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RIMA Environmental Impact Report

Acelen Renováveis Renewable Fuel
Production Plant

São Francisco do Conde – BA



Summary

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Introduction

This document is the EIR, short for Environmental Impact Report, which presents the main information and conclusions of the EIA (Environmental Impact Study) of the implementation of the Renewable Diesel (HVO) production plant with the possibility of co-producing ACELEN's Sustainable Aviation Fuel (SAF), located in the area of the Mataripe Refinery, in São Francisco do Conde, in the state of Bahia.

The Environmental Impact Study aims to instruct the process of applying for an Amendment License (LA) of the Preliminary License (LP) concomitant with the Installation License (LI) of the project, obtained through INEMA Ordinance No. 33,349, of 08/18/2025, in addition to guiding and providing technical subsidies to the Institute of the Environment and Water Resources (INEMA).

Environmental Impact Study aims to attest to the environmental feasibility of the project, through the characterization of the project, knowledge and analysis of the current situation of the areas that may undergo modifications due to their implementation and operation – the so-called areas of influence – for the subsequent comparative study between the current situation and the future situation.

This analysis is carried out through the identification and evaluation of the potential environmental, social and economic impacts resulting from the works and operation of the project. Such evaluation considers the proposition of actions, which aim to minimize and/or eliminate negative changes, and increase the benefits brought by the implementation of the project.

The development and content of this Environmental Impact Study comply with the legal bases determined according to the Constitution of the Federative Republic of Brazil of 1988, according to its article 225, paragraph 1, item IV, which determines the performance of EIA/RIMA for projects that may cause significant environmental impacts.

In addition to the constitutional determination, the infra-constitutional provisions present in the guidelines of CONAMA Resolutions No. 01/86 and CONAMA No. 237/97 were also analyzed, as well as specific guidelines of the Term of Reference (TR) for the preparation of this EIA/RIMA issued by INEMA through Ordinance No. 33,758, of September 10, 2025.

The EIA involved the preparation of the following chapters: Characterization of the Enterprise, Environmental Diagnosis of the Physical Environment, Biotic and Socioeconomic, Identification and Analysis of Environmental Impacts, including Mitigating and Compensatory Measures, Basic Environmental Programs, Prognosis and Conclusion of the EIA.



Identification of the company responsible for the EIA/RIMA

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Characteristics of the project

The object of licensing is a Renewable Diesel (HVO) production plant with the possibility of co-producing Sustainable Aviation Fuel (SAF), targeting different end markets (exports to the USA, Canada and Europe) for both HVO and SAF, located in the area of the Mataripe Refinery, in the district of Mataripe, in São Francisco do Conde, in the state of Bahia.

The plant will require an interconnection of a 109 m line, in the tie in of the EMBASA pipeline, of 12 inches in diameter to the Biorefinery, using a directional method on Highway BA-523, km 04.

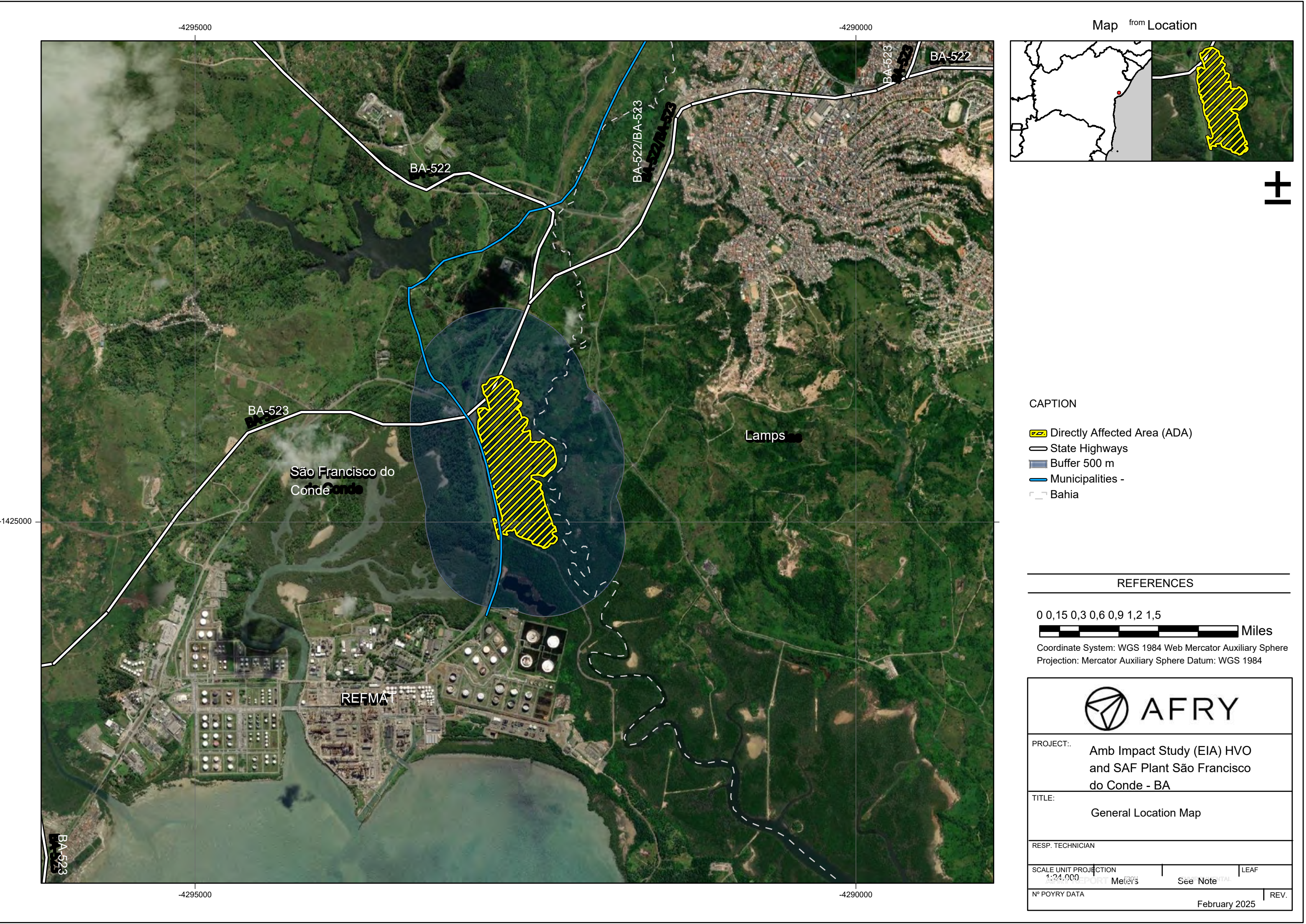


Location of the development

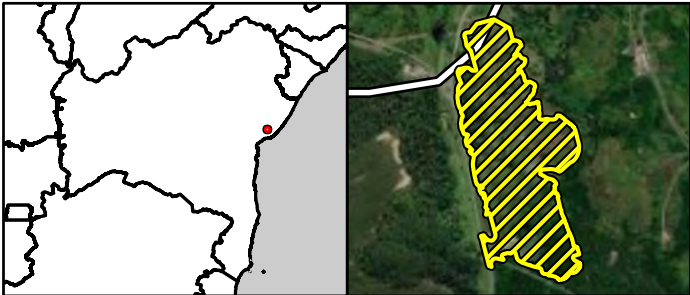
ACELEN's new factory will be implemented in an industrial area, consolidated for decades, close to REFMAT located in the district of Mataripe, municipality of São Francisco do Conde, state of Bahia, far away a km from the city center.

The following figure shows the location of the project and other information about the location of implementation and its surroundings.





Map from Location



CAPTION

- Directly Affected Area (ADA)
- State Highways
- Buffer 500 m
- Municipalities -
- Bahia

REFERENCES

0 0,15 0,3 0,6 0,9 1,2 1,5
 Miles

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary Sphere Datum: WGS 1984



PROJECT: Amb Impact Study (EIA) HVO and SAF Plant São Francisco do Conde - BA

TITLE: General Location Map

RESP. TECHNICIAN

SCALE UNIT PROJECTION 1:24.000 Meters See Note LEAF

Nº POYRY DATA February 2025 REV.

Enterprise Size

The project foresees the use of approximately 1.1 million m³ of vegetable oil per year to produce about 20 thousand barrels per day of renewable fuels.

The expectation of job creation is as follows: —

Maximum estimate of jobs generated in the construction phase by approximately 3,608 workers in the peak period of construction and assembly. — Jobs generated in the operation phase by 220 direct employees, who will work in 3 (three) shifts, probably distributed as follows: —

Administrative areas: 65 — Maintenance Workshop: 60 — Areas of Operation: 95

There is also the provision of indirect labor to support the activities and who will occupy the administrative, maintenance and operation areas. It is estimated a hiring of 80 outsourced workers.



Justifications for the project

The plant will use a technology called HEFA that transforms vegetable oils into high-quality fuels known as renewable diesel (HVO) and sustainable aviation fuel (SAF). The method consists of treating oils from raw materials such as soybeans, corn, palm and macaúba, in fuels that pollute less than those derived from oil

This means a lower carbon footprint and an important step towards sustainability.

In addition, the demand for cleaner fuels, such as SAF and HVO, is growing increasingly due to carbon reduction targets in the transport sector and the search for alternatives to oil.



The main advantages of the fuels produced are:

- Higher heating value: Contains more energy by volume, ensuring better efficiency and performance in aircraft.
- Higher energy density: Stores more energy per unit mass, allowing longer flights and greater autonomy.
- Enhanced Cold Spot Qualities: Maintains liquid flow at low temperatures, ensuring safe operation in cold weather or high altitudes.
- Lower carbon footprint: Contributes to the reduction of greenhouse gas emissions, promoting a more sustainable energy matrix.
- Compatibility with existing infrastructure and engines: Especially in the case of HVO, which has a composition similar to conventional oil, facilitating adoption and immediate use.

These advantages, taken together, position the HEFA process as a significant advance in renewable energy technology over traditional petroleum-based fuels and have the potential to continue to play a key role in the sustainability of the aviation industry.





Know-how da Acelen

ACELEN's history began in 2021. The first and important asset was the Mataripe Refinery, which is located in the State of Bahia and is the second largest in the country, active for more than 70 years. ACELEN entered the energy sector to reduce the impact of the fossil operation on the environment and make the refinery a national reference.

Also in Bahia, ACELEN invests in a solar power generation plant with an installed

capacity of 161 MWp to enable the energy supply of the Mataripe Refinery and generate carbon credits. Its operations are expected to start in 2025.

And, to further accelerate the global energy transition, during the United Nations COP 28 Conference in 2023, ACELEN launched the company Renewables, with the aim of being a protagonist in the energy transition by bringing to the market a new source of raw material, macaúba, a native Brazilian plant that will be used to produce SAF and HVO from Brazil to the world.

To this end, it will implement a new Biorefinery (an enterprise addressed in this licensing process) that aims to intensify the decarbonization of refining operations, reduce greenhouse gas (GHG) emissions and promote the development of more sustainable products. For this it will use HEFA (*Hydroprocessed Esters and Fat Acids*) technology that will involve

the processing of vegetable oils for the production of renewable SAF and HVO fuels. The use of this technology will reduce the carbon footprint of its industrial park from the production of fuels with renewable content.

In addition, the production of SAF is in line with the commitments made by aviation companies with CORSIA from 2027. CORSIA (*Carbon Offsetting and Reduction Scheme for International Aviation*) is the International Civil Aviation Organization's (ICAO) program for the reduction of

e offsetting CO emissions from international flights. Your The objective is to ensure that emissions are stabilized at the levels observed in 2020, without the airline industry having to stop growing. In this way, the commitment to the energy transition has been in the DNA since the beginning of ACELEN and, now, even closer to the future.

For production, vegetable oils and fats of different origins are planned, including crude soybean oil (SOB), technical corn oil (TCO), used cooking oil (UCO), animal fat and oil blends, which will be subjected to a refining process to obtain HVO (*Hydrotreated Vegetable Oil*) and SAF (*Sustainable Aviation Fuel*) through a dedicated refining train.

Considering the advances and investments made by Acelen Renováveis, both in the acquisition and planting of macaúba on its own farms and in the promotion of planting in integration projects with family farming, the technical and logistical feasibility of incorporating macaúba oil as a raw material in the HVO and SAF production portfolio was identified, which will require a specific facility for this input. The company advances with excellence, safety, responsibility and transparency, combining productivity with a sustainable look. Every day, the relationship of trust with its customers, partners, employees and local communities increases. This is how the company wants to accelerate even more in the coming years.

Unit Overview

ACELEN RENEWABLES' renewable fuel production plant will process 20,000 barrels/day of the pre-treated raw material to produce SAF and HVO, along with renewable naphtha, LPG

and residual gas as by-products integrated into a Hydrogen Production Unit (HPU).

The conversion of feedstock into renewable fuels is achieved by the reaction between vegetable oil and hydrogen gas, in the presence of a suitable catalyst and under high pressure and temperature conditions.

In general, the main stages of the industrial process of the ACELEN plant are the following: — Receipt and storage of raw materials; — Pre-treatment; — Application of HEFA technology with hydrogenation; — Obtaining the finished products.

— Storage and shipment of finished products.



These steps are presented schematically in the following flowchart and detailed in subsequent items.



Receipt and storage of raw materials

The main raw materials that will be used in the ACELEN plant will be, as previously mentioned, soybean oils, corn and used cooking oil. In a later step, macaúba oil. To receive the raw material at the refinery and ship the final product, two new and exclusive pipelines were considered for this purpose, in order to maintain the segregation of fluids and ensure the traceability of renewable products.

Pretreatment Unit

There are many types of biological feedstocks available on the market for the production of sustainable fuels. These can be crude, unrefined, or food-grade oils. Unrefined and waste oils are available at a lower price, but they contain undesirable contaminants that need to be removed to allow processing. The pre-treatment unit provided for in the project will be responsible for removing these contaminants. Certain raw materials, such as beef tallow and some refined and bleached vegetable oils, can also be used. The pretreatment unit is prepared for such materials, helping to expand potential sources of raw material supply.

Carrying out the pre-treatment step of the raw material is necessary to ensure high yields of the HEFA process. Without pre-treatment of the raw material, the presence of impurities such as water, other non-triglyceride molecules, and solid particles can negatively affect the hydrotreating process by poisoning catalysts (reducing their shelf life), leading to lower yields and lower product quality. In addition, the high heat generated during the hydrogenation reaction requires careful control of the raw material to avoid problems such as coking and fouling of the reactors.

The pre-treatment stage will use conventional refining processes used for edible oils. The system will be carried out in two stages, including: — Refinement: This is a degumming and neutralization process using a mixture of acid and soda to remove phosphorus compounds and some metals; — Bleaching: Filtering with bleaching soil to further reduce contaminants and metals.

HEFA Process

For the manufacture of renewable diesel (HVO) and renewable aviation kerosene (SAF) from vegetable oil, HEFA (*Hydroprocessed Esters and Fatty Acids*) technology will be used. The most important process of a renewable jet fuel/diesel production plant will be carried out at the Ecofining unit, which converts fats, oils, greases and other renewable raw materials into HVO and/or SAF.

The Ecofining unit consumes hydrogen, which will be produced at the Hydrogen Production Unit (HPU)

Ecofining will be fully flexible to produce SAF, HVO and green naphtha. The project envisages the use of a wide range of feedstocks, including waste oils with high levels of nitrogen.

HEFA hydroprocessed ester and fatty acid technology consists of a complex series of catalytic reactions designed to convert lipids (vegetable oils and animal fats) into hydroprocessed renewable fuel. A simplified representation of the process chemistry is shown in figure

a

Manufactured Products

The production of HVO and SAF will require approximately 1,112,909 m³/year of pre-treated vegetable oil, equivalent to 20,000 barrels per day (conditions of 1 atm and 20°C), considering an operation of 350 days per year. The resulting final product volume varies between 1,030,020 m³/year and 1,111,848 m³/year, depending on the raw material used and the operational configuration aimed at the production of SAF or HVO.

HVO and SAF Storage – U-046R

The HVO and SAF produced by HEFA will be transferred to storage in tanks.

The tanks will be able to store both SAF and HVO.

The transfer of HVO and SAF to marine loading will be done from pumps using a shared 18" pipeline.

A production of HVO and SAF will not occur simultaneously, and the choice of product to be produced will depend on commercial demand, logistics and operational strategies.

In this way, an interconnection between the tanks was foreseen, so that they can operate with both fluids.

Water Abstraction and Treatment

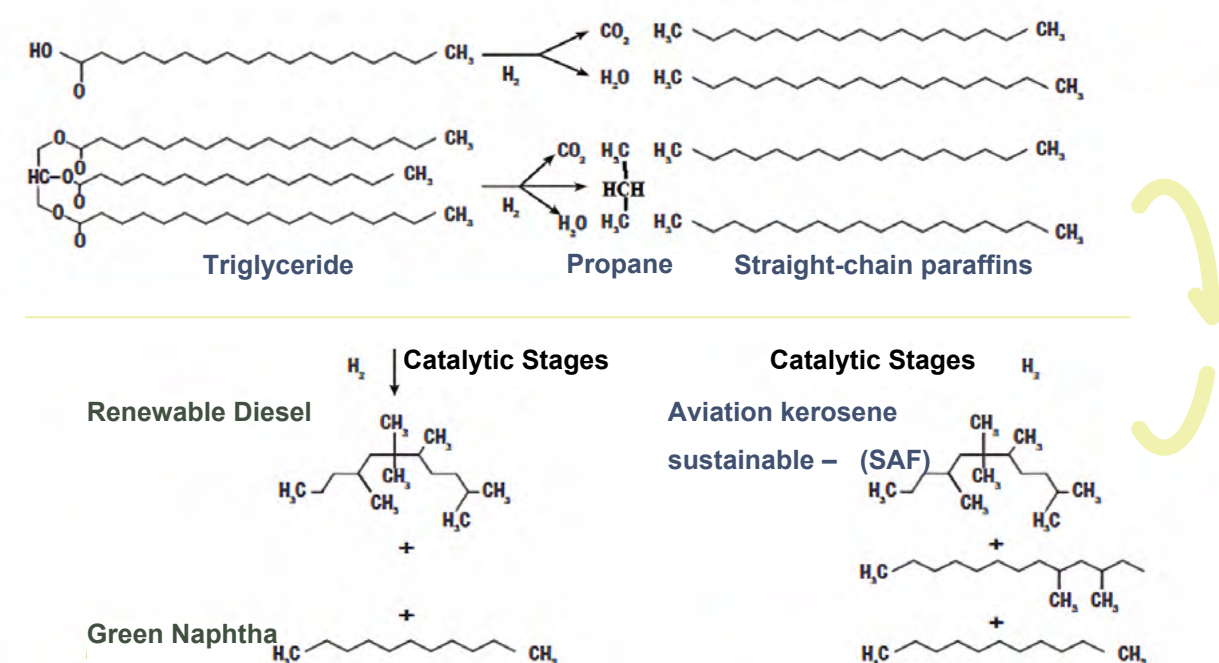
The raw water will be captured by the concessionaire EMBASA from the dam on the Pedra do Cavalo River and the water necessary for the operation of the ACELEN plant will be directed to the factory through an interconnection in the concessionaire's raw water network. The water will be directed to the plant's water treatment plant (WTP).

At the WTP, the raw water undergoes various treatments such as chemical dosage, coagulation, flocculation, removal of solids, filters, among others, and the water ready for industrial use is stored in a reservoir. This reservoir will have pumps directing industrial water to the biorefinery units and will have a estimated capacity of 450 m³/h.

Effluent Treatment and Discharge

The effluents from the Biorefinery will be collected, treated at the Effluent Treatment Station (ETE) and sent to the Industrial Dumping Station - ETDI of REFMAT for subsequent final disposal in the Bay of All Saints, via point 8 (according to the Operating License of the refinery in force).

Chemical Reactions Involved in the HEFA Process



Environmental Control

Regarding environmental control systems, one of the pillars of ACELEN RENOVÁVEIS' materiality matrix is environmental integrity, so the implementation of the industrial plant in line with the IFC sustainability guide, aims to reduce, control and monitor liquid effluents, atmospheric emissions and solid waste generated.



Liquid Effluents

The ACELEN RENOVÁVEIS plant will have the following liquid effluent treatment systems: — Wastewater Treatment Plant (WWT) in the pre-treatment unit; — Effluent Treatment Plant for the treatment of some industrial streams generated in the process; — Sanitary effluent treatment plant for the treatment of all sanitary effluent generated during the operation of the plant; and — SWS Unit, which will treat gaseous effluents and some liquid process streams from the Amine Unit – ATU and Ecofining. — Water and oil separator boxes (CSAO) and Containment Dikes.

There will be two separate systems: The Industrial ETE and the Sanitary ETE.

The industrial effluent generated at the plant will be destined for treatment at the Effluent Treatment Station (ETE) to be built at the site. Its treatment capacity will be up to 120 m³ /h. It should be noted that the treated effluents will be sent to FEFMAT's Industrial Dumping Station - ETDI for subsequent final disposal in the Bay of All Saints, via point 8 (according to the refinery's Operating License in force).

Atmospheric Emissions

The fixed sources of atmospheric emissions present in the renewable fuel plant are specified below: — Chimney of the reformer furnace of the hydrogen generation unit – HPU, from the burning of the fuel used in the unit, which is composed of: — *Tail-gas* generated in PSA from the purification of hydrogen, composed mainly of H₂, CO, CH₄ and

²⁴ CO₂. There is no sulfur content; — *Offgas* generated in Ecofining composed of light hydrocarbons, composed mainly of C₃, H₂, H₂ and others with reduced composition. ³⁸² No sulphur content; — Natural gas from the utility, consisting mainly of

CH₄, C₂H₆ and N₂.

— Chimney of the furnaces of the Ecofining plant from the burning of the fuel used in the unit, which is composed of: — Offgas generated in the Ecofining composed of light hydrocarbons, composed mainly of C₃, H₂, H₂ and others with reduced composition;

— *Acid Gas Handling System*, composed of treated gaseous effluent. The effluent has the following composition before treatment: NH₃, CO₂, H₂S and H₂O.

The control of atmospheric emissions foreseen in the biorefinery is composed of two systems: — H₂S Adsorption System – Fixed Beds: The control of sulfur emissions

will be performed in the H₂S adsorption section in fixed beds.

— Acid Water Treatment and Acid Gas Treatment Unit: The removal of NO_x from the flue gas is carried out by means of a selective catalytic reduction (SCR) unit in the *Acid Gas Handling system*.

Solid Waste

During the operation phase, industrial solid waste will be generated and not industrial. The management of solid waste generated during the operation will include the best practices, as described in Federal Law No. 12,305/2010, among which the following stand out: — Minimization of waste generation through the use of the principle of the 3R's (Reduce, Reuse, Recycle); — Segregation of solid waste, according to the color standard established by CONAMA Resolution No. 275/2001; — Collection, packaging, storage and transportation of solid waste, in accordance with current legislation; — Environmentally appropriate final destination (reuse, recycling, composting, energy use, etc.) and/or environmentally appropriate final disposal (industrial landfill) of the solid waste generated in the project.

Noise

The generation of noise during the operation of the project will be due to the activities of the industrial process.

ACELEN RENEWABLES will use noise treatment systems and protection measures for its employees and third parties in its factory, which are based on the legislation e technical standards.

In addition, ACELEN RENOVÁVEIS will have health and safety programs, as a way to control and/or minimize the exposure of its employees and partners to industrial noise.



Support infrastructure and construction phase

The construction site will consist of the following areas: offices, locker room, storage area for manufactured parts and equipment, warehouse, workshop, cafeteria, outpatient clinic and occupational safety.





"The office will have a reception, meeting rooms, management room, area for technicians, pantry, toilets, archive and plotting.

— The locker room will consist of sinks, toilets, showers and lockers. — The storage areas for manufactured parts and equipment will be sized according to the activity and size of each contractor.

— The warehouse will be divided into a gate and covered area for unloading, receiving and shipping, an office, a small parts warehouse, a warehouse for electrical equipment-panels, packaging-scrap and toilets.

— The workshop will have an impermeable area for washing parts, with a channel interconnected to a water and oil separator box.

"Externally there will be an area for a gas plant, a transformer to supply electricity to the complex and an elevated water reservoir.

"The outpatient clinic will consist of an emergency room with advanced life support.

— The work safety area will consist of a common room for technicians, a meeting room, a safety engineer's room, a deposit for equipment and safety materials and toilets.

For the implementation of the project, it will be necessary to prepare the land and carry out such activities as: earthmoving, land protection during the works, street paving, paving, surface drainage, foundations and civil works, fire fighting protection system, electricity distribution system and concierge.

Environmental control will also be applied throughout the implementation phase of the factory, with regard to the use of water, generation of sanitary sewage, solid waste, noise generation, atmospheric emission and suppression of vegetation.

The labor required for the implementation of the factory is estimated at approximately 3,608 workers in the peak period of the work and assembly.

Professionals who come from outside the region will be accommodated in the hotel chain and in rental properties already available in the region.

The estimated period for the implementation of the project is approximately three years (33 months), including the stages of earthmoving, civil works, construction, assembly, commissioning and start-up, as shown in the following figure. It should be noted that these deadlines are conditioned to financing negotiations with investors and the signing of the necessary contracts, and there may be delays in the start of the works due to these previous steps.

