Oásis Atlântico
HOTELS & RESORTS

ATLANTIC OASIS IMOBILIÁRIA, SARL

ENVIRONMENTAL IMPACT STUDY

SALINAS RESORT

Santa Maria – Sal Island

Cape Verde, July 2008

Responsible for preparing the Study:

AgroProdutos, SA *- Studies and Projects -*

Achada S. Filipe, Cape Verde Beach

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GENERAL INDEX

TABLES AND FIGURES INDEX

1. INTRODUCTION

1.1. IDENTIFICATION OF THE PROJECT, PROPONENT AND LICENSING ENTITY

1.1.1. The project

• This Project concerns the Salinas Resort, located in Santa Maria – Ilha do Sal. The Project involves the construction of a Tourist Complex, in an area of about 17.5 hectares. Given its type and size, this Project falls within the scope of Decree-Law nº 29/2006, of 6 March, and is therefore subject to the Environmental Impact Assessment (EIA) process.

• At the time of submission of this Environmental Impact Study (EIA), the Salinas Resort Project is in a development phase. The preparation of the EIA relied on a multidisciplinary team made up of national technicians, coordinated by Engº Patricio Varela, a specialist in the preparation and assessment of environmental impact. This Environmental Impact Study was carried out from May to July 2008.

• The construction of the Salinas Resort Tourist Complex is part of the Integrated Tourist Development Zone (ZDTI) of Santa Maria Ilha do Sal.

• The project will consist of an investment of around 55,000,000 euros to be carried out over a period of four years.

1.1.2. the bidder

The proponent of this project is the company SOLORIZONTE HOTÉIS SOCIEDADE UNIPESSOAL, headquartered in Santa Maria, island of Sal and aims to build a Hotel - Apartments with 194 accommodation units that are intended to obtain the four-star category.

1.1.3. Licensing Entity and EIA Authority

The licensing entity of the project, subject to the EIA procedure, is, under the terms of number 1 of article 2 of Decree-Law no. 6/2003, of 31 March, *the government department responsible for the area of the environment, having previously heard the municipality whose territorial area, the exploration will be carried out.*

The EIA authority is the **General Directorate of Environment of the Ministry of Environment and Agriculture**, under the terms of point 1) of Article 8 of Decree-Law no. 29/2006, of 6 March, which establishes as the authority the national service responsible for the area of the environment.

1.2. METHODOLOGY AND GENERAL DESCRIPTION OF THE EIA STRUCTURE

1.2.1. Legal Framework

Within the scope of the analysis and assessment of environmental impacts, the Salinas Resort project took into account the necessary basic legal framework applicable to environmental impact studies, namely Decree-Law no. 29/2006, of 6 March, which approves the legal framework for environmental impact assessment.

A methodology compatible with the provisions of current legislation was also adopted, taking into account, in particular:

> The Constitution of the Republic which enshrines "The right of citizens to a healthy, ecologically balanced living environment, which must be defended and preserved". Also according to the Constitution: "The State and Municipalities, with the collaboration of the Associations for the protection of the environment, are responsible for adopting policies for the defense and preservation of the environment and ensuring the rational use of all natural resources".
>
> Law n.º 86/IV/93, Basic Law of Environmental Policy, which presents a vast set of goods and values related to each other and to the various components of the environmental issue;

Decree-Legislative nº14/97, of 1st of July, which develops regulatory norms of the situation foreseen in the Basic Law of Environmental Policy. This same Legislative Decree, also in its Article 3, establishes the obligation to present the Environmental Impact Study for plans and projects that, due to their size or location, are likely to cause negative impacts on the environment, territory and/or quality of life of the citizens.

In addition to the aforementioned specific legislation, applicable to EIA, the following legislation was also considered in the development of this study, as complementary legislation to support the environmental components addressed in the study:

Decree-Law No. 22/98, of 25 May, which approves the minimum standards for the preparation and approval of construction projects, the soundproofing and safety conditions of night-time entertainment establishments

Decree-Law No. 31/2003, of 1 September, which establishes the essential requirements to be considered in the disposal of urban, industrial and other solid waste and its inspection, with a view to protecting the environment and public health.

Decree-Law No. 5/2003, of March 31, which defines the national system for the protection and control of air quality.

Decree-Law nº 3/2003, of February 24th, which defines the legal regime of natural spaces.

1.2.2. Methodology and Document Structure

With the elaboration of the present Environmental Impact Study (EIA) of the project SALINAS RESORT is intended to be a technical study of an interdisciplinary nature that, incorporated into the environmental impact assessment procedures, is intended to predict, identify, assess and correct the environmental consequences or effects that

certain actions carried out within the scope of the project, can affect the quality of life of man and the environment.

Thus, taking into account the different stages of implementation of the project and the planning of interventions, the study is based on an inventory, systematization and evaluation of the ecological, socio-cultural, economic and aesthetic effects, in the short, medium and long term.

For the achievement of the outlined objectives, three phases of technical analysis were established, as follows and in direct consonance with the execution project phase:

A – APPROACH DEFINITION PHASE, in which the technical needs of the study/ project are materialized, previously defining the vectors of analysis (biophysical and socio-economic), as well as the so-called project actions.

B - PHASE OF *SCREENING*, which registers the scale of occurrence of the project actions, defined in close relationship with the project under study (impact scales), selecting those actions that cause the greatest effects or changes in the reference environment. In this way, the area of intervention of the EIA is also defined.

C – OPERATIONAL PHASE, where it is intended to specify the various components to be included in the study and promote its execution. It is carried out with the following technical analysis steps:

- Characterization of the reference situation
- Identification and assessment of impacts
- Proposition of measures and recommendations
- Monitoring
- Conclusions/Recommendations

This methodology makes it possible to identify, define and assess the environmental impacts and respective risks arising from the implementation of the project throughout its surroundings

territory, as well as to propose the respective measures to minimize impacts and adequate safety.

Structure and organization of the EIA

The structural content considered for the presentation of this EIA favored the best way to display all the information collected and analyzed during the preparation of the study, having been organized into 2 (two) fundamental and complementary technical volumes.

- VOLUME I - ENVIRONMENTAL IMPACT STUDY

It corresponds to this document, and includes all technical and sector information, as well as the global analysis carried out, presenting the following structure:

1. Introduction
2. Objectives and justification and justification of the project
3. Project location and description
4. Characterization of the affected environment – Santa Maria, Sal island
5. Prediction and assessment of environmental impacts
6. Impact level - Analysis and evaluation
7. Elements affected by the project and measures to be taken
8. Main environmental measures
9. Main Findings
10. Bibliographic references
11. Attachments

- VOLUME II - NON-TECHNICAL SUMMARY

Synthesis document, which contains, in non-technical language, a synthesis of the content of the EIA, having been met and adopted, the provisions imposed under the terms of Decree-Law No. 29/2006 of March 6, which establishes the legal regime of the Environmental Impact Assessment.

The methodological approach followed for the selection of descriptors and environmental components considered relevant and susceptible to being directly affected and/or

indirect in the construction and operation phases of the project, took into account, in addition to the environmental characteristics of the Project site, its functionality in light of the intrinsic characteristics of this type of project.

2. PROJECT OBJECTIVES AND JUSTIFICATION

2.1 PROJECT JUSTIFICATION AND INTEREST

It is intended with this PROJECT, the installation of an infrastructure Hotel - Apartments with 194 accommodation units that are intended to obtain the category of four stars.

With the Government having elected the tourism sector as one of the pillars of development, this project will not only increase supply but will also contribute to the development of quality tourism in Cape Verde.

2.2. THEBACKGROUND OF FORPROJECT AND ÇCOMPLIANCE WITH THE IINSTRUMENTS OF GTHEY ARE TERRITORIAL

The Project that is the object of this EIA had no antecedents for the planned location. The territorial management instruments in force for the location area foreseen for the present project are classified as ZDTI zones, specific for the development of tourist infrastructures, and are not included in any of the areas with legal protection status existing in the island, namely protected areas corresponding to Natural Spaces (established by Decree Law No. 3/2003, of 24 February).

3. PROJECT LOCATION AND DESCRIPTION

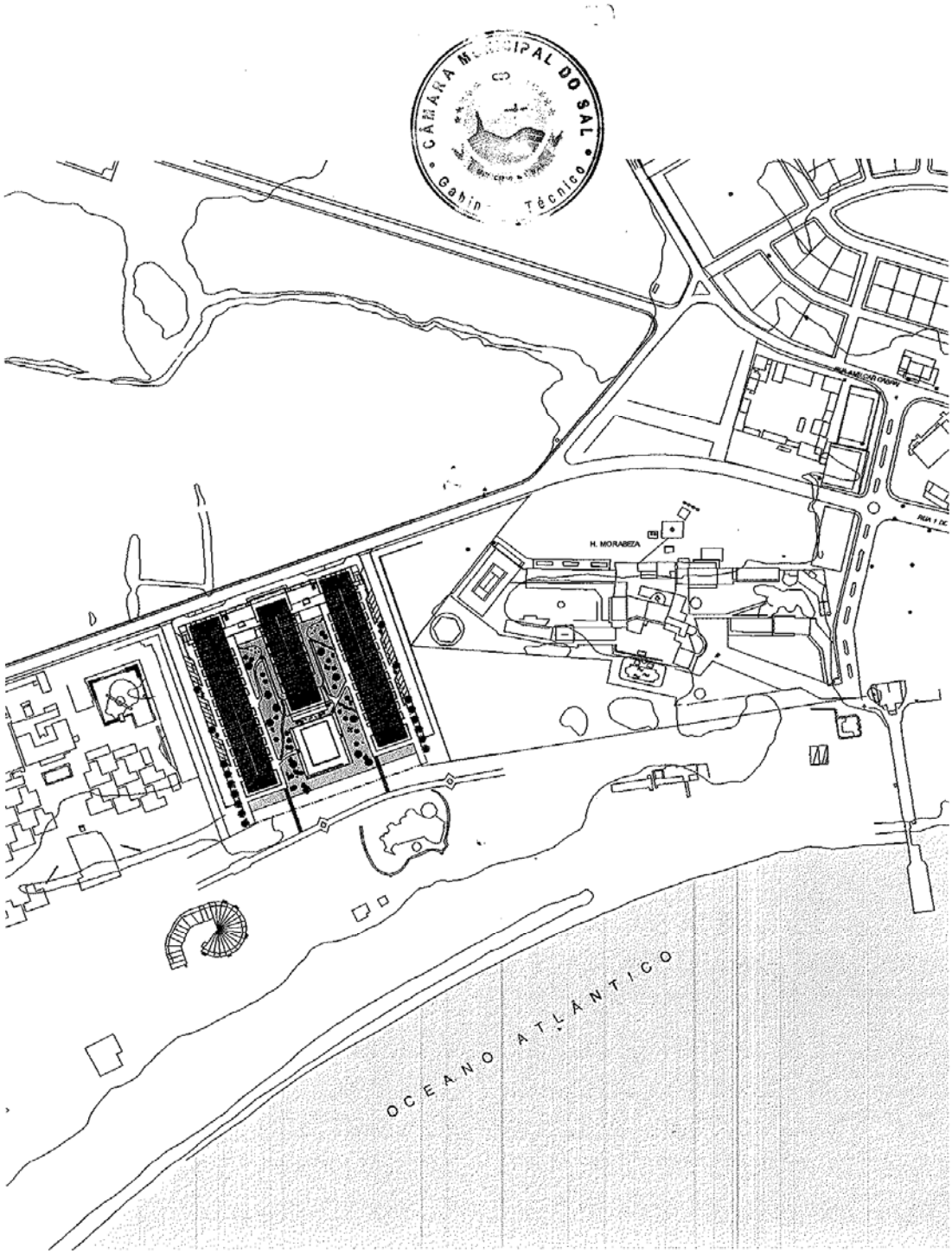
3.1. GENERALITIES

The area covered by this project is located in the west of Santa Maria, in the 1st line of hotels, adjacent to the southern beachfront. This front is built practically in its entirety, and the hotel unit to be built will occupy the void between the Morabeza hotel and the Oàsis Belorizonte Hotel

