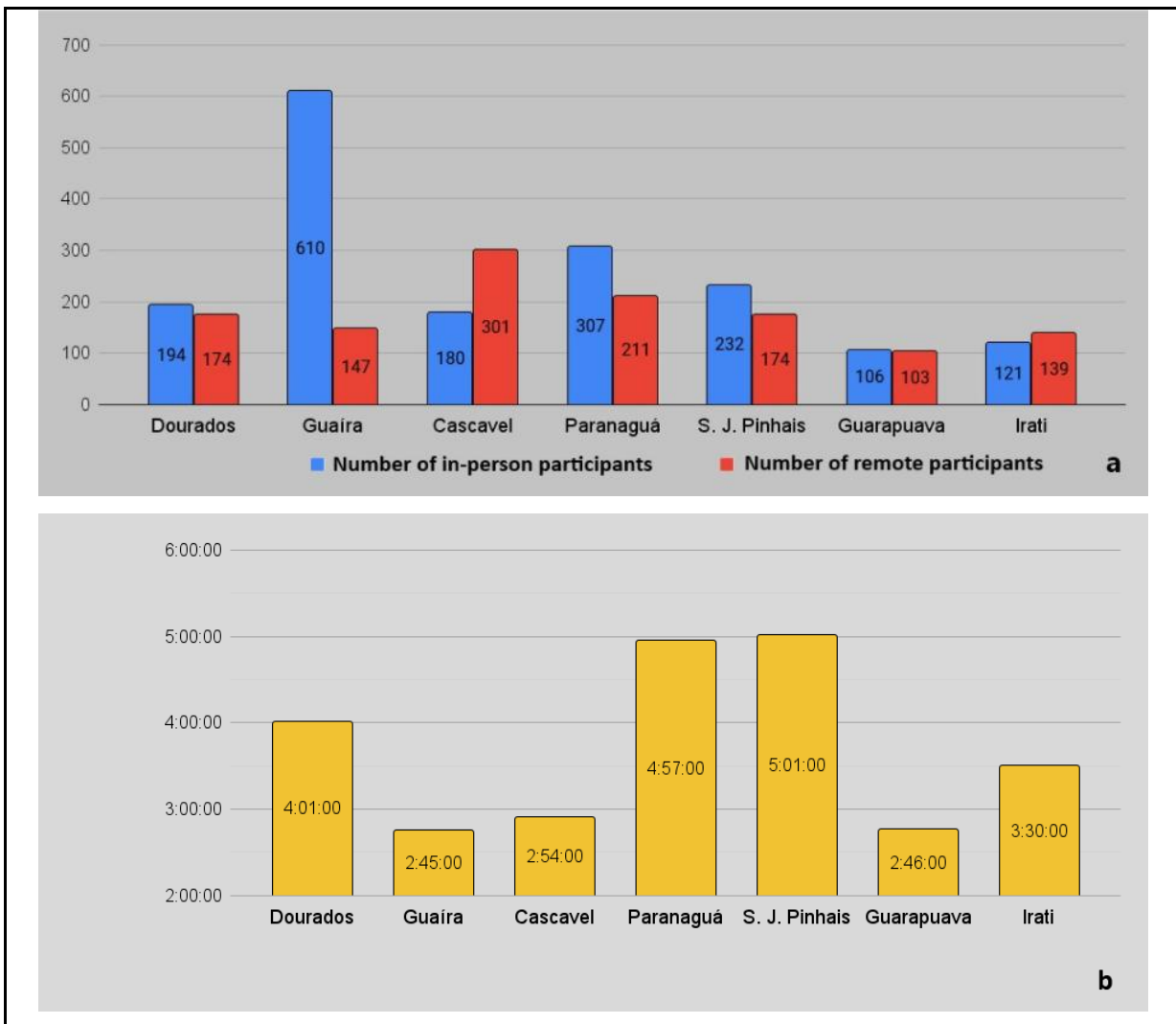


Figure 2 – Number of in-person and remote participants (a) and Public hearings duration (b).