Areas of influence

This item presents the geographical limits of the areas that will be directly and/or indirectly affected by the impacts of the project, called areas of influence of the project.

Next, the justifications for the definition of each of the areas of influence and incidence of impacts are presented, accompanied by mapping.



Directly Affected Area (ADA)

The Areas Directly Affected for the Physical, Biotic and Socioeconomic Environments, comprise the region within the property of REFMAT, delimited by the Biorefinery plant of Acelen Industrial where the works for the implementation of the industrial unit that has an area of approximately 43.5 hectares will be carried out. It refers, therefore, to the place where the changes in the environment are most intense, either by replacing current uses or by changing environmental factors.

Area of Direct Influence (IDA)

The Area of Direct Influence (AID) corresponds to the area that will suffer the direct impacts of the implementation and operation of the project.

The Area of Direct Influence for the physical environment was defined from a radius of 3,500 m in the surroundings of the project, taking into account the study of the dispersion of atmospheric emissions, and the direct impacts that occurred in the contribution area of the São Paulo River basin, which is covered by the radius.

The IDA for the biotic was defined according to the occurrence record of the species *Leopardus pardalis* (ocelot), which needs a wide area of use to meet its vital and ecological needs, where a buffer of 1 km from the ADA was applied for IDA.

For the socioeconomic environment, the IDA was considered to be the communities directly affected by the project in the municipalities of São Francisco do Conde (BA) and Candeias (BA). Where the impacts of greater spatial scope are associated with the housing of exogenous workers, equipment traffic and people linked to the project. Thus, the communities potentially subject to the direct impacts of the implementation and operation of the project are:

— Caípe de Baixo - São Francisco do Conde —
Caípe de Cima - São Francisco do Conde — Santo
Estevão - São Francisco do Conde — Ilha do Paty -
São Francisco do Conde — Curupeba-Colmonte -
São Francisco do Conde — Socorro - São Francisco
do Conde — Muribeca - São Francisco do
Conde — Engenho de Baixo - São Francisco do
Conde — Ilha das Fontes - São Francisco do
Conde — Querente — Candeias — Maria
Quitéria - Candeias — Malembá de Cima
-Candeias — Malembá de Baixo — Candeias —
Centro e other neighborhoods of the Headquarters -
Candeias

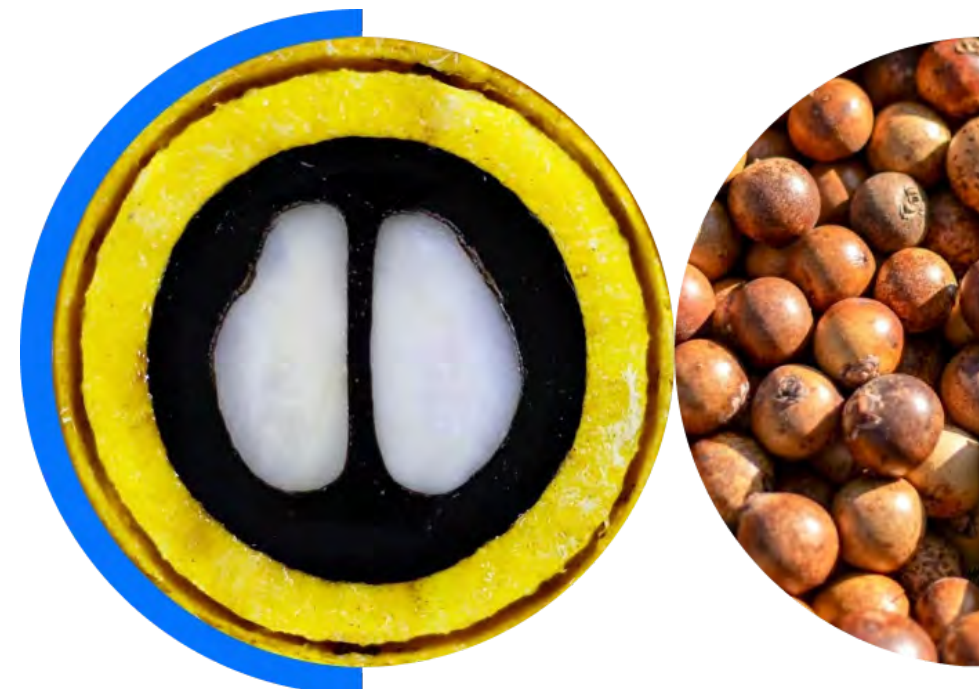
Indirect Influence Area (IIA)

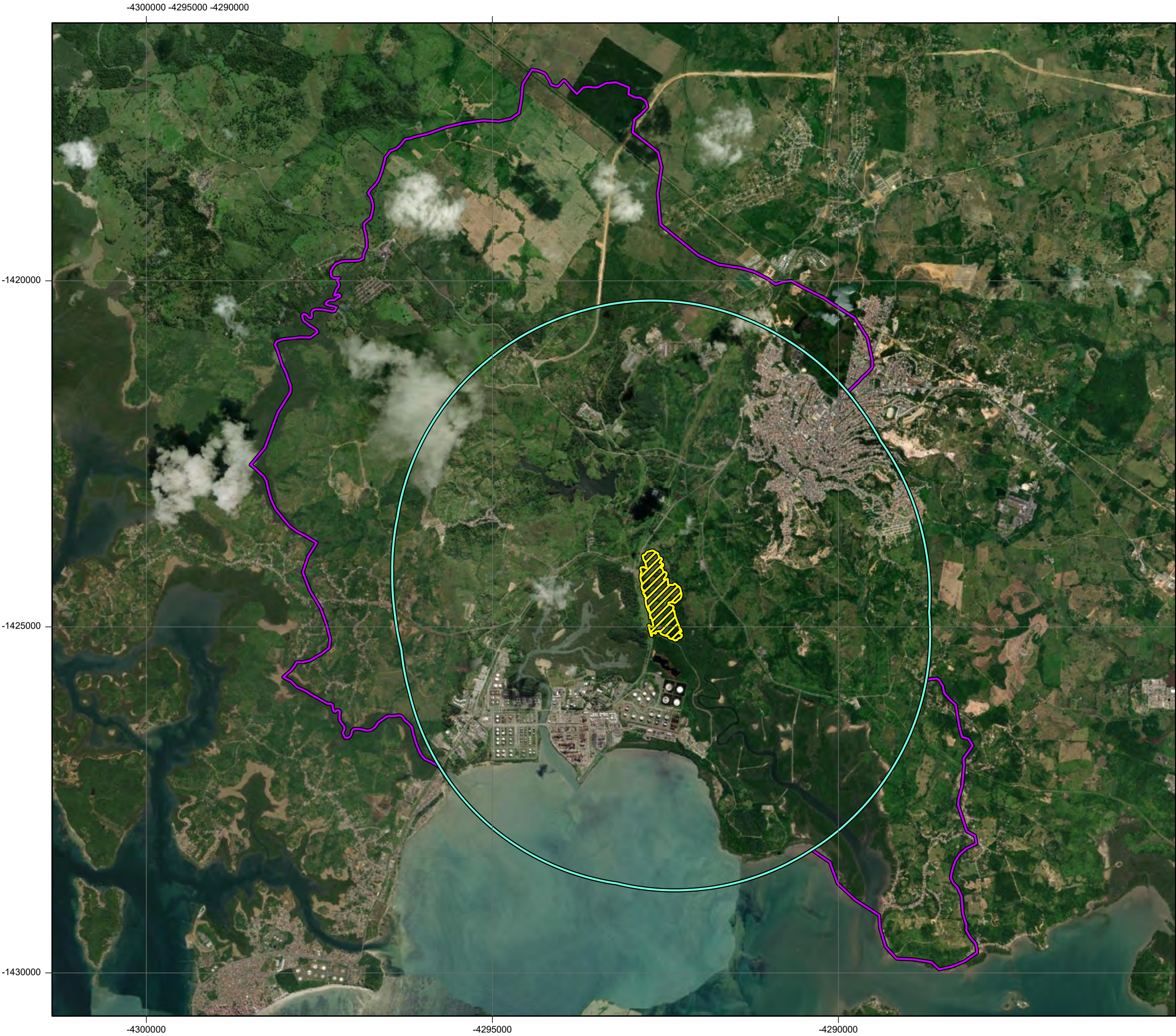
The Area of Indirect Influence (AII) corresponds to the area potentially subject to the indirect impacts of the implementation and operation of the project.

For the physical environment, the AII is composed of the contribution area of the sub-basin that comprises the São Paulo and Mataripe Rivers, in relation to the project.

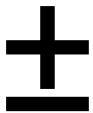
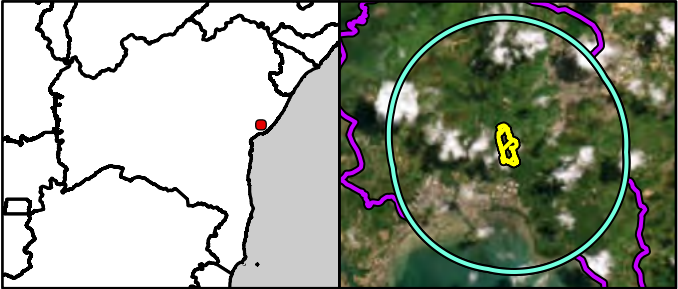
For the biotic environment, the IIA corresponds to the space where the enterprise can impact organisms indirectly, either by secondary effects already generated or by a chain of events that interferes with fauna and flora, even if in synergy with other anthropogenic pressures. In this context, considering the aspects of the regional fauna previously known and the presence of vegetation fragments in the area, the IIA covers the delimitation of a buffer of 2 km of the area of the project, also corresponding to the home area of the largest mammal recorded in the region. In addition, a fragment of mangrove vegetation, located southeast of the project, was fully included due to its ecological relevance and function in maintaining local biodiversity.

In the socioeconomic sphere, indirect impacts are associated with the diffuse effects of the arrival of new inhabitants, increase in local circulating income, pressure on infrastructure and public services, increase in tax collection, among other aspects whose effects are imprecise spatial delimitation. Thus, it was decided to indicate the entire territory of the municipalities of São Francisco do Conde, which fully encompasses the project, Candeias, which should receive the largest population influx, and Madre de Deus, which will have its main access route significantly affected.





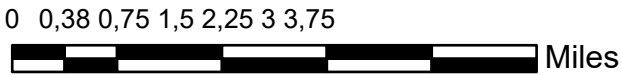
Map from Location



CAPTION

- Directly Affected Area (ADA) Area of
- Direct Influence (AID) - Area of
- Indirect Influence (AII) - MF

REFERENCES



Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary Sphere Datum: WGS 1984

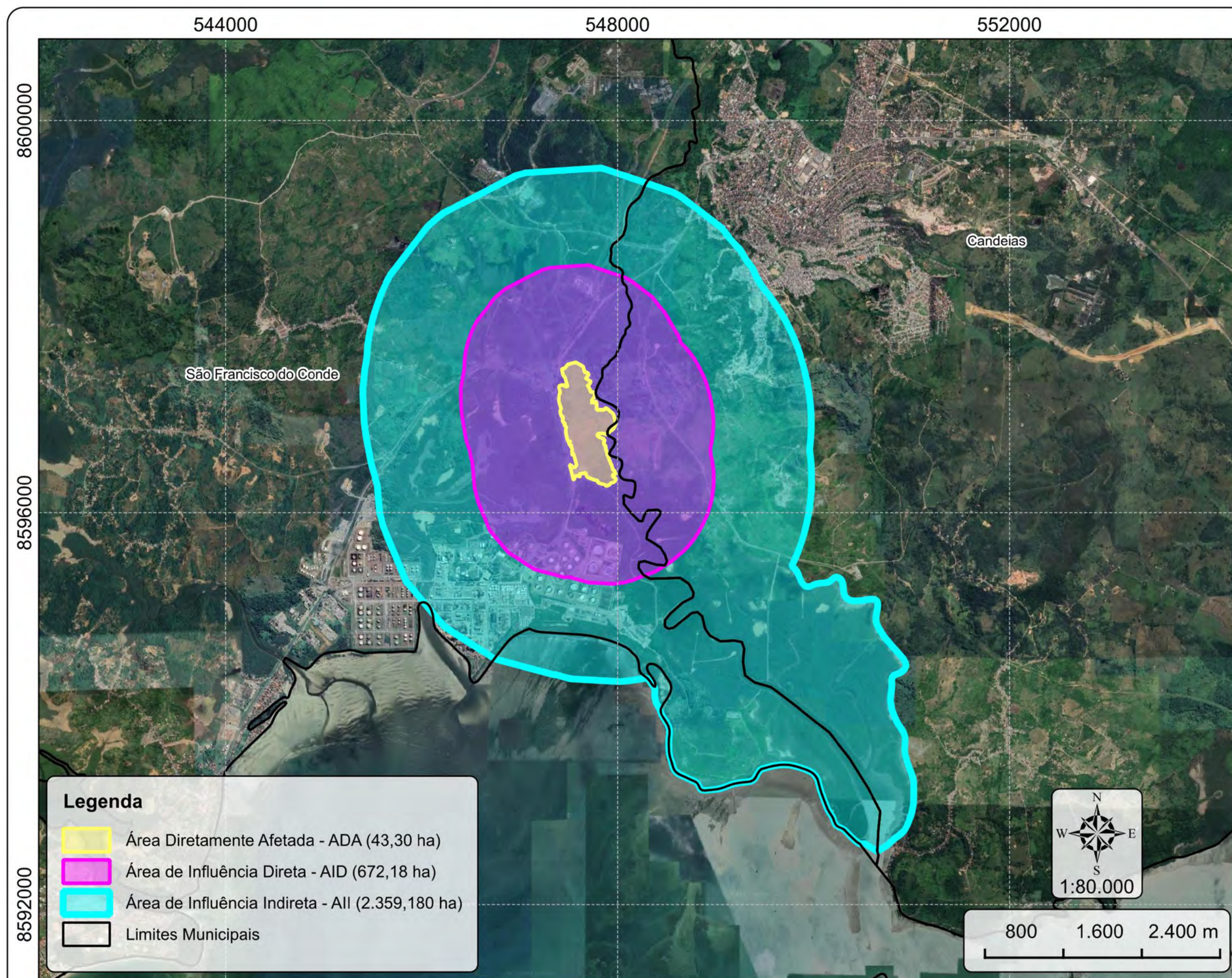


PROJECT: Amb Impact Study (EIA) HVO
and SAF Plant São Francisco
do Conde - BA

TITLE: Location Map Areas of
Influence Physical
Environment

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SCALE 1:54.060	UNIT Meters	PROJECTION See Note	LEAF
POYRY No.	DATE February 2025	REV.	

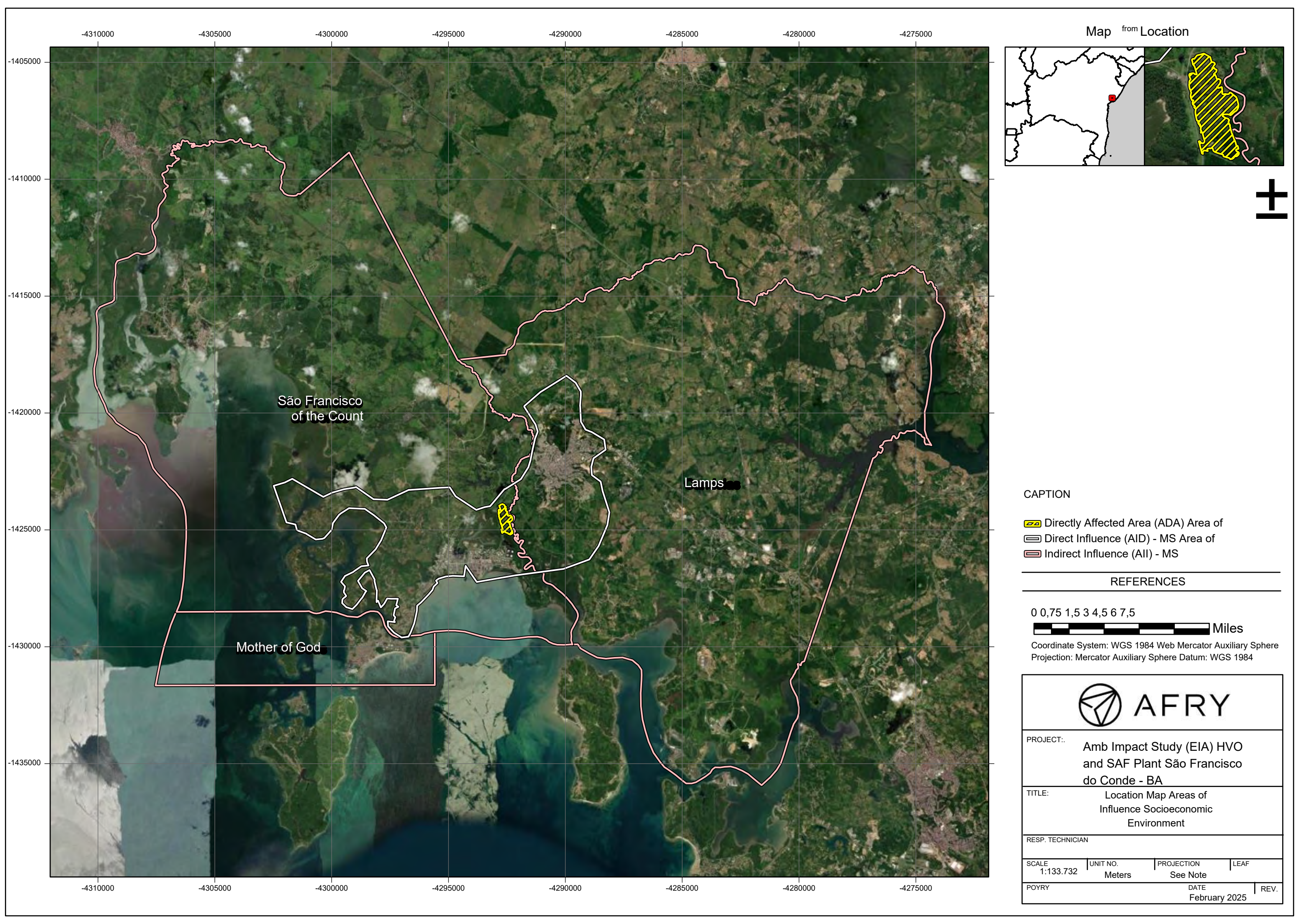


Mapa:
Áreas de Influência do Meio Biótico

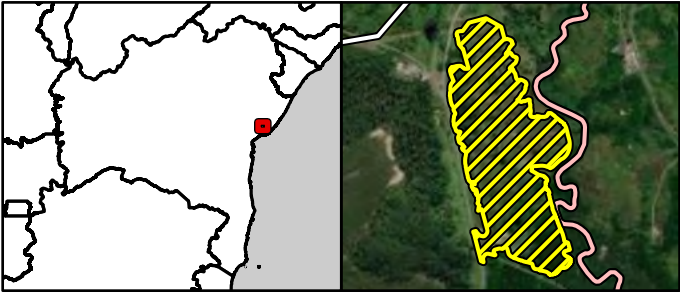
Sistema de Coordenadas:
SIRGAS 2000 - UTM 24S

Fonte dos dados:
Imagem de Satélite - GOOGLE, 2022; Áreas de Influência - AMBSUS, 2024.

Data:
20/02/2025



Map from Location



CAPTION

- Directly Affected Area (ADA) Area of
- Direct Influence (AID) - MS Area of
- Indirect Influence (AII) - MS

REFERENCES

0 0,75 1,5 3 4,5 6 7,5

Miles

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary Sphere Datum: WGS 1984



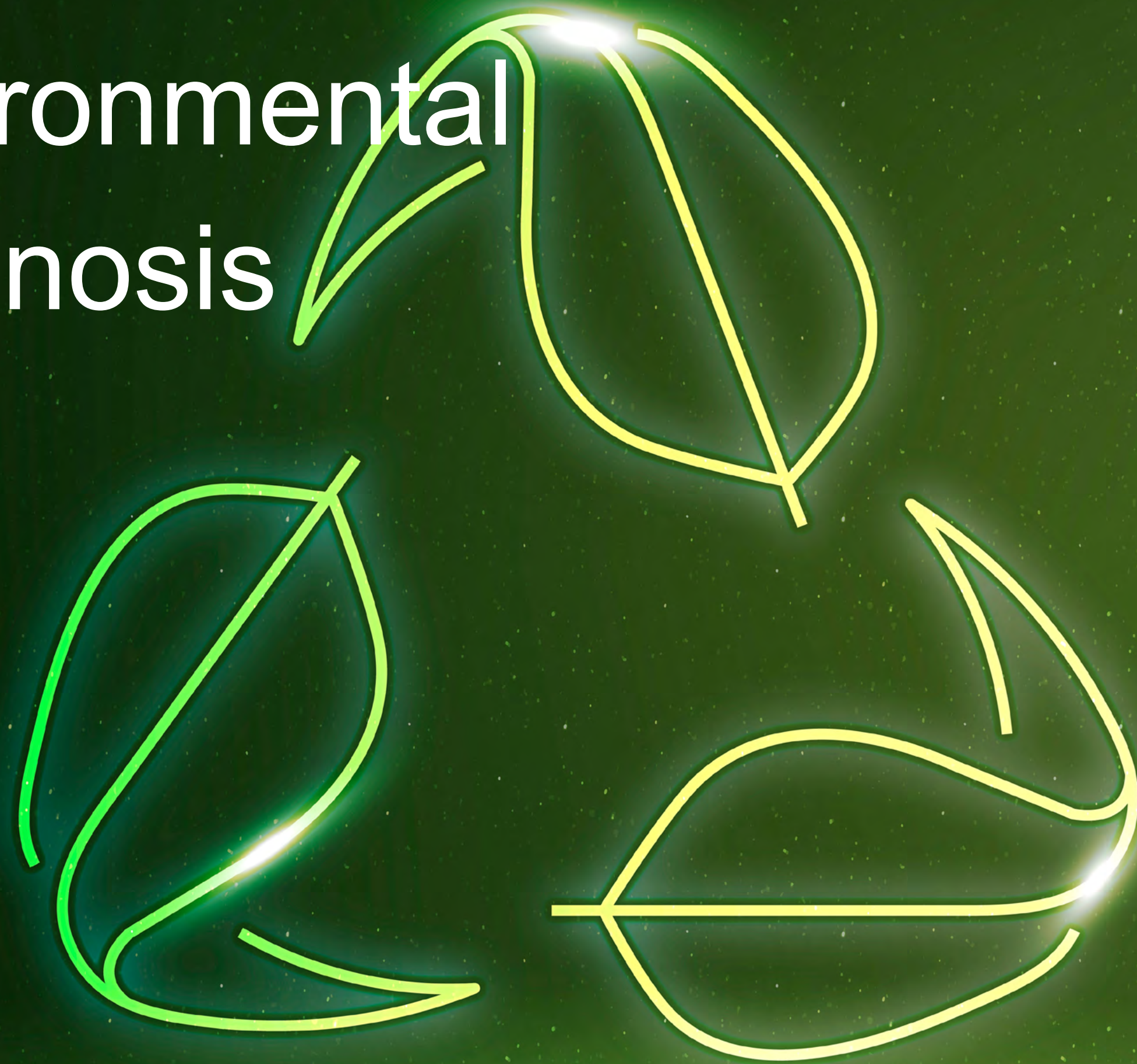
PROJECT: Amb Impact Study (EIA) HVO
and SAF Plant São Francisco
do Conde - BA

TITLE: Location Map Areas of
Influence Socioeconomic
Environment

RESP. TECHNICIAN

SCALE 1:133.732	UNIT NO. Meters	PROJECTION See Note	LEAF
POYRY	DATE February 2025	REV.	

Environmental Diagnosis



Physical Environment

The diagnosis of the physical environment is a fundamental step for the evaluation of environmental impacts, as it provides a detailed understanding of the current conditions of the study area.

This diagnosis includes the evaluation of the following aspects:
Climate, Geology, Geomorphology, Pedology, Surface and Underground Water Resources.

Climatic Characteristics

The predominant climate in the State of Bahia is tropical hot and sequent. The State of Bahia according to The Köppen classification is covered by twelve climatic types, with a predominance of tropical (code A) and dry (arid and semi-arid, code B) climates, with some code C (tropical high-altitude) climates. The municipality of São Francisco do Conde is fully included in a place classified as Af (equatorial climate).

According to the average values of the meteorological variables monitored in the automatic EMS of Salvador-BA (A401) for the period of 01/01/2019 on 31/12/2023 and compared to the climatological normals released by INMET (83229), the average temperature of the coldest month is above 18°C, the accumulated precipitation of the driest month is above 60 mm and the accumulated annual rainfall exceeds 1500 mm.

According to climatological normals, the preferred wind directions are northeast and southeast; Thus, the pollutants emitted by the project's chimneys will be transported, preferably, to the Southwest and Northwest. Regarding the wind intensity (average of 1.34 m/s), it can be classified as light wind (< 2.0 m/s).

Geology and Geomorphology

The areas of influence of the project are completely inserted in the area of basins and Phanerozoic Sedimentary Covers and Quaternary Sedimentary Deposits.

