RISK ASSESSMENT

CERTIFICADO AÇORES PELA NATUREZA
ipdt TURISMO E CONSULTORIA
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GOVERNO DOS AÇORES Vice-Presidência do Governo
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RISK ASSESSMENT

Elaboration
Azores DMO

Approval
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1. FRAMEWORK

The certification framework "EarthCheck Destination" presents as one of its requirements the preparation of a risk analysis, in which: "The destination must identify the current and/or potential level of risk of situations, planned, accidental or emergency, natural or anthropogenic, related to the scope of action of the destination".

This risk assessment should include the following areas of performance:

1. Energy efficiency, conservation, and management
2. Greenhouse gas emissions
3. Air quality protection and noise control
4. Management of freshwater resources
5. Waste water management, drainage and streams
6. Ecosystem conservation and management
7. Land use planning and development
8. Transport
9. Solid Waste Management
10. Management of environmentally harmful substances
11. Cultural and Social Management
12. Economic Management

Therefore, this risk assessment for the Destination Azores is presented below, considering the previous assumptions.

2. METHODOLOGY

The scope of the current report extends to:

a) Risk: effect of uncertainty on the results of the activities developed or with influence on the region in environmental, cultural, social and economic terms;

b) Aspect: present features with its interaction generating a potential impact on the environment, the social and cultural activities or the economy of the Region;

c) Impact: variation (positive or negative) in the resulting environment, totally or partially caused by the influence of the aspects.

To evaluate the risks, we deployed the following methodology:

The risk assessment was carried out, considering two dimensions:

- The likelihood,
- The severity.

Tables 1 and 2 present the various likelihood and severity categories that were used in this risk analysis.

Table 1 - Definition of Likelihood Degrees

Category	Definition
1	**Certain/happens daily**: Impact is expected with a daily frequency.
2	**Likely/happens weekly**: Impact is expected in most cases.
3	**Possible/happens monthly:** The impact is expected on a monthly basis.
4	**Unlikely/happens annually:** Impact may occur, but not much to be expected. It can occur annually.
5	**Rare**: Impact only occurs in exceptional situations.

Table 2 - Definition of Severity Degrees

Category	Definition
1	**Catastrophic**: Widespread and irreparable damage in terms of environmental, cultural, social or economic dimensions; loss of human life or harmful and permanent effects on people's health; national emergency situation.
2	**Larger**: Generalized damage, with medium- or long-term impact; serious damage to people's health; regional emergency situation; situation of violation of legal requirements, major disruption in current operations; Region's reputation at stake
3	**Medium:** Medium or long term impact in a limited area; moderate contribution to global warming; moderate health effects requiring medical care; monitoring by the regional media; violation of legal requirements with application of fines.
4	**Smaller:** Short- or medium-term impact on a limited area; reduced contribution to global warming; minor and reversible damage to the health of people in need of first aid; negative impact on regional media; occasional situations of violation of legal requirements.
5	Impact limited to a given area with no long-term effects; concern or complaints in the neighborhood; no impact on people's health; without violation of legal requirements, with some situations of technical non-compliance.

From the combination of the categories identified above, a double entry table is built for the final valuation of risk, as shown below.

		SEVERITY				
		1	2	3	4	5
LIKELIHOOD	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Assessment
Severe
Extreme
High
Medium
Low

3. RISK MATRIX

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Energy management, efficiency, and conservation					
Impossibility of connection to international energy production networks and consequent dependence on import of fossil fuels.	Consumption of fossil fuels for energy production with consequent effects on natural resources and air pollution.	2	5	**10**	Strong focus on energy production from renewable sources. Policies for responsible energy consumption, such as the current tariff system.
Growth in energy consumption because of the increase of tourism in the Region.	Consumption of fossil fuels for energy production with consequent effects on natural resources and air pollution.	2	5	**10**	Strong focus on energy production from renewable sources. Policies for responsible energy consumption, such as the current tariff system.
Greenhouse Gas Emissions					
Increased GHG production, resulting from the increase of tourism in the Region.	Air pollution with consequences for climate change.	3	5	**15**	Strong focus on energy production from renewable sources. Policies for responsible energy consumption, such as the current tariff system.