The lot has a rectangular shape and a surface of 17.5ha. It has access through two side roads that will allow road access to the inner streets.
Altimetry is substantially flat as seen in the rest of the urbanization.

Figure 1: North view of the Salinas Resort project

ZINHO ANTUNES – PLANEAMENTO E ARQUITECTURA. LDA



Limite do Terreno / Stª. Maria – Ilha do Sal

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The project is based on a joint study, already appreciated by Cape Verde Investimento (CI). For the plot in question, it proposes ideas for the development of the tourist area, particularly with regard to the importance necessary to attach to the volumetric design and implementation of buildings, their relationship with the surroundings, the arrangement of outdoor spaces, the introduction of public spaces and to the reorganization and hierarchy of the road network.

3.2. TECHNICAL CHARACTERISTICS OF THE PROJECT

The parcel is free from building and its surface is 17.5ha. It has a little hilly topography, with a drop of a few meters, and a privileged location, facing the sea (West).

For the land in question, it is proposed the installation of an Apartment-Hotel with 194 accommodation units, which is intended to obtain the four-star category. The land is located next to the beach, varying the contour lines that express its morphology only 0.20 m. The intervention area is without any building, and can be considered a vacant lot.

In the implementation of this unit, several aspects were taken into account in order to obtain a solution that allows for an adequate urban integration, respecting local characteristics, the built environment, the desirable use of panoramic views and also seeking the best solar orientations. The pre-existing volumes and the sequence of planned exterior spaces are also followed up, allowing passage through treated spaces for those traveling towards the beach, coming from the 2nd tourist line, adjacent to the North.

The drawings designated as IMP and IMPO1 show, respectively, the implementation of the building in relation to the adjacent streets, as it will be at present and how it might eventually become integrated, if the suggestion relating to Alameda is implemented. An image of a virtual 3D model was also produced that shows the relationship between the building and the aforementioned Alameda.

The building that integrates this unit, has an E shape lying down and facing the sea and guarantees an adequate solar orientation and a view to the south of most of the rooms planned. In the future, rooms facing north will be able to enjoy the view of the eventual Alameda and the healthy movement that it will provide.

The project consists of a building with three bodies perpendicular to the sea line, with only two floors, which, like the other hotels located on the 1st tourist line, is elevated on the ground in order to avoid problems caused by the short distance that occurs between the soil and the water table of the place. The central body is 0.70m higher than the other two on the sides, allowing the introduction of an area for semi-basement services, which guarantees the necessary support for the restaurant and the other rooms of this hotel.

Between the side bodies there is a large swimming pool, equally elevated above the ground, which, in addition to providing a good local panorama, guarantees a clear relationship between the leisure area of the Hotel-Apartment, the beach and the east. equipment.

Table 1: Components of each floor of the development

Floor -1
. Health Center; . Parking lots; . Consumption Water and Fire Service Reservoirs; . Raw and Salt Water Reservoirs; . Irrigation Reservoirs; . Technical Areas of Swimming Pools; . Technical Areas; . Kitchen; . Staff Canteen;
1st floor
. Reception;

. Offices; . 112 Rooms; . Restaurant; . Service Areas; . Outdoor Swimming Pools;
2nd floor
. Service Areas; . 132 Rooms;

3.2.1. Urban Parameters

Table 2: Urban parameters of Salinas Resort

Land Area	17,500,m_{two}
deployment area	7706.60 m_{two}
Occupancy rate	0.44
Gross building area	14,531.23 m_{two}
occupancy rate	0.83
Floor numbers	two
Number of accommodation units (apartments)	194
Number of accommodations by type	126 T1 and 68 T0
Number of fixed beds	252
Open-air parking/light vehicles	30
Open-air parking/places for the disabled	two
Open-air parking/tourist buses	3

3.2.2. functional organization

For a better understanding of the functional organization of the Apartment-hotel as well as from the reading of the zoning of its spaces, cartoons were produced,

sheets Z1 to Z3.

It should also be noted that the floor plans at scale 1/100 were subdivided into two separate drawings in order to allow a better reading of the work, as otherwise, the sheets would become too long. However, for a better understanding of the work as a whole, the plans, elevations and sections are also presented at 1/200 scale and on a single sheet.

This hotel unit comprises 194 accommodation units, 126 T1 and 68T0, with a capacity of 252 fixed beds.

The building is characterized by the existence of three distinct bodies perpendicular to the sea line, body A at the centre, body B at East and body C at West, which all connect to the North, creating a continuous façade unit parallel to the street. access to the hotel unit.

This façade is set back in its alignment, in relation to the Hotel Oásis Belorizonte, (a building adjacent to the West), in order to provide an arrival space compatible with the category of the unit. This is marked by a sizeable sign that guarantees convenient access to the hotel, protected from the sun and rain.

Floor 0

On the ground floor we have the entrance hall, reception/concierge and back-office, living and reading areas, places for art exhibitions, panoramic restaurant with a covered and an outdoor area, bar, shops, restrooms with separation of sex from public support and also for users with physical disabilities and also a direct access to the outside. On this floor, in body A, there are 14 apartments with access only from the outside. The outdoor pool is also located on this floor.

Notwithstanding the fact that the building has 2 floors for the public, two elevators were considered for use by guests, with dimensions that also allow its use by users with physical disabilities.

There are 2 lifts to support service personnel, which connect the semi-vehicle floor to the other planned floors.

1st floor

On this floor we only have the service pantry and apartments, in which 3 of the planned ones have a large jacuzzi, installed on the respective terraces.

Semi-basement floor

It is on this floor that all the service areas are concentrated: kitchen, dining room, toilets and changing rooms with gender separation for Service personnel, maintenance workshop, laundry, container storage, garbage deposit, technical areas and even 2 running water tanks with sufficient capacity to temporarily meet the needs of its services if normal sources of supply are lacking and another one to support the fire network.

Access to the roof is via the service stairs that are located next to the main façade.
32 open-air parking spaces for light cars and 3 spaces for tourist buses were also planned.

3.2.3. Constructive Solutions

The building consists of a basement floor and two elevated floors and has a layout similar to an "E" and is divided into 5 structural blocks of approximately rectangular shape - Blocks A, B, C, D and E - as shown in the following figure:

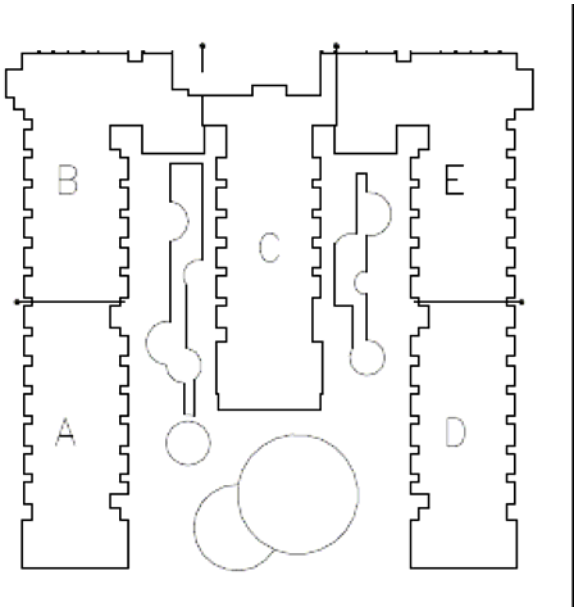

Figure 2: Building plan geometry and division into structural blocks.

Blocks A, B, C, D and E have variable lengths between 59.00m and 85.00m, and a width of 20.50m. These blocks are connected to each other in some areas of floors –1, 0, 1 and roof.

The use of the different floors of the hotel building can be simply divided into:

Floor -1

BODIES A, D and E – Various tanks and pumping stations;

BODY B – Parking.

BODY C – Various kitchens and warehouses, technical areas.

Floor 0

BODIES A, B, D and E – Rooms and apartments area. BODY

C – Restaurants and common areas.

1st floor

BODIES A, B, D, C and E – Rooms and apartments area.

The solution adopted for the structure of the building is a mixed structure formed by zones in reinforced concrete and zones in metallic structure, with the detailed description and justification of the adopted solution being presented in point 1.2 of this specification.

Description of the Structural Solution

The structural solution adopted is a mixed solution, comprising zones in reinforced concrete and zones in light metallic structure (type Somundy Century).

In general terms, a solution in reinforced concrete was chosen for all structural elements below floor 0, including the respective floor slab, and in the areas of floors 1 and roof adjacent to the stairs and elevators.

In specific areas of the building where the size of the spans and architectural constraints do not recommend the use of the metallic structure, a reinforced concrete solution was also adopted.
In the remaining areas, a solution in metallic structure was chosen, made up of lightweight galvanized steel profiles, as the regularity of the architectural solution, the arrangement of the partition walls and the speed of execution of this type of structure recommended this.

In areas where a reinforced concrete solution was chosen, the structure is generally made up of a set of pillars, arranged in a regular and orthogonal mesh with spans between 7.00m and 8.65m in both directions, complemented by a set of reinforced concrete cores, located mostly in the areas of stairs, elevators and involving some rails.

This set of pillars and cores support the concrete slabs of floor 0 and some areas of floor 1 and roof, which are generally solid fungiforms.