The Area of Direct Influence (IDA) and the Directly Affected Area (ADA) are comprised of three of the geological units: Islands, São Sebastião and Holocene Coastal Deposits.

As for geomorphological units, the Direct Area of Influence of the project is located in the units called Baixada do Recôncavo and Plains

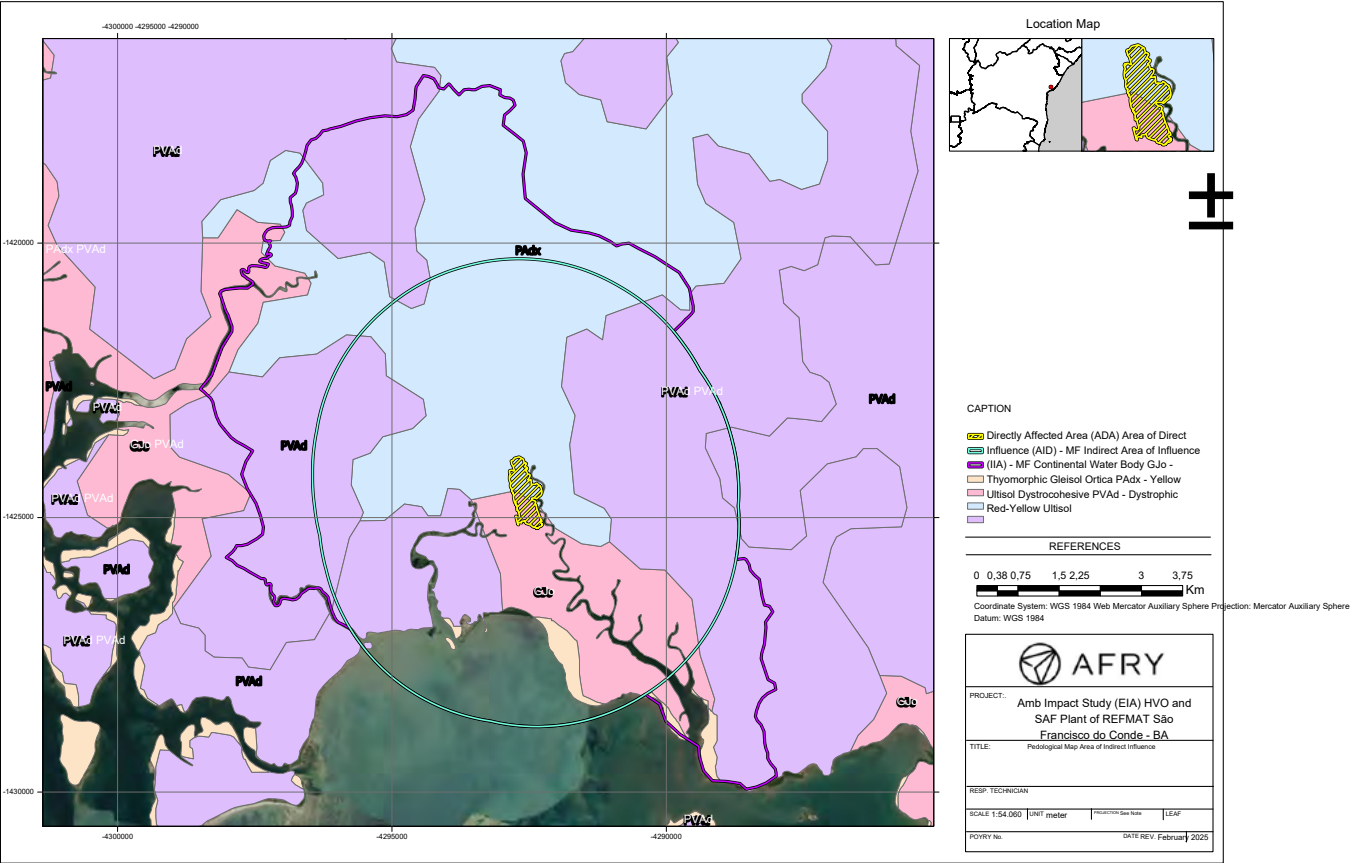
The relief environment is predominantly flat with gentle swells and slope towards the sea.

Pedology

The Indirect Area of Influence of the project has two major soil soil classifications in the area, presented below.

- Ultisol: From the Latin *argilla*, connoting soils with a process of clay accumulation. Group of soils with textural B horizon, with clay of low activity, or high activity as long as it is combined with low base saturation or aluminum character.
- Gleisol: From the Russian *gley*, mass of pasty soil; connotative of excess water. Soil grouping with expressive gleization.

The directly affected area (ADA) is in an area whose soil classification is Yellow Dystrocoesal Argisol in the northern portion and Ortíc Thyomorphic Gleisol in the southern portion of the project.



Hydrogeology

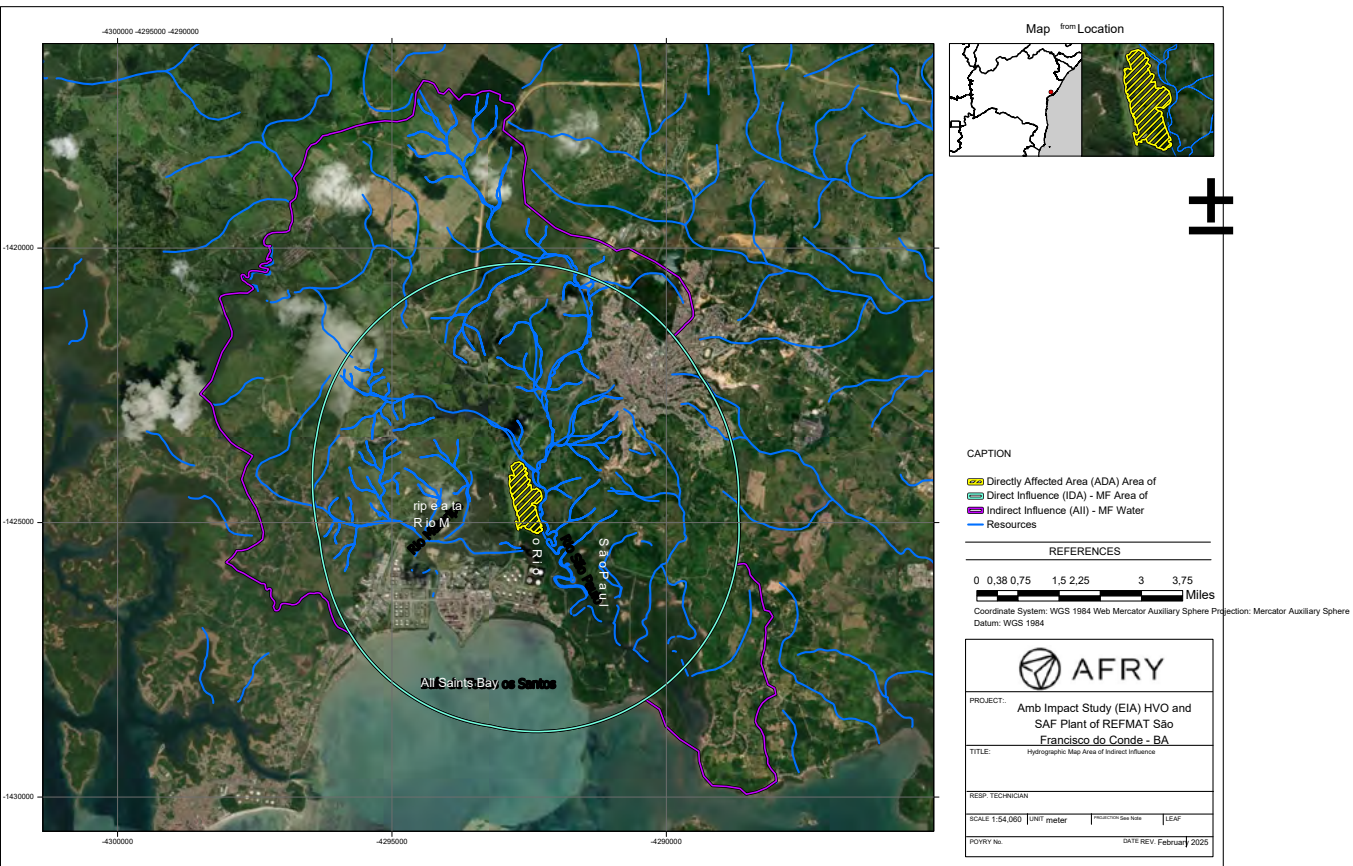
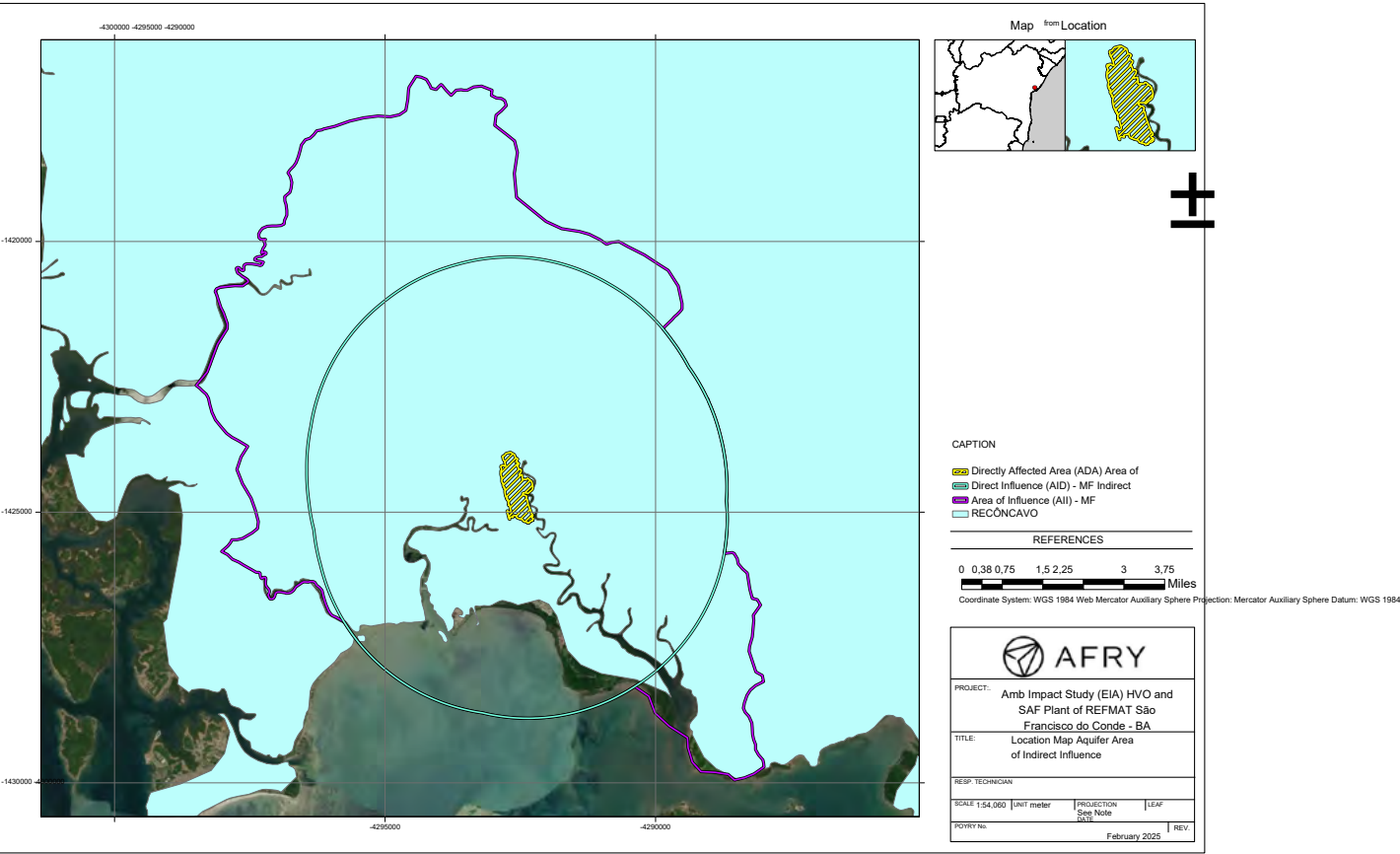
The area of interest is located over the Recôncavo Sedimentary Basin. In hydrogeological terms, sedimentary basins have high favorability for groundwater storage, and constitute the most important reservoirs, due to the great thickness of sediments and the high porosity/permeability of most of their lithologies, which allows the exploitation of significant flows.

Hydrography

Surface water resources refer to the water present in visible water bodies, such as rivers, lakes, dams, weirs and streams, which are directly connected with the hydrological cycle of the region. They are an essential source of water for human supply, irrigation, power generation, industry, fishing, navigation, leisure, among other uses.

The municipality of São Francisco do Conde is entirely located in the Recôncavo Norte and Inhambupe Hydrographic Basin, or Water Planning and Management Region (RPGA) of the Inhambupe, Subaúma, Pojuca and Joanes Rivers.

The project's areas of influence (AIs) are composed of three main water bodies and their tributaries, namely the São Paulo River, the Mataripe River and the Bay of All Saints, in addition to an artificial lagoon present in the directly affected area.





Primary Surveys

REFMAT's management, in compliance with the company's policies and legal compliance, including compliance with license conditions, performs quality analyses of surface water resources for water bodies near the project's implementation area.

A analyses are presented below.

Surface water quality

Constraints XLVII and XLVIII of the REFMAT Operating License request the monitoring of water quality in marine and fluvial environments, respectively, regarding the parameters of Total Petroleum Hydrocarbons (HTP), turbidity, Suspended Material (MS), pH, DO, BOD, COD, Sulfides, Phenol, Oils & Greases, Total Organic Carbon (TOC), Ammonium, Nitrate/Nitrite, Phosphate, in addition to carrying out acute and chronic ecotoxicity analysis according to current ABNT Standards and/or Standards of the CETESB.

Environmental monitoring campaigns are carried out periodically, with a sample grid of 37 points in the refinery's current Area of Direct Influence, of which 12 are distributed in mangroves (Caboto, Caípe, ETDI, Jeribatuba, Mataripe and Passé), 12 in the infralittoral (10 in the Bay of All Saints and 2 in Jeribatuba), 6 in rivers (Caípe, Mataripe and São Paulo), 5 in the south (Caípe, ETDI, Jeribatuba, Mataripe and Passé) and 5 fishing spots.

These campaigns are carried out within the scope of Oceanographic monitoring (where the 2023 Annual Report was used for this EIA/RIMA), the Environmental Assessment of the São Paulo – Korea Dam (used the Annual Report – 2023) and the Monitoring of the Waters of the São Paulo River (used the 2nd Campaign of January 2024).

The waters of the São Paulo River, according to the 1st and 2nd Monitoring Campaign of the Waters of the São Paulo River prepared by AVANTZ, are classified as Brackish Waters, according to CONAMA Resolution 357 Item II, Article 2, where waters that have Salinity Higher than 0.5% and less than 30% are classified as Brackish Waters.

According to the document referring to the 1st São Paulo River Water Monitoring Campaign, the samples collected at the upstream and downstream points of the Mataripe Refinery are classified in Class 3, of Águas Salobras. This classification is due to the results associated with the parameters of Thermotolerant Coliforms and Dyes. Additionally, the RSP-02 sample has the "Odor" parameter, which also fits it in Class 3.

In the document referring to the 2nd São Paulo River Water Monitoring Campaign, the samples collected at the upstream and downstream points of the Mataripe Refinery are classified in Class 3, Salobras Waters. This classification is due to the associated results in the parameters Colorants, DO, Total Chlorine, Dissolved Copper, Phosphorus, Ammonia Nitrogen, Objectionable Solid Residues and Surfactants.

Water analyses of the São Paulo River and Mangrove near the area affected by the implementation of the project by Foco Soluções em Meio Ambiente Ltda were also carried out.

Regarding the analysis of the physicochemical parameters, it is noted that the three surface water collection points recorded concentrations above the maximum allowed values (VMPs) of CONAMA Resolution 357/2005 for Total Organic Carbon, Nitrate, Ammonia Nitrogen, Phosphorus and Dissolved Iron. The RSP-01 point was also above the VMP for Total Dissolved Solids, while the RSP-03 point registered a value above the VMP for the True Color parameter.

It should be noted that these parameters, except for Dissolved Iron and Dissolved Solids, are associated with the presence of organic contaminants such as domestic effluents, for example. It is also important to highlight the absence of petroleum hydrocarbons (C8-C40) in the points analyzed.

Although there is no regulation for the quality of interstitial water in mangrove soils, there is a high concentration of sulfate and low presence of nitrogenous compounds (nitrate, nitrite and ammonia nitrogen and NKT) when compared to river samples. Typical of mangrove ecosystems, the high concentration of TOC is also noted at this point, a consequence of the accumulation of organic matter in the region. The absence of petroleum hydrocarbons in this environment is emphasized again.

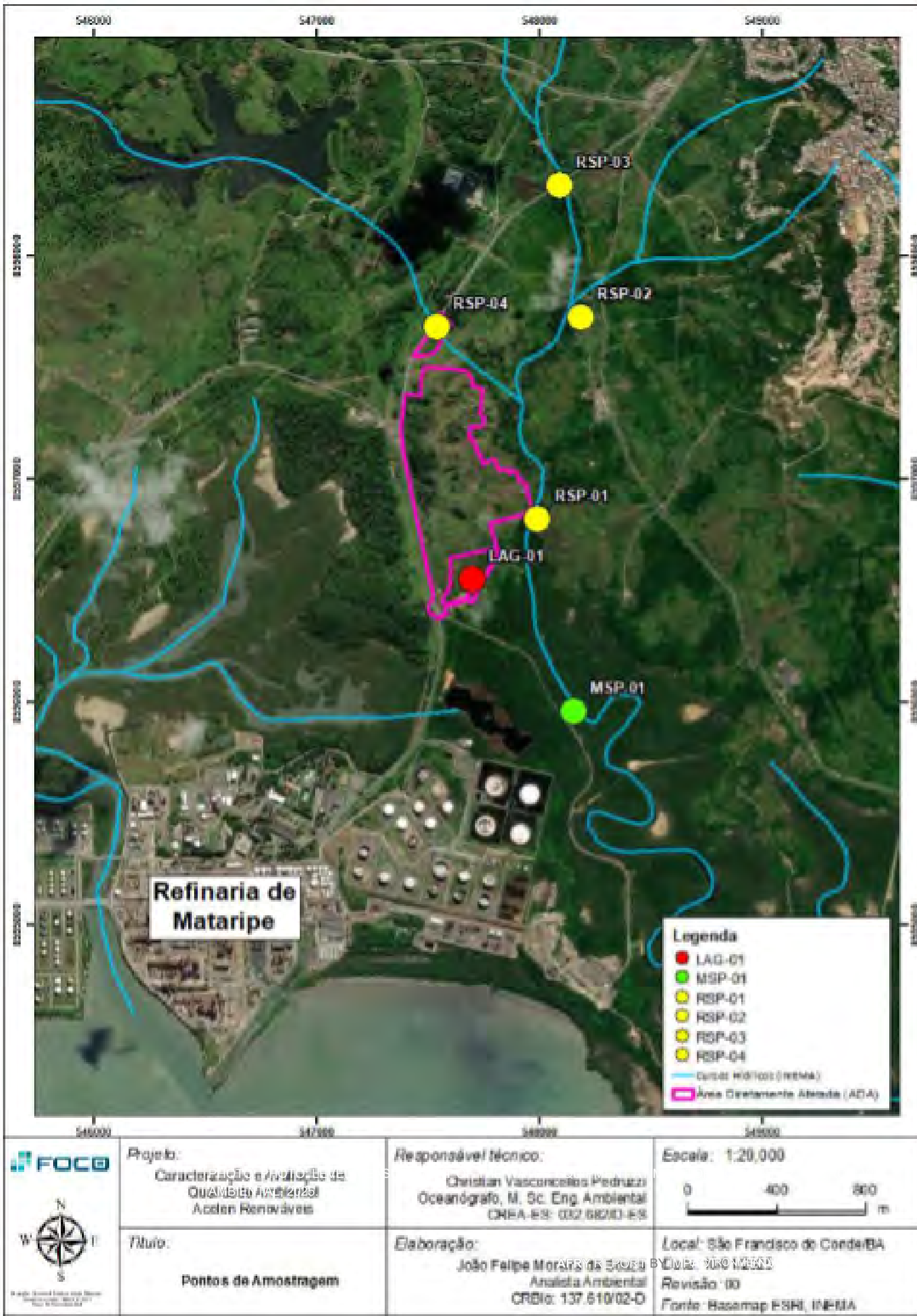
It is worth noting that the analysis of point RSP-04 was made impossible by the absence of water in the channel, demonstrating that this water course has an intermittent character, possibly having its course interrupted during periods of drought and due to the existing dam by the Korea Dam.

For the analysis of the artificial lagoon there is no specific legislation that determines water quality limits for this type of environment. For comparison purposes, however, the limits established in Conama Res. 357/2005 for Class II Fresh Water were used, considering that it is a rainwater drainage lagoon. The more alkaline character (pH > 7.0) of the lagoon water, when compared to the results observed at the river points, may be associated with the eutrophication process of lentic environments.

For the Dissolved Oxygen results, the CONAMA Resolution determines a minimum limit of 5.0 for class II, and the results in the lagoon were below the limit.

Salinity and conductivity indicate a borderline environment between fresh and brackish (>0.5), which corroborates the origin of this water resource, which is water from rainwater drainage (according to information from ACELEN RENOVÁVEIS).

The set of characteristics of water, together with its origin and lack of interconnection with other environmental components, is a limiting factor for the occurrence of specimens.





Biotic Medium

The diagnosis of the biotic environment aims to identify the existing environmental weaknesses in the areas of influence and analyze the possible interferences resulting from the implementation of the project.

The identification of these attributes allows qualifying and quantifying the probable impacts on the biota and proposing, in an appropriate way, control, monitoring, mitigation, environmental compensation of negative impacts, and enhancement of positive impacts.

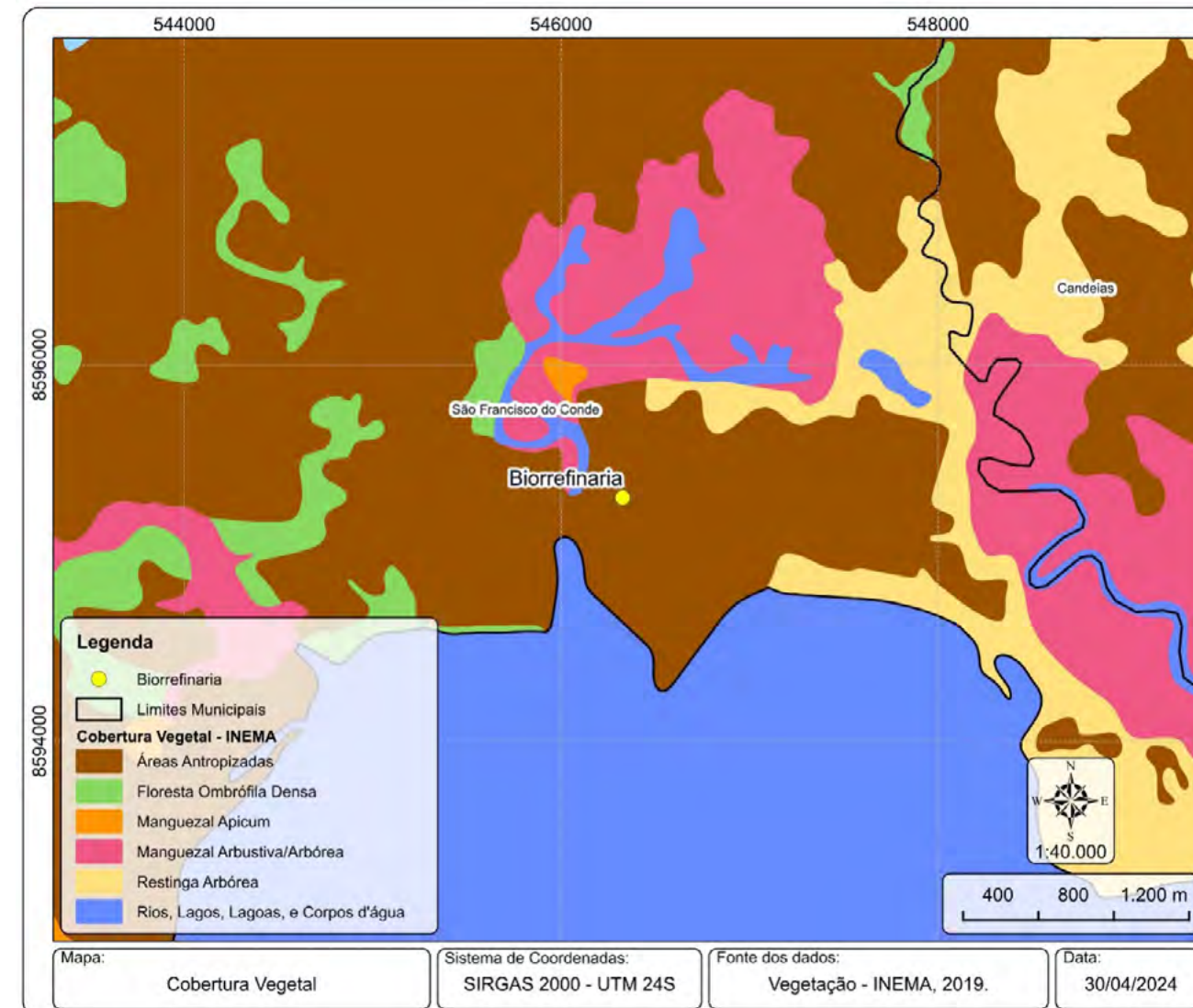
Flora

For the diagnosis of the flora, a Forest Inventory of the Census type (100% Inventory) was carried out, whose main objective is the floristic and phytogeographic characterization of the Directly Affected Area (ADA), in addition to measuring the estimated woody volume for the suppression area.