Source: The authors, 2024.

In total, 184 Statements were recorded, divided into 99 in-person and 85 remote Statements. The São José dos Pinhais public hearing (PH) had the highest number of Statements when both modalities were combined, while Dourados had the lowest, with only three remote participations. Regarding the in-person Statements, the Paranaguá PH had the highest number, with 25 participations, while Guarapuava had the lowest, with only seven in-person participations (Figure 3a).

Based on the ratio of the number of Statements to the number of participants in each hearing, the resulting index may indicate the average level of the participant engagement. While in the São José dos Pinhais hearing, this index reached 12%, in Guaira it was only 2%, with an overall average of approximately 6% for the seven events (Figure 3b).

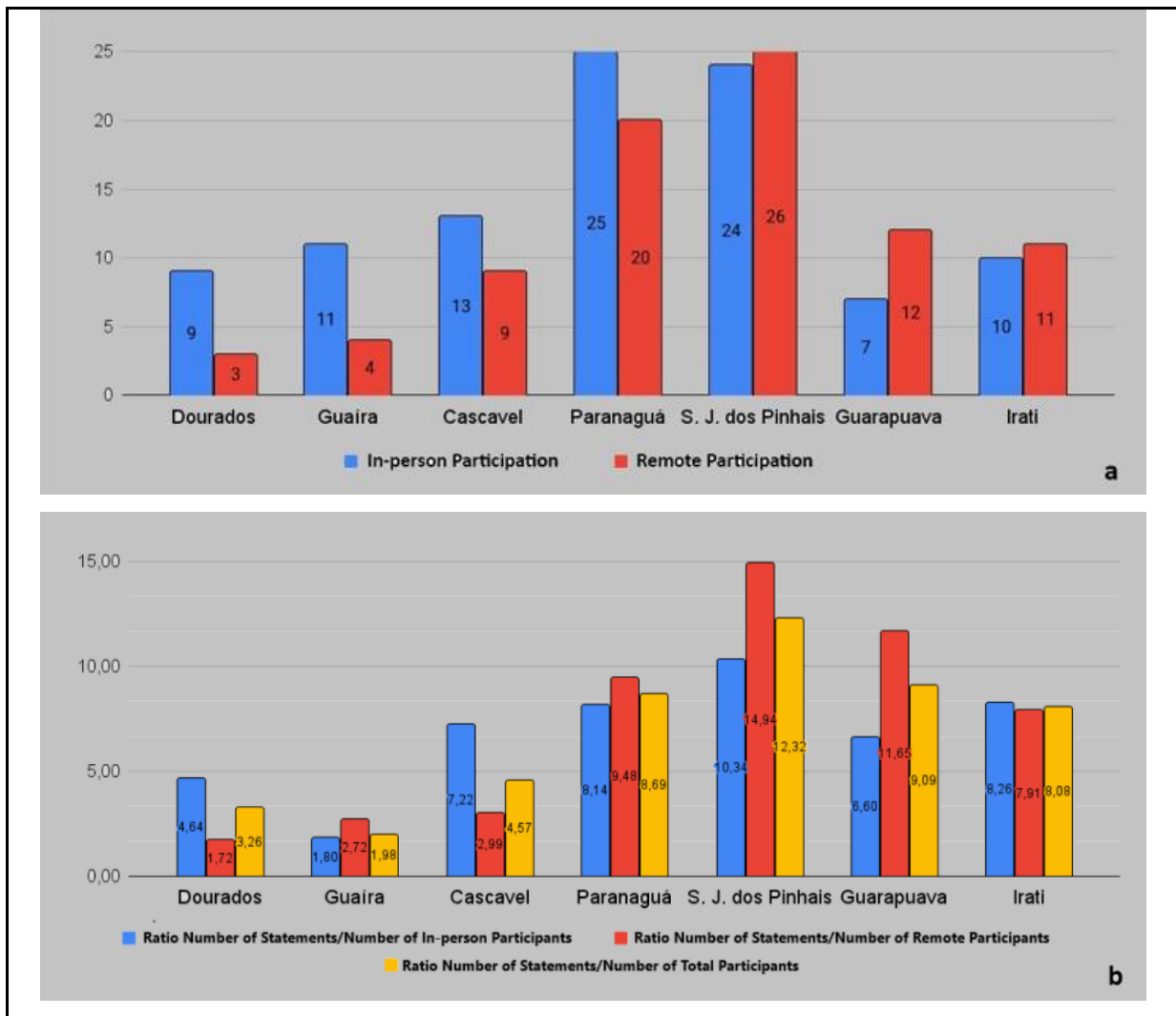


Figure 3 – Number of statements (a) and participant engagement index in the public hearings (b).

Source: The Authors (2024).

From the 184 Statements, 416 Interventions were obtained, distributed across the three typologies of the methodological proposal (in accordance with Table 2): the typology “Questions” had the highest representation, with 71,88%, followed by “Presentation of Information”, with 18,27% and “Requests”, with 9,86%.

In all the hearings examined, the typology “Questions” was the most prevalent, reaching approximately 81% in São José dos Pinhais event. Most of the questions were related to the environmental impacts on small properties of the region and the disruptions caused by the crossing of the Serra do Mar mountain range. Afterwards, the typology “Presentation of information” was observed, with emphasis on the municipalities of Dourados, Guaíra and Cascavel, with around 29% of the Interventions. The bulk of the interventions classified in this typology discussed the presence of the traditional communities or expressed support for the project. And lastly, the typology “Requests” was examined, with emphasis on Guaíra (around 23%), in which the bulk of the interventions were requests for the construction of railroad yards in the region (Figure 4).