On floors 0 and 1, the slabs adopted present, in general, a thickness of 0.25m, with capitals with a thickness of 0.40m (floor 0) or 0.35m (floor 1) and dimension in plan

3.00mx 2.50m, 2.00mx 3.00m and 6.00mx 3.00m. In the areas of the roof built with concrete slabs, a thickness of 0.20m or 0.25m was generally adopted, depending on the span and loads of the slab. In the brackets of floors 0, 1 and Cover, a thickness of 0.25m was adopted. In the slab areas next to the stairs with a span of 3.50m, the adopted thickness is 0.15m.

Border beams with sections of 0.25mx 0.50m or 0.25mx 0.60m were adopted in the contour of the fungiform slabs. Beams were also adopted in the areas adjacent to the stairs and elevators in order to rigidify these areas of the structure.

The reinforced concrete cores that surround the stairs and elevators are generally 0.25m thick from the foundation to the roof. The cores located in the expansion joints are 0.20m thick. The pillars are generally rectangular, with sections of 0.70mx 0.25m, 0.25mx 0.40m and 0.25mx 0.25m being the most frequent.

The earth retaining walls and the walls of the water tanks are traditional walls with 1 floor high and have a thickness of 0.25m. There are also some smaller walls that are 0.20m thick. To cover the water tanks, lightened slabs were adopted, consisting of joists, vaults and a concrete sheet with a total thickness of 0.20m.

Regarding foundations, direct foundations were chosen, consisting of a set of shoes sized for a voltage of 400 kN/m$_{two}$. These shoes must be supported on the existing hard layer under the surface sand, and, if necessary, the foundation dimensions indicated in the drawings must be adapted.

The metal structure used consists of a set of vertical profiles arranged along the dividing walls of the apartments, generally 0.60m apart. These vertical profiles support a set of lattice steel beams which constitute the support structure of the floor.

On the 1st floor, a floor consisting of a collaborating metal sheet was adopted, complemented by a concrete sheet, forming a mixed slab with a total thickness of 0.09m.

For the roof, it was decided to use "OSB" wood fiber boards, under the tile covering and directly supported on the metal trusses that form the roof.

In the terraced areas of the roof that are supported by metallic elements, a solution was adopted for the floor in mixed slab with a thickness of 0.09m.

The structural solution adopted constitutes a balanced compromise between the structural needs and the use of the building's spaces, and respects the presented architectural project, also allowing a quick execution of the projected structure.

The geometry adopted for the slabs of floors 0 and part of the slabs of floor 1, made up of solid flat slabs, complemented by thickening in the area of the support pillars, is considered to be more economical and easier to execute for the adopted span .

The use of contour beams is suitable for the best performance of the structure when subjected to horizontal loads and for the elimination of eccentric punching problems.

The rigidity of the structure for horizontal actions is mainly ensured by the adopted reinforced concrete cores and, although to a lesser extent, by the frames formed by the edge pillars and the border beams. The arrangement of these zones of greater rigidity also serves to improve the behavior of the metallic structures that they confine.

In order to alleviate the effects of thermal variations and shrinkage, and to simplify the structural behavior of the building, it was divided into 5 independent blocks, through the adoption of four expansion joints, two horizontal and two vertical.

The expansion joints adopted ensure a good structural functioning of the different structural blocks, without introducing an excessive number of joints, which are often the origin of building conservation problems.

The excavation to be carried out to carry out the basement area and the respective foundations will be carried out in the open without recourse to special containment measures, due to the low depth to be excavated (approximately 1.5m) and the non-existence of neighboring constructions.

3.3. THEACCESSIBILITY TO PEOPLE WITH CONDITIONED MOBILITY

Some precautions taken to support users with physical disabilities are highlighted:

- Public elevators have the necessary dimensions for your transport;
- 2 T1 apartments on floor 0;
- Public toilets (1 per gender) on the 0th floor;
- 2 parking spaces with adequate dimensions.

3.4. MSECURITY ISSUES ÇONTRA-RBAITS OF IFIRE

This project passively complies with the provisions of legislation, which regulates the safety measures against fire risks applicable in the construction, installation and operation of hotel establishments.

Specialty technical studies, stability calculations and reinforced concrete, water, sewage and electricity networks, air conditioning and smoke exhausts, elevators, etc., will be presented after the approval of the part referring to the architecture and within the deadlines determined by the entities involved in the appraisal of the project.

3.5. REDE OF THESUPPLY OF THEGUA

The water supply planned for the Hotel will be carried out directly from the public network, which will supply the water for consumption and fire service, through a branch to be established, and through a catchment hole associated with a desalination plant and water tanks. raw and salt water.

The metering of water from the public network will be carried out by a meter to be installed on the access ramp to floor -1, as represented in the drawings. The aforementioned consumptions refer to the supply of water to the following facilities:

. Sanitary Installations, and Kitchen;
. Sanitary Hot Water Thermal Plant;
. Health Center;
. Pools;
. Air Conditioning Technical Installations;
. Cleaning Network for Parking Areas;
. Reservoirs for the consumption water network and for fire service.

For the purposes of sizing and general design of the system, the following assumption will be considered:

- The service pressure in the entire distribution network must not exceed 400 KPa, requiring 150 KPa in devices with the most unfavorable location.

When supplying water to the various floors, the hotel will have:

- The entire interior distribution network will consist of cross-linked polyethylene piping with a Unipipe aluminum core, with the exception of the adduction branch to the fire reservoirs, which will be made of AISI 316L stainless steel.

- The supply of hot water to all facilities, including general bathrooms, and its production will be carried out through a Thermal Power Plant consisting of a gas boiler and accumulator deposits.

- The hot water network will consist of a flow and return system in order to maintain constant water temperature, with minimal energy costs.

Taking into account the location of this development, and the characteristics of the public adduction systems, a private reserve of drinking water will be considered, corresponding to 2 days of maximum capacity for the Hotel.

Adjacent to the consumption water reservoir, a hydro-pressing plant for consumption water will be installed in order to adopt the system for hotel operation depending on the hotel's occupancy.

The Power Station will consist of five variable speed pump sets, one of which is a reserve “Grundfos” model.

Given the large volume of water reserve, it will be necessary to provide for the appropriate automatic recirculation and oxygenation treatment system, which will consist of the following equipment, taking into account the quality of water supplied:

a) Descaling
. Descaling filters;
. Cables for the preparation and storage of reagent solution.

b) Pre-filtration/Circulation

. Solid body filters, intended to retain larger suspended matter;

. Electropump sets for recirculating water and passing it through filtering elements;

c) Automatic Chlorine Controller

. Allows automatic reading and respective dosage;

d) Chlorination

. Injector metering pumps, electromagnetic;

. Solution storage tanks to be dosed;

. Agitators;

e) Hardness

. Reduction of the water's calcium and magnetic hardness, using a multi-layer pre-filtration system;

. Set of automatic hydraulic valves;

. Automatic decalcifier by volume control, and to reach residual hardness values between 5 and 15º F;

. Set of hydraulic actuation valves.

f) Electric Panel

. Electrical panel, to control and protect the electrical parts of the treatment installation.

3.5.1. Distribution Networks

The distribution networks, originating from the Pressurization Center, will be constituted, by piping in cross-linked polyethylene with a Unipipe-type aluminum core, until reaching the intended consumption points.

In order to provide the Hotel, and the corresponding management, with adequate means, 2 supply systems were provided, which allow both horizontal and vertical supply, according to Hotel needs.

3.5.2. Swimming Pool Treatment System

The design of the Swimming Pool Water Treatment System was based on the CNQ 23/93.

Thus, all calculations carried out have the main objective of offering a water quality suitable for collective public use.

Taking these values into account, the Renewal Times for the main pool is 4 hours.

The Treatment will be done with independent equipment with a speed of less than 30 m/h/ m_{two}.

The entire installation has automatic control in operation, and in the dosing of chemical products; obtaining a visual record on DISPLAY LCD, the values of Chlorine and Ph.

The recirculation treatment equipment will be defined later according to the geometry of the swimming pools.

3.5.3. Water Network for Fire Service

The intervention in the fire protection project relating to this building will be limited to fire networks that use water as an extinguishing agent.

Thus, all the elements in question will refer exclusively to the interior networks of fire hydrants of the CCR type and fire hydrants for the use of the RBV, including a pumping station.

Regarding the water supply source, it was decided to have a single source, consisting of two concrete reservoirs located in the basement with a total capacity of 60 m_3, and respective pumping station.

The pumping plant is intended to supply the fire hydrant installations, for the use of the RSB and CCR(s), and was defined, in terms of dimensioning, based on the necessary flow rates and manometric heights, as well as the applicable regulations .

Fire Hydrant Network

This network of fire hydrants makes it possible to provide building occupants and first intervention teams with a highly effective means of extinguishing, covering all occupied areas in accordance with what is defined in the Integrated Safety Project and drawings.

So that use is facilitated and coverage at any point of the occupied space is guaranteed, fire hydrants of the "Reduced Caliber Reel" (RCC) type are provided.

On each floor and in the antechamber of the stairwell, water intakes were provided with two 50 mm plugged openings, for use by the Fire Department (BI).

3.6. ANDEQUIPMENT OF FORROTECTION IINDIVIDUAL

Personal Protective Equipment (PPE) should only be taken into account when Collective Protection Equipment is not effective or inadvisable in the specific situation for the protection of workers, these should be chosen taking into account the risks associated with each activity or area of Work.

Table 3: Equipment provided for the safety of workers

FORART OF ÇORPO A FORPROTECT	*ANDEQUIPMENT ANDEXISTING*	*RBAITS TO BE DESTINAM*
Head	Safety helmet	Material drop Crash head into objects
Eyes	Visor Glasses	Welding Operations Projection of particles (including dust)
airway	protection mask (dust/dust and gases/liquids)	Inhalation of dust or vapours/gases
arms and hands	protective gloves	Various cuts, electrocution
Trunk	work suit welder apron	Clothes pull pinch Weld burns
Feet and Legs	Safety Boots/Shoes (Steel Insole and Toecap)	Drilling; crush
Others	fall from height	Safety Belt / Harness

3.7. REDE OF THEGUAS RSTREETS DOMESTIC

The domestic wastewater drainage networks of this development will have as their destination a WWTP, common to the various hotels and located in the vicinity.

Thus, all hotel effluents will be sent to pumping wells for subsequent elevation to the WWTP, these waters will be reused for irrigation of green spaces.

The networks mentioned above are made up of drop tubes and horizontal collectors. Given the height of the building, it was decided not to install secondary ventilation of the downpipes, which were extended directly to the roof.