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Greenhouse Emissions					
Insufficient public transport network given the growth in the number of light vehicles in circulation in the Region.	Air pollution with consequences for climate change.	1	5	**5**	Campaigns for the use of public transport (public transport accessible in the urban perimeters of the biggest cities). Installation of an electric vehicle supply network. Increase the electric vehicles in circulation. Encouraging the purchase of electric vehicles by Rent-a-cars in the Region.
Area of land use occupation of the agricultural sector.	Air pollution with consequences on climate change,	2	5	**10**	Conversion of agricultural land into forested land. Prepare a study of the carrying capacity of the occupation of agricultural land use in the Region.
Air quality, noise control and light pollution					
Noise growth in larger urban areas, because of the increase in tourism in the Region.	Negative impacts on residents' quality of life Potential negative image of the Region for residents and tourists	2	5	**10**	Control of noise levels (annoyance). Control of the licensing of noisy infrastructure in the urban fabric. Elaboration and implementation of strategic noise maps and municipal action plans (Municipal Land Use Plans).
Noise growth in areas of scenic interest, because of the increase in tourism in the Region.	Potential negative image of the Region for residents and tourists	3	5	**15**	Elaboration and implementation of strategic noise maps and municipal action plans (Municipal Land Use Plans).

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Water Management and its resources					
Area of land use occupation of the agricultural sector.	Pollution of surface and underground water. Potential negative image of the Region for residents and tourists.	4	4	**16**	Delimitation of aquifer and surface water protection areas. Sensitization of primary producers to the negative effects, on water resources, of their activity, as well as the respective rules of conduct. Promotion of sustainable practices in the agricultural sector.
Greater pressure on water resources in the summer months.	Lack of availability of the resource on some islands, and for some activities (e.g., agriculture).	4	4	**16**	Integrated management of water supply networks. Increased water storage capacity.
Pollution resulting from the activity of the American Base in Lajes.	Inorganic aquifer pollution.	5	2	**10**	Ongoing negotiation with US authorities to take the necessary measures to mitigate the problems.
Possible increase in water consumption and of waste in supply systems.	Reduction in the availability of the resource for consumption and the possibility of exceeding the capacity limits for renewing sheets \ water sources available for collection.	3	4	**12**	Frequent inspection of water collection and transport circuits. Awareness of controlled consumption and reduction of water waste. Creation of more rainwater catchment reservoirs for the agricultural sector.

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Wastewater management					
Lacking connection to existing public wastewater sanitation systems.	Pollution of surface and groundwater (including those for human consumption), with potential pathogenic bacteria, and soil pollution.	5	4	**20**	Promote connection to public sanitation systems, whenever possible.
Ecosystem management and conservation					
Increased tourist pressure on natural areas,	Pressure on the ecosystem with possible repercussions on its biodiversity. Potential negative image of the Region for residents and tourists.	3	4	**12**	Measures provided that foreseen the legal and regulatory instruments relating to tourism planning in the Region. Measures to encourage the d decentralization of the visitors' experience to the archipelago and lesser-known attractions.
Increase in the number of recreational boats in marinas in the Region and cruise ships.	Spills with consequent pollution of the marine ecosystem. Introduction of marine invasive alien species.	5	3	**15**	Mechanisms and equipment for controlling spills at sea. Avoid the risk of biological invasions, by ballast water, through the implementation of the Diploma of Biodiversity regulations and the norms of the International Maritime Organization (norms)
Increased agroforestry and urban pressure on natural ecosystems.	Changes on the ecosystem.	4	4	**16**	Legislation and territorial management instruments.

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Ecosystem management and conservation					
Rural fires.	Changes on the ecosystem Destruction of biodiversity Waste. Impact on people's lives (social and economic).	5	5	25	Rural areas surveillance. Raising awareness about the use of fire to forest producers and farmers.
Management and use of the territory					
Anthropogenic pressures (agriculture, tourism, and urbanization) on the territory.	Potential negative image of the Region for residents and tourists. Potential consequences of natural disasters. Degradation of landscape quality.	3	4	12	Implementation of Territorial Management Instruments (PNOPT, PROTA, POTRAA, Sectoral Plans, Special Spatial Planning Plans, PMOT). Regulated and controlled licensing. Carrying out economic feasibility analyzes and environmental impact studies for public and private investments included.
Transport					
Increase in the number of visitors in the region, with a consequent increase in the volume of land transport (occasional), namely with cruise ship travelers, and trips on rent a car.	Atmospheric pollution. Increased noise levels. Increased traffic volume.	3	3	9	Land traffic control. Cruise ships in counter cycle. Implementation of carrying capacities defined in POTRAA. Tax and financial incentives for the conversion of terrestrial tourist fleets to hybrid/electric vehicles. Encouraging the implementation of decarbonization actions.