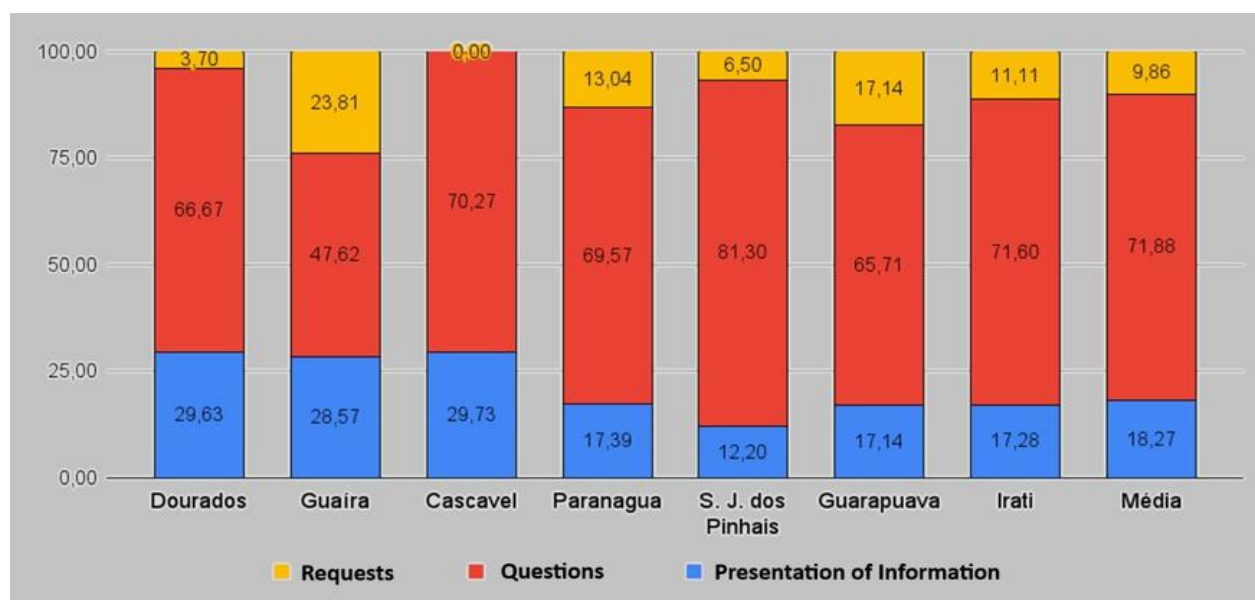


Figure 4 – Typology of the Interventions in the public hearings.  
Source: The Authors (2024).

Regarding the topics discussed, it was observed that the category “Project information” was considered the most relevant, with an index greater than 40%, followed by “LA information”, with 35% of the public interest, while the category “biotic environment” received the least attention, with only 4%.

The category “EL and EIA/RIMA information” drew the most interest in the Dourados hearing (48%) and the least in the Guarapuava hearing (14%). Meanwhile, the category “Project Information” received more

attention in the Cascavel, São José dos Pinhais and Guarapuava events (an index greater than 40%) and less attention in the Dourados event (less than 14%).

Information related to “Socioeconomic Environment” generated the most interest in the Dourados hearing, especially due to presence of traditional communities that may be impacted by the project. On the other hand, the category “Biotic Environment” gained more attention in the Irati public hearing, especially due to interventions from a remote participant who raised several questions related to the developed studies. In contrast, in the Cascavel and Paranaguá events, there was no statement related to this topic. Lastly, regarding the interest in “Physical Environment”, the Dourados event was where this theme received the most attention (11%), whereas in Irati, less than 3% of the interventions addressed this topic (Figure 5).