On floor -1, four domestic pumping wells are planned (PBD1, PBD2, PBD3 and PBD4). PBD2 and PBD3 are intended to collect sewage from Bodies A and B respectively, PBD4 is intended to collect sewage from appliances installed on the Central body floor. These three wells raise the sewage to PBD1. In addition to receiving sewage from the Central Body, PBD1 also receives the other three wells.

The flows coming from the cooking area of the kitchen will be routed to a grease separating chamber, with subsequent connection to the domestic waste network.

Cleaning nozzles, with easy access, will be installed along the downpipes in the following places:

- Change of direction, close to the concordance curves;
- Next to the highest discharge branch insertion in the downpipe;
- On all floors;
- At the bottom of the downpipe, next to the curve of agreement with the horizontal branch.

In order to avoid excessive reduction in the ceiling height (in the case of pipe suspended from the ceiling) a 1.0% inclination was adopted, however, the pipe gauges were sized for this situation.

3.8. IINSTALLATIONS OF GAT ÇBUSTIBLE ÇANALYZED

The Hotel will be supplied through a propane gas network. At the limit of the lot, a box will be installed where a general shut-off valve will be installed, a pressure reducer (which will reduce it from 0.500 bar to 1.750 bar to the value of 300 mbar), meter and a 24v NC solenoid valve connected to the central of building fires.

From this box, the network extends to the consumption points, with the piping being installed in a groove in the wall or floor and in plain view.

Outside the boiler room, a quick shut-off valve in a box and a 24v NC solenoid valve will be installed. connected to the building's security center.

Upstream of each boiler, the safety reducer will be located, reducing the pressure to the pressure used by the burning appliances.
Inside the boiler room, the piping will be installed in plain view, if this is subject to aggression, it must be protected.

The indoor gas network is intended to supply two boilers in the domestic hot water production system.

Taking into account the power of the boiler, the described in Chapter II must be taken into account.

The network will be built with copper piping.

4. CHARACTERIZATION OF THE AFFECTED ENVIRONMENT AND THE LOCATION OF THE SALINAS RESORT PROJECT

4.1. GENERALITIES

This chapter characterizes the current state of the environment likely to be affected by the SALINAS RESORT project.

The aim of this chapter is to provide as detailed a description as possible of the state of the environment in its various aspects, for the area potentially affected by the project.

The island of Sal, located northeast of the Cape Verde archipelago and north of the island of Boa Vista, between parallels 16º 36' and 16º 51' of latitude N and meridians 22º 53' and 23º 00'

of longitude W, it belongs to the group of the windward islands. It has an approximate area of 620 km², with a maximum dimension of 29.8 km from Ponta Norte to Ponta do Sino and 11.7 km in the EW direction.

The population of Sal is today, in 2008, 19,630 inhabitants, with 10,630 male and 9,000 female.

The main population centers are: Espargos, Santa Maria, Palmeira and Pedra de Lume. The Amílcar Cabral International Airport is located in Espargos, while in Santa Maria most hotels are located.

The island of Sal has volcanic origins. It is marked by a great monotony of landscape, due on the one hand to the scarcity of mountains and on the other hand to the presence of extensive plains. The highest point on the island is Monte Grande, which does not exceed 406 m in altitude. There are no significant permanent water courses on the island.

4.2. ÇPHYSICAL CHARTERIZATION OF THE ISLAND

Knowledge of the island's physical environment is heavily conditioned by the large gap in research studies on the island's natural resources. There is no pedological study and thus little is known about their soils. Were it not for the recent publication of the geological chart, it would be difficult to reach a reasonable level of understanding.

4.2.1. Natural landscape

The natural landscape of the island of Sal is marked by a relatively homogeneous relief, where large flats stand out framing the few valleys and elevations. According to the agro-ecological map of the island, it has a climate of extreme aridity and dryness as it does not benefit from moisture traps brought by the humid northeast winds.

4.2.2. Relief and Terrain Morphology

The island has an elongated shape in the North-South direction (Ponta Norte to Ponta Sinó) and in general, extensive plains predominate, which are very rarely interrupted by small valleys and hills. For further clarification and depending on geology and

lithology, it is consensual to divide the island into three more or less equal parts from North to South and as follows:

a) The North Third (North of Monte Curral)

Characterized by a smoothly shaped flatness, a consequence of the coverage of pyroclastic materials, alluviums and colluviums. It is also characterized by an average elevation between 20 and 40 to 50 meters, and for housing an important alluvium and moisture accumulation basin, constituting the so-called Terra Boa, whose elevation is between 15 and 16 meters.

The relief does not exceed 406 m in Monte Grande (maximum of the island). It also has other structures resulting from the ancient volcanic complex, such as: Monte Leste (269 m), Rocha de Poi (194 m), Cagarral (173 m) and the boundary of the Caldeira da Pedra de Lume (124 m).

The water lines (ribs) are not well fitted and, as they originate from residual structures, they easily disappear on the flattening surfaces (endoreic drainage) - see figure 5

The elevations are practically non-existent, appearing very sporadically in the coastal strip, as are the cases of Monte Curral (107 m), Rabo de Junco (166 m) and Serra Negra, with an important plateau (102 m).

The water lines formed at the extremities of the limestone structures, strongly cut the basaltic structure, passing through intercalary limestone surfaces, leaving strongly embedded streams in the coastal landscape such as: Ribeiras da Madama de Cima and de Baixo, Beirona and Palha Verde. Like the Algodoeiro, Leteu, Feijoal and Fragata streams, small alluvial strips develop downstream.

b) The central third (from Monte Corral to the White House)

Several very regular limestone platforms that reach an altitude of 50 to 60 m (Lajedo dos Espargos and Lajedo do Socorro) stand out on this leveling surface. Separating these platforms are the relatively busy basaltic surfaces that cover the limestones and the basaltic mantles that outcrop in large extensions of the coastal slopes.

c) The southern third

The area of this study is located entirely in this area, which is an applanation surface and is characterized by lower elevations, a few meters in altitude, basically consisting of an extensive basaltic level covered by thin dunes and thin layers of thin material, especially in the saline (see figure 7).
There are no expressive elevations and thus, the water lines are almost confused with the surface itself.

From these brief descriptions and referring to the considerations referred to at the beginning of this chapter, it can be concluded that from a morphological point of view, the island's landscape is characterized by a highly evolved morphogenesis, which is in part responsible for:

- low ecological diversity
- high visual monotony
- low orographic expression
- high degree of dryness

Regarding the relief, the island, in addition to presenting low elevations, is not very rugged, with the applanation surfaces standing out. In other words, the slopes are very low and the slopes are almost nil. Consequently, it does not benefit from the humidity of the altitudes, nor does it intercept the trades in the Northeast, which are fundamentally characterized by the humidity that it transports. These facts make the landscape of the island quite uniform and marked by a climate of extreme aridity and dryness where only rare plant species survive. This drawn frame fits perfectly into the area of the plan

4.2.3. Geology and Lithology

The eruptive formations date from the Tertiary (Miocene and Pliocene) and Quaternary (Pleistocene).

The ancient volcanic complex began its formation in the mid Miocene from underwater basaltic mantle outcrops. During the Miocene, different formations of breccias, granular rocks and sub-aerial layers of nephelinitic and phonolitic rocks alternated. All these outcrops are found fitting together dykes of basalt.

At the end of **Miocene** due to the occurrence of large lava flows, subaerial and submarine layers of basalt rocks with a high content of olivine originated (Morrinho do Açúcar, figure 8, is an example) and which today are intercalated with limestone rocks (from the Quaternary).

During all the **Pliocene**, the various spills that occurred gave rise to aerial and sometimes submarine layers. Examples are Serra Negra and Ponta do Altar-Baleia.

in the Pleistocene, dates from the last lava phase of the island, the Montes Grande, Rocha Salina, Leste, Rabo de Junco and Pedra de Lume are testimonies. This low-explosive phase reached small extensions, thus emitting pyroclastic materials (volcanic ash and lapili) that cover a large part of the northern third.

As for the sedimentary formations, marine and continental deposits are distinguished. The first ones, made of limestone and marine limestone, are mirrored in the slabs of Espargos and Socorro, bearing witness to the ancient beaches. On the other hand, the second ones are the dunes and small sand covers, the result of wind erosion caused by strong northeast winds. They are distributed covering the basaltic mantles and basaltic platforms of the central and southern thirds. They also appear on the shores of the beaches to the south and in the alluvial lows of the main streams.

From these descriptions it can be concluded that the island has, in general, low capacity in terms of infiltration and water retention, a fact that is reflected in the

landscape characterized by an almost absence of vegetation and a very low biological diversity.

4.2.4. soils

On the island of Sal, according to the FAO/UNESCO soil classification, we find the following types of soils and distributed according to morphological situations: Eutric, limestone and molic fluvisols, Eutric leptosols from basaltic, limestone and trachytic rocks, Lithic leptosols from basaltic, limestone and trachytic rocks, Rendzitic leptosols from limestones, There are sandplic and sandy leptosols pyroclastic materials, glass andosols of pyroclastic materials, various cambisols, haplic Solonetz, calcareous and calcic haplic Solonchaks.

Therefore, the island is generally formed by incipient (poor) soils, with the exception of the Fluvisols, which in fact constitute soils with high ecological potential and, therefore, deserve to be protected. According to A. Castanheira Diniz and A. Cardoso de Matos (1993) these soils are located in the lows of the main western streams, lows of the secondary streams, in the open valleys that frame the undulating surfaces, in Terra Boa, in the gently sloping slopes and slope to the coast and in the very smooth sloping flats, related to runoff deposits.

4.2.5. Vegetation

Unfortunately, due to the almost complete flatness of the island of Sal, vegetation is scarce. both in terms of diversity and coverage and is basically made up of introduced acacias. Most of the natural vegetation is formed by annual species that appear with the rains but disappear shortly thereafter.

4.2.6. Agro-silvopastoral Use, Vocation and Potential,

The use, vocation and agro-silvopastoral potential of soils are explained in the tables that follow.