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Transport					
Road accidents, some caused by lack of knowledge of traffic rules of foreign visitors.	Loss of human life. Waste production (end of life vehicles). Spills.	3	3	**9**	Land traffic control. Road Prevention and safety awareness actions. Clarification and information to visitors of traffic rules.
Air accidents.	Loss of human life. Waste production. Spills.	3	2	**6**	Security rules and procedures at airports and aircrafts.
Accidents with cruise ships passengers and tourist recreational boats and maritime vessels	Loss of human life. Waste production. Spills.	4	3	**12**	Harbor security rules and procedures. Mandatory ship piloting in the ports of the Azores.
Solid waste management					
Growth in the number of visitors to the region. Growth in trade turnover.	Increased production of solid waste. Potential negative image of the Region for residents and tourists	3	4	**12**	Measures and actions foreseen in the Strategic Plan for the Prevention and Management of Waste. Cleaning the coastline (PALM). Monitoring of marine litter. Promote Circular Economy practices in the Tourism sector.
Hazardous waste management					
Incorrect use of phytopharmaceuticals.	Worker's injuries.	4	5	**20**	Ongoing training in the application of plant protection products.
Accident at waste and hazardous material storage sites.	Widespread pollution.	5	two	**10**	Municipal and regional emergency plans. Conducting simulations (drills)

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Management of cultural and social aspects					
Low schooling and education.	Reduced capacity of professional skills. Lack of civility.	2	3	**6**	Bet on people's qualification. Programs at the level of the OP Azores 2020 for the people's qualification. Commitment to innovation: creation of new jobs.
Low birth rate and negative migration balance.	Loss of cultural identity. Lack of skilled labor. Population-ageing.	4	3	**12**	Support and grants for people settlement on smaller islands. Salary package with positive fiscal discrimination in relation to Portuguese mainland. Commitment to innovation: creation of new jobs. Support for active and healthy aging.
Tourist pressure on sites, attractions, monuments and built heritage.	Heritage degradation. Potential negative image of the Region for residents and tourists	3	3	**9**	Consistent and systematic information on rules and precautions to be taken when visiting sites and monuments. Implementation of Territorial Management Instruments (PNOPT, PROTA, POTRAA, Sectoral Plans, Special Spatial Planning Plans, PMOT). Creation of access regulations and definition of carrying capacity for places with greater tourist pressure. Greater monitoring and inspection of its use. Creation of programs to support the restoration of built heritage.

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Management of cultural and social aspects					
Trend - “cloning” \ copying of local cultural identity.	Reduction of diversity and loss of historical cultural identity of the various communities.	3	3	**9**	Raising awareness for maintaining the diversity and historical cultural identity characteristic of each community and its valuation as a potentially attractive distinctive factor.
Limitations on hospital care on all islands.	Negative impact on people's quality of life. Potential negative image of the Region for residents and tourists	2	3	**6**	Improve and strengthen inter-island emergency transport conditions. Increased capacity to respond to medical emergencies.
Management of economic aspects					
Acquisition of regional companies by large national and multinational groups.	Loss of identity. Devaluation of regional products. Negative image of the region ("not place").	4	3	**12**	"Azores Brand" products. Local investor support programs.
Reduction of the competitive capacity of regional companies versus large multinational groups.	Loss of jobs. Loss of economic valuation for the Region (leakage).	5	3	**15**	Incentives for the consumption of local products. Incentives for the creation of partnerships between local producers, restaurants, and tour operators. Strengthen licensing requirements (fiscal seat in RAA).
Tourism seasonality.	Reduced business profitability. Increase in short-term employment contracts.	1	4	**4**	Reinforcement of the promotion in low season. Focus on market segments and products with greater propensity to generate tourist demand in the low season.

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Management of economic aspects					
Increased risk of the emergence of commercially successful imitations and counterfeits of original regional products.	Reduction of individuality and loss of identity of genuine regional products. Intrinsic quality reduction and economic devaluation of regional products. Negative image of regional products.	3	4	**12**	Incentives and financial support for establishing of patents. Protection and incentives to produce genuine products and establishment of Industrial Property Rights. More focused economic surveillance.
Adverse weather conditions.	Lack of essential goods due to lack of transport. Flight cancellations. Impossibility of carrying out activities. Infrastructure degradation. Potential negative image of the Region for tourists	4	3	**12**	Weather warnings. Encourage the creation of insurance to be adopted by companies that cover losses caused by adverse weather conditions.