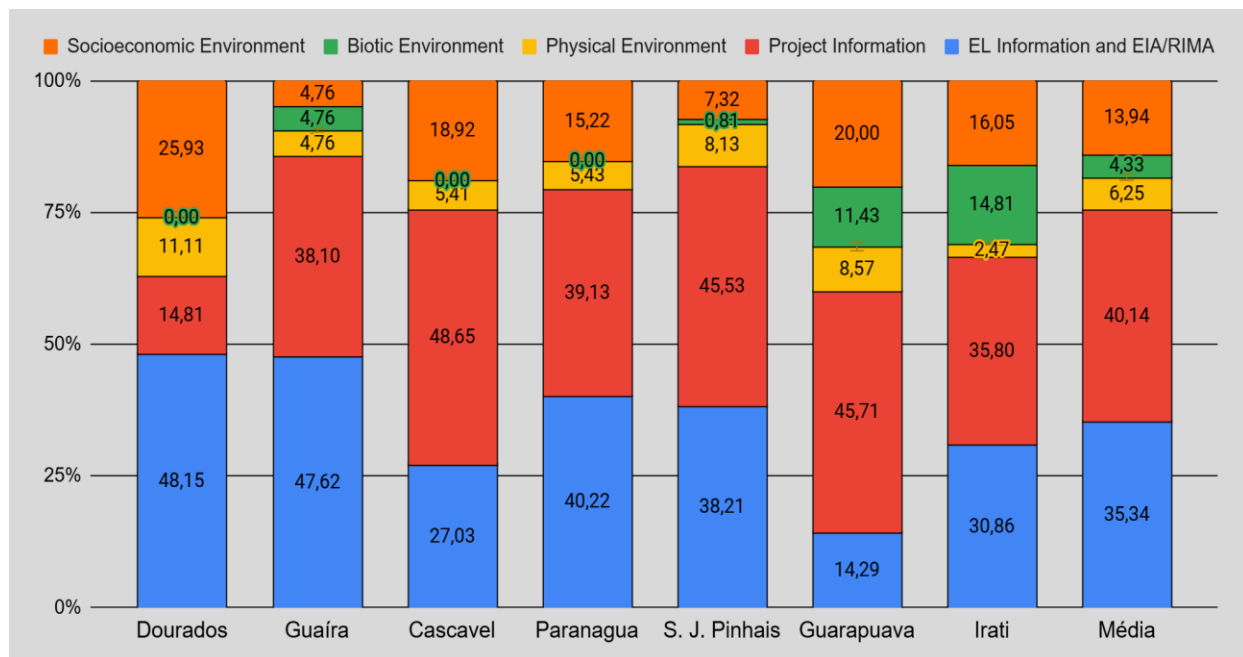


Figure 5 – Technical and environmental aspects discussed in the public hearings.  
Source: The authors (2024).

Of the 22 examined aspects, the 10 most addressed categories accounted for 86,06% of the total, whereas the 12 less addressed topics accounted for 13,94% (Figure 6). The category “Layout Information” was the most discussed topic, with 19,47%, indicating that the railroad location is a theme of high interest to the participants. The second most addressed category was “LA Deadlines