Table 4: Areas with Agricultural, Pastoral and Pastoral Vocation

Solo Vocation Classes and Subclasses	Definition	limitations	Potential of utilization
Areas with vocation for irrigated and semi-irrigated crops	Alluvium, favorable for the capture of underground water and soil reconstitution	rockiness, risk of floods exceptional	Construction of underground dams and development of semi-irrigated food crops
Areas with pastoral forestry vocation after reforestation	soils with particular conditions (runoff and water table) allowing reforestation in very arid climates	and climate conditions wind erosion	silvopastoral reforestation adapted to very arid climates and soil characteristics, prosópis, parkinsonia, atriplex and tamarix
Areas with vocation pastoral hiss locally extensive upgradeable	very heterogeneous soils in arid and semi-arid areas. Partially reforestable in edaphic conditions favorable	aridity, soils heterogeneous	pastoral potential very sensitive to climatic irregularities. Locally (10-40%), possibility of silvopastoral reforestation of arid areas, feasible with soil and water conservation techniques. prosopis, parkinsonia, atriplex and tamarix
Unusable zones regular and unusable under current conditions	various soils from very arid areas		
	saline soils		
	live dunes		

Table 5: Agricultural occupation

agricultural occupation		
Practices	**limitations**	**Occupation**
Occasional rainfed crops in semi-arid and semi-humid areas	zones with limited soils (crop: 10-40%)	maize, beans, very unequal yields and very variable yearly cultivated area
Reforestation	reforestation of arid zones	Prosopis juliflora, other acacia, Parkinsonia aculeata

4.3. Physical characterization of the project's implantation site

Figure 3: Project implementation site

Table 6: Summary of the physical characterization of the project area

Morphology	altitudes averages (m)	Slope (%)	Geology/Lithology	Zone climatic	soils	Vegetation	limitations main	current use
basaltic surface gently descending to the coast	13 to 20	2 to 8	Subaerial basaltic mantles often stained with limestone slab	very arid	Leptosols lytics, Eutric leptosols and Cambisols basal chromics and limestone that alternate with the outcrops of basalt	Composition of herbs formed by *dichanthium, Sporobolus, Cleome and Aristida*	limitations very severe related with the weak thickness of the soil	not used
Flattened platforms limestone slab formed by calcarenites, marine limestones and conglomerates	-------	-------	Limestone slab formed by calcarenites, marine limestones and conglomerates	very arid	Leptosols lytics, Eutric leptosols and Leptosols yields of associated limestones to outcrops of loose rocks	Tufts dispersed from *Asparagus*, with *Phagonia*, *frankenia*, *corchorus*, *Elionorus* and *Crotolaria*	Very thin soils limited by substr little lithic depth or even surface	not used
small mounds movable dunes covering the basaltic mantles	2 to 3	1 to 5	Aeolian deposits of limestone sand material	very arid	Hapli soil thickness varies	Tufts dispersed from Sesuvium, Zygophyllu, Sporobolus and Cyperus	mantle of loose sand about substrate of hard Rock	not used

Source: Agro-ecological chart of the island of Sal

5. FORECAST AND ASSESSMENT OF ENVIRONMENTAL IMPACTS

5.1. CONSIDERATIONS INEWS

In this chapter, the forecast and assessment of the potential environmental impacts generated by the implementation of the SALINAS RESORT project, in the Municipality of Sal, in the town of Santa Maria, is carried out. You *environmental descriptors* considered in the impact assessment were the same as those addressed in the characterization of the situation of

reference, although some themes were deepened to the detriment of others, due to the nature of the project and the availability of data. On the other hand, the *Geographical area* considered for impact assessment purposes, it was adjusted to the components of the biophysical and socio-economic environment under analysis, taking into account the importance they assume given the specificity of the Project. The assessment of these changes/impacts was carried out in a qualitative manner and, whenever possible, they were quantified, indicating and describing the forecasting methods used for the assessment, and their rationale, as well as the indication of the criteria for assessing its significance.

For the characterization and prediction of impacts, the following impact characteristics were considered:

sense of impact: According to this criterion, impacts were classified as null, positive or negative, depending on the absence or on the beneficial or harmful nature of the Project's action.

Character of Impacts: According to this criterion, impacts were classified as direct or indirect, depending on whether they are directly induced by activities related to the construction and operation of the Project or by processes induced by direct impacts.

Impact Duration: According to this criterion, impacts were characterized as temporary or permanent.

Impact reversibility: According to this criterion, the impacts were classified as reversible or irreversible, in a more or less extended time frame.

Magnitude: The magnitude criterion translated the relative importance of the impacts, integrating concepts that respect the geographic scope of the effects and the dimension

of affected populations or the degradation of cultural values (very low, low, medium, high, very high).

Meaningfulness: The meaning of impacts summarized its classification through the integration of the characteristics of the impacts, previously described, crossing them with the relative importance of the effects of the impacts. The classification includes the gradation of null, very little significant, little significant, significant and very significant, allowing to compare the different impacts considered.

Without prejudice to detailing the characteristics of the impact when it appears to be relevant, for the sake of ease of exposition and reading of the text that follows, impacts will basically be classified according to their sense and meaning.

The analysis of the environmental impacts carried out for each descriptor took the following aspects into account:

- The type of actions planned to carry out the Project
- The characteristics of your deployment area
- The environmental constraints existing in its area of implementation.

In the process of preparing the Environmental Impact Study and the Non-Technical Summary, it is essential to consider the scope of the areas directly and indirectly to be affected by the environmental impact study. The Environmental Diagnosis becomes a basic technical activity, consisting in the elaboration of a description and analysis of environmental resources and their interactions, which should characterize:

the physical environment – soil, subsoil, water, air, climate, mineral resources, topography and hydrological regime;

the biological environment – fauna and flora;

the socio-economic environment – water use, socio-economic structuring of the population, archaeological, historical and cultural sites and monuments, organization of the local community and the potential use of natural and environmental resources in the region.

An environmental impact is defined as any change in the physical, chemical and biological properties of the environment, caused by any form of matter or energy resulting from human activities that directly or indirectly affect the health, safety and well-being of populations, activities social and economic conditions, biodiversity, the aesthetic and sanitary conditions of the environment, and the quality of environmental resources.

In this context, the impacts associated with the project are those that appear as a direct consequence of its execution, resulting from transformations or changes in environmental factors that occur in the environment of its implantation and development, and in the exploration phase.
Its implementation, given its complexity and as a result of the interactions between man and the environment, will result in negative impacts, in some cases, which will be compensated through proposed mitigation measures, and finally causing positive impacts.

For the purpose of analyzing the project and the associated environmental impacts, the most important components are considered.

5.2. FORANSWERS

The identification of activities that have a negative impact on the environment aims to select alternatives, in the planning stage, design and dimension the most appropriate solutions, changing the operating conditions, in order to control or minimize the significant negative environmental impacts of the enterprise and promote the positives.

Taking into account the natural environment of the implementation of this project, it was considered best to attribute greater importance to the assessment of environmental factors subject to possible changes, a strategy that allows for better control of impacting activities, and to identify preventive and corrective measures for their management more efficient and effective, with a view to sustainable development.

In the present study, it did not look into possible alternatives concerning the location of the project, since it fits perfectly into the intended location that is an integral part of the Integral Tourism Development Zone (ZDTI), object of a previous planning for the construction of tourist infrastructure on the island.

Considering the natural environment in which the construction of the Salinas Resort is inserted and for a greater clarity of the study, it was decided to evaluate the factors subject to possible physical, chemical and biological transformations caused by any form of matter or energy resulting from human activities related to the implementation of each component of the project's implementation, which directly or indirectly affect:

- the health;
- the security and well-being of populations;
- social and economic activities;
- biodiversity;
- the aesthetic and sanitary conditions of the environment; and
- the quality of environmental resources.

5.3. SELECTION OF FORARAMETERS

The selection of environmental parameters to be taken into account for the assessment of the environmental impact was carried out based on the characteristics of the development in its various multifaceted components.

The impactful actions were organized in groups, representing three phases of the development of interventions in this sector, as shown in table 1 below.

Table 7: Project development phases

PHASE	INTERVENTION LEVEL
I	Land Preparation Fences Construction of shipyards. Provisional connections to public networks Installation of equipment
II	Construction of works
III	project exploration

In turn, the table below presents a summary of the main impacts associated with each phase of implementation, taking into account the specific characteristics of the project.

The tables will present the main environmental interactions, considering fundamental aspects such as the preparation of the land, the mobilization of equipment and the assembly of shipyards, the construction of infrastructure and finally the impacts during the use and exploration phase. In these tables, an attempt was made to draw up an exhaustive and objective description of the most significant impacts arising from the implementation of each component of the project.

In turn, Chapter 6, presented below, will assess the levels of impact of the project, that is, the direct and indirect effects on the various environmental factors.

Table 8: Summary of the main impacts associated with the Salinas project

PROJECT PHASE	ENVIRONMENTAL IMPACTS
Phase I Preparation of ground for construction: Construction of shipyards Implementation of works	Modifications to the structure. New order after the end of work
	Changing the flows after the end of the work
	Pollution/Turning
	Impoverishment and creation of barriers
	Alteration of habitats / destruction of species Disturbances (noise and light)
	Modification of vegetation cover and/or destruction of species
	Atmospheric pollution (dust, soot, CO2, etc.) Noise pollution
	Degradation of the quality of the environment Visual degradation and spatial disorganization Significant alteration of the landscape
	Detour in ways in Communication; transit conditioning
	Maintenance of shipyards
	generation of temporary employment
	Invigorating the construction sector
Phase II Construction	Changing the flows after the end of the work
	Modifications. New order after the end of work
	Pollution / Turbidity
	Impoverishment and creation of barriers

	Alteration of possible habitats and/or destruction of species Disturbance (noise and light)
	Modification of vegetation cover and/or destruction of species
	Atmospheric pollution. Noise pollution
	Degradation of the quality of the environment Visual degradation and spatial disorganization Significant alteration of the landscape
	Detour in ways in transit conditioning Communication;
	Maintenance of works
	Invigorating the construction sector
Phase III Exploration of the enterprise	Maintenance of the enterprise
	Generation of permanent employment Capture of new operators
	Increased effectiveness/efficiency of operations Creation of competitive advantages (economic agents) Increased service offer
	Attractiveness. Fixation of economic activities Multiplier effect Feasibility of support services Increased tourism offer Stimulation of the tourism sector
	Acceptance of works. historical memory and heritage
	Creating new opportunities

6. LEVEL OF IMPACT - ANALYSIS AND EVALUATION

6.1. INTRODUCTION

Recognition of potentially significant impacts is one of the most delicate operations in the entire process, and assumes significant importance in the preliminary stages of the environmental pre-feasibility analysis. It is, therefore, of fundamental importance to make available effective checklists of the lines of possible impacts, to be framed, as much as possible, within the environmental sectors (components, factors, systems).

The impact level assessment aims to determine the effects on the project's area of implementation and its area of influence. For each of the interventions, the level of impact will be based on the analysis of variations in environmental components during the operation and exploitation of the RESORT, taking into account the effects on the natural system and the anthropic system.