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Climate change					
Storms (hurricanes, tropical cyclones, similar)	Destruction of buildings and supporting facilities. Loss of human life. Destruction of natural habitats and farms. Loss of historical, natural, and cultural heritage near coastal areas.	3	3	**9**	Monitoring the magnitude and intensity and estimated path of storms. Weather warnings. Raising awareness in the community for their protection at similar times (e.g., simulacra). Implementation of Territorial Management Instruments (PNOPT, PROTA, POTRAA, Sectoral Plans, Special Spatial Planning Plans, PMOT). Implementation of the Azores Regional Civil Protection Emergency Plan and the Municipal Civil Protection Emergency Plans.
Slope movements, floods and floods resulting from extreme/intense precipitation episodes	Destruction of buildings and supporting facilities. Loss of human life. Destruction of natural habitats and farms. Loss of historical, natural, and cultural heritage near coastal areas.	3	3	**9**	Weather warnings. Sensitizing the community to adopt safety/protection behaviors. Regular assessment of slope stability/safety. Building capacity to reduce flooding situations.

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Climate change					
Drought	Changes in the forest and agricultural landscape mosaic (reduction of agricultural cultivation area in drought situations). Increased fire risk. Soil erosion. Economic losses on farm/livestock. Negative social impacts due to lack of water supply to local populations, on some islands.	4	3	**12**	Installation of water storage systems. Implementation of a model for the storage and management of water destined for agricultural/livestock exploitation Raising public awareness on the efficient use of drinking water. Diversify and adapt agricultural crops considering climate change scenarios. Promote the implementation of agricultural techniques and practices for soil protection.
Occurrence/emergence of exotic species in the waters of the Azores	Loss of indigenous marine biodiversity. Changing the profile of the current marine ecosystem. Pressure on marine species (cetaceans) with a greater demand for nautical tourism activities (eg observation, tours).	3	4	**12**	Monitoring/surveillance and control/eradication of invasive marine species. Adoption of measures to preserve native marine species and their habitats. Adoption of measures to reduce the negative impacts associated with anthropogenic pressures: fisheries, pollution, tourism, noise. Constant regularization of tourist activities.

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Climate change					
Average sea level rise.	Increased regularity of overtopping and coastal flooding. Coastal erosion. Degradation of buildings near coastal areas. Loss of historical, natural, and cultural heritage near coastal areas.	3	3	**9**	Constant monitoring of the average sea level. Installation of protection barriers to the average sea level rise. Adoption of coastal defense and protection measures. Surveys and mapping of areas with greater susceptibility and vulnerability to the occurrence of floods. Implementation of Territorial Management Instruments (PNOPT, PROTA, POTRAA, Sectoral Plans, Special Spatial Planning Plans, PMOT). Implementation of the Azores Regional Civil Protection Emergency Plan and the Municipal Civil Protection Emergency Plans.

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Public health					
COVID-19	Loss of human life. Overload of public health services. Restrictions on the free movement of people and goods. Reduced safety and confidence to travel. Impact on the business economic viability.	1	1	**1**	Increased responsiveness of public health services. Creation of services to monitor and combat COVID-19. Community awareness on compliance with safety rules and integration of the vaccination process. Ensuring compliance of the safety rules, legally punishing their disrespect. Constant communication about the evolution of the disease and its impacts. Implementation of support systems for the companies' financial health. Implementation of procedures to ensure the safety of workers and clients of companies in the tourism sector (e.g., Clean & Safe Azores Stamp) Establishment of simple validated access criteria to the region that guarantees the safety of the community (e.g., mandatory tests for entry into the region). Adaptation and adjustment of measures applied in the region, with measures applied at national and European level. Facilitate the communication/dissemination of the necessary procedures to access the destination. Encourage the population to adhere to the vaccination process against COVID19.