and Procedural Rites”, that concerns aspects such as the next steps to the LA procedure and when the licenses will be issued, with 14,66%. In the third position was the category “Alternative Locations and Technologies”, with 11,78%, addressing aspects such as the possibility of layout change or the incorporation of other operational technologies to the project (Figure 6).

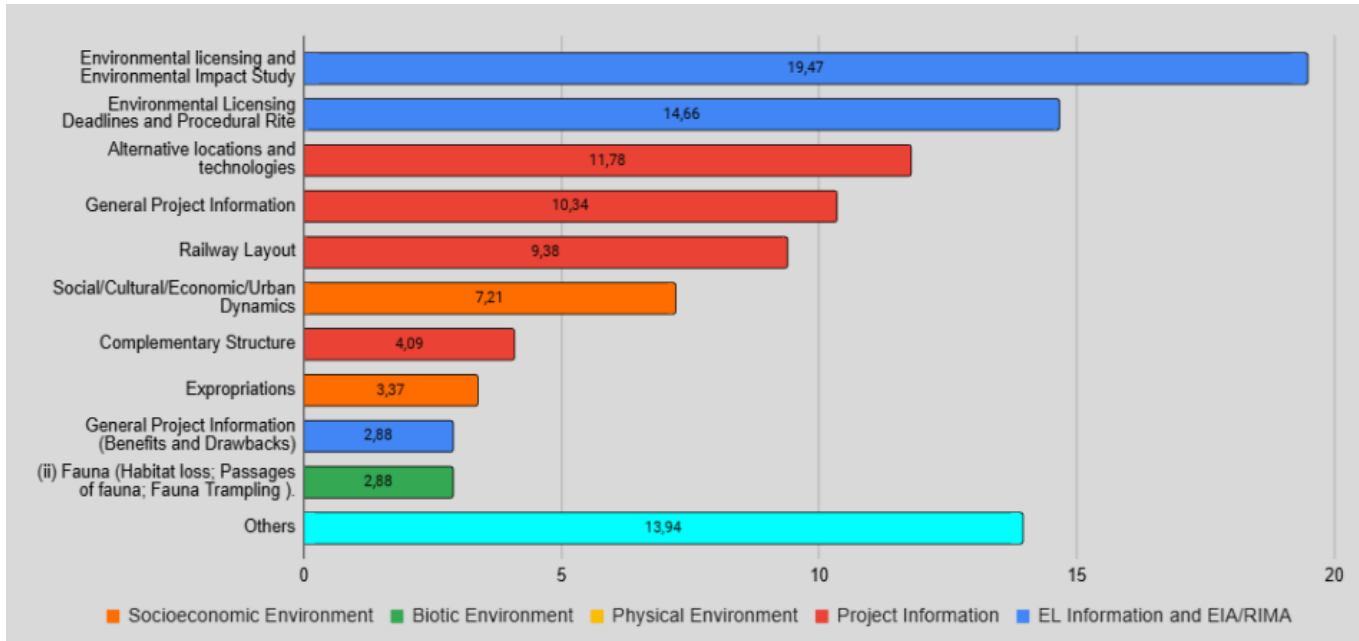


Figure 6 – Technical and/or Environmental Aspects addressed in the Public Hearings.  
Source: The authors (2024).