In addition, for a broad characterization and quantitative analysis of the vegetation in the study area, associated with floristic information, together with the phytosociological analysis of the abundance of individuals and species, the Phytosociological Study was presented.

The quali-quantitative survey of the flora was carried out in the field between June 4 and 7, 2024 and on July 17, 2024.

The Vegetation Cover of the study area is located in an anthropized area, close to areas of Dense Ombrophilous Forest, Mangrove and Restinga.



Flora AID

The vegetation of the AID is formed by the Atlantic Forest Biome.

For the area of direct influence (AID), 6 samples were studied in 10x10 plots (100m²), totaling 0.06 hectares in the different phytophysionomies of the surroundings, with the perspective of broadly characterizing the entire margins of the project. The inclusion values followed the same guidelines for directly affected area (ADA).

In the AID, vegetation characterized by extensive anthropization was also identified, in addition to a stretch of mangrove in a good state of conservation and an area of riparian forest on the margins of the directly affected, but also very degraded, area.

Identification and Mapping of Possible Ecological Corridors
Considering the Directly Affected Area (ADA) and the Area of Direct Influence (AID) of the project, it was found that they do not have considerable fragments that point to the formation of ecological corridors.

An ecological corridor connecting two fragments of native vegetation was not identified in the directly affected area, due to the high degree of anthropization present in the site. The low diversity and reduced ecological importance of the vegetation analyzed result from multiple factors, with fragmentation being one of the most impactful, present in almost all the intervention polygonal.

The few existing fragments have a high number of exotic and invasive species, such as Pine, Leucaena and Bamboo, compromising the ecological integrity of the area. In addition, the possible connection of these fragments Areas of native vegetation further away could have an effect contrary to that expected of an ecological corridor, favoring the propagation of non-native species instead of promoting gene flow and the dispersion of native vegetation.

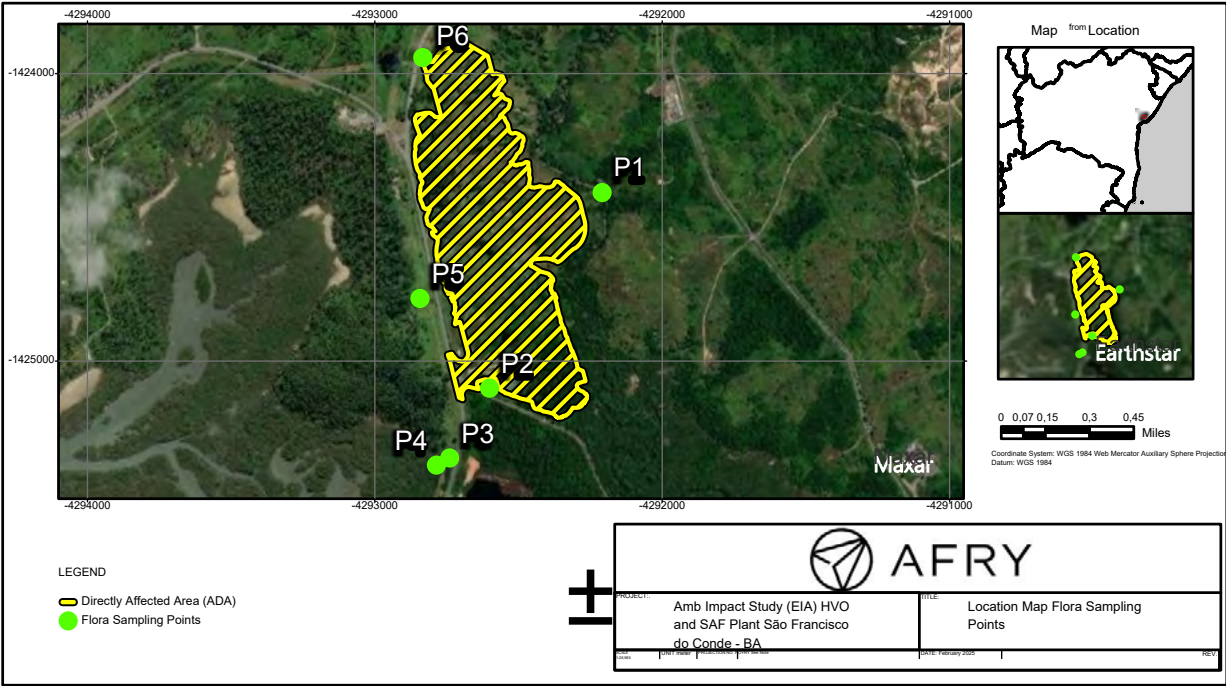
Directly Affected Area (ADA)
In the floristic survey at ADA, 26 taxa were identified. The Fabaceae family presented the highest richness, with five (05) species, followed by Anacardiaceae with three (03) species, Myrtaceae and Salicaceae with two (02) species each.

Among the species identified, seven are exotic cultivated in Brazil: Bambusa vulgaris, Elaeis guineensis, Leucaena leucocephala, Pinus elliottii, Psidium guajava, Ricinus communis and Eucalyptus grandis. In addition, Mimosa caesalpinifolia was found, an exotic species in Bahia, used as a hedge, green belt and landscaping.

Vegetation Suppression
A suppression area corresponds to 36.43 hectares. All the woody material will be used in the enterprise itself and the surplus will be donated.

During the forest survey carried out, no threatened species were identified at the state (SEMA Ordinance 40/2017), national (MMA Ordinance 148/2022) and international (IUCN) levels. No species protected by specific legislation were identified.

In view of the suppression of native vegetation necessary for the implementation of the project, and in compliance with the requirements of environmental legislation, environmental compensation will be carried out proportional to the suppressed area and the successional stage of the impacted plant formations.



Fauna

For the diagnosis of the fauna in the area of the project, sampling campaigns were carried out for: birds, reptiles, amphibians and mammals, in addition to the study of aquatic communities: fish, phytoplankton, zooplankton and benthic macroinvertebrates.

The characterization of fauna makes it possible to qualify and quantify the impacts on the biota and, based on the results obtained, to propose, program and apply appropriate mitigating measures to reduce or eliminate the impacts.



PHOTO: SPECIES OF REPTILE IDENTIFIED IN THE STUDY AREA, KNOWN AS CALANGO VERDE.



Poultry

Result

The secondary data survey added a total of 340 species to the list of birds observed through the primary data (105 species) in the two campaigns. This value, added to the species surveyed by the primary sampling effort, accounts for 430 species for the region of the project, which represents approximately 61.4% of the species that occur in the Atlantic Forest, a richness of birds considered high, reiterating the avifauna potential in the region of the project (MARINI & GARCIA, 2005). However, many of the birds mentioned in this survey may not occur directly in the affected areas, but may face indirect consequences due to the increased regional anthropogenic impact. The indicator species are evaluated throughout the subsequent items of this study.

Endangered, endemic and bioindicator species

During the field sampling, records were made of 12 species endemic to Brazil: *Ortalis araucuan*, *Nystalus maculatus*, *Picumnus pygmaeus*, *Aratinga auricapillus*, *Thamnophilus ambiguus*, *Herpsilochmus pileatus*, *Furnarius figulus*, *Pseudoseisura cristata*, *Polioptila atricapilla*, *Icterus jamaicae*, *Agelaioides fringillarius* and *Paroaria dominicana*.

In the collection of primary data for the two campaigns, eleven species of regional migratory birds were found, according to the Report on Areas of Concentration of Migratory Birds in Brazil (SANTOS et al., 2022); they are: *Dendrocygna viduata*, *Tachybaptus dominicus*, *Himantopus mexicanus*, *Tringa solitaria*, *Nannopterum brasilianus*, *Pitangus sulphuratus*, *Tyrannus melancholicus*, *Empidonomus varius*, *Vireo chivi*, *Stelgidopteryx ruficollis* and *Progne tapera*. These species carry out only regional migrations following seasonal variations, and leave these areas due to food scarcity.

Regarding the conservation status, the primary data of the two campaigns indicated only the presence of *Herpsilochmus pileatus* (Cap-tailed Antwren) in the category "near threatened" by the MMA and IUCN, all the others recorded in the field sampling have a status of little concern.

The bioindicator species recorded in the two diagnostic campaigns are the twelve endemic species for Brazil and the Atlantic Forest, the eleven migratory species, one near threatened species and three exotic species, they are, *Columba livia*, *Estrilda astrild* and *Passer domesticus*. All of them have already been mentioned above.

Terrestrial Fauna

Regarding the primary data, the collection, obtained in loco, was carried out during two campaigns carried out in June 2024 (Rainy Season - First Campaign) and in February 2025 (Dry Season - Second Campaign). In addition, it included the collection of secondary data with potential occurrence for the study area.

Mammals

Result
In total, 34 species were identified, distributed in eight (08) orders and 16 families, as probable occurrence for the IIA of the enterprise. Eight (08) species considered endemic to Brazil and three considered endemic to the Atlantic Forest biome stand out.

Endangered, endemic and bioindicator species
During the present study, the presence of the species *Bradypus torquatus* and *Chaetomys subspinosus* were highlighted, which are in the VU – Vulnerable category according to the Official List of Endangered Fauna Species of the State of Bahia (SEMA, 2017), the Red Book of Endangered Brazilian Fauna (MMA, 2022) and the IUCN conservationist parameters (2025).

In addition to these, *Leopardus pardalis* is included in the VU category – Vulnerable according to the Official List of Endangered Fauna Species of the State of Bahia (SEMA, 2017).



Amphibians and Reptiles

Result
The reptile and amphibian fauna surveyed for the region has 26 families distributed in 62 species, 28 amphibians and 34 reptiles. The Hylidae family showed the greatest diversity, with 06 genera and 12 species. It was also registered for the region of the enterprise, as shown in the following table, the Viperidae family that contains representatives of medical importance such as the viperidae genus *Bothrops* sp.

Reptiles and amphibians are present in all Brazilian ecosystems, occurring in greater abundance and diversity in the warmer regions of the country.

Endangered, endemic and bioindicator species
Of the species recorded during the diagnosis, none is present in the main lists of endangered fauna, state (SEMA, 2017), national (MMA, 2022) and world (IUCN, 2024). However, species with a more restricted geographic distribution were recorded, namely: *Adenomera thomei* and *Pristimantis paulodutais*, with records confirmed only for the northeast region, in addition to *Boana albomarginata*, which, added to the two previous species, are considered endemic to the Atlantic Forest.





Aquatic Fauna

Two campaigns were carried out for the environmental characterization of the area of influence of the Acelen Renováveis Biorefinery, which were carried out in December 2024 and May 2025.

Due to the factors provided, three important points were determined to be carried out for environmental characterizations, namely: São Paulo River (RSP), São Paulo River Mangrove (MSP) and Artificial Lagoon (LA).

For the São Paulo River, 4 sampling points were defined, in order to to characterize the aqueous matrix of its three different contributions, covering the following points in relation to the location of the project's installation:

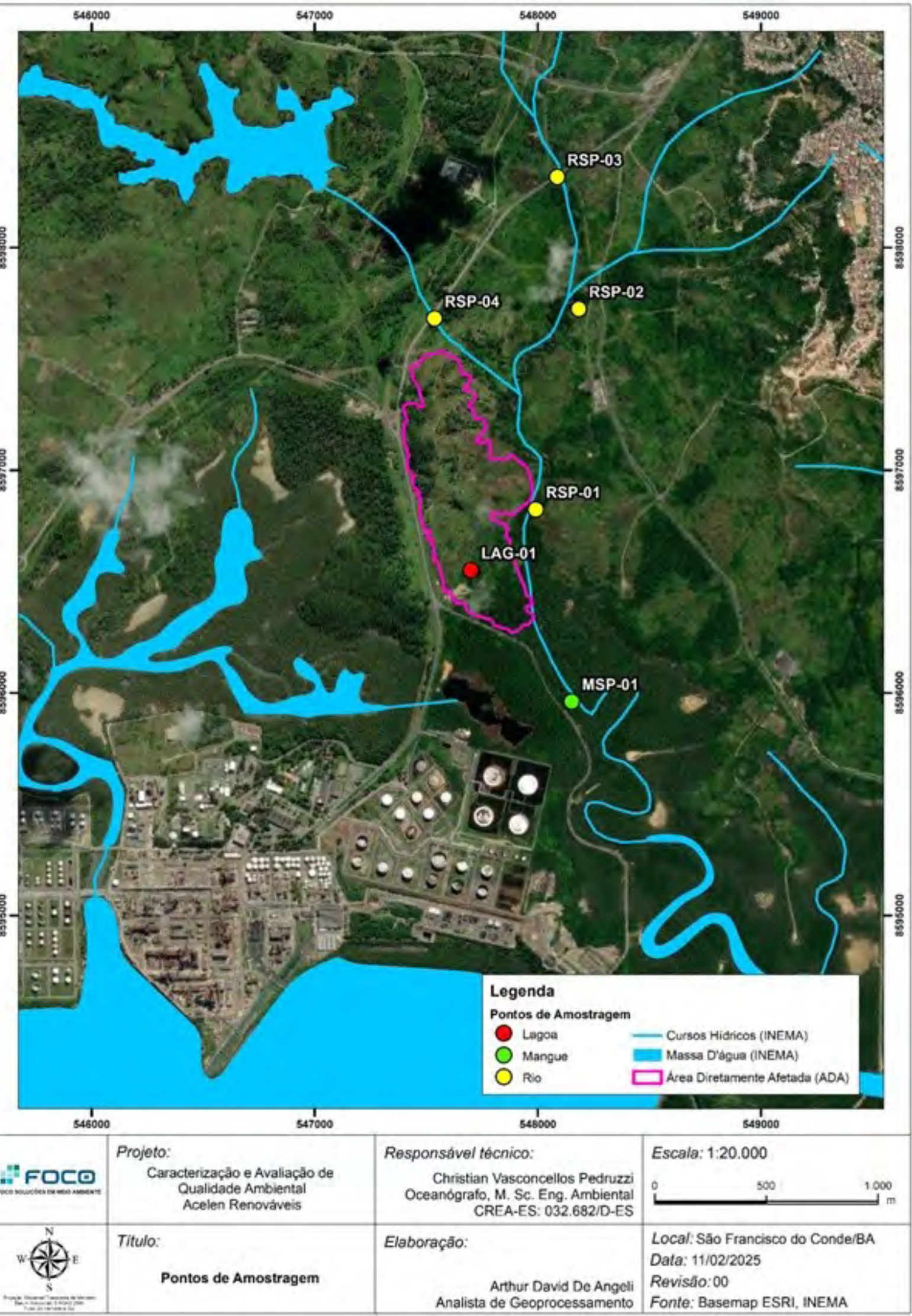
- 1- Contribution of the neighborhoods of Candeias (RSP-01);
- 2- Contribution of the rural regions of São Francisco do Conde and São Sebastião do Passé (RSP-02);
- 3- Contribution of the São Paulo Dam (RSP-03);
- 4- Amount to the project (RSP-04).

It is worth mentioning the analysis of the RSP-04 was made impossible by the absence of water in the channel, demonstrating that this water course has an intermittent character, possibly having its course interrupted during periods of drought and due to the existing dam by the Korea Dam.

For the São Paulo River Mangrove, only 1 sampling point was defined to the south of the project, which was defined by proximity to the project and by determinants of access (MSP-01).

For the Artificial Lagoon, only 1 sampling point was defined due to the unique existence of this element in the area of the development (LA-01).





River

In the river, the sampling points RSP-01 and RSP-02 were defined for ecotoxicological evaluation.

This analysis includes the evaluation of the toxic effect of the aqueous matrix on organisms of different trophic levels in order to produce an accurate picture of the effect of contaminants on the biota and the ecological risks associated with contamination.

The collections were carried out only for the aqueous matrix, being collected directly on the surface.

Soon after collection, the samples were stored in refrigerated containers and sent to the freezer located in the field laboratory. The frozen/refrigerated samples were sent in thermal containers by air transport and picked up by the laboratory responsible for the analysis at their place of destination. The organisms for the ecotoxicological tests were:

- Echinometra lucunter
- Vibrio fischeri
- Nitokra sp.

It was possible to observe that for the evaluation of the chronic toxic effect (E. lucunter) the samples showed toxic effect.

It is worth mentioning that CONAMA Resolution 357/2005 establishes as a quality condition for Class II Fresh Water the non-verification of chronic toxic effect to organisms, and the two points analyzed, therefore, are in disagreement with the current legislation with regard to this criterion.



Mangrove

The mangrove present is characteristic of the Basin type, having its areas flooded only during high tide. In this region, the variation in salinity tends to be smaller and there is a greater accumulation of organic matter. In general, mangrove trees in the basin are adapted to air respiration, by means of pneumatophores (roots that grow out of the ground), such as those present in the species *Avicennia schaueriana*.

Macrofauna

During the campaign to characterize and evaluate the environmental quality in the project's area of direct influence (AID), 28 individuals of the benthic mangrove macrofauna were collected and identified.

10 macrofauna taxa were identified, distributed in four taxonomic groups and two phyla, namely: phylum Annelida – Clitellata and Polychaeta; phylum Arthropoda – Decapoda and Amphipoda. The taxon *Notomastus* sp. (Polychaeta) was the most frequent, having been recorded in the 3 sampling points, with a FO = 100.00%. The taxon *Notomastus* sp. It was also the most abundant, accounting for 42.86% of the total relative abundance in the campaign.

Regarding relative richness, the Polychaeta Class (phylum Annelida) was the most representative, with a total of seven taxa identified, corresponding to 50.00% of the total, followed by the Amphipoda class (phylum Arthropoda) with three taxa, representing 30.00% of relative richness. On the other hand, the classes Clitellata and Decapoda presented one taxon each, representing 10.00% of relative richness for each.

Meiofauna

During the campaign to characterize and evaluate the environmental quality in the project's area of direct influence (AID), 2716 individuals of the benthic mangrove meiofauna were collected and identified.

In the current campaign, eight taxa of meiofauna were identified, distributed in six taxonomic groups and five phyla, namely: phylum Annelida – Polychaeta; phylum Arthropoda – Crustacea; phylum Kinorhyncha, phylum Rotifera and phylum Nematoda (Table 18). The taxa Copepoda (Crustacea), Náuplio (Crustacea) and Nematoda were the most frequent, being recorded in the 3 sampling stations, with a FO = 100%, being classified as very frequent. The taxon Rotifera was classified as frequent, with FO = 66.66%. The taxa Polychaeta, Kinorhyncha, Ostracoda and Acari were considered as infrequent, with FO = 33.33%.

The taxon Nematoda was the most abundant, representing 78.69% of the total relative abundance.

Carcinofauna

During the campaign to characterize and evaluate the environmental quality in the project's area of direct influence (AID), 70 crabs were collected and identified.

In the current campaign, three species were identified, namely *Aratus pisonii*, *Goniopsis cruentata* and *Ucides cordatus*. The species *Aratus pisonii* and *Ucides cordatus* were the most frequent, being recorded in all sampling stations, with one FO = 100% each, being classified as very frequent. The species *Goniopsis cruentata* was considered frequent, with an FO = 60.00%.

Final considerations

In mangroves, the results of the ecological analyses indicated an environment of low diversity for both macro, medium and carcinofauna, with the presence of dominance of specific groups and, consequently, low diversity.

Bioaccumulation

Eleven (11) crustacean individuals of the species *Ucides cordatus* were collected, both male and female, and all crabs were collected with a sampling effort of 30 minutes with the help of an experienced crab picker. The organisms were packed in raffia bags, identified and frozen. Subsequently, the organisms were weighed, sexed and measured (biometry) and cephalothorax muscles were collected, grouped in 50 g samples and frozen.

The results presented indicate that the concentration of metals in crustacean tissue at the analyzed point was above the limit established by the Brazilian legislation for Copper, Chromium and Zinc. It is also important to highlight that these concentrations are significantly far from the established limit value, being about 15 times higher for Cu, 8 times higher for Cr and 81 times higher for Zn.

The other compounds that presented detectable concentrations (Al, Fe, Va) do not have a limit established in the Brazilian legislation.

No significant concentration of hydrocarbons was detected in the crustacean biological tissue sample at the point analyzed.

Pond

For the biotic characterization of the Lagoon, data from the Ichthyofauna were sampled through different collection methods, subdivided into Passive Sampling and Active, in order to sample the different possible types of habitat and habits of the animals present in the area, namely: waiting net and pit traps as passive sampling; Tarrafa and Cerco as active sampling.

The seine technique is carried out with the use of gillnets, however, unlike the waiting technique, in the seine seine the water is generated with o intention of scaring away and directing the fish to the gillnet.



Installation of the standby network.



Armadilhas de covo.



Siege technique.



cast net launch.

Ichthyofauna
From the different sampling methods, 12 specimens representing only 1 species were found of Ichthyofauna, popularly known as Cascudinho or Camboatá, whose species is Callichthys callichthys.



Armadilhas de covo.

Amphibians and reptiles
From the different sampling methods, 12 specimens representing only 1 species were found of Ichthyofauna, popularly known as Cascudinho or Camboatá, whose species is Callichthys callichthys.

For the amphibian and reptile data, we had the presence of two distinct groups, belonging to the Class Reptilia and the Class Amphibia.

For Reptilia, the presence of the species Mesoclemmys tuberculata, popularly known as Northeast Turtle, was recorded, totaling 2 individuals.



Subjects of Mesoclemmys tuberculata sampled



Subjects of Mesoclemmys tuberculata sampled

For Amphibia, one of the species of the genus *Rhinella* sp., popularly known as true toads, was recorded. These individuals were seen at the edge of the lagoon in abundant reproduction with several individuals inhabiting the holes formed by the footprints of horses that use the area to drink water.

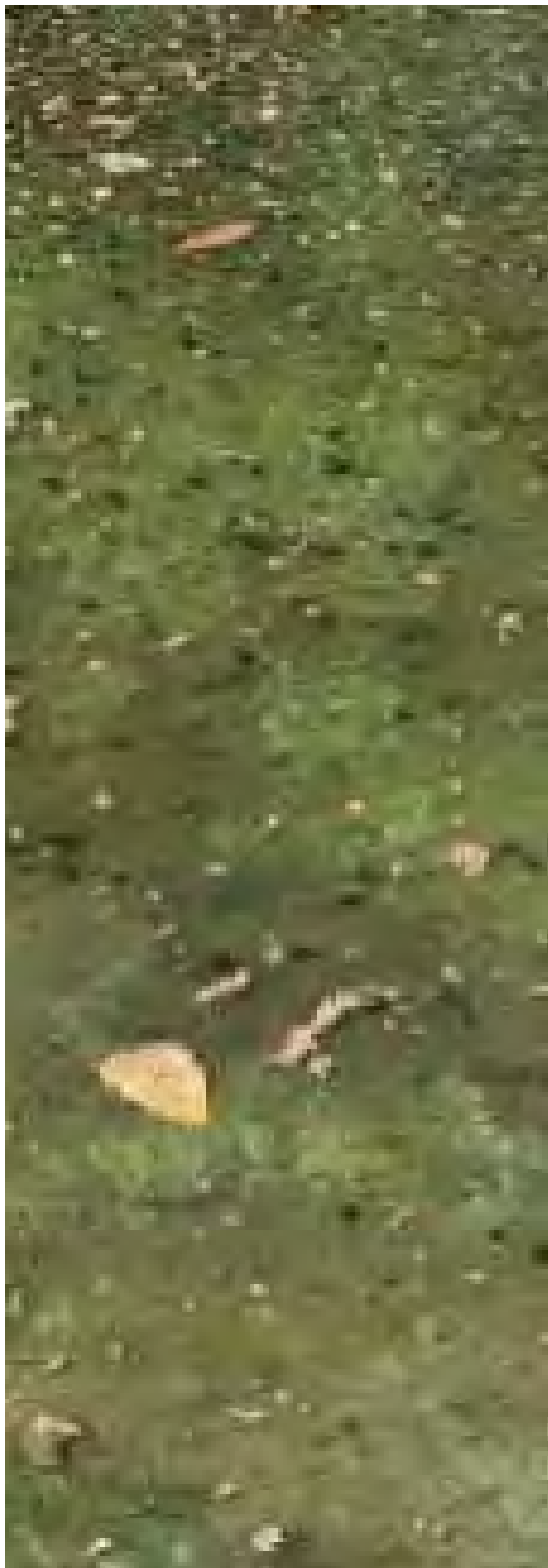
The reproduction of *Rhinella* species usually happens by the deposition of egg filaments that are deposited in water, and free-living tadpoles hatch. These tadpoles tend to develop and undergo metamorphosis within 2 to 10 weeks after hatching.