ASPECT	POTENTIAL IMPACT(S)	LIKELIHOOD	SEVERITY	RISK	RISK MINIMISATION
Public health					
Transmissible Respiratory Diseases	Loss of human life. Overload of public health services. Limitations on the travel process and/or movement of people or goods. Impact on the business economic viability.	5	1	**5**	Monitoring the emergence and evolution of new viruses and transmissible respiratory diseases. Creation of commissions to fight the disease. Establishment of legal measures to control disease transmission. Qualification of health services with necessary equipment and medicines. Raising awareness for the adoption of protective measures by the local community. Implementation of a vaccination process to fight these diseases.
Vector-borne diseases (Dengue, West Nile Fever, Lyme disease)	Increase in affected people after transmission. Lesser perception of travel safety by tourists. Limitations on the travel process and/or movement of people or goods.	5	4	**20**	Follow-up and monitoring the presence of pathogens, as well as their density and viral replication. Adoption of measures to mitigate the impact of diseases.

4. RESPONSE TO EMERGENCY SITUATIONS

The Azores Regional Civil Protection and Fire Service (SRPCBA) is the department that reports to the Regional Secretariat for Health and Sports and is responsible for guiding, coordinating and supervising, at the level of the Autonomous Region of the Azores, Civil Protection and of the Fire Departments. It also, ensures the operation of a land transport system for medical emergencies, in order to guarantee, to casualties or victims of sudden illness, the prompt and correct provision of health care (https://www.prociv .azores.gov.pt).

They are civil protection agents, in accordance with their own attributions:

1. Fire brigades;
2. Security forces;
3. The Armed Forces;
4. The bodies of the National Maritime Authority;
5. The National Civil Aviation Authority;
6. Public entities providing health care.

The SRPCBA is organized in four divisions, each with the following competencies:

1. **Prevention, Training and Awareness** who are responsible, among other competences for promoting, ensuring, and supporting prevention/awareness in Civil Protection among all citizens; ensure the training of elements of the fire brigades in the areas of pre-hospital emergency, fire, and rescue, planning and operations.
   More information at:
   https://www.prociv.azores.gov.pt/sensicao/
   https://www.prociv.azores.gov.pt//formacao/

2. **Planning, Operations and Risk Assessment**, its mission is to ensure the planning and direction of the Service's operations, the coordination of the resources to be committed and the adequacy of exceptional measures to be adopted in the imminence or occurrence of a serious accident or catastrophe. This division also includes the Emergency Operations Center, the operational structure of the SRPCBA, which includes, among others, the Emergency Management and Service Room where all RAA distress calls are answered, sorted, and monitored. Ensures the service of the European

Emergency number (112), Medical Emergency Line and other emergency situations that directly or indirectly put the population at risk.
More information at:
https://www.prociv.azores.gov.pt/operacoes/
https://www.prociv.azores.gov.pt//emergencia-medica/

3. **Fire Department Inspection,** in addition to the competences assigned to it through the Azores Regional Civil Protection and Fire Service, its main objective is to ensure the technical and operational connection between the government and all Fire Departments in the Region, maximizing investment and the dedication, professionalism and competence of the Firefighters, ensuring their recognition and safety in an active and permanent way.
   More information at:
   https://www.prociv.azores.gov.pt//firemen/

4. **Fire safety**, this division's main competence is to ensure compliance with fire safety regulations in buildings in the Azores.
   More information at:
   https://www.prociv.azores.gov.pt/seguranca/

The SRPCBA has a Training Center which is a space for training and theoretical/practical training, with approximately 5 hectares and comprising a diverse set of infrastructures that allow the practical training of Fire Brigade operatives, in a wide range of representative scenarios presenting the reality in the Autonomous Region of the Azores and allowing the training and education of operational and collaborators from other regional entities. This training center has specialized technical training, in terms of pre-hospital emergency, structural firefighting, industrial firefighting, intervention in road rescue and extrication, height rescue in confined spaces and catastrophe intervention.

5. Hospital Assistance

In the Autonomous Region of the Azores, there are the following hospital care equipment/infrastructures:

- Basic Emergency Units on all islands.
- IFS Service – Immediate Life Support - on four islands (São Miguel, Terceira, Faial and Pico).
- Emergency services in the three Hospitals of the RAA, on the three islands with the highest population density (São Miguel, Terceira and Faial).
- Inter-island and overseas emergency transport.
- Medical Emergency Line.
- Azores Health Line.

6. Pandemic by COVID-19

The Government of the Azores activated all the resources to respond to the public emergency imposed by the evolution of the COVID-19 pandemic. The responses were – and will continue to be – agreed upon between the Regional Health and Sports Secretariat, through the Regional Health Directorate, and the guidelines issued by the General Directorate of Health and the World Health Organization.