6.2. THEASSESSMENT OF IMPACTS

The individual environmental impact assessment describes and assesses the direct and indirect effects of the project on the following factors:

Climatic conditions and air quality; Fauna

and Flora;

Pollution (production of waste and effluents);

Acoustic impact;

Landscape – Integration and complementarity;

Socio-economic impact.

6.2.1. Weather conditions and air quality

With regard to the climate, the interventions recommended by the SALINAS RESORT construction project are not expected to have significant impacts on the local climate. It will not have any negative interaction with the climate of the region, so it can be concluded that there will be no negative impacts, either in the intervention or post-intervention phases. Buildings have reduced height so the risk of unwanted changes in the microclimate can be reduced. On the contrary, a great positive impact is expected from the use of treated water for green area projects.

In the implementation of the SALINAS RESORT project, it will not imply contributions in terms of greenhouse gas emissions, as this type of impact is usually found in projects that directly or indirectly predict high consumption of fossil fuels, such as thermoelectric power stations, large industrial installations, which produce carbon dioxide emissions into the atmosphere. In the project area there are no facilities of this type.

The realization of the project will introduce changes in the conditions of the land, with a change in the surface and implementation of the buildings.

This change will, however, remain uninfluenced by all elements of the local climate and will not harm people's health.

6.2.2. Fauna and Flora

Due to the aridity of the landscape, characterized by the existence of only a few small patches of vegetation, with the construction of the proposed development, this area will benefit taking into account that the project proposes the implantation of large green spaces with varieties adapted to the region itself. As for fauna, the implantation of the project does not pose a great risk, considering that there are almost no animals in the project site.

6.2.3. Pollution

The new construction provides for the treatment of waste water and its reuse for irrigation of green areas. According to the project, the Salinas Resort's wastewater will be treated in an existing WWTP that has been in operation for some time in perfect safety conditions.

Solid waste will be collected, packed in plastic bags and placed in appropriate places to be collected daily by the Sanitation Services of the Municipality of Sal, upon the signing of a contract for this purpose. The tourist complex may use its own means to evacuate this type of waste to the municipal dump area in a situation of impediment or non-compliance with collection by the municipal services.

6.2.4. Acoustic impact

The acoustic impact generated by the Resort is only reflected by the functioning of the machinery and equipment during normal operating hours. The project envisages the use of electricity from the Ponta Preta power station network.

6.2.5. Landscape - integration and complementarity

The introduction into the landscape of a development with the characteristics of the project in This study may always have a negative impact, due to changes made to its biophysical and landscape components, with changes occurring in the landscape in terms of its visual structure, since it will imply the destruction of the current typology of the intervention space, by replacing the uses , in addition to being able to develop a certain contrast in relation to the surroundings.

During the construction work, changes in the surface of the land will occur, but only of a temporary and local nature. The creation of a vegetation cover represents an asset to the project, in environmental terms.

6.3. IMPACTS SIDLENESS-ECONOMIC

The establishment of the Salinas Resort development, taking into account its size and the volume of planned investments, is yet another factor in boosting the

economic activity of the island of Sal. Similarly, taking into account the volume of investments and the number of planned houses, it is estimated, both during the construction period, but mainly after the completion of the project, a growing population dynamic with considerable impact in the population growth of the island.

Such dynamic results, at first, from the need for labor for construction activities and, at the second, for the provision of services, whether for hotel services or for built housing.

The indirect economic effects are processed through the dynamization of the local business fabric that will ensure part of the equipment, goods and services that the enterprise will need both in construction and in operation.

From the above, it can be concluded that, in terms of impact levels, the construction of the Salinas Resort is of significant importance from a socio-economic point of view for the island of Sal, and for the country in general.

7. ELEMENTS AFFECTED BY THE PROJECT AND MEASURES TO BE ADOPTED

A project like SALINAS RESORT always causes changes in the various elements that make up the environment, and these changes are, in most cases, possible to minimize through a set of actions that can be taken during the construction and operation of the project.

Therefore, the various elements affected during the two phases of the project, the construction phase and the phase of its use, will be analyzed below.

Geology

The main problems for the geology that may result from the construction of the Aldeamento concern the excavations and also some landfills, necessary for the construction of the hotel, houses, tourist apartments and access roads.

that are going to be built. These actions will affect geological formations and cause changes in the natural relief of this area. However, the planned changes are of little significance given the characteristics of the project and the relief of the area, which imply reduced land movements.

Regarding the volumes of land involved in the construction of the tourist village SALINAS and associated infrastructure, excess land is expected. However, the remaining land will be used in the modeling of outdoor green spaces, in order to avoid the need to resort to other places to deposit these materials.

As minimization measures it is recommended that earthmoving work be reduced during periods of greater rainfall, in order to minimize water erosion phenomena and also that the creation of vegetation cover is carried out as quickly as possible, in order to reduce the exposure of soils to erosive processes.

Groundwater

The most critical situations that can occur in groundwater, in the phase of construction, refer to possible accidental spills of oils and other lubricants from the machines involved in the construction of the Resort, which can infiltrate into the soil and cause changes in the quality of groundwater. In order to avoid these situations, maintenance and washing operations of machinery and equipment to support the work, as well as the handling of oils, lubricants or other chemical substances likely to cause contamination of soil and groundwater, must be carried out in appropriate places and properly waterproofed. Cleaning and filling trucks with fuel and/or other materials must also be restricted to appropriate locations and properly waterproofed.

The construction of infrastructure, hotel, tourist apartments and access roads will also cause the terrain to become impermeable, which reduces the permeability of the formations. However, given the high permeability of the entire

area surrounding the project implementation area, this allocation is considered to be of little significance.

Soils and Current Land Use

For the analysis of impacts on the soil, it is important to take into account its aptitude for agriculture and the protection of natural spaces. In the study area, the suitability of the soil for agriculture is low or even nil. Also in this area of intervention, there is no protected space.

In terms of land use by the project, the main problems that may arise with construction are those that result from the removal of the surface layer of the soil, from compaction and from soil contamination, even considering their low or almost zero agricultural suitability.

With regard to current use, it can be said that nothing will be affected as the area does not have any occupation worthy of registration.
To avoid the loss of soil, the activities necessary for construction in the area will be reduced, and the construction of temporary access roads, the circulation of machinery and shipyards should be limited.

Uncovered soils should be planted as quickly as possible to avoid prolonged exposure to rain and wind. The land from the blasting of the soil will be used to cover the embankments and excavations.

surface water

Taking into account that the construction of the project will guarantee the integrity of the water lines, the main impact related to water resources is associated with the waterproofing of the soil, in which surface runoff is promoted instead of infiltration of water into the soil.

In the exploration phase of the enterprise, a very important principle will be taken into account: **Reduce water consumption** through reuse.

Thus, two water distribution networks were considered: 1.
Drinking water distribution network;
2. Treated water distribution network for irrigation, washing and cisterns.

The first network (drinking water distribution network) will be supplied through a connection to the public network, which will supply the water for consumption and fire service, through a branch to be established, and through a water hole associated with a desalination plant and raw and salt water deposits.

Regarding the second network (domestic wastewater drainage network), they will be destined for a WWTP, common to the various hotels and located in the vicinity. All hotel effluents will be sent to pumping wells for subsequent elevation to the WWTP, these waters will be reused for irrigation of green spaces. The network will consist of downpipes and horizontal collectors. Given the height of the building, it was decided not to install secondary ventilation of the downpipes, which were extended directly to the roof.

This treatment system will be strictly controlled in order to comply with the limits established by the legislation in force in the country.
In addition and so that there are no negative impacts on water resources (surface and underground), a rigorous control of the water supply network will be carried out, to prevent leakage and loss of water.
The sewage drainage network will also be controlled in order to avoid leakage and consequently contamination of the soil, surface water and groundwater.

The pools will be supplied with water from the drinking water network. This water is later reused also in the irrigation of green spaces, after being treated with Aquabrome.

Air quality

The air quality around the study area can be classified as “Good” due to the absence of significant pollution sources. The implementation of the SALINAS RESORT project will cause negative impacts on the quality of the air, which may affect the populations closest to it, as well as the users and workers of the project.

This fact occurs due to the release of atmospheric pollutants in the construction and exploration phases of the project.

During the construction phase, the main impacts derive from the emission of dust as a result of blasting and earth moving. This phase will affect the construction workers and some houses close to the construction site. However, some were identified.**minimizing measures** so that impacts are reduced, such as:

Land subject to movement and dirt paths should be regularly moistened;

Powder materials, easily dispersed by the wind, must be covered and/or moistened;

The construction equipment, machines and vehicles must be inspected and kept in good working condition, in order to avoid bad carburetion responsible for a greater emission of atmospheric pollutants.

As these temporary emissions are easily dispersed by meteorological factors in the region and reduced by the application of the aforementioned measures, the negative effects on air quality during the construction phase are considered to have a reduced significance and magnitude.

During the operation of the Resort, the main negative effects are expected to be: the circulation of vehicles in the development and the burning of fuels in the different types of accommodation due to the use of boilers and stoves, mainly releasing carbon monoxide and nitrogen dioxide.

The main ones affected will be the project's service workers, its users and some houses close to the site. However, the negative effects on air quality are considered to be negligible given the reduced release of pollutants, especially due to the seasonal nature of emissions. In addition, it should be noted that these can still be minimized if all the machines and vehicles in the development with a combustion engine are inspected and kept in good working order, thus avoiding bad carburetion, responsible for a greater emission of atmospheric pollutants.

Noise

During the construction phase, the main source of noise in the project's implantation area comes from the circulation of vehicles assigned to the work (mostly heavy), as well as from the operation of essential machinery for the execution of the works.
The area under study does not have many noise-sensitive receptors, considering that there is no infrastructure and/or very close dwellings that could possibly be affected by an increase in noise inherent to the works associated with the construction of the project.

This impact is defined by the distance each sensitive receiver is from the project boundary (noise source). Thus, the following criteria are considered:

From 150 m away from the project implementation area, the impact is of Reduced Magnitude;

Between 20 and 150 m the impact is of Medium

Magnitude; Below 20 m the impact is of High Magnitude.

The significance varies depending on the number of recipients (being greater the greater the number of recipients). Most of the receivers are located at a distance of around 50 to 100m, considering in general that the negative impact associated with the construction face of the project is temporary, of medium magnitude and of low significance.

As for the exploration phase of the project, there will be an increase in the volume of traffic on the roads leading to the development.

Thus, an increase in the noise level in receivers adjacent to the roads is expected, with this increase being of reduced magnitude and significance.

In terms of the acoustic component, in general, it is considered that the exploration of the project under analysis will cause a negative impact, of reduced magnitude and significance in relation to the surroundings.