Horse Footprints



Amphibians recorded in the lagoon



Amphibians recorded in the lagoon





Conservation Units

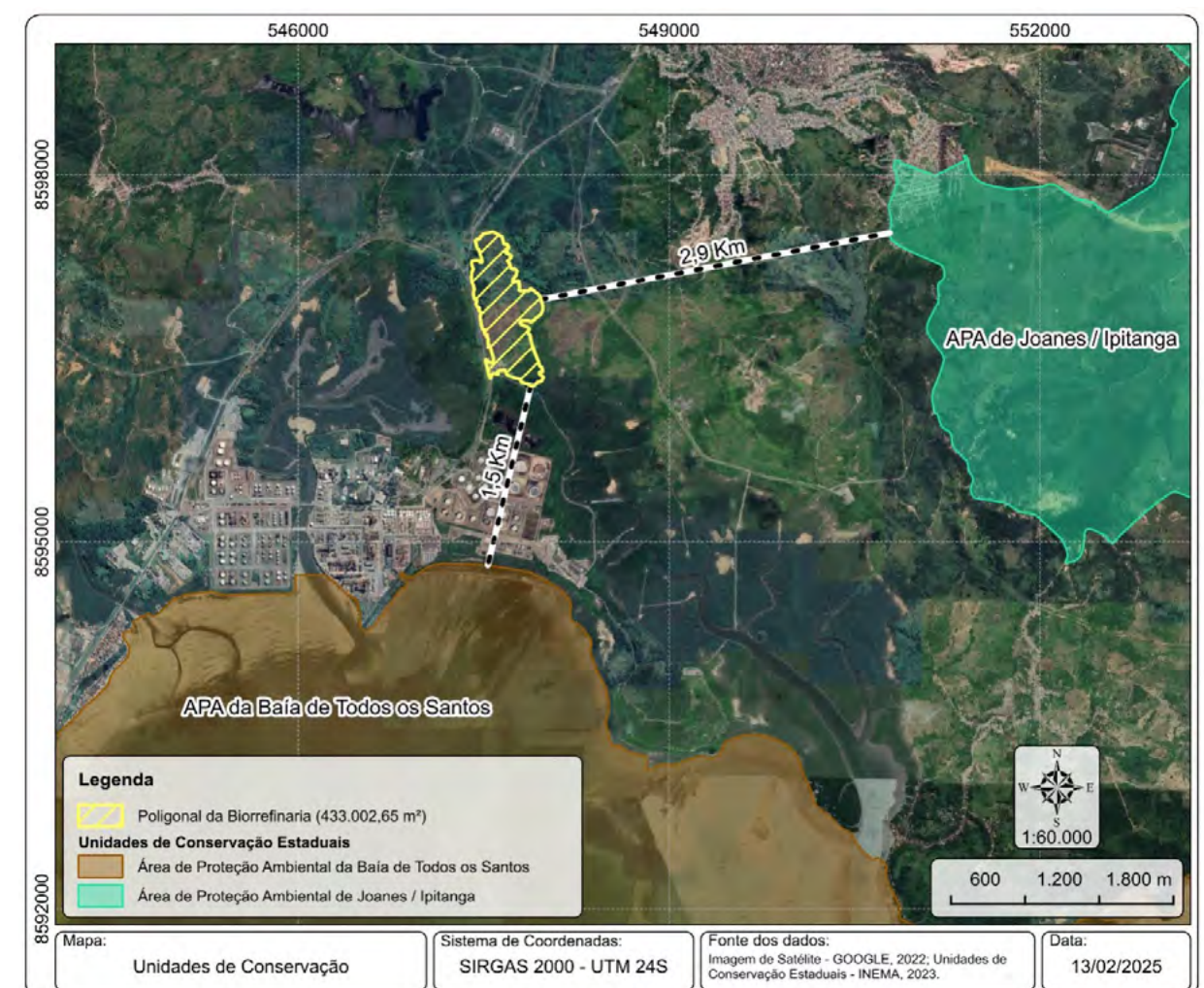
According to the National System of Conservation Units (SNUC), created through Federal Law No. 9,985 of July 18, 2000, Conservation Units are territorial spaces that have environmental resources with relevant characteristics for conservation, with defined limits and a special administration regime.

Article 7 of the same law states that Environmental Protection Areas (APA) are part of

the Group of Sustainable Use Units, where their main objective is "(...) to make nature conservation compatible with the sustainable use of part of its natural resources". Consequently, the APA is a category of Conservation Unit that allows the development of a region to be reconciled with its environmental protection.

According to the INEMA database (2019; 2022; 2023; 2024), the area intended for the implementation of the ACELEN Renováveis Biorefinery is not included in any Conservation Unit (UC). The nearest Conservation Units are the Joanes/Ipitanga APA, located about 3 km away from the site and the Baía de Todos os Santos APA, located in the adjacent maritime area

a Mataripe S.A. Refinery (RefMat), approximately 1.6 km away.



Socio-economic environment

The socioeconomic study comprises in its areas of influence, the location of the project as the Directly Affected Area (ADA); communities directly affected by the project in the municipalities of São Francisco do Conde (BA) and Candeias (BA) as Area of Direct Influence (AID) and the municipalities of São Francisco do Conde (BA), Candeias (BA) and Madre de Deus (BA) as Area of Indirect Influence (AI).





Demographics

The study of the demographic profile covers the formation and evolution of population groups in its most varied aspects, which are their size, spatial distribution and age composition, which are analyzed within a time interval.

Demographic data are the representation of the characteristics of a population and knowing them is an important tool to assess and understand its evolution.

The state of Bahia has a population of just over 14 million inhabitants (2022), this population grew by 8.20% in the period from 2000 to 2022 and a growth of 1% in the last ten years.

The municipality of São Francisco do Conde (BA), between the years 2000 and 2022, showed a growth of 47.3%, higher than that of the State. Its population of 38,733 inhabitants has grown by 17% in the last decade alone. Madre de Deus (BA) also showed significant growth with a percentage of 53.74% in the same period between 2000 and 2022.

In the opposite movement, the municipality of Candeias (BA) showed a decrease in its population, in the last two decades it reduced 5.73%.

RESIDENT POPULATION GROWTH IN THE STATE OF BAHIA AND MUNICIPALITIES OF SÃO FRANCISCO DO CONDE (BA), CANDEIAS (BA) AND MADRE DE DEUS (BA).

Locality	2000	2010	2022	Growth between 2000 and 2022 (%)
Bahia	13.070.250	14.016.906	14.141.626	8,20%
São Francisco do Conde (BA)	26.282	33.183	38.733	47,37%
Candeias (BA)	76.783	83.158	72.382	- 5,73%
Mother of God (BA)	12.036	17.376	18.504	53,74%

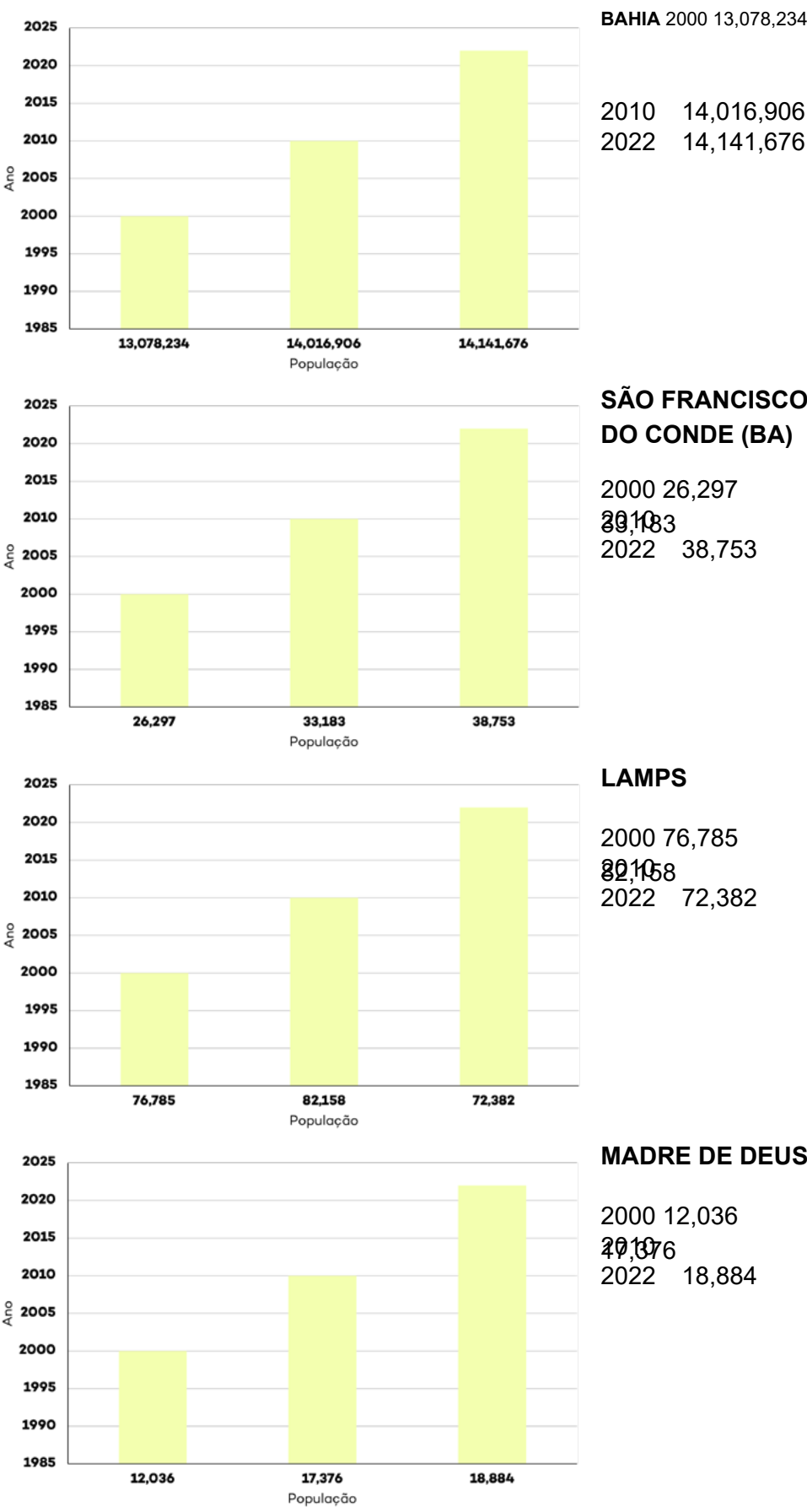
*SOURCE: DEMOGRAPHIC CENSUS (IBGE)



Population evolution

Next, population growth in the State of Bahia and the municipalities of São Francisco do Conde (BA), Candeias (BA) and Madre de Deus (BA), from 2000 to 2022.

Source: IBGE - Demographic Census.





The municipal HDI of São Francisco do Conde (BA) and Candeias (BA) is classified as medium and Madre de Deus (BA) is classified as high.

Regarding the dimensions evaluated by the HDI-Municipal (MHDI), such as Income, Longevity and Education, the municipalities of São Francisco do Conde (BA), Candeias (BA) and Madre de Deus (BA) stand out in relation to the MHDI-Longevity.

IDH

Human Development Index

The Human Development Index (HDI) is a summarized measure of long-term municipal progress in three basic dimensions of human development: income, education, and health.

MUNICIPAL HUMAN DEVELOPMENT INDEX – HDI-M OF THE MUNICIPALITIES OF THE AII FOR THE YEAR 2010.

UF - Municipality	IDHM	MHDI Income	IDHM Longevity	IDHM Education
São Francisco de Conde-BA	0,674	0,641	0,812	0,587
Candeias (BA)	0,691	0,652	0,823	0,616
Mother of God (BA)	0,708	0,67	0,794	0,667

SOURCE: IBGE AND ADMINISTRATIVE RECORDS, AS SPECIFIED IN THE METADATA AVAILABLE AT: [HTTP://ATLASBRASIL.ORG.BR/ACERVO/BIBLIOTECA](http://atlasbrasil.org.br/acervo/biblioteca).



admissions, closing with a negative balance.

The number of formal jobs in the municipality of São Francisco do Conde (BA), registered in 2021, was 7,200. The presence of women in the labor market has a significant social and economic impact, such as promoting gender equality and reducing family poverty.

Number of formal jobs according to sex in the municipality of São Francisco do Conde – BA reveals greater female participation in the sectors of Public Administration and Services, the other activities are mostly occupied by men.

**NUMBER OF NEW JOBS FOR
THE STATE OF BAHIA AND MUNICIPALITY
OF SÃO FRANCISCO DO CONDE - BA
(2023- 2024).**

LAST 12 MONTHS 2024 - ADJUSTED**

UF- MUNICIPALITY	Admissions	Shutdowns	Balances	Relative Variation (%)
Bahia	979.593	894.867	84.726	4,13
São Francisco do Conde (BA)	1.345	1.508	- 163	- 4,09
Candeias (BA)	5.723	5.057	666	5,06%
Madre de Deus (BA)	908	760	148	8,39

SOURCE: MINISTRY OF LABOR AND SOCIAL SECURITY – NOVO CAGED. ** INCREASED RESULTS OF ADJUSTMENTS; THE RELATIVE CHANGE TAKES AS REFERENCE THE INVENTORIES WITH ADJUSTMENTS OF THE CURRENT MONTH AND THE SAME MONTH OF THE PREVIOUS YEAR.

Employment and Income

In the latest data available for the state of Bahia, there was a higher number of admissions in relation to dismissals, thus having a positive balance of 68,634 new jobs in the last year analyzed. The municipalities of Candeias (BA) and Madre de Deus (BA) also had a positive balance in 2024.

O municipality of São Francisco do Conde (BA) had more dismissals in relation to

NUMBER OF JOBS BY GENDER IN THE MUNICIPALITY OF ACRE SÃO FRANCISCO DO CONDE – BA. (2021).

Sector	Male	Female	Total
Mineral Extraction	5	5	5
Manufacturing Industry	951	117	1.068
Serv. Ind. Up	84	20	104
Construction	28	1	29
Trade	802	188	990
Services	268	420	688
Public administration	1,924	2,340	4.264
Agriculture	50	2	52

Access Routes

NUMBER OF FORMASIN FRANCISCO DO CONDE (DECEMBER 2021).

Paved highways

Railways

Limits

STUDY CARRIED OUT FOR international

12 miles (Territorial Sea)





Education

To analyze the education system in the area of influence of the enterprise, it is necessary to base oneself on an important indicator: the literacy rate.

In Brazil, the illiteracy rate has been decreasing over the years, from 20.07% in 1991 to 9.61% in 2010, according to data from the Demographic Census. In the state of Bahia it is also no different, it showed a reduction in its numbers in the period between 1991 and

2010 (which are the data made available by the IBGE so far), falling from 35.3 to 16.5. The municipality of São Francisco do Conde (BA) recorded a significant drop in this period, as well as the municipalities of Candeias (BA) and Madre de Deus (BA) reaching indices of 10.1, 9.08 and 5.26, respectively, according to the latest data available.

Data from the latest IBGE censuses on illiteracy in the municipality show that there are points to celebrate, as the rate of the population aged 15 and over has fallen uninterruptedly over the last decades.

More recent data (2022 Demographic Census) show us that these indices have improved even more in all municipalities in the area of influence (AI). Madre de Deus (BA) is the municipality with the highest percentage of literate people (95.97%). It is possible to observe that women have a higher percentage of literacy compared to men.

Another relevant indicator of the quality of education, measured every two years, is the IDEB - Basic Education Development Index.

The IDEB was created in 2005 and brings together, in a single indicator, the results of two equally important concepts for the quality of education: the school flow and the average performance in the assessments. The IDEB is calculated from data on school approval, obtained from the School Census, and from performance averages in the Basic Education Evaluation System (Saeb).

**ILLITERACY RATE OF 15 YEARS OF AGE
AND OVER – 2022.**

Territorialities	1991	2000	2010
Brazil	20,07	13,63	9,61
Bahia	35,3	23,15	16,58
Candeias (BA)	22,27	13,53	9,08
Madre de Deus (BA)	15,84	8,73	5,26
São Francisco do Conde (BA)	28,88	16,83	10,1

SOURCE: IBGE - ELABORATION: ATLAS OF HUMAN DEVELOPMENT IN BRAZIL. UNDP BRAZIL, IPEA AND FJP, 2022.

The IDEB of the municipality of São Francisco do Conde (BA) has improved over the years as can be seen in the image below, but still registers rates below the national average. High school is the group with the lowest index (2.8). Last records for the initial and final years are 4.8 and 4.0 respectively.

The IDEB of the municipality of Candeias (BA) has also improved over the years, as can be seen in the image below, but still registers rates below the national average. High school is the group with the lowest index (3.4). Last records for the initial and final years are 4.3 and 3.6 respectively.

Madre de Deus (BA) is the one with the best IDEB indexes among the municipalities in the area of influence of the study. It has registered a progression over the years, but still far from the national averages.

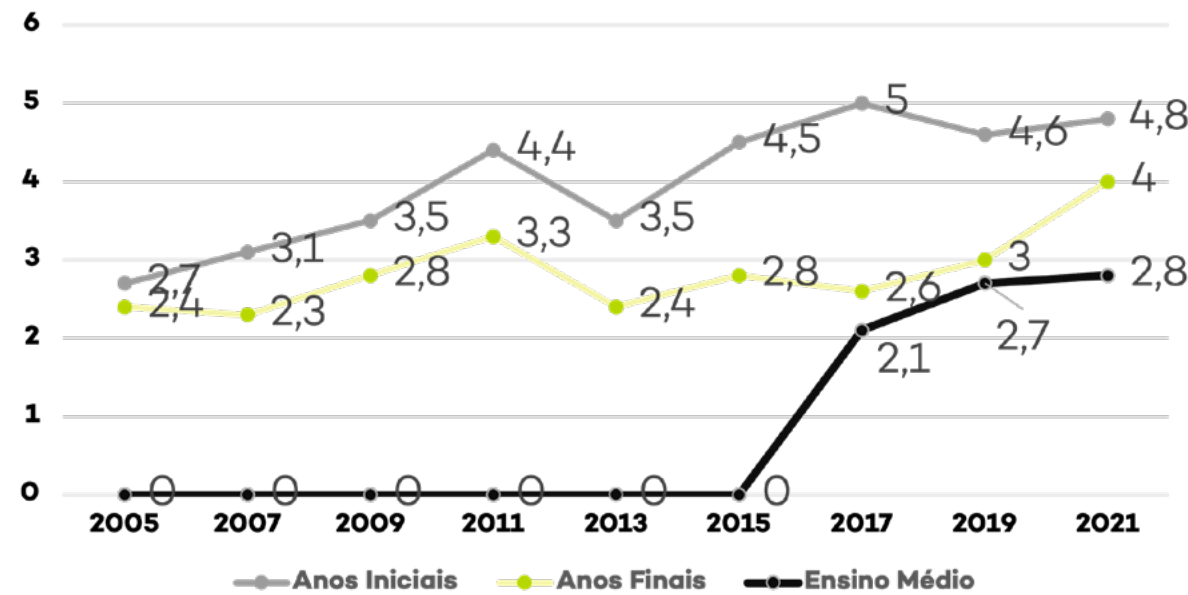
GENDER
PERCENTAGE –
2022.

LITERACY X

Territory -lities	Literate (%)			Illiterate (%)		
	Total	Men	Women	Total	Men	Women
Brazil	93	44,31	48,69	7	3,6	3,4
Bahia	87,4	41,12	46,28	12,6	6,57	6,03
Candeias (BA)	92,81	42,69	50,12	7,19	3,18	4,01
Madre de Deus (BA)	95,57	43,97	51,6	4,43	1,83	2,6
São Francisco do Conde (BA)	91,79	41,86	49,93	8,21	4,02	4,19

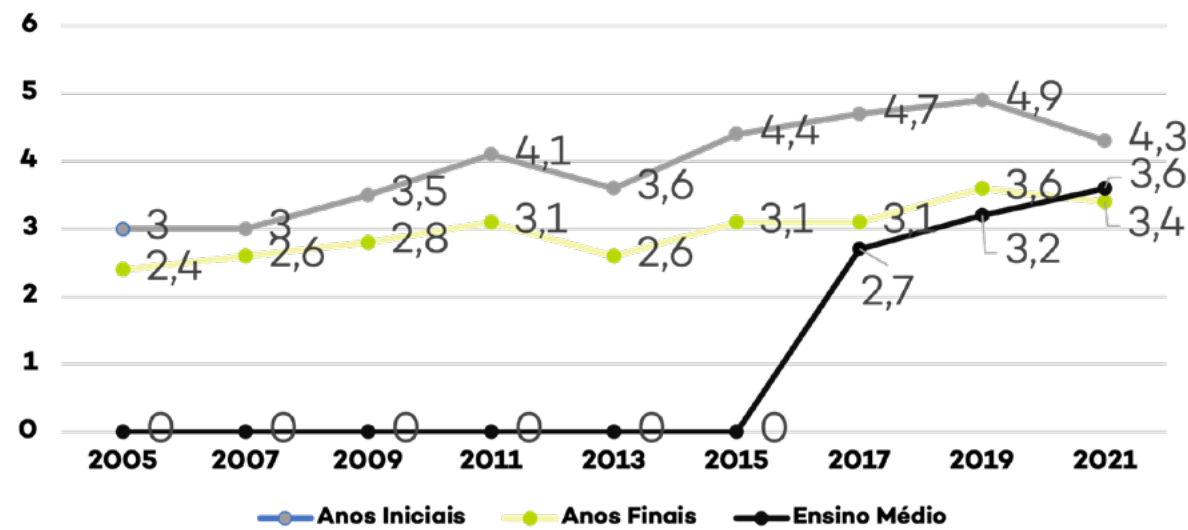
SOURCE: IBGE – 2022 DEMOGRAPHIC CENSUS.

MUNICIPALITY OF SÃO FRANCISCO DO
CONDE (BA)



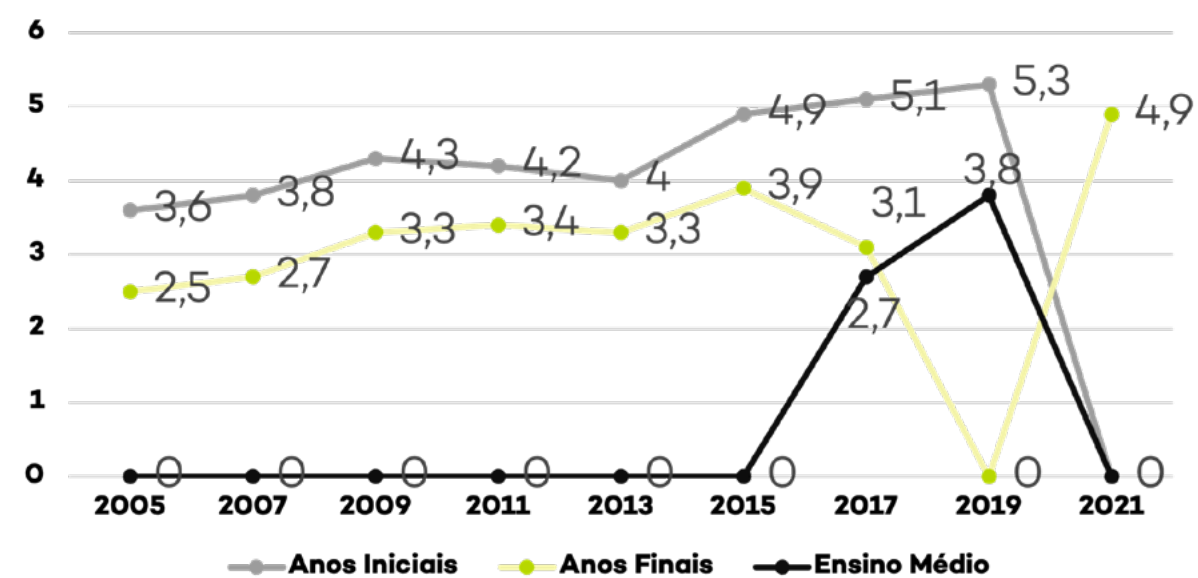
BASIC EDUCATION DEVELOPMENT INDEX – IDEB INITIAL, FINAL AND HIGH SCHOOL YEARS OF THE MUNICIPALITY OF SÃO FRANCISCO DO CONDE (BA) (2005 – 2021) SOURCE: MEC/INEP.

MUNICIPALITY OF
CANDEIAS (BA)



BASIC EDUCATION DEVELOPMENT INDEX – IDEB INITIAL, FINAL AND HIGH SCHOOL YEARS OF THE MUNICIPALITY OF CANDEIAS (BA) (2005 – 2021) SOURCE: MEC/INEP.

MUNICIPALITY OF MADRE DE DEUS
(BA)



BASIC EDUCATION DEVELOPMENT INDEX – IDEB INITIAL, FINAL AND HIGH SCHOOL YEARS OF THE
MUNICIPALITY OF MADRE DE DEUS (BA) (2005 – 2021)
SOURCE: MEC/INEP.





Health

The greater the access to health services, the higher the quality of life of the population. São Francisco do Conde (BA) has 1 (one) General Hospital for the care of the population and 17 Health Centers of basic unit. Candeias (BA) has 04 (four) general hospitals and Madre de Deus (BA) 01 (one). Number of existing health facilities, by type, (2024).