All the guiding information regarding the COVID-19 pandemic (eg, normative and informative circulars) - in addition to being published in the Official Journal of the Regional Government of the Azores - are also disseminated through the main regional information channels, as well as through social and on the website created exclusively to gather information on the evolution of the pandemic and the Region responses. “Safety Destination Azores” website -https://destinoseguro.azores.gov.pt/ - aggregates all the information regarding the pandemic, from the evolution of active cases, recoveries, deaths and the vaccination process, as well as the measures prevailing per island to mitigate the spread of the virus in the community.

The Government of the Azores, through the Regional Directorate of Tourism, promotes a set of measures aimed to mitigate the native impact and promote the recovery of the sector, namely:

- Plan “Relatival o Turismo” - *Reactive Tourism activity*;
- Clean&Safe Azores stamp (https://clean-safe.azores.gov.pt/);
- Safe destination voucher (http://voucher.azores.gov.pt/pt-pt/);
- Azores Air Fare at €60 (https://www.azoresairlines.pt/pt-pt/informacao/tarifa-acores);

- Measures to support companies and restaurants (https://portal.azores.gov.pt/web/draic/apoios-covid19).

The Clean&Safe Azores project, which within its scope developed specific guidelines for various sectors of activity in the tourism value chain, to mitigate the danger and propagation situations associated with COVID-19, to implement more effective prevention measures and behaviors and train agents on the procedures to be taken in confirmed cases of COVID-19 with their clients.

This project, created in 2020 and renewed in 2021, thus aims to recognize the commitment of private tourism agents in complying with the security measures in relation to COVID-19 and, at the same time, encourage tourists to trust to travel to the Azores, through an internationally recognized validation mechanism for these measures.

This is a voluntary application process for agents, which requires – for the award of the stamp – the (mandatory) participation in a training session dedicated to the specific measures of their sector of activity. Upon completion of the training, all companies send their Contingency Plan and Declaration of Honor on how to apply Clean&Safe Azores measures to the Regional Directorate of Tourism. The Clean&Safe Azores Stamp is issued with 1-year validity, with a yearly renewal. During the validity period of the stamp, validations of compliance with the measures are carried out by the Regional Tourism Inspectorate: non-compliance implies the loss of the stamp.

ANNEX

Analysis of the risks according to the Regional Civil Defence Emergency Plan of the Azores approved by the Government Resolution no. 55/2019 of 16 April 2019

3. TYPES OF RISKS

This current plan seeks to provides responses to risks with the potential to impact on the Autonomous Region of the Azores.

The risks considered are the following:

Natural Risks	Earthquakes
	Volcanic Activities
	Flooding
	Coastal Flooding
	Landslides
	Cyclones, Storms and Hurricanes
	Coastal Erosion
	Tsunamis
	Collapse of natural subterranean caves
Technological Risks	Maritime Accidents
	Air Accidents
	Overland transport of dangerous goods
	Industrial Accidents
	Urban Fires
Mixed Risks	Pollution Accidents
	Forest Fires

The risk evaluation took into consideration the probability of occurrence and the gravity.

The probability of occurrence is defined according to the historical incidence of the risk under analysis and the likelihood of such risk is high, medium-high, medium, medium-low and low.

In relation to certain risks, especially the technology based risks, no level is attributed due to the only residual probability of occurrence.

LEVEL OF PROBABILITY	ANNUAL PROBABILITY	PERIOD OF RETURN (YEARS)
High	>= 0.2	<=5
Medium-high	0.05 - 0.2	]5 - 20]
Medium	0.02 - 0.05	]20 - 50]
Medium-low	0.005 a 0.02	]50 - 200]
Low	< 0.005	>200

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In order to ascertain the level of gravity, this considers the historical incidence of occurrences, the events with the greatest probability and most severe occurrences, defining the expected damage caused to the population, the environment, the economy and society, with the level of gravity classified as residual, reduced, moderate, high or critical.