Taking into account the impacts associated with the CONSTRUCTION of the project, the **minimization measures** noise at this stage, should be the following:

Elaboration of a program of the works to be carried out, in which the exercise of noisy activities between 18:00 and 07:00 and on Saturdays, Sundays and public holidays is prohibited near buildings with sensitive use. The noisiest operations should still be carried out during daytime periods that cause less disturbance;

Preparation of a periodic maintenance program for machines and equipment to verify their operating conditions, in order to comply with the limits defined in current legislation;

Whenever works are carried out at certain distances from dwellings, insulating panels must be used in front of the work, in order to partially reflect the noise emitted by the equipment in operation;

Reduction and control of the circulation speed of heavy vehicles on the access roads to the work;

Carry out campaigns to monitor the noise produced by the works, whenever these take place in the vicinity of inhabited areas.

During the EXPLORATION phase of the project under review, the **minimization measures** noise should be as follows:

All equipment, machinery and vehicles used in the development with an engine must be inspected and kept in good working order, in order to avoid the emission of noise levels higher than those observed during its normal operation;

The equipment used in maintenance actions, namely lawn mowers and vegetation maintenance, must comply with the sound power limit values defined in current legislation.

Biological Component

The region where the study area is located does not have any important natural wealth.

In this area there is little vegetation. The most negative situations for Fauna and Flora could happen if the project affected areas that are more important for living beings, that is, areas where there are species or habitats protected by law (Decree law 3/2003, of 24 February). The project area does not correspond to any zone classified as protected due to the existence of any species.

During construction works, the stripping of the soil will cause the destruction of the little existing vegetation.

To minimize these problems, it is proposed that these actions be restricted to areas strictly necessary for the work. Construction sites and roads for machine access should not be built in the most important places for plants and animals, but in areas of less interest. Workers must be careful when handling toxic substances, so as not to pollute the environment, they must not make fires without being very well controlled, they must not walk outside the paths of the work.

During the works, it is important that in areas subject to landscape integration projects, plants from the region or adapted are used, and plants such as acacia, which grow very quickly and can invade the areas around the development, should not be used. In fact, these plants should be removed when planting plants in the region, so that the entire area of the development becomes more natural and allows for the appearance of local fauna.

At the end of the works and the beginning of the operation of the enterprise or when maintenance or repair work is necessary, the same recommendations must be followed: limit the presence of workers to the places necessary, do not travel outside the defined paths, do not pollute the environment with toxic substances. In addition, during the operation of the project, the development of plants in areas subject to landscape integration projects should continue to be promoted.

Patrimony

For the study area, a bibliographic and field survey of the existing heritage in the area where the project will be built was carried out, concluding that there are no elements with heritage value in this area.

In terms of impacts during construction, it was concluded that no archaeological sites, buildings or architectural complexes will be affected.

Social Component

The project is being carried out in the Municipality/Island of Sal. According to projections, the population of Sal currently represents around 3.82% of the total population of Cape Verde.

The population of Sal is today, in 2008, about 89.95% urban, representing a total of 19,630 inhabitants, with 10,630 male and 9,000 female. The urban population is distributed among the villages of Espargos, Santa Maria, Palmeira and Pedra de Fire.

Looking ahead to the future evolution of the population, assuming that the average annual growth rate observed in the last century (6.6%) will remain the same, in 2014 the island of Sal will have approximately 35,714 inhabitants.

This is an estimate, given that the island is still in the process of development, which is why, it is believed, population growth tends to remain explosive. This is because tourism – the main base of development on the island of Sal – and

the range of activities related to it, whether upstream (provision of various services, trade, industrial production, etc.) or downstream (civil construction, e.g.), are activities that mobilize a lot of labor. And so, the main driver of population growth will continue to be migration.

The consequences of the project are mostly positive; The project can help to solve some of the unemployment problems and improve the local economy. The attraction of tourists will bring advantages to commerce in terms of traditional cultural activities.

As far as road traffic is concerned, no major problems are expected.

The main disadvantage of the project occurs at the time of construction and refers to the inconvenience caused by noise, dust and road degradation resulting from the works. The main people affected are those who use the existing housing and establishments on the periphery of the intervention area.

To alleviate these problems are proposed as **main measures**:

Identify the circulation routes of trucks assigned to the work, as well as their status prior to the start of the project. Assess the condition of the roads on a regular basis in order to infer maintenance needs as a way of preventing accidents. Ensure that at the end of the work, the roads are in the same or better condition than those diagnosed prior to the start of the project. Implement a Health and Safety Plan.

Landscape

In the landscape of the study area there is a very little human presence, with heterogeneous topography, with little accentuated slopes where sand and dunes and uncultivated land predominate.

The main negative aspects of the construction of the tourist development in the landscape result from the cutting of the scarce existing vegetation cover, the implementation of the shipyard and the characteristic disorganization of the work environment, the movement of

land (landfills and excavations) and the construction of new buildings, equipment and infrastructure, in an area with more or less visual quality.

For the changes to be **minimized**:

Existing vegetation will be maintained whenever possible, cutting cuts to the minimum necessary;

The new areas to be implanted adapt to the existing terrain, reducing the necessary earth movements;

During the works, the shipyard area will be fenced and concealed;

The buildings have a maximum of 2 to 3 floors, allowing for better integration into the landscape;

The project brings a landscape integration, which seeks to integrate the built-up areas through a green structure for protection and framing. In this way, the alteration made to the landscape will be smaller, guaranteeing, at the same time, the conservation and safeguarding of the landscape's characteristics, through the enhancement of existing elements on the ground (relief and some vegetation formations);

The plant species chosen to be planted belong to the local and regional flora in order to promote continuity with the surrounding landscape.

Territorial Planning

In this Environmental Impact Study, the territorial planning and management instruments at the municipal and regional level that were found to directly cover the area of project implementation are the Municipal Master Plan of Sal and Zones of Touristic and Integral Development (ZDTI) of Santa Maria . The project area belongs to ZDTI of Santa Maria, confirming the agreement with these instruments, of all the actions foreseen for the current project, as they foresee the alteration of the current use of the land in function of the new occupations proposed by the enterprise.

The space to be occupied by the project is classified in the Municipal Master Plan as a Touristic Space.

To minimize these allocations it was proposed that the works necessary for the work, such as the implantation of shipyards and temporary accesses, should be located far from the most sensitive areas and that, in the exploration phase, the Municipality of Sal controls the use of the land, in order not to allow the back to the development area of urbanization spaces or others that may cause conflicts of use, with the objective of preservation and not de-characterization of the area.

It is considered that an enterprise with these characteristics is always a guarantee of success, either at a local or regional level, mainly due to the existing needs and the great demand for recreational spaces in the country.

Table 9: Impact Summary

descriptor	impact	Phase	Occurrence Area	Impact Characteristics	Minimization Measures
Geology	Changes in relief caused by excavation and landfill works	Construction	Excavation and embankment slopes and track platform	Negative, of magnitude and significance, the higher the larger the dimensions of the embankments and excavations predicted	Whenever the dimensions of the embankments allow, their construction should adapt to the natural modeling of the land. Embankment embankments morphologically similar to the natural relief should be formed.
Hydrogeology	Change in hydrogeological balance caused by excavation and landfill work	Construction	Area of work and surroundings of the Salinas Resort project	Negative, of low significance, and of low magnitude	Whenever there is a need to lower the water table, the pumped water must be returned to the water lines immediately downstream of the work area. The quality of the water must be respected, as they are a source of recharge for the aquifers.
	Decrease in the permeability of geological formations caused by the construction of landfills and waterproofing the land allocated to the project	Construction	**Slopes and platform**	Negative, of low to medium magnitude, of low to medium significance	In the execution of landfills, materials removed in the excavation process should be reused in order not to cause lithological contrasts that will potentially induce waterproofing processes.
Hydrogeology	Contamination of groundwater by accidental spills of toxic and dangerous substances	Construction	shipyard area	Negative, of medium magnitude, from low to medium significance	
Soils and Current Use of Ground	Soil compaction (by the movement of machinery, equipment and personnel and construction of temporary accesses)	Construction	Project implementation area and its surroundings	Negative, and all the more significant as the longer the construction period	Restrict the movement of machines to the space strictly necessary for the construction of the Salinas Resort, and in the areas of the shipyards.
	Contamination of soil with concrete, oil and fuel resulting from accidental spills	Construction	Project implementation area and its surroundings	Negative and of medium significance	Restrict the location of machine parks and the carrying out of machinery maintenance activities on the most permeable soils.

descriptor	impact	Phase	Occurrence Area	Impact Characteristics	Minimization Measures
Soils and Current Use of Ground	Destruction of the little existing vegetation cover, instability in unprotected soils, exposure to erosive agents, and change in drainage patterns	Construction	Project implementation area and its surroundings	Negative, and all the more significant the better the quality of the soil and its suitability agricultural	Creation of large green spaces in order to avoid prolonged exposure to erosive agents. Use the land from blasting to fertilize landfill surfaces, increasing the efficiency of plantations and consolidating cuts and embankments, ensuring a reduction in the risks of water and wind erosion.
	Changing Current Land Use	Construction	Allocation of project areas	Negative, direct, permanent, irreversible, very significant	Restrict activities associated with the work in the project implementation area so as not to affect more sensitive areas than strictly necessary. Prohibit the construction of accesses, creation of loan or storage areas. Recovery of affected spaces through landscape recovery plans.
Air quality	Allocation of dwellings due to the emission of dust caused by earth movement and the flue gas emissions (CO, NOx) from engines of the machinery assigned to the work	Construction	Project surrounding area	negative, direct, temporary, reduced magnitude and mean significance	The soil surfaces subject to movement must be previously watered. Materials transported by truck must be pre-wetted and/or covered. All equipment, machinery and vehicles with a combustion engine, must be inspected and maintained in good working order.
	Increased concentration of CO and NOx from road traffic	Exploration	Area surrounding the project	Negative, direct, reduced magnitude and meaningfulness	Due to the low relevance of the impacts arising from the exploration phase, it is not considered necessary to adopt measures.