O number of hospitals, together with the number of hospital beds, are important indicators

to determine the health resources available to the population and, consequently, the capacity of a country or region to provide care in high and medium complexity.

Municipality	Health Center/ Basic Unit	General Hospital	General Emergency Room	Isolated Clinic	Clinic Specialty Center Mobile Unit of pre-hospital level in the emergency area	Health Management Center	Psychosocial Care Center	Emergency Care
São Francisco do Conde BA	17	1	1	8	6	2	1	1
Candeias (BA)	25	4	-	11	21	5	1	2
Madre de Deus (BA)	6	1	-	5	8	2	1	-

NUMBER OF EXISTING HEALTH FACILITIES, BY TYPE, (2024). SOURCE: MINISTRY OF HEALTH - NATIONAL REGISTRY OF HEALTH ESTABLISHMENTS OF BRAZIL - CNES (JANUARY/2024).

The municipality of São Francisco do Conde – BA, has 34 beds, and among the 34 offered, 33 are SUS and 01 is Non-SUS, thus having a rate of 0.9 beds per 1,000 inhabitants, following the same particularity of the state of Bahia. The municipality of Candeias – BA, has 116 beds, of which 71 are SUS and 45 are non-SUS beds, thus having a rate of 1.6 beds per 1,000 inhabitants. The municipality of Madre de Deus – BA, has 28 beds, and among the 28 offered, all are from the SUS, thus having a rate of 1.5 beds per 1,000 inhabitants.

	Quantity Existing municipality	Qty SUS	Non SUS	Population	Men
Bahia	30.848	24.432	6.416	14.141.626	2,2
São Francisco do Conde – (BA)	34	33	1	38.733	0,9
Candeias (BA)	116	71	45	72.382	1,6
Madre de Deus (BA)	28	28	-	18.504	1,5

NUMBER OF BEDS IN THE MUNICIPALITIES OF SÃO FRANCISCO DO CONDE, CANDEIAS AND MADRE DE DEUS - BA, BY TYPE OF BED AND SUS SERVICE, AND NUMBER OF BEDS PER INHABITANT - 2024. SOURCE: IBGE – 2022 DEMOGRAPHIC CENSUS.



Sanitation

Water supply

Basic Sanitation is composed of a set of public services, infrastructures and operational facilities that aim to ensure environmental quality and health to the population, they are: Collection, treatment and distribution of drinking water; Collection, transportation, treatment and final disposal of sewage.

The State of Bahia still has many challenges regarding access to water and sewage services. The state is responsible for the company Embasa (Bahia Water and Sanitation

Company), which is present in 366 of the 417 cities in Bahia. In Bahia, there are three Infranational Agencies for the regulation of sanitation: Basic Sanitation Regulatory Agency of the State of Bahia (AGERSA-BA) – State; Feira de Santana Regulatory Agency (ARFES) – Municipal; and Regulatory and Inspection Agency for Public Services of Salvador (ARSAL-BA) – Municipal.

According to the National Sanitation Information System (SNIS), based on 2022 data, of the 14 million inhabitants of the state, 20.3% without access to the water network system and 58.8% of the population without sewage collection. In the state, 48.8% of the volume of sewage collected is not treated.

Information on existing infrastructure and demand in relation to water supply in São Francisco do Conde (BA), Candeias (BA) and Madre de Deus (BA), was obtained from the National Sanitation Information System – SNIS. In São Francisco do Conde (BA) the total water service is practically 100%, the municipality has just over 14 thousand active water connections in 163km of network extension. In Candeias (BA) the water service is 90% and in Madre de Deus (BA) 96%.

	Total Population 2022	Total population served with water supply	Quantity of active water connections	Extension of the water network	Quantity of active water connections	Total water supply index
Municipality	Inhabitants	Inhabitants	Links	Km	Links	Percentage
São Francisco do Conde (BA)	38.733	38.476	14.764	163,17	14.668	99,34%
Candeias (BA)	72.382	65.694	28.240	334,75	28.061	90,76%
Madre de Deus (BA)	18.504	17.943	8.004	79,15	7.968	96,97%

GENERAL INFORMATION ON THE WATER SUPPLY SYSTEM IN THE MUNICIPALITIES OF SÃO FRANCISCO DO CONDE (BA), CANDEIAS (BA) AND MADRE DE DEUS (BA) – (2022). SOURCE: NATIONAL SANITATION INFORMATION SYSTEM - SNIS

According to the Sewage Atlas developed by the National Water Agency (ANA) and the National Sanitation Secretariat, the Brazilian average of service to the urban population with collective sewage collection and treatment systems is 46.5%. The State of Bahia has 45.4%.

In relation to the municipalities of São Francisco do Conde (BA), Candeias (BA) and Madre de Deus (BA), information was collected from the National Sanitation Information System (SNIS). In São Francisco do Conde (BA) of the 38 thousand inhabitants, only 14 thousand are served with sanitary sewage, which represents only 38% of the population. In Candeias (BA) 44% of the population is served with sanitary sewage. The municipality of Madre de Deus (BA) has the best scenario in relation to sewage, with 71% of the population served.

The municipality of São Francisco do Conde treats practically all the sewage it collects, however only 42.7% of these are collected.

The selective collection of solid waste aims to reduce the environmental impact generated by the production of waste in a municipality, correctly disposing of the materials for reuse or proper disposal.

In São Francisco do Conde (BA) 80% of the population is covered by the garbage collection service at least once a week, the municipality produced almost 20,000 tons of garbage in the last year analyzed. In the municipality of Candeias (BA) 97% of the population is served with collection at least once a week.

SEWAGE SERVICE INDEX IN THE MUNICIPALITIES OF SÃO FRANCISCO DO CONDE (BA), CANDEIAS (BA) AND MADRE DE DEUS (BA) (2022)

Municipalities	Total Population 2022	Total population served with sanitary sewage	Number of active sewer connections	Extension of the sewerage network
	inhabitants	inhabitants	Links	Km
São Francisco do Conde - BA	38.733,00	14.546	5.379	48,27
Candeias (BA)	72.382	32.107	13.704	177,01
Madre de Deus (BA)	18.504	13.219	5.860	74,22

SOURCE: NATIONAL SANITATION INFORMATION SYSTEM - SNIS

SEWAGE TREATMENT INDEX IN THE MUNICIPALITIES OF SÃO FRANCISCO DO CONDE (BA), CANDEIAS (BA) AND MADRE DE DEUS (BA) (2022)

Municipalities	Volume of sewage collected 1,000m3/year	Volume of sewage treated 1,000m3/year	Sewage collection index Percentage	Sewage Treatment Index Percentage
São Francisco do Conde (BA)	590,17	586,91	42,74	99,45
Candeias (BA)	1.303,33	1.307,34	-	-
Madre de Deus (BA)	553,92	552,73	-	-

SOURCE: NATIONAL SANITATION INFORMATION SYSTEM - SNIS. NOTE: THERE IS NO INFORMATION ON THE SEWAGE COLLECTION AND TREATMENT INDEX IN THE MUNICIPALITIES OF CANDEIAS (BA) AND MADRE DE DEUS (BA) IN THE NATIONAL SANITATION INFORMATION SYSTEM – SNIS

PERCENTAGE OF GARBAGE COLLECTION COVERAGE IN THE MUNICIPALITIES OF SÃO FRANCISCO DO CONDE (BA), CANDEIAS (BA) AND MADRE DE DEUS (BA) (2022)

Total amount of ODR and UPR collected by Total population served- Municipalities all agents with collection at least 1 time a week
Ton/year Percentage of collection coverage at least 1 time a week

Healthy Francisco do Conde (BA)	19.833	31.278	81%
Candeias (BA)	36.480	70.500	97%
Madre de Deus (BA)	—	—	-

SOURCE: NATIONAL SANITATION INFORMATION SYSTEM - SNIS NOTE: THERE IS NO INFORMATION ABOUT THE MUNICIPALITY OF MADRE DE DEUS ON WASTE COLLECTION



Gross Domestic Product

Gross Domestic Product (GDP) represents the sum (in monetary values) of all final goods and services produced in a given region (i.e., countries, states or cities), during a given period (month, quarter, year, etc.). GDP is one of the most widely used indicators in macroeconomics in order to measure the economic activity of a region.

In the calculation of GDP, only final goods and services are considered, excluding the

counts all intermediary consumer goods (inputs). This is done in order to avoid the problem of double counting, when values generated in the production chain appear counted twice in the sum of GDP.

The following table shows the GDP values and the percentage of growth in the period of 2015; 2017; 2019 and 2021 in the country, in the state of Bahia and in the municipalities of São Francisco do Conde (BA), Candeias (BA) and Madre de Deus (BA).

GROSS DOMESTIC PRODUCT – GDP OF BRAZIL, BAHIA AND THE MUNICIPALITIES OF SÃO FRANCISCO DO CONDE (BA), CANDEIAS (BA) AND MADRE DE DEUS (BA) FOR THE YEARS 2015-2017-2019 AND 2021

2021	Variable - Gross Domestic Product at current prices (Thousand Reais)				Where.
	Anus				2019 x 2021
UF - Municipality	2015	2017	2019	2021	
Brazil	5.995.787.000	6.585.479.000	7.389.131.000	9.012.142.000	22%
Bahia	245.043.690	268.724.090	293.240.504	352.617.852	20%
São Francisco do Conde - THREE	8.643.550	10.121.957	10.714.391	13.086.121	22%
Candeias (BA)	3.388.543	3.848.284	4.217.672	6.819.267	62%
Madre de Deus (BA)	494.442	443.919	509.617	515.514	1%

SOURCE: IBGE, IN PARTNERSHIP WITH THE STATE STATISTICAL AGENCIES, STATE GOVERNMENT SECRETARIATS AND SUPERINTENDENCE OF THE MANAUS FREE TRADE ZONE – SUFRAMA.

In the last two years analyzed, between 2019 and 2021, there was an evolution in GDP in the state of Bahia and in the municipalities in the study area. The state showed a growth of 20%, São Francisco do Conde 22%, Candeia 62%. Madre de Deus, a municipality of just over 18,000 inhabitants, recorded a 1% growth in GDP.

The composition of the Gross Domestic Product is based on the participation of four productive sectors (Administration, public health and education and social security, Agriculture, Industry and Services) added to the taxes collected.

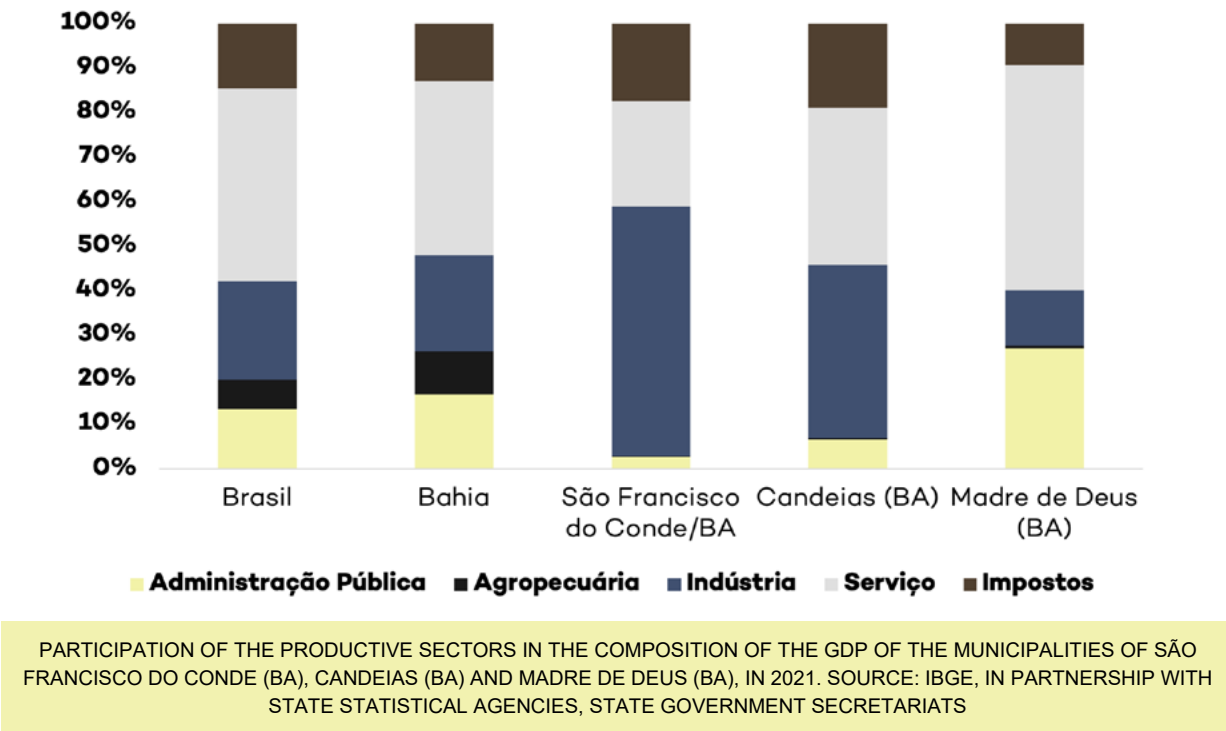
In the municipality of São Francisco do Conde (BA), the Industry sector has the largest participation in the municipal GDP, as it houses the Landulpho Alves Refinery, one of the largest oil refineries in Brazil, which is one of the main economic engines of the municipality, followed by the Services sector. Finally, the sector of Administration, public health and education and social security, registers a 3% share. The Agricultural sector has a modest role in the participation in the GDP in the municipality, not reaching 1% of the municipality's index.

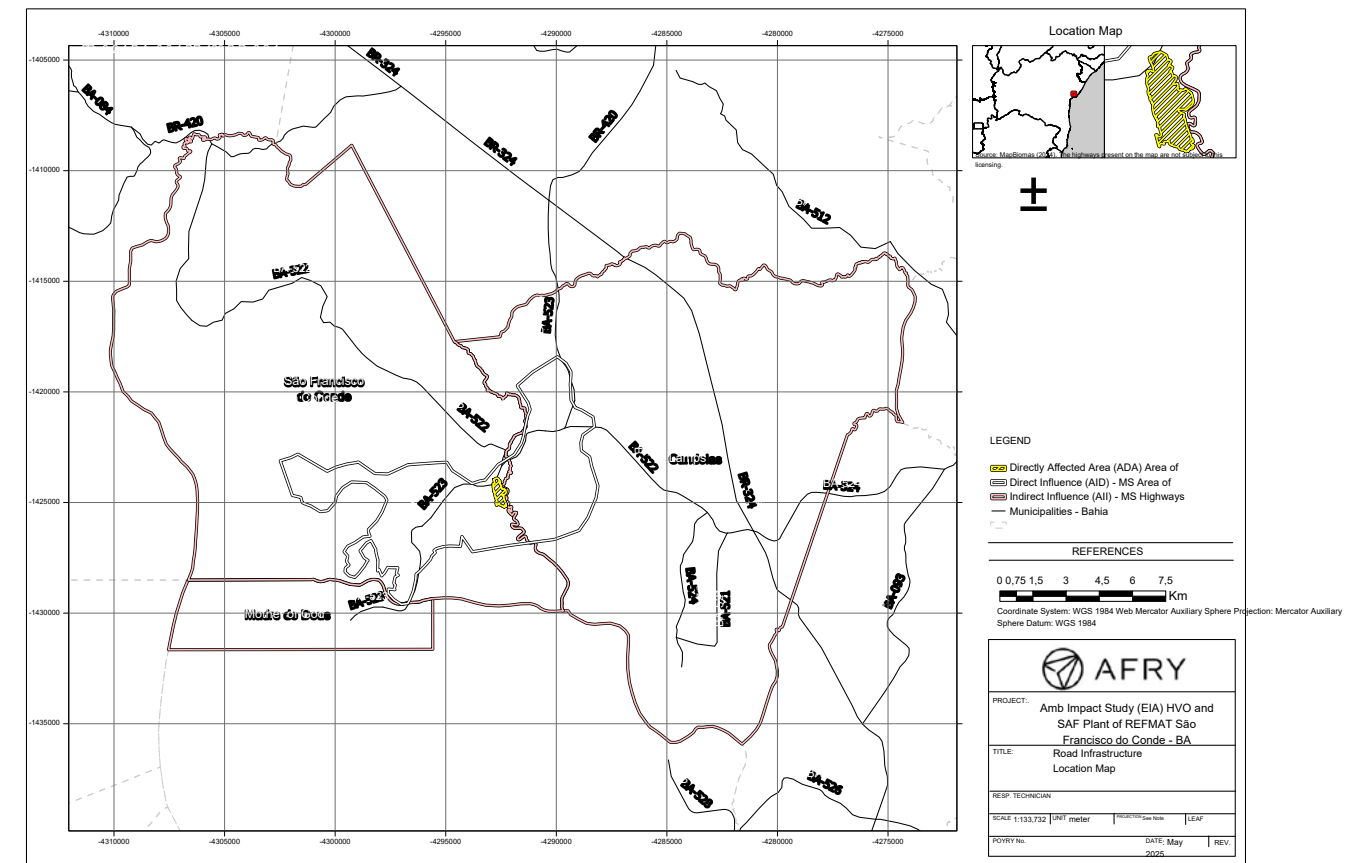
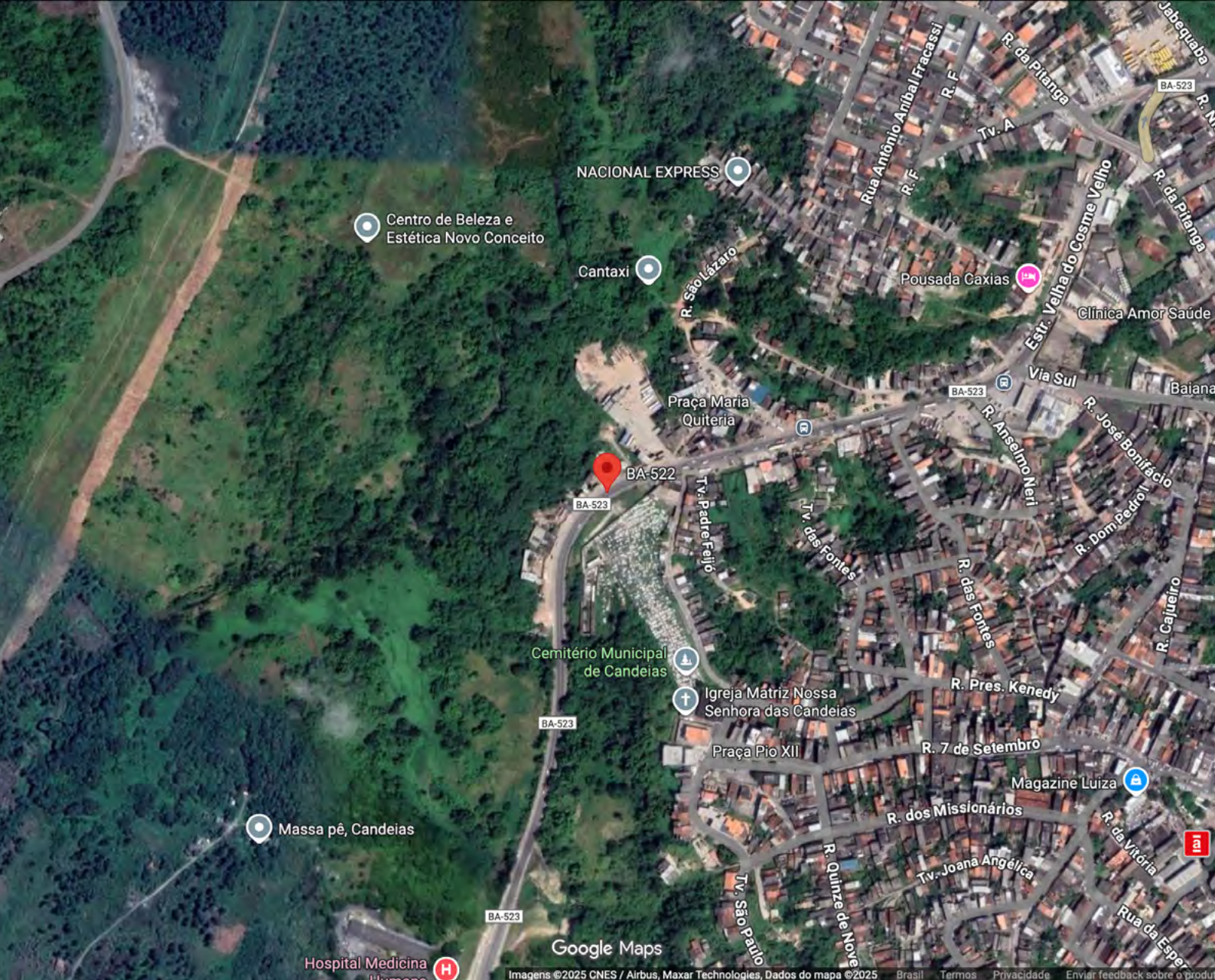
Madre de Deus differs from the others in the public sector, which represents 27% of its total GDP, only behind the service sector, which represents 51%. The Madre de Deus port (BA) is an important logistics and transport point, facilitating trade and the movement of goods. Tourism is also a growing area, with emphasis on beaches and cultural events that attract visitors

Candeias (BA) concentrates most of its GDP in the industrial sector, which represents 39%, and is home to the Port of Aratu, one of the most important in Brazil, which facilitates trade and logistics, contributing to industrial development e commercial in the region.

The figure below shows the participation of the productive sectors in the composition of the national GDP of the state of Bahia and the municipalities of São Francisco do Conde (BA), Candeias (BA) and Madre de Deus (BA) – 2021.

**PRODUCTIVE SECTORS
OF GDP - 2021**





Rail Network

The state of Bahia is crossed by the Centro-Atlântica Railway (FCA). FCA is the main axis of integration between the Southeast, Northeast and Midwest regions. It stands out as an important route for the logistics flow of general cargo, through its connections with other railroads, allowing access to the largest consumer centers in the country. Note: The planned railroad present on the map is not subject to this licensing. The plan is for it to go from Camaçari to Candeias starting and ending at Ferrovia Centro-Atlântica S.A. — FCA.

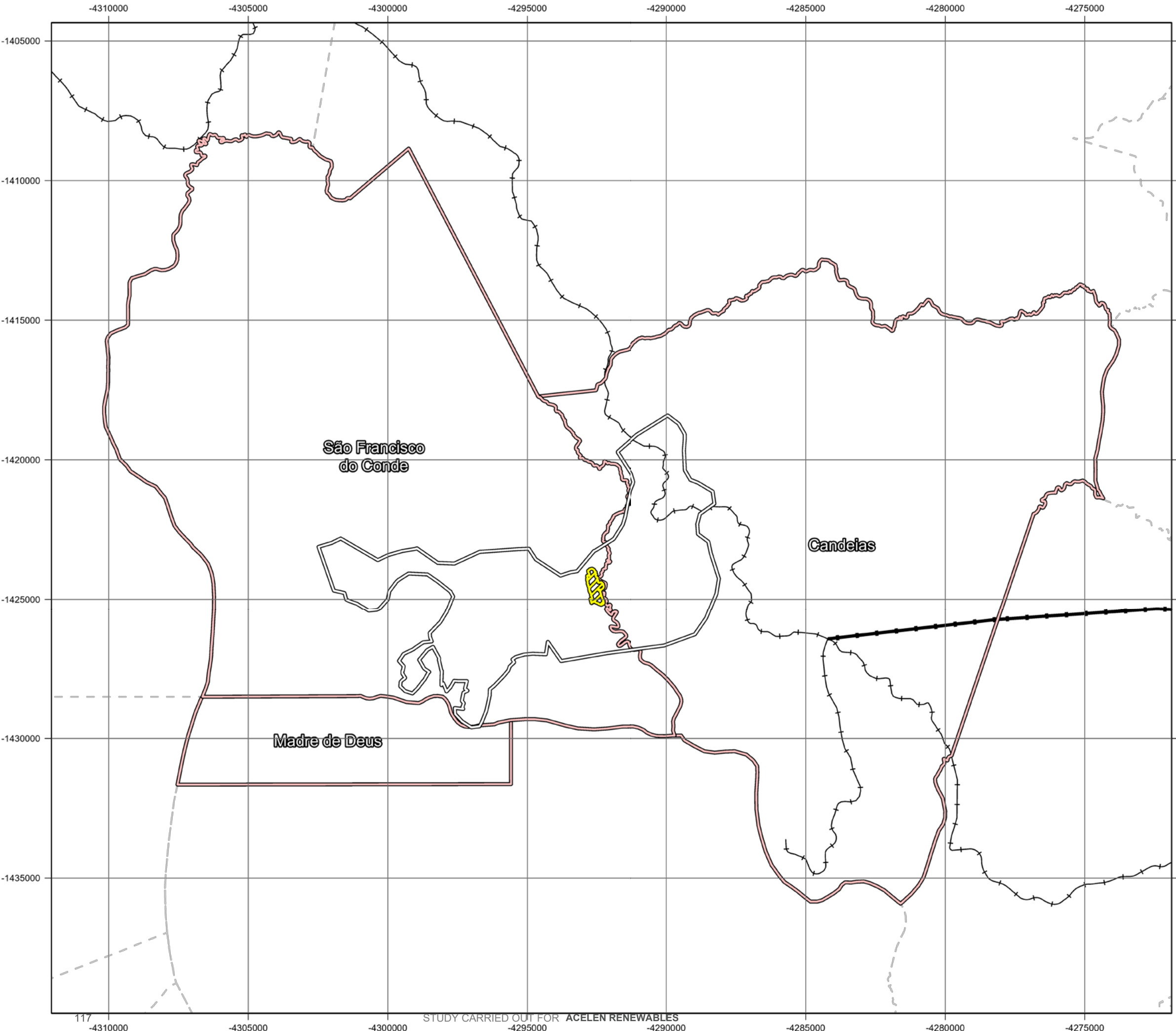
Waterway Network

The Bay of All Saints, which is part of the waterway network that connects Salvador to other municipalities and localities in the interior of the Recôncavo. The waterway transport of passengers and vehicles is a public service under the competence of the State, as established by Law No. 12.044/2011 (Provides for the Intermunicipal Waterway Transport System for Passengers and Vehicles of the State of Bahia) and Decree No. 13.168/2011. The project is located in an important part of the Bay of All Saints and known as Joia do Recôncavo. As an important factor for tourism in the municipality of São Francisco do Conde-BA, the Bahia Nautical Tourist Terminal — TTNB is part of the waterway system of the Bay of All Saints — BTS, which together with the São Joaquim Terminal (Ferry-boat) represents the main means of access to the Municipalities of Itaparica Island and the Bahian Recôncavo. The increase in population resulting from the labor hired for the operation of the factory, will be able to enjoy the tourist sites of São Francisco do Conde and region. The only consideration is about the environmental preservation of leisure places and existing tourist areas.