Regarding the relevant and emblematic aspects of this project’s Environmental Licensing, the crossing of the Serra do Mar mountain range proved to be a topic of concern for the participants, especially in the Paranaguá and São José dos Pinhais hearings. Railway projects in rugged terrain require extensive earthworks and the need for tunnels and/or viaducts construction (Nabais, 2015).

The layout proposal for the Nova Ferroeste involves the crossing of the Serra do Mar mountain range, starting in the Paraná Plateau areas, in the São José dos Pinhais municipality, passing through Morretes and reaching the maritime plains of Paranaguá municipality. It is an area of dense ombrophilous forest, with high rainfall indexes and an important history of landslides. The region is also known for the presence of Atlantic Rainforest flora and fauna of great environmental relevance (Santos et al., 2006; Zai et al. 2017; Fundação Instituto De Pesquisas Econômicas, 2021).

One of the premises of the environmental impact assessment is the presentation of alternative locations and technologies (Sánchez, 2013). The development of EIA/RIMA alternatives was carried out jointly with the project’s EVTEA, offering three layouts in the section where the Serra do Mar crossing is located (Consórcio TPF-SENER, 2022; Fundação Instituto De Pesquisas Econômicas, 2021).

Part of the public questioned the choice of the preferred layout layout, arguing that using the BR-277 highway’s right-of-way would reduce the disruptions caused in rural communities and districts, in addition to diminishing the need to remove Atlantic Rainforest vegetation. In response, the technical representatives of the

proponent clarified that the railway operation would be incompatible with such abrupt grade variation, such as the observed on the highway's right-of-way.

It can be observed that in Paranaguá PH and, to a lesser extent, in São José dos Pinhais, there was concern among the population and the institutional actors (NGOs, Public Prosecutor's office, Associations) regarding aspects such as the risks associated to the operation; the lack of location alternatives; the impacts to the local population and the possible damage to the water resources (Figure 7).



Figure 7 – Serra do Mar mountain range view in Morretes and demonstration during the Paranaguá hearing.  
Source: The authors, 2022.

One important point in this layout discussion was the presentation, by the public, of one technological alternative named *Skyway*, a transport modal that makes use of cables or suspended rails (Dunayeva e Vinakurava, 2019).

In some participants' opinion, this transportation modality, besides making operational improvements possible due to the capacity of operating in great declivity areas, would reduce the environmental impacts of the project, since the area occupied by the supporting pillars — and consequently the vegetation removal — would be significantly smaller compared to the right-of-way required for the project.

Still regarding the crossing of the Serra do Mar mountain range, the population raised other questions, which shows their concern with the project's operational aspects. Among them, the supposed lack of a risk evaluation, considering the recent landslide events due to the intense rain of the region, which could be aggravated by global climate change.

Likewise, questions regarding the economic feasibility of the project were raised, considering the proposal of building the "Bioceanic Corridor", a series of highway interventions that would link commodity-producing areas within the project's area of influence to ports located in the pacific coast of South America.

These questions were considered relevant by the technical team of Ibama. Thus, the team required more detailing and adjustments to present more location alternatives consistent with the environmental legislation, according to the following terms:

In relation to the chosen alternative, the Alternative 3, some comments on important points for adjustments and layout changes are made here, some of them considered obstacles to recommending the issuance of the Previous License (...) It is important to stress that the proponent must present in the EIA the alternative locations, choosing the best alignment, and should not suggest that the environmental agency is responsible for making the decision.

(...)