descriptor	impact	Phase	Occurrence Area	Impact Characteristics	Minimization Measures
Noise	Increased noise from the circulation of vehicles (mostly heavy) used in the work, and from the operation of machinery and equipment.	Construction	Project surrounding area	negative, direct, temporary, reduced magnitude and significance	Elaboration of a periodic maintenance program for machines and equipment in order to respect the limits established by law. Reduction and control of the circulation speed of heavy vehicles on the access roads to the work.
Biological Component	Destruction of little vegetation cover	Construction	Construction areas, land borrowing areas and spillways, provisional access roads to the work	Negative, of varying magnitude and significance (as a function of habitat type affected), permanent and irreversible	Restriction of deforestation operations to strictly necessary areas; restriction of movement of machines and workers in areas of greater sensitivity; implementation of garden projects.
	Degradation and replacement of plant communities	Construction	deforested areas	Negative, magnitude and significance medium, permanent and irreversible	Restriction of deforestation operations to strictly necessary areas; protection of the most representative specimens from an ecological or aesthetic point of view (including transplantation); restriction of movement of machines and workers in areas of greater sensitivity; implementation of revegetation projects in the deforested area, through gardens and green spaces.
	Changing the water lines	Construction	Embankment and excavation zones associated with water lines	Negative, of reduced magnitude and significance, permanent and irreversible	Restriction of work activities to strictly necessary areas;
	Physiological changes	Construction and exploration	Surrounding area of project implementation	Negative, of low magnitude and significance, temporary and reversible	Prevent the spillage of polluting substances into the aquatic environment; water the marginal vegetation cover of the various temporary roads, reducing suspended dust.

descriptor	impact	Phase	Occurrence Area	Impact Characteristics	Minimization Measures
Biological Component	environmental disturbance	Construction and exploration	Project implementation area and nearby surroundings	Negative, of medium magnitude, medium significance, temporary and reversible	Schedule vegetation clearing actions for less sensitive periods; Limit working hours for the noisiest activities; Avoid pointing lamps directly to shore; Lighting of gardens and sidewalks using lamps of reduced height and oriented directly to the ground; Use of medium-sized trees and shrubs as attenuation and lighting elements;
	Increased mortality	Exploration	Project implementation area	Negative, of medium magnitude and significance, permanent and irreversible	Placement of progressive mesh fences along the entire lane; placement of vegetation barriers with the aim of forcing birds to pass over the path.
	Changing animal habitats and communities	Exploration	Project implementation area and surrounding areas	Negative, of medium magnitude and significance, permanent and irreversible	Implementation of revegetation projects in the affected area, using traditionally occurring species, favoring the continuity of the original biotopes.
Social Component	Constraint of traffic flow	Construction	Project surrounding area and area of direct influence	Negative impacts, direct and indirect, temporary, medium to high magnitude and significant	Construction of Parallel Paths prior to the section of rural paths that compete with it. Creation of a large number of temporary jobs
	Improved accessibility	Exploration	Project surrounding area and area of direct influence	Permanent, significant and high magnitude positive impacts	Creation of permanent jobs
	Greater density of long-term traffic near the tourist village	Exploration	Project surrounding area and area of direct influence	Negative, permanent, direct impacts or indirect and significant or very significant	-

descriptor	impact	Phase	Occurrence Area	Impact Characteristics	Minimization Measures
	Development of tourist activities and, in general, of the tertiary sector of activity.	Exploration	Project surrounding area and area of direct influence	Positive, indirect, permanent impacts, from medium to high magnitude and significant	-
	Increased population fixation, especially in working age	Exploration	Project surrounding area and area of direct influence	Positive impacts, direct and indirect, permanent and significant or very significant	-
Planning and Management of the Territory	Change of use at the level of Spatial Planning	Construction	project area	Negative, direct, permanent, irreversible, medium to high significance and magnitude	Restrict the activities associated with the work in the area of implementation of the Salinas Resort in order not to affect more areas than strictly necessary.
	Changes in land use and planned planning as a result of increased urban pressure	Exploration	project area	Negative, indirect, of significance and variable magnitude	Control by the municipality
Landscape	Transformation in the visual character of the landscape, due to the change in the current use and function of spaces	Construction	Project area and surroundings	Negative impact, permanent, partially reversible, from medium to strong magnitude and significant	Fence, with siding, of areas where work is being carried out, including areas for the shipyard and the machinery park;
	Land clearing and soil stripping	Construction	Zones where movements occur of land	Negative, temporary, partially reversible, average impact magnitude and significant	Protection of existing vegetation in project areas not affected by land movements;

8. MAIN ENVIRONMENTAL MEASURES

The analysis and forecasting of impacts made it possible to identify the main problems and advantages that the construction and operation of the project will bring on the physical, ecological and human environment of the affected area. Several measures and recommendations were defined in the EIA with a view to reducing the importance of the problems and increasing the identified benefits. In addition to the measures mentioned in the previous chapter, other measures that should be applied are presented very briefly below.

For the construction phase the following were proposed **minimization measures** of the negative impacts:

1. If the construction works of the Salinas Resort take place simultaneously with the other villages planned for this tourist area, common shipyards should be used, whenever possible;

2. The speed of accesses to the work must be limited, in order to reduce the inconvenience on the villages. If these accesses are damaged, they must be recovered;

3. The perimeter of the work and the site must be sealed with fences that serve, among other functions, as a barrier to the propagation of noise to the outside of the enclosure;

4. Information boards must be placed next to the work and main access, containing the purpose of the interventions, the expected duration, any changes to road or pedestrian traffic, etc.;

5. Land clearing and movement operations must be carried out in the shortest possible time, preferably in the dry season, avoiding that soil compaction and increased surface runoff lead to significant impacts in terms of soil erosion. Compaction should be restricted to access roads and the location of the infrastructure;

6. The materials from the cleaning must be placed far from the banks of the water lines. At the boundary of the work, retaining barriers must be placed and maintained, so that solid material does not reach the water level;

7. The unpaved access roads and the work area must be moistened and the truck wheelsets must be washed before leaving the work, to control the release of dust;

8. A system of waste and effluents generated during the work must be implemented until they proceed to the appropriate final destination;
9. The removal of vegetation cover must be limited to areas strictly necessary for carrying out the work;

In order to maximize the positive impacts of this phase, whenever possible, local labor, construction companies, and the supply of local and/or regional materials should be used.

For the exploration phase, the following minimization measures were proposed:

1. The effluent leaving the WWTP must be periodically analyzed to verify compliance with legislation. Any unpleasant odors in the WWTP or downstream lakes should lead to a reassessment of the system's operating conditions;

2. A solid waste management plan must be carried out for the Salinas Resort complex;

3. Special attention must be paid to the use of pesticides and fertilizers used in green spaces in order to avoid the contamination of surface and underground waters with hazardous substances and nutrients;

As a leverage measure for the exploration phase, it is recommended to maximize the hiring of employees and suppliers of Sal Island or residents.

9. MAIN CONCLUSIONS

This Environmental Impact Study (EIA) intends to be an instrument to support the decision on the environmental viability of the SALINAS RESORT construction project, which aims to increase the accommodation capacity, requalification and sustainable tourist development in the region in which it operates.

The analysis of the project points, in general, to localized and insignificant negative impacts, related essentially to temporary effects of the construction phase, not going beyond a moderate level of significance, and only in the case of two subscribers: sound environment (due to the increase in road traffic, a factor that will extend to the exploration phase, and because of the work itself) and landscape (due to the change in the current use of the land, with alteration of the local landscape values). However, once the project is completed, the impact on the landscape will tend to change from negative to positive, with the introduction of a new value in the landscape, and the enhancement of its fruitful use.

The main positive impacts of this project are verified at the socio-economic and territorial planning level, due to the resulting gains for the region, and for the entire national territory, complying with the guidelines of the main planning instruments (PDM).

The Resort implements the quality tourism diversification strategy defined as one of the central objectives for the development of Cape Verde, which will bring important gains, not only through the direct and indirect stimulation of correlated economic activities, but also, at a social level, through its creation. of a significant number of jobs, which will consequently improve the level of income of families, as well as their living conditions.

The significance of the positive and negative impacts of this Resort will be cumulatively enhanced, if the construction/exploitation phases of other projects planned for the tourist area of Santa Maria take place at the same time.

10. GENERAL RECOMMENDATIONS

The analysis carried out allows us to conclude that the socio-economic impacts generated by the project are frankly positive, contributing significantly to improving the quality of life of populations and to boosting the economy in general and tourist activities in particular.

More relevant potential negative impacts were identified for the "Environment and Landscape" component, but very significant potential positive impacts were also identified. The negative impacts, although some are definitive and unavoidable, others can be minimized through the measures proposed by this study.

In this perspective, and for a better effectiveness in the implementation, the actions should be preceded by a careful survey of the real state of degradation of the environment in the implantation and development zone of the project. Therefore, these are preventive measures aimed at preserving the initial balance.

Finally, environmental sustainability and long-term balance will be achieved through the adoption of correct policy and management measures, ensuring compliance with current environmental legislation, compliance with safety standards and ensuring the inspection and control of operations and the actions to be implemented. Based on the most relevant aspects pointed out in the course of this environmental impact study, some of the most important recommendations and measures are presented below, which are believed to be at the heart of the concerns of those responsible for implementing the project and for the management and administration of the village , highlighting:

At the level of studies and projects

- Develop specific programs for each component, reflecting the recommendations of the environmental impact study;

- Coordinate with the municipal authorities the interventions to be carried out in the project's intervention zone;

- Adopt technical solutions ensuring compliance with the safety recommendations prepared by a specialized company;

- Adopt technical solutions ensuring compliance with the recommendations of this environmental impact study;

In terms of infrastructure construction

- Careful selection of the construction company;

- Careful selection of the inspection company;

- Reduce construction deadlines to what is strictly necessary. Isolate as much as possible the intervention areas and create direct access to the construction sites;

- Ensure compliance with the safety recommendations prepared by a specialized company;

- Ensure the application of the recommendations of this Environmental Impact Study.

At the level of the exploration phase of the project

- Develop standards to be applied in operations carried out at Salinas Resort, aimed at safety and efficiency in the use of infrastructure in the movement of people and goods and environmental safety;

- Monitor, in conjunction with other areas of the company and technical entities in the follow-up, the environmental conditions of the Complex;

- Develop education, training, awareness-raising programs for tourists and project workers in matters related to the preservation of the environment;

- Develop an Internal Emergency Plan, a Safety Manual and an Occupational Safety Regulation;

- Promote the introduction of techniques and equipment with minimal environmental impact;

- Promote awareness in the field of Health and Safety at Work, through the distribution of information leaflets and/or the posting of appealing posters in the various areas;
- Implement a periodic internal audit plan in the environmental area;

- Ensure compliance with international standards and conventions in the environmental area;

- Guarantee the open space in order to allow the public to circulate, mainly with regard to access to the beaches as well as the adjacent coastline (80 meters);

- In order to protect the dunes, signs prohibiting the movement of beach bikes should be posted.

The decision to build the Resort should be taken, considering the balance between the main advantages and problems described. If the proposed measures are carried out, and the applicable law is complied with, the balance of the project's implementation will be GLOBALLY POSITIVE, bringing benefits to the region, without significant environmental costs.

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ATTACHMENTS