Infrastructure

Road Network

Main highways in the region of the project are: BA-522 and BA-523. Highway BA-522 connects with BR-324 to the municipality of Candeias. And the BA-523, in turn, connects Candeias to Madre de Deus and Candeias to São Francisco do Conde, passing through the districts of Jabequara and Caípe. Note: The highways present on the map are not subject to this licensing.



Fonte: MapBiomias (2024).
A Ferrovia Planejada presente no mapa não é objeto deste licenciamento.
O Planejamento é que a mesma vá de Camaçari até Candeias partindo e finalizando na Ferrovia Centro-Atlântica S.A. - FCA

LEGENDA

Área Diretamente Afetada (ADA)

Área de Influência Direta (AID) - MS

Área de Influência Indireta (AII) - MS

Malha Ferroviária

Em Operação

Planejada

Municípios - Bahia

REFERÊNCIAS

00,751,534,567,5

Km

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary Sphere
Datum: WGS 1984

AFRY

PROJETO: **Estudo de Impacto Amb (EIA)
Planta de HVO e SAF da REFMAT
São Francisco do Conde - BA**

TÍTULO: **Mapa de Localização
Infraestrutura Ferroviária**

RESP. TÉCNICO

ESCALA
1:133.732

UNIDADE
metros

PROJEÇÃO
Vide Nota

FOLHA
AERY REPORT DE ENVIRONMENTAL IMPACT

Nº POYRY DATA REV.
abril de 2025



Energy Electric

The distribution of electricity in the area of influence of the project is carried out by the company Neoenergia Coelba. Regarding energy consumption distributed by sectors, data from the state of Bahia are analyzed to or year 2023, highlighted by sectors.

The electricity for the implementation stage of the factory will be supplied by the concessionaire Coelba, with an average consumption of 2MW per month expected.

The plant will be powered by a new 69-13.8 kV substation, equipped with two 30/40 MVA transformers. The substation will be supplied by a new transmission line with two 69 kV circuits interconnected with the Neoenergia Coelba substation. The approximate consumption will be 16.6 MW per month. The licensing of the new substation and new transmission line are not part of this licensing.

In the table below, it is possible to see data on electricity consumption for the year 2022, for the state of Bahia.

ELECTRICITY CONSUMPTION IN THE STATE OF BAHIA.

Type of Consumption	Bahia (2023) in MWh
Consumption per UH	27.101.663
Residential Consumption	7.939.190
Industrial Consumption	9.578.693
Commercial Consumption	4.051.711
Other consumption	5.532.069
Residential Consumers	70.357.438
Industrial Consumers	122.825
Commercial Consumers	5.276.015
Other Consumers	3.189.954

SOURCE: EPE – ENERGY RESEARCH COMPANY



Traditional Communities

Traditional communities, according to Federal Decree 6.040/2007 – National Policy for the Sustainable Development of Traditional Peoples and Communities, are those that use a portion of the territory and its natural resources, as a prerequisite for their cultural, social, religious, ancestral and economic reproduction, through the use of knowledge and practices generated by their groups of origin. Thus, the main responsible agencies were sought for the availability of information on possible indigenous communities,

remnants of quilombos and traditional populations to the municipalities of the region studied.

Quilombola communities and localities

According to the IBGE Demographic Census (2022), the state of Bahia has 48 officially delimited quilombola territories, 1,702 communities declared and associated with localities and 1,814 quilombola localities. With 736 quilombola communities certified by the Palmares Cultural Foundation, Bahia is at the top of the ranking of Brazilian states with locations recognized as descendants of quilombolas.

In the present study, the following were considered: 5 communities, three located in São Francisco do Conde, one in Candeias and one in Salvador, marked for being within the radius of

8 kilometers indicated in Annex I of Interministerial Ordinance No. 60 of 2015.

Indigenous Lands

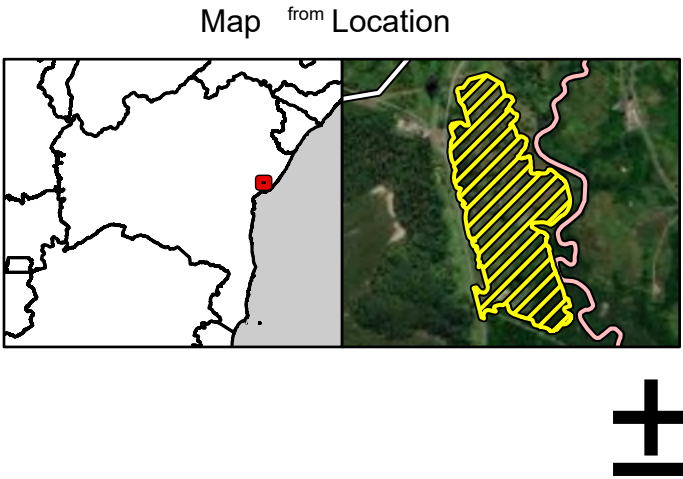
No Indigenous lands were identified in the databases of the National Foundation of Indigenous Peoples in the municipalities of São Francisco do Conde-BA, Candeias-BA and Madre de Deus-BA.

Existing Settlements or Settlement Projects

In relation to rural settlements in the area studied, there is the União Settlement Project (PA) located in the municipality of Candeias-BA. However, as shown in Figure

next, the PA is 13 km in a straight line from the project, and no direct impact on the Settlement is expected.

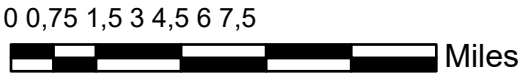




CAPTION

- Directly Affected Area (ADA) Area of
- Direct Influence (AID) - MS Area of
- Indirect Influence (AI) - MS
- Quilombola Communities - INCRA
- Quilombola Communities - Foundation Palmaers
- Buffer - 8 km

REFERENCES



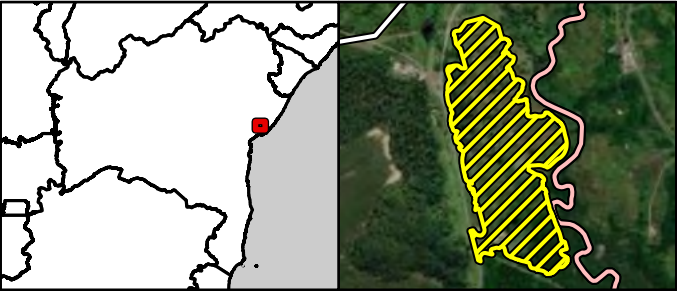
Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary Sphere Datum: WGS 1984



PROJECT:	Amb Impact Study (EIA) HVO and SAF Plant São Francisco do Conde - BA		
TITLE:	Location Map Quilombola Communities Area of Indirect Influence		
RESP. TECHNICIAN			
SCALE	UNIT	PROJECTION	LEAF
1:133.732	metre	EmptyNote	
POYRY No.	AFRY REPORT FROM IMPACT ENVIRONMENTAL		DATA REV. February 2025



Map of Location



LEGEND

- Directly Affected Area (ADA) Area of
- Direct Influence (AID) - MS Area of
- Indirect Influence (AII) - MS
- Settlement Projects

REFERENCES

0 0,75 1,5 3 4,5 6 7,5

Km

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary Sphere Datum: WGS 1984



PROJECT: Amb Impact Study (EIA) HVO
and SAF Plant São Francisco
do Conde - BA

TITLE: Location Map Settlement
Projects Area of Indirect
Influence

RESP. TECHNICIAN

SCALE 1:133.732	UNIT Meters	PROJECTION See Note	LEAF ENVIRONMENTAL
POYRY No.	DATE REV. February 2025		

Impact Assessment

Based on the environmental diagnosis of the area of influence, the environmental impacts generated by the project were evaluated, identifying the impacts on the physical, biotic and socioeconomic environments for the different phases of the project: planning, implementation and operation, according to CONAMA Resolution No. 01/1986.

Based on the assessment of the impacts, mitigating or enhancing measures were proposed to be applied, based on the degree of change that occurred in the environmental factors. The following is an assessment of some of the main impacts identified and the mitigating measures.



Implementation Phase



Intensification of erosion and siltation processes

Earthmoving activities will be required for leveling the factory grounds, which will be preceded by clearing the land with the removal of existing organic soil and, where necessary, vegetation suppression.

It should be noted that this is an area that has already been anthropized, which served as a dumping ground for the Mataripe Refinery and, therefore, it is not an impact on the natural conformation of the terrain, but rather a reconfiguration of an area already anthropized to receive an industrial plant.

In the final stage of implementation, the removed topsoil can be reused as substrate for any areas that will receive landscaping treatment.

Mitigating Measures

— Minimize the exposure time of areas without vegetation cover in the construction phase; — Implement structures to contain material such as windrows on the crests of slopes, water speed reducers, bioblankets, etc.; — Perform environmental monitoring and supervision of earthmoving activities during the implementation of the project.



Alteration of the quality of surface water

At the beginning, before the peak of the works, container-type toilets will be used, provided with a watertight container for the storage of the effluents generated, and these will be removed by cesspool cleaning trucks, transported and arranged by accredited companies in licensed destinations. This sewage may also be disposed of and treated by the Water and Sewage Concessionaire EMBASA.

The chemical toilets and other facilities at the construction site will be installed in accordance with NR 18. The sewage will be removed by cesspool trucks, transported and disposed of by accredited companies in licensed destinations. Once the works are completed, the chemical toilets will be deactivated and returned to the company that rented them.

After the installation of the infrastructure connecting with the REFMAT Treatment Plant, the effluents generated during the construction of the plant will be collected and treated in a compact treatment system before being sent to the Refinery.

Mitigating Measures

— Take measures to certify that the company to be hired to collect the sanitary sewage from the chemical toilets will be properly regularized, and that it will be disposing of the sewage in an environmentally appropriate manner; — Implement a compact WWTP for the treatment of sanitary sewage before forwarding it to the Refinery's WWTP; — Collect ballast water in a cistern for reuse in the humidification of the roads; discard only if there is no possibility of use, via forwarding to the refinery's WWTP; — Build sedimentation boxes and water/oil separator boxes to collect and properly store and package the oil for later disposal in a licensed location; — Build temporary drains and sedimentation boxes, for the retention of solids, avoiding the transport of materials; — Follow the guidelines of the Environmental Construction Program – PAC / Construction Site Management, regarding Effluent Management.

Implementation Phase



Alteration of soil and/or water quality

In the construction phase of the project, several types of waste will be generated.

The lack of control and the inadequate disposal of solid waste can compromise the environmental quality of the area.

Therefore, the proper control of solid waste will be carried out through collection, packaging, transportation and disposal according to its nature, which will minimize possible environmental impacts. In addition, the process of reusing the material through selective collection can significantly reduce this impact.

In addition, in the construction phase, there will be a Temporary Storage Center for Solid Waste that will be managed by a company specialized in this service.

Mitigating Measures

— Follow the guidelines of the Environmental Program for Construction – PAC, regarding the best practices of Solid Waste Management as described in Federal Law No. 12,305/2010, so that the solid waste to be generated during the works is minimal and collected, packaged, treated, recycled and disposed of in an environmentally appropriate and effective manner.



Increased noise generation, dust generation, and black smoke

It is expected that during the construction of the project there will be an increase in the traffic of heavy vehicles, such as machinery and trucks on the local access roads that generates noise, as the work will require a quantity of material, equipment, machinery and various inputs.

Another vector of impact on vehicle traffic is the generation of dust, related to traffic on unpaved roads, which may be transported depending on the region's wind regime.

The traffic of vehicles and the presence of engines, both on the roads that give access to the construction yard and on the paved highways in the region, during the implementation phase of the project, may cause an increase in pollutants in the atmosphere due to the exhaust gases of the vehicles.

It should be noted that in the area surrounding the project, the most immediate presence of population agglomeration is about 2 km to the east in the municipality of Candeias, so it is not expected that there will be an impact of dust generation on the local population.

In addition, the project in question is located in the Industrial Macrozone – MZI according to the Macrozoning of the Municipal Territory – Annex III of the Master Plan.

Mitigating Measures

— Follow the guidelines of the Environmental Program for Construction – PAC, to minimize the generation of dust and black smoke; — Prioritize the use of existing roads for the implementation of the project.

— Follow the guidelines of the Environmental Program for Construction – PAC, regarding noise generation, such as: — Perform maintenance and regulation of the engines of machines, trucks and vehicles; — Carry out activities predominantly during the day; — Monitor noise during the construction phase.

Implementation Phase



Loss of vegetation and terrestrial habitat individuals

In earthmoving activities, there will be suppression of vegetation in the area of the project.

It is important to note that based on the results obtained in the Floristic and Phytosociological Studies through the Forest Inventory carried out by the company PAPYRUS Consultoria Ambiental Ltda, following the requirements contained in INEMA Ordinance No. 11,292 of 2016, no threatened species were identified at the state (SEMA Ordinance 40/2017), national (MMA Ordinance 148/2022) and international (IUCN) levels, nor were species protected by specific legislation identified.

It can be said that the location of the ACELEN Biorefinery plant will not impact the connectivity of the surrounding remnants, or even the loss of relevant ecological functions, seed sources or the survival of endangered species.

It should be noted that the place where the ACELEN Biorefinery will be installed was used as a dump-away area for REFMAT and there is an artificial lagoon inside the property that will be landfilled. Thus, all fauna existing in the lagoon must be rescued in the Fauna Rescue Plan to be issued together with the Vegetation Suppression Authorization (ASV).

Mitigating Measures

— Follow the guidelines of the Environmental Construction Program (PAC), regarding the criteria and operational controls to be carried out in the suppression of vegetation, which are: — Start the suppression only after obtaining the Suppression Authorization from the responsible environmental agency; — Perform stakeout to mark the area to be suppressed; — Use a team with experience in this activity; — Properly dispose of organic waste and vegetation from the suppression activity; — Carry out environmental compensation, through the Forest Easement, as established in the Suppression Authorization; — Carry out supervision and environmental monitoring of the work; — Prohibit the use of fire for the suppression of vegetation; — Carry out a subprogram for the rescue of fauna in the intervention area of the project.



Increased risks of being run over by animals

In the implementation stage of the project, there will be an increase in the circulation of vehicles, especially trucks and trailers on the main access roads, increasing the risk of animals being run over in the region.

It is important to note that the impact caused to fauna by the highways present in the region already exists.

It should be noted that the use of existing roads will be prioritized for the implementation of the project.

If employees find injured wild animals on the roads, they must have access to the contact of the environmental area that will guide the procedures to be adopted.

It should be noted that dead or even injured animals must be managed in accordance with the fauna rescue plan to be approved together with the Vegetation Suppression Authorization (ASV).

Mitigating Measures

— Inform and raise awareness among vehicle drivers about defensive driving, traffic legislation and local legislation through the Traffic Interference Mitigation Program; — Perform maintenance and signaling of access roads to the project; — Conduct training of vehicle drivers so that if they find injured or dead animals on the roads, they call the environmental area.

Implementation Phase



Changing social dynamics and potential increase in violence rates

The new workers resulting from the labor necessary for the implementation of the factory, as well as the possible population attracted by the possibility of professional insertion in the activity, tend to seek social interaction in the city of São Francisco do Conde. For the purpose of the study, an increase in the number of people in the region was considered, corresponding to 3608 employees at the peak of construction and assembly.

Normally, this social interaction can be reflected in the search for bars, restaurants, prostitution. Since exogenous workers do not have identity, social and affective ties with the place, there are risks of practices that escape the local social dynamics, and that have the potential to generate conflicts and violence.

Therefore, ACELEN must carry out awareness work with employees and outsourced companies, through the Environmental Education Program for Workers as a mitigation factor, in order to guide employees on: child prostitution, sexually transmitted diseases, drugs, violence with firearms, require contractors to evaluate criminal record certificates of contractors, in addition to other procedures in the selection to mitigate the possibility of new hires contributing to violence, etc., as well as requesting public agencies to monitor security, especially in the area of bars to inhibit illegal acts.

Mitigating Measures

— Carry out awareness work with outsourced companies, in order to guide employees about: child prostitution, drugs, sexually transmitted diseases, etc., in the Environmental Education Program with employees and third parties.



Interference in urban infrastructure

The increase in population, represented by the workforce and possibly attracted by the possibility of professional insertion in the region, tends to increase the demand for equipment for public use: health, sanitation, transportation, etc.

During the peak of the implementation period, it is estimated that 3608 employees will be working on the construction of the project.

Although the project is located in the municipality of São Francisco do Conde, the urban center closest to the site is the municipality of Candeias and thus workers both for the implementation phase and for the operation phase tend to move from this municipality.

To make up for this deficit in the health system, ACELEN will provide an outpatient structure within the factory, which minimizes this impact on the municipality's health infrastructure.

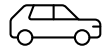
In addition, in order to minimize the pressure on the sanitary sewage system, the sanitary sewage generated during the construction of the factory will be collected and treated at the new Industrial Waste Treatment Plant (ETDI), inside the factory.

To minimize the pressure on public transport, the transport of employees to the area of the project can be carried out by a contracted company or by the entrepreneur's own fleet.

Mitigating measures

— Implement an outpatient structure and zero accident practice (Occupational Health Program) that minimizes dependence on the region's health infrastructure, and together with the responsible public agencies should provide improvements to meet the additional demand; — Implement mechanisms for transporting workers between the municipality involved and the location of the project, in the Traffic Mitigation Program.

Implementation Phase



Pressure on the logistics structure and worsening traffic conditions

During the installation of the Biorefinery, the exclusive accesses of BA-523 at the entrance to the site may interfere with the daily routines of the surrounding residents in terms of their mobility, especially with the communities of Madre de Deus.

In this way, the traffic of trucks and even buses with workers may interfere with the road circulation surrounding the factory, as the BA-523 connects Candeias to Madre de Deus and Candeias to São Francisco do Conde, passing through the districts of Jabequara and Caípe.

In addition, the displacement of eventual workers in their own cars tends to produce a low-intensity overload on neighboring streets in search of parking.

Regular passenger transport in the municipality is offered in the segments: boat, moto-taxi, taxi, van and apps (UBER, CABIFY, 99 TAXI, etc.). The municipality also has public transport by intra-municipal and inter-municipal buses. In addition, there are bike lanes in the municipality.

Mitigating Measures

— Implement the Traffic Interference Mitigation Program; — Implement an ordinance dedicated to the works; — Implement a dedicated parking lot in order to prevent the formation of queues and the stopping of trucks, buses and construction vehicles on the access road to the factory; — Avoid, whenever possible, the accumulation of bus arrivals with trucks transporting materials and equipment at the peaks of entry and exit of employees; — Provide a circular bus for the transport of construction personnel, preferably powered by clean energy; — Carry out prior communication with the traffic regulatory agencies regarding the transport of large special cargo on state highways; — Maintain a communication channel with affected communities and create a direct channel for suggestions and complaints due to traffic



Increased risk of accidents

Any construction and assembly services, no matter how small, are subject to personal and material accidents. Therefore, this is a potential impact for all projects involving mechanical and electromechanical works and assemblies.

On the other hand, accident events can be minimized, having to act very preventively and carry out constant training of the workers involved, through the Occupational Health and Safety Program.

Signage and guidance of areas under construction, with restricted access to areas that offer risks; in addition to the application of training and awareness of workers and residents for the prevention of accidents and first aid care, when necessary; and all safety measures taken to protect workers will minimize the impact of accidents on the roads, as long as the machines used are always in good condition.

Mitigating Measures

— Carry out safety dialogues and constant training of workers involved in the works; — Plan construction and assembly activities, contemplating internal safety programs and requiring third-party companies to comply with their emergency/contingency plans; — Use PPE or any other measure in accordance with the Health Program and ACELEN Worker Safety; — Install speed signs on the main access roads to the plant's implementation area.

— Perform maintenance and regulation of the engines of machines, trucks and vehicles periodically.

— Inform and make vehicle drivers aware of defensive driving.

Implementation Phase



Interference in quilombola communities

In the municipality of São Francisco do Conde-BA, 02 (two) quilombola localities identified by administrative records - Dom João and Monte Recôncavo and 01 (one) quilombola community - Ilha do Paty were identified.

Candeias has only 01 (one) community certified by the Palmares Foundation, on 11/12/2020, according to ordinance 184/2020: the quilombola community Boca do Rio Aratu.

Madre de Deus does not have any community certified by the Palmares Foundation.

Despite the existence of quilombolas in the region, Dom João is located 12 km from the site, Monte Recôncavo about 8 km, Ilha do Paty about 7 km and Boca do Rio Aratu about 10 km from the project.

It is worth mentioning that, despite not being part of the Biorefinery's Area of Direct Influence, the Ilha de Maré Quilombola Community is the closest quilombo to the project located about 6 km from the site, being recognized by INCRA. However, the project is not expected to impact the Ilha de Maré Quilombola, although closer the physical, biotic and socioeconomic impacts should not reach the Island directly.

To mitigate the impact, ACELEN must implement several measures to mitigate the impact of vehicle traffic on BA-523 in the construction phase.

It should be noted that meetings were held with the quilombola communities about 8km from the project, as recommended by law, in order to obtain alignment with state agencies as a form of Free, Prior and Informed Consultation (FPIC) to present the ACELEN project and listen to these communities without interfering in their customs.

Mitigating Measures

— Implement measures to mitigate the impact of vehicle traffic on BA-523 in the construction phase; — Maintain dialogue with residents of the quilombola communities in the region, explaining about the impacts of the project and how they will be contained, so that the clarification of doubts that may arise will bring confidence and satisfaction to the population regarding the implementation of the project, contributing to the good image and transparency of the company.



Job creation and dynamism of the economy

The implementation phase presents the emergence of temporary jobs, either for labor directly linked to the enterprise, or indirectly, for the supply of inputs, services and consumption of workers. This impact tends to spread throughout the region through the insertion of other service companies.

The workforce required for the implementation of the factory will be approximately 3608 workers in the peak period of the work and assembly.

The labor necessary for the construction and assembly of the project will be recruited preferably in the region.

That said, in the implementation phase there is a tendency to grow the demand for production goods, leading to the possibility of installing new commercial units, such as: workshops, food establishments, fuel establishments and others.

Thus, the local economy tends to benefit from the emergence of this demand, linked both directly to the activity of implementing the project and indirectly, through the consumption carried out by the labor linked to the implementation.

This dynamization of the local economy can be proven through indicators, which can be the significant increase in public investments, from the increase in tax collection.

Potentiating Measures

— Promote a publicity campaign for hiring labor to implement the project, giving priority to the local population; — Give preference to hiring companies, service providers and commerce in the region, through the Local Hiring Prioritization Program, both for workers and suppliers.

Operation Phase



Change in soil and/or groundwater quality

At the ACELEN plant, during the operation phase, various solid waste will be generated from the operational and administrative areas, which if disposed of inappropriately can lead to changes in the quality of soil and groundwater.

The management of solid waste generated by ACELEN will contemplate the best practices, as described in Federal Law No. 12,305/2010, which consists of minimizing the generation, segregating, collecting, packaging and transporting in accordance with current legislation and disposing of it in an environmentally appropriate manner. It is important to highlight that ACELEN will have a Selective Collection system that aims to previously separate materials with similar characteristics at the source.

Mitigating Measures

- Implement the Solid Waste Management Program (PGRS) using the best practices, as described in Federal Law No. 12,305/2010 and other applicable laws and standards, for solid waste management;
- Implement a Temporary Storage Center for Solid Waste that will be managed by a company specialized in this service.
- Train all employees who will work on the works regarding the waste management practices provided for in the PGRS of the works.
- Segregate solid waste as provided for in the ABNT NBR 17100-1 standard;
- Carry out the collection, packaging, storage and transportation of solid waste, in accordance with current standards and legislation;
- Provide environmentally appropriate final disposal (reuse, recycling, etc.) and/or environmentally appropriate final disposal of the solid waste generated in the project.