GRAVITY	IMPACT	DESCRIPTION
RESIDUAL	Population	There are no injuries or mortalities. There are no evacuations of people or only of limited numbers for short periods (up to 12 hours). Few support staff necessary. Insignificant levels of damage.
	Environment	There is no environmental impact.
	Socioeconomic	There is no or only levels of impact on the community. There are no financial losses.
REDUCED	Population	Small number of injuries without any fatalities. Some hospitalisations. Evacuation of people for periods less than 24 hours. Some support and reinforcement staff needed. Some damage.
	Environment	Low level environmental impact without long lasting effects.
	Socioeconomic	Disruption (less than 24 hours). Low level financial losses.
MODERATE	Population	Moderate number of victims. Medical treatment necessary but without fatalities.

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		Some hospitalisations. Evacuation of people for a period of 24 hours. Some technical staff necessary.
	Environment	Environmental impact without long lasting effects.
	Socioeconomic	Some disruption to the community (less than 48 hours). Some financial losses.
HIGH	Population	Large numbers of victims. High numbers evacuated for periods in excess of 24 hours. Fatalities. External resources required to support emergency teams. Significant damage that require external resources.
	Environment	Some environmental impacts with long lasting effects.
	Socioeconomic	Partial functioning of the community with some services unavailable. Significant losses.
CRITICAL	Population	High numbers of victims. Large scale evacuations for long term durations. Significant numbers of fatalities. Support staff and reinforcements necessary.
	Environment	Significance environmental impact with permanent damage.
	Socioeconomic	The community is no longer able to function without significant support.

This attributes both a level of risk in accordance with the respective levels of probability and gravity as set out in the risk matrix below:

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LEVELS OF RISK

Autonomous Region of the Azores		LEVEL OF GRAVITY				
		Residual	Reduced	Moderate	High	Critical
LEVEL OF PROBABILITY	High	G1	R1	R2	Air Accident TS	H1 H2
	Medium-high		G2		R3	H3
	Medium		G3	G4		H4
	Medium-low				G5	R4
	Low					H5 R5

Low Risk | Moderate Risk | High Risk | Extreme Risk

NOTE: while the Azores has no experience of Forest Fires, which would result in their inclusion in the table above, they need to be considered a potential risk deserving particular attention due to the ongoing effects of climate change.

CAPTION:

Tropical Cyclones: (SaffirSimpson Scale):	**Maximum daily wind gusts (km/h)**:	**Daily Precipitation (mm):**
TS: Tropical storm H1: Category 1 H2: Category 2 H3: Category 3 H4: Category 4 H5: Category 5	G1: 127-145 G2:146- 161 G3: 162-179 G4: 180-198 G5:>= 199	R1: 99-134 R2: 135-165 R3: 166-201 R4: 202-237 R5:>= 238

In order to characterise the natural risks, specifically earthquakes, landslides, remote tsunamis, regional tsunamis, local tsunamis, pyroclastic falls, pyroclastic flows, lava flows, volcanic gases, constant gas emissions and flooding, we opted to carry out analysis for each island taking into account the different geological, geodynamic and geomorphologic contexts as any other approach at the regional level would remain overly generalist in detail. Hence, we set out the following risk matrixes:

SANTA MARIA		LEVEL OF GRAVITY				
		Residual	Reduced	Moderate	High	Critical
LEVEL OF PROBABILITY	High		Landslides			
	Medium-high					
	Medium					
	Medium-low				Pyroclastic falls Earthquakes	
	Low	Regional tsunamis			Remote tsunamis	

SÃO MIGUEL		LEVEL OF GRAVITY				
		Residual	Reduced	Moderate	High	Critical
LEVEL OF PROBABILITY	High				Landslides	Constant gas emissions
	Medium-high					
	Medium				Flooding	Earthquakes
	Medium-low				Volcanic gases	Lava flows Pyroclastic falls
	Low	Regional tsunamis			Remote tsunamis	Pyroclastic flows

TERCEIRA ISLAND		LEVEL OF GRAVITY				
		Residual	Reduced	Moderate	High	Critical
LEVEL OF PROBABILITY	High					Constant gas emissions
	Medium-high		Landslides		Flooding	
	Medium					Earthquakes
	Medium-low				Volcanic gases	Lava flows Pyroclastic falls
	Low	Local tsunamis			Remote tsunamis	

SÃO JORGE		LEVEL OF GRAVITY				
		Residual	Reduced	Moderate	High	Critical
LEVEL OF PROBABILITY	High					
	Medium-high				Landslides	
	Medium					Earthquakes
	Medium-low	Tsunamis				
	Low				Volcanic gases	Lava flows
					Remote tsunamis	Pyroclastic falls
						Pyroclastic flows