The EIA must be presented again with improvements in the alignment of Sections IV and V, thus, also significantly reducing the vegetation removal. The presented alternatives have few differences between them. Primarily in Section V, the proponent must present and study alternatives that would really reduce the impact on the Serra do Mar mountain range (Brasil, 2022b).

Regarding the interception of rural properties, although most of the potentially impacted properties are in the region of Cascavel (Fundação Instituto De Pesquisas Econômicas, 2021), it was in the region of São José dos Pinhais (area that forms the “green belt” of Curitiba), that this issue became more evident. There were a great number of questions, either regarding the definition of the areas to be expropriated to the right-of-way formation, LAYOUT change requests and doubts regarding the expropriation procedures.

The disruption caused by the project in economic activities and improvements is one of the greatest challenges in socio-environmental impact assessment. When declaring a project to be of public utility and interest, the proponent must conduct a socio-economic survey of the afflicted families and determine the compensation values for the property and for the improvements that will be impacted, following what the Law no. 3,365/1941 defines. Nevertheless, there are criticisms regarding how this assessment is conducted, arguing that the socio-environmental dimension of those affected and their cultural and socioeconomic relations should be considered: the expropriation and resettlement of a given family is carried out with emphasis solely on economic and financial compensation (Martins, 2020).

The project's EIA acknowledged these impacts and the disruptions caused by the project to the affected rural properties: there was a warning of partial inviability and another of total inviability of the economic activities (Fundação Instituto De Pesquisas Econômicas, 2021). The impact assessment performed by Ibama's

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technical team disagreed with the magnitude and significance of the assessment, highlighting the importance of this topic in the assessment of the project's feasibility (Brasil, 2022b).

Around 48% of the interventions in the São José dos Pinhais hearing addressed the topic of the possibility of changing the Ferroeste layout, due to the expropriations and the impacts on local mobility, as well as the possibility of economic inviability for those remaining in the affected properties. It is important to highlight that this issue was also observed during inspection conducted by Ibama's team, alongside the occurrence of the Public Hearings (Figure 8).



Figure 8 – Rural and peri-urban region of São José dos Pinhais, in the place of the Nova Ferroeste construction.  
Source: The authors, 2022.

To reduce these impacts, some programs have been proposed (Public Assistance Policy, Monitoring and Control of these disruptions, among others). These programs in their implementation phase are assessed in a later stage after the hearings (installation licensing stage). However, Ibama's technical team considered that the impacts and mitigation measures need to be quantified and defined, which should be required from the proponent in the preliminary licensing stage (Brasil, 2022b).

Another point of interest from the hearings is the cultural, economic and environmental impacts on traditional communities, which was widely discussed in the PH that took place in Dourados/MS, representing around 52% of the interventions. The same topic was also observed in the hearings of Paranaguá and São José dos Pinhais, but to a lesser extent.

The procedures regarding the indigenous and quilombola components of the EL are regulated by the Interministerial Ordinance no. 60/2015, with the participation and involvement of National Indian Foundation (Funai, in its Portuguese acronym) and Palmares Cultural Foundation (FCP in Portuguese), respectively. In 2020, FCP's functions were transferred to the National Institute of Colonization and Agrarian Reform — INCRA (in its Portuguese acronym) (Brasil, 2015).

It is responsibility of these bodies to conduct the consultations with the indigenous and quilombola affected public, in which the specific studies are presented and debated. However, the environmental legislation does not link these specific consultations to the public hearings that are conducted for the presentation of the environmental studies of the licensing authority.

Nevertheless, part of the public commented that it was necessary to discuss the EIA/RIMA with these specific studies, mainly regarding the impacts on indigenous communities in the region of Dourados/MS and in the crossing of the Serra do Mar mountain range region. It was observed that no FUNAI and Inca representatives were present in the events conducted by Ibama, which, according to those present, would have added more legitimacy to the discussions.