Risk of chemical accidents

ACELEN's Biorefinery plant will use various chemical products as inputs to serve the plant.

The risks associated with possible accidents were evaluated through a Risk Analysis Study, and a total of 53 risks were identified. The scenarios were classified into categories of frequency, severity, and risk, 49 hazards (92.5%) were classified as Medium Risk, and 4 hazards (7.5%) were classified as Accepted Risk.

47 accidental hypotheses were consolidated and the detailed physical effects were estimated. For the simulations of the physical effects, the PHAST program was used, where the reference values used followed the recommendations of CEPRAM Resolution No. 4,578 of 2017.

The results showed that the scenarios do not reach any area of occupation, remaining restricted to the limits of ACELEN, and no intolerability was observed from the point of view of risk analysis. Thus, the Risk Analysis Study considered that the risk imposed by ACELEN on the surrounding areas is fully acceptable.

Mitigating Measures

- Train the professionals involved in the activities of handling, storage and transportation of chemical products in the industrial area, with the preparation of the Emergency Plan;
- Use appropriate PPE on the factory premises;
- Implement recommendations from the Risk Analysis Study.

Operation Phase



Changing air quality

The fixed sources of atmospheric emissions present in the renewable fuel plant are: — Chimney of the reformer furnace of the hydrogen generation unit – HPU, from the burning of the fuel used in the unit.

- Chimney from the furnaces of the Ecofining unit from the burning of the fuel used in the unit.
- Acid Gas Handling System, composed of treated gaseous effluent.

The control parameters for significant air emissions from the renewable fuels plant correspond to the following pollutants: — SO_x (sulfur oxides) — NO_x (nitrogen oxides)

To evaluate the future concentration of pollutants in the atmosphere from the sources of ACELEN's Biorefinery plant, an Atmospheric Dispersion Study was carried out. The simulations of NO₂ and SO₂ dispersion were performed with the AERmic MODEL dispersion model (AERMOD), developed and made available by the U.S. EPA (U.S. Environmental Protection Agency).

Two emission scenarios were analyzed:

1. Future Emission Scenario, considering only the emissions of the new Renewable Fuel Production Plant (PPCR – ACELEN) and
2. Synergy Emission Scenario, considering the new Renewable Fuel Production Plant (PPCR – ACELEN) together with the emissions from the Mataripe Refinery (REFMAT), already existing in the study area.

The mathematical modeling indicated values of maximum concentration of NO₂, PM₁₀ and SO₂ were below established air quality standards by CONAMA Resolution 506/2024.

It can be stated that the air quality will be little changed due to the operation of the plant, even considering the cumulative impact of the existing Refinery, since the contributions of the unit, as well as the second modeled scenario, occupy a very low percentage of the air quality standard (in general below 50%, often below 10% of the standard), thus representing a very safe condition in relation to possible health impacts to the environment.

Obviously, this condition considers the adoption by the company of the expected emission control technologies, in order to ensure that the 3 emission sources of the biorefinery will

remain constantly below the maximum emission limits (LMEs) established in CONAMA Resolution 382/2006.

Mitigating Measures

- Implement high-efficiency emission control equipment (best practical technologies available);
- Carry out a Monitoring Program for Atmospheric Emissions.



Operation Phase



Change in sound pressure levels

The generation of noise during the operation of the project will be due to the activities of the industrial process, comprised in a closed place, by industrial warehouses, as well as by the traffic of vehicles and machinery foreseen. Noise emissions will be in accordance with the limits provided for in the Regulatory Standard of the Ministry of Labor NR-15, which deals with workers' health.

With regard to environmental noise, it will be monitored in accordance with what is established by CONAMA Resolution No. 01/1990 and NBR 10.151/2020, details on the proposed noise monitoring can be verified in the Basic Environmental Plan.

The engineering design specifications of the equipment and the final layout of the plant may be affected by the limitations of personnel exposure to noise level and must be in accordance with the Brazilian Regulatory Standards NR 15 - Unhealthy Activities and Operations.

It should be noted that the project in question is located in the Industrial Macrozone – MZI according to the Macro zoning of the Municipal Territory – Annex III of the Master Plan.

Even so, ACELEN must comply with the ABNT NBR 10151:2019 Corrected Version 2020 standard regarding noise levels following the evaluation criterion for outdoor environments – RLA_{eq} , determined for the industrial area of said standard.

Mitigating Measures

- Obey the current legislation regarding noise generation; — Implement the Noise Monitoring Program.



Alteration of surface water quality

The sources of liquid effluent generation that will correspond to the activities of the production process and other support activities are as follows: — Effluents from the fractionation process at the Ecofining Unit; — Effluents from the Hydrogen Generation Unit (HPU); — Effluents from the Acid Water Stripping Unit (SWS); — Reverse osmosis effluents (tailings) from water treatment for steam generation - ETAC; — Sanitary sewers; — Aqueous and oily effluents from contaminated rainwater collection or firefighting, cooling tower purges, and oily water in general (possible leaks, cleaning and draining of equipment, etc

Industrial effluent will be treated in a dedicated Effluent Treatment Plant, which will be sized to operate by absorbing any composition, flow or temperature fluctuations in the effluent streams of the units.

Subsequently, the treated effluents will be sent to the Industrial Dumping Station - ETDI of REFMAT for subsequent final disposal in the Bay of All Saints, via point 8 (according to the Operating License of the refinery in force).

Mitigating Measures

- Maintain the operation of the pre-treatment system in a closed circuit (sending to the WWTP only any surplus).
- Use the best available technologies (BAT) in the production process in order to minimize the generation of liquid effluents (flow and organic load); — Implement an effluent treatment plant properly sized to meet the project's flows and the release limits of the Resolution

CONAMA 430/2011;

- Properly operate the treatment plant so that the discharge of treated liquid effluents is in accordance with current legislation; — Continue the Monitoring Program of the Industrial Waste Treatment Station (ETDI); — Carry out the Surface Water Quality Monitoring Program.

Operation Phase



Increased risk of accidents on the roads

In the operation stage of the industrial unit, the circulation of vehicles, especially trucks and trailers, will considerably increase on the main access roads to the project, and on the internal roads of the property.

ACELEN must adopt several traffic safety measures in order to reduce the risks of accidents, and these practices are required of its employees and third parties, such as:

- Proof of license of vehicle drivers; — Proof of mandatory training (MOPP, NR11, others); — Compliance with traffic rules, according to the Brazilian Traffic Code (CBT); — Mandatory use of seat belts and headlights on (day and night); — The use of radio or cell phone when driving the vehicle is prohibited; — The transport of pesticides, portable or manual tools and fuel, packed in cabins with passengers, is prohibited. All cargo must be packed in an appropriate place (trunk, luggage rack, glove compartment, etc.); — Reinforce traffic signs; — Control of weight and volume of cargo; — Training of drivers in defensive driving; — Carry out traffic safety awareness campaigns for the circulating population on the main access roads; and — Perform periodic maintenance on vehicles.

In addition to these, among the traffic safety measures adopted by ACELEN should also be those related to the training of workers. For workers, training related to traffic safety will be carried out and/or required.

Mitigating Measures

Adopt traffic safety measures in order to reduce the risks of accidents through the Traffic Interference Mitigation Program.



Job creation

The number of workers needed for the operation of the factory will be 150 people.

The working day of employees in the industrial area will occur in 3 work shifts each, totaling 3 classes (uninterrupted shifts). In the administrative area, the working day will be 8 hours and will take place during business hours.

The operating regime of ACELEN's renewable fuels plant will be 24 hours a day, 7 days a week and 12 months a year. The effective production period will be approximately 350 days.

Vacancies should be offered to companies that provide this type of service, and should give priority to hiring local labor.

It is recommended that ACELEN articulate with professional education bodies and institutions to enter into agreements and/or agreements aimed at professional training of the local population.

Potentiating Measures

- Promote a publicity campaign for hiring labor for the operation phase of the factory through the Social Communication Program, and should give priority to the local population through the Program for Prioritization and Contraction of Products and Services; — Articulate with professional education bodies and institutions to enter into agreements and/or agreements aimed at professional training of the local population through the Labor Training Program.

Operation Phase



Boosting the economy

Trade in the region tends to benefit from the emergence of demand for products linked both directly to the operation of the factory and indirectly, through the consumption carried out by the labor linked to the activity.

Likewise, it tends to rise the demand for products and services of the region's formal commerce. This dynamization may lead to the opening of new small and medium-sized companies, products and services, as well as the strengthening of existing ones. The growth in the number of jobs in the region is a predictable consequence.

Another sector that will suffer from heating up due to the venture refers to the informal economy. The emergence of bars, food stalls, cigarettes and other consumer items may occur in the area near the development.

Potentiating Measures

— Give preference to companies, service providers and commerce in the region through the Program for Prioritization and Contracting of Products and Services.



Increased tax collection

The operation of the ACELEN Biorefinery plant in the state of Bahia, as well as the creation of direct jobs and indirect taxes will promote an increase in tax collection, which will provide state executives with and municipal possibilities for investments in social and economic areas. This process is called the multiplier effect and is based on economic theories to estimate the economic impact of the main initiatives.

Thus, the increase in revenue due to the project is considered a positive impact of great importance.

Potentiating Measures

— Enhance the purchase of services and goods, preferably in the region through the Program for Prioritization and Contraction of Products and Services.



Environmental Programs

ACELEN must implement the PBAs in the implementation and operation phases, as stated in the Environmental Impact Study (EIA).

The following table presents each PBA program as well as the respective phases of the project (implementation and/or operation), monitoring periods, and delivery of reports to INEMA. It should be noted that the definition of the programs was based on the mitigating measures proposed in the EIA.



IMPLEMENTATION
PHASE

- ENVIRONMENTAL
CONSTRUCTION PROGRAM (PAC)
 - WATER QUALITY AND
CONSUMPTION
MONITORING
SUBPROGRAM
 - SANITARY EFFLUENT
MONITORING SUBPROGRAM
 - SUBPROGRAM FOR
SOLID WASTE
MANAGEMENT IN CIVIL
CONSTRUCTION
 - NOISE MONITORING
SUBPROGRAM
 - DUST AND BLACK SMOKE
CONTROL SUBPROGRAM
 - EROSIVE PROCESS
CONTROL SUBPROGRAM
 - VEGETATION
SUPPRESSION
SUBPROGRAM
 - FAUNA RESCUE
SUBPROGRAM
 - PROGRAM FOR THE
RECOVERY OF DEGRADED
AREAS (THROUGH
PLANTING AND
ENRICHMENT OF FLORA)

IMPLEMENTATION
AND OPERATION
PHASE

- ENVIRONMENTAL
MANAGEMENT PLAN
 - SOIL AND
GROUNDWATER QUALITY
MONITORING PROGRAM
 - SURFACE WATER
QUALITY MONITORING
PROGRAM
 - OCCUPATIONAL
HEALTH AND SAFETY
PROGRAM
 - ENVIRONMENTAL
EDUCATION PROGRAM
 - SOCIAL COMMUNICATION
PROGRAM
 - PROGRAM FOR PRIORITIZING
LOCAL HIRING AND PRODUCTS
AND SERVICES
 - TRAFFIC INTERFERENCE
MITIGATION PROGRAM

OPERATION PHASE

- EFFLUENT CONTROL,
TREATMENT AND
MONITORING PROGRAM
- SOLID WASTE
MANAGEMENT
PROGRAM
- ATMOSPHERIC EMISSIONS
MONITORING PROGRAM
- AIR QUALITY
MONITORING PROGRAM
- NOISE MONITORING
PROGRAM





Water Quality and Consumption; — Generation of Sanitary Effluent; — Solid Waste Generation; — Environmental Noise Generation; — Generation of Dust and Black Smoke; — Incidence of Erosive Processes; — Carrying out Vegetation Suppression; and — Disturbances in Fauna.

Program for the Recovery of Degraded Areas (through planting and enrichment of flora)
The main objective of this Program is to present guidelines, techniques and recovery methods that are updated, effective and appropriate to the future impacted locations – components of the Area Directly Affected by the implementation of the ACELEN industrial unit – capable of promoting the recovery of impacted vegetation, providing the stability of edaphic resources, the conservation of water resources and preventing erosive processes resulting from engineering works.

Environmental Management Plan
The objective of the Plan is to provide the enterprise with efficient mechanisms that ensure the execution and control of the actions planned in the environmental programs, and adequate environmental conduction, with regard to environmental procedures, maintaining a high standard of quality in implementation and operation.

Soil and Groundwater Quality Monitoring Program
O program's main objective is to verify and monitor soil quality and groundwater, regarding possible contamination by accidental leaks of effluents and chemical substances, even with the entire soil and groundwater protection system to be implemented by ACELEN's biorefinery, as well as the monitoring of contamination already raised by previous and ongoing studies in the area, which are being carried out within the scope of REFMAT's PGAC. In addition, the program aims to establish the criteria for monitoring the quality of soil and groundwater, with regard to the location of monitoring points, sample collection, preservation and analysis procedures, definition of analysis parameters, frequency of monitoring, reports and certifications.

Objectives of each PBA

Environmental Plan for Construction (PAC)
The Environmental Construction Program (PAC) aims to carry out environmental control and monitoring of activities related to the implementation of the project, aiming to meet the legal requirements and applicable standards.

The main controls addressed are related to the following environmental aspects: —

Surface Water Quality Monitoring Program

The main objective of the Surface Water Quality Monitoring Program is to ensure monitoring of water quality that allows an adequate assessment of any changes resulting from the project, and aiming to comply with current legislation.

Occupational Health and Safety Program

The program aims to prevent and avoid work accidents and occupational diseases during the execution of the activities of implementation and operation of the biorefinery. To this end, the program aims to develop training courses and training for workers involved in the works, preventing work accidents, implementing occupational safety and health prevention campaigns, avoiding the occurrence of occupational diseases among workers, avoiding the proliferation of local endemic diseases and avoiding overloading the public health service units in the municipalities near the project.

Environmental Education Program

The purpose of the Environmental Education Program (PEA) is to contribute to the prevention and mitigation of socio-environmental impacts associated with the project's works. Through the promotion of issues with socio-environmental themes involving the target audience, where their actions should be thought of in function of this conception of sustainability, problematizing their role as a transforming agent.

Social Communication Program

O Social Communication Program aims to provide reliable information and pertinent, such as size, capacity, number of jobs to be generated, socio-environmental impacts resulting from the project, among other relevant aspects of interest to the nearby community. This is because, it is part of the way ACELEN manages its enterprises, the ethical relationship and a communication with stakeholders.

Local Hiring and Products and Services Prioritization Program

The Local Contracting and Products and Services Prioritization Program aims to provide that employees and suppliers of Products and Services in the region are, whenever possible, prioritized and hired from the installation phase of the enterprise, considering elements such as quality, technique, availability and economic criteria of the companies. Therefore, the Program has the function of planning, monitoring and controlling the flow of hiring employees and local suppliers.

Traffic Interference Mitigation Program

The Program aims to propose mitigating measures associated with traffic safety and preventive and mitigating measures to reduce the risks of traffic accidents.

The goals of the program are to eliminate the occurrence of traffic accidents and/or run-overs involving vehicles linked to the activities in the implementation and operation phases of the project, the occurrence of records of local manifestations (complaints/denunciations) of nuisances generated by the flow of vehicles and inappropriate postures of the company's drivers and/or the occurrence of traffic risk situations associated with the project and

the occurrence of violations of traffic laws.



Effluent Control, Treatment and Monitoring Program

This Program aims to evaluate the efficiency of the ETEs, evaluate the operating conditions and performance of the treatment units, verify compliance with the standards established by CONAMA Resolution No. 430/2011.

The proposed Monitoring Program has as its main goal to ensure that the operation of ACELEN's Effluent Treatment Plants (ETEs) has an optimized and constant efficiency, in such a way, that the effluents generated are minimized and sent to REFMAT's ETDI, for subsequent release in the Bay of All Saints, fully meeting the emission and quality standards of CONAMA Resolution No. 430/2011.

Solid Waste Management Program

The PGRS aims to establish the criteria for the management of solid waste generated in the operation phase of ACELEN's industrial unit.

This Plan aims to minimize the generation of solid waste by adopting the best available practices, as well as to carry out segregation, collection, packaging, storage, transportation, treatment and destination/disposal in full accordance with current legislation.

Atmospheric Emissions Monitoring Program

The main objective of the proposed Atmospheric Emissions Monitoring Program is to ensure that the operation of the sources of atmospheric emissions generation and their respective pollution control equipment meet the emission limits established by COMANA Resolution 382/2006.

This Program also aims to establish the criteria for the monitoring of atmospheric emissions generated in the operation of the enterprise, with regard to the variables analyzed, frequency, etc.

Air Quality Monitoring Program

The objective of the program is to monitor air quality in the region in order to maintain emission levels within legal environmental parameters, avoiding possible lack of control or accident that may cause discomfort to the population.

Noise Monitoring Program

The main objectives of this program are: to verify the actual levels of noise emission of the biorefinery operation and to evaluate the noise level within the limits of the operational area, verifying compliance with current legislation.



Conclusion

To analyze the environmental feasibility of the implementation of the ACELEN renewable fuels plant in the municipality of São Francisco do Conde, in the state of Bahia, an Environmental Impact Study (EIA/RIMA) was developed. This study made a systemic approach to the enterprise, its main characteristics, as well as the scenario of the physical, biotic and socioeconomic environments. Subsequently, in the analysis of the environmental impacts, the possible impacts resulting from the interaction between the future operation of the industrial unit in the physical, biotic and socioeconomic elements were pointed out.

Emphasizing that ACELEN ENERGIA RENOVAVEL S.A., hereinafter ACELEN INDUSTRIAL SA, through the Medium Impact Study (EMI) process, obtained the PRELIMINARY LICENSE concomitant with the INSTALLATION LICENSE from INEMA according to ORDINANCE No. 33,349 OF JUNE 18, 2025 for production ranging from 455,112 m³/year to 494,332 m³/year in case of continuous operation of 365 days/year, depending on the raw material used and the mode of operation, i.e. to maximize

the production of SAF or HVO, with a capacity to process 499,060 m³/year of pre-treated vegetable oil, in the district of Mataripe, municipality of São Francisco do Conde, state of Bahia.

Considering the advances and investments made by Acelen Renováveis, both in the acquisition and planting of macaúba on its own farms and in the promotion of planting in integration projects with family farming, the technical and logistical feasibility of incorporating macaúba oil as a raw material in the HVO and SAF production portfolio was identified, which will require the installation of a second refining train specific to this input.

All of this also aims to tend to the high demand for SAF (Sustainable Aviation Fuel) and HVO (Renewable Diesel) fuels, driven by decarbonization initiatives in the transport sector and in the search for alternatives to fossil fuels, ACELEN, in a process of competitive and sustainable response to high-performance renewable fuels, identified some opportunities that could provide an increase in capacity.

Therefore, the project in question focuses on the production of renewable diesel (HVO) with the capacity to co-produce SAF (Sustainable Aviation Fuel), consuming around 1,115,000 m³/year of pre-treated vegetable oil, predicting a production of 20,000 barrels/day of renewable fuels.

ACELEN's renewable fuels plant will be supported by a robust logistics infrastructure already in place around the existing and operating refinery in

Mataripe.

The project foresees its development in two phases: in the first phase of the project, in synergy with Brazil's agricultural potential, to obtain such renewable fuels, soybean oil and complementary raw materials will be used, which have a greater volume available and competitiveness in the country. In the second phase, macaúba oil will be used, a native Brazilian tree with high energy potential not yet explored on a commercial scale that should be planted from 2025. Using the state-of-the-art in the implementation of the industrial plant with regard to environmental control systems, aiming at the reduction, control and monitoring of liquid effluents, atmospheric emissions and solid waste generated, as well as the Best Environmental Management Practices – BPEM (*Best Practice Environmental Management*) will be applied.

In the environmental diagnosis, specific studies of the physical, biotic and socioeconomic environments were carried out, identifying the current environmental sensitivities and vulnerabilities.

In the physical environment, aspects such as climate and meteorological conditions, geology, geomorphology and pedology, water resources, air quality were contemplated. Among the studies carried out, the mathematical modeling of atmospheric emission dispersion and the risk analysis study stand out.

The simulations showed that the maximum concentration values of NO₂, PM₁₀ and SO₂ were below the quality standards of the established by CONAMA Resolution 506/2024, including in the nearest receivers.

In addition, from the initial characterization of the products, the liquid or gaseous chemical substances with the greatest representativeness, in terms of flammability and toxicity, were selected for the Risk Analysis Study. An analysis of all products expected to be stored in the company was carried out, where the chemicals hydrogen, HVO, SAF, naphtha, LPG and Natural Gas presented intrinsic hazards relevant to the quantitative analysis of the risks.

Based on the above, it can be considered that the risk imposed by ACELEN Biorefinery to the surrounding areas is fully acceptable from the adoption of the recommendations described in the Preliminary Risk Analysis (APR) spreadsheets.

Conclusion

The studies of the biotic environment covered the fauna and flora present in the areas of influence of the project, and few outstanding elements were identified in the local environment since the area is anthropized. It is worth noting that the Floristic and Phytosociological Studies were carried out through the Forest Inventory carried out by the company PAPYRUS Consultoria Ambiental Ltda following the requirements contained in INEMA Ordinance No. 11,292 of 2016, with no threatened species being identified at the state (SEMA Ordinance 40/2017), national (MMA Ordinance 148/2022) and international (IUCN) levels, nor were species protected by specific legislation identified.

In parallel, the protocol provided for the Vegetation Suppression Authorization (ASV) was applied, and it is necessary to have compensation through planting and forest replacement of species in the region, in accordance with the provisions of the environmental agency's procedures.

ACELEN proposes to establish a Forest Easement (SF) area of perpetual character, and the location of this area will be defined together with the state environmental agency, within ACELEN's properties, in the municipality of São Francisco do Conde (BA). To formalize the compensation for SF, a specific procedure will be carried out, which begins with the request for Forest Easement Approval (ASF) with INEMA. After approval, ACELEN will proceed with the registration of the new SF area in the registration of the property where it will be instituted. The preference for the allocation of perpetual SF will be for areas contiguous to other protected areas, such as Legal Reserves or Permanent Preservation Areas (APP). As the target area of ASV is at an early stage and highly anthropized, it is assumed that the future area of SF may be at any successional stage. This is in accordance with Article 17 of Federal Decree No. 5,300/2004, which establishes that the compensation area must have the same characteristics as the area to be suppressed.

As for the socioeconomic studies, the demographic dynamics, the economic aspects, the urban structure and basic sanitation in the cities of São Francisco do Conde, Candeias and Madre de Deus in the communities under the influence of the project were characterized, in order to constitute a broader image of the context in which the project is inserted.

It should be noted that the need for labor to implement the ACELEN unit can be considered an important factor in the generation of direct and indirect jobs. During the peak of the implementation period, it is estimated that 3608 employees will be working on the construction of the project, characterizing socioeconomic status in the region.

one significant impact

It is important to note that the project in question is located in the Industrial Macrozone – MZI, according to the Macro zoning of the Municipal Territory – Annex III of the Master Plan, being able to receive a project of this size.

In the evaluation of the environmental impacts, based on the characterization of the project and the environmental diagnosis, considering the synergistic and cumulative impacts, the consultancy responsible for the study found that most of the negative impacts identified are concentrated in the physical environment and in the implementation stage for which mitigating measures were proposed, which are actions aimed at reducing or minimizing these impacts.

In addition to the mitigating measures, monitoring programs were also proposed in the four phases planned for the project (planning, installation, deactivation of the works and operation), which will present varying degrees of resolution.

Therefore, according to the analyses carried out during this Environmental Impact Study (EIA/RIMA), the project is adequate in terms of environmental quality aspects. The aspects identified as being more vulnerable are subject to mitigation, requiring that environmental control measures be provided for in the executive project and correctly implemented. On the other hand, the positive impacts will remain throughout the period of operation of the project.

That said, based on the study presented, no impact was identified that, in the opinion of the team that prepared this EIA/RIMA, questions the environmental feasibility of the implementation of the project.

For this reason, ACELEN's Renewable Fuels Production Plant can be implemented in the region studied, as it is a sustainable and viable enterprise from an economic, social, environmental, technical and legal point of view, contributing to the social and economic growth of the region, considering that the production of SAF is in line with the commitments made by aviation companies with CORSIA (from English: Carbon Offsetting and Reduction Scheme for International Aviation) from 2027 for the reduction and compensation of CO emissions from international flights.

2

Technical team

The technical team in charge prepared this work in order to provide subsidies for the environmental agency to analyze the request for a Preliminary License and conduct the environmental licensing process and define the necessary conditions so that the project can be implemented and, finally, operate it in accordance with the premises of sustainability.

The technical team responsible for the preparation of the EIA/RIMA is presented below.

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AFRY – the result of the merger between ÅF and Pöyry – provides engineering, design, digital and consulting services to accelerate the transition to a sustainable society. We are 19,000 dedicated experts in the industrial, energy and infrastructure sectors, creating impact for generations to come.

AFRY has Nordic roots with a global reach, net sales of SEK 24 billion and is listed on Nasdaq Stockholm.

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