In the public hearings of Paranaguá and São José dos Pinhais, some questions were raised regarding the Tupã Nhe'é Kretã indigenous land (in the municipality of Morretes). This territory was mentioned in a statement from ICMBio of Curitiba, which discusses the project's impacts on federal conservation areas, but was not included in Funai's initial statement, and it was later incorporated into the indigenous component of the PLA (Plan of Environmental Licensing) of the project (Brasil, 2022b). Lastly, the initial assessment of the project's feasibility considered the indigenous component of the licensing process as one of the outstanding issues for the issuance of the Preliminary License.

Thus, in addition to the addressed and quantified aspects of this work, which vary depending on the region affected by the project, the three issues proved to be of great importance to the public that attended the events. It was noted that the issues were incorporated into the final technical analysis and influenced on the Ibama's decision to return the first version of the EIA/RIMA and not yet attest to the socio-environmental feasibility of the project.

#### **IV. CONCLUSION**

As discussed earlier, the PHs conducted in the environmental licensing process serve a dual purpose: for the interested public, they provide knowledge about the project and the environmental studies carried out. For the Licensing Body, they allow the collection of criticisms and suggestions, which will serve as input for the feasibility assessment of the project under licensing.

Through the assessment on the public participation in the environmental licensing process, based on the analysis of the contributions received by Ibama in public hearings of a great railway project, it was possible to conclude that listening to the affected population and institutional actors is important in the debates of projects with the potential to generate relevant socio-environmental impacts.

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It was possible to observe different interests due to the specificities of the affected regions, such as the natural features (relief, vegetation, water resources), the economic and productive characteristics and the profile of properties and activities potentially affected.

Considering the scientific literature and the analysis carried out based on the Nova Ferroeste experience, direct contact between the technical teams of the Proponent and the Licensing Body with the affected public is deemed irreplaceable. The in-person public hearing model, frequently criticized, should be improved to better achieve its goal of promoting effective public participation in the environmental management of future projects under licensing.

The possibility of remote participation, through the internet, also proved to be highly important by enabling citizens who were not physically present at the event locations to follow and take part in the discussions.

Despite the suspension of the Conama resolution that allowed this possibility, Ibama has continued to hold EL hearings for other projects in both formats. Future assessments may determine whether there was a tangible increase in the effectiveness of hearings with remote participants compared to those held before 2020, which were conducted exclusively in person.

The improvement in communication mechanisms in environmental licensing must be an ongoing task, through actions by the licensing body and the involved company, as well as adjustments to the Brazilian environmental legislation. In a phase prior to the hearings, communication mechanisms for the potentially affected populations must be sought, with wide dissemination of information about the project and environmental licensing, educating this audience to the promotion of the right to participate in the decision-making process.

Some initiatives by Ibama have already been carried out, through the definition of procedures which aim to improve communication with society not only in the preliminary phase of licensing, but also in the subsequent phases. Examples are the Technical Note no. 13/2012 – COPAH/CGTMO/DILIC/IBAMA and no. 1/2022/ COTRA/CGLIN/DILIC. There are, nevertheless, non-normative procedures, which could be incorporated into the legal framework governing the licensing body.

Furthermore, public participation should not be restricted to the hearings which are conducted in the preliminary licensing phase. In the installation and operation phases, communication processes must be continued and improved, ensuring that the interested population, especially those directly affected by the project, can follow and express their opinions about the project's environmental management.

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In terms of procedures, considering large-size projects as the analyzed project, it is also necessary to adjust the lengthy construction schedule. In the case of Section II (Cascavel to Santa Terezinha de Itaipu), for example, where construction work will start only 20 years after the issuance of the installation license, normative adjustments must be introduced in order to conduct new public hearings, considering changes in local dynamics over time.

Finally, apart from the need for legal and procedural improvements in the environmental licensing in terms of contact with the local population, the public hearings conducted in the Nova Ferroeste project provided important input to the licensing body, enabling a more technically, environmentally, and legally secure project analysis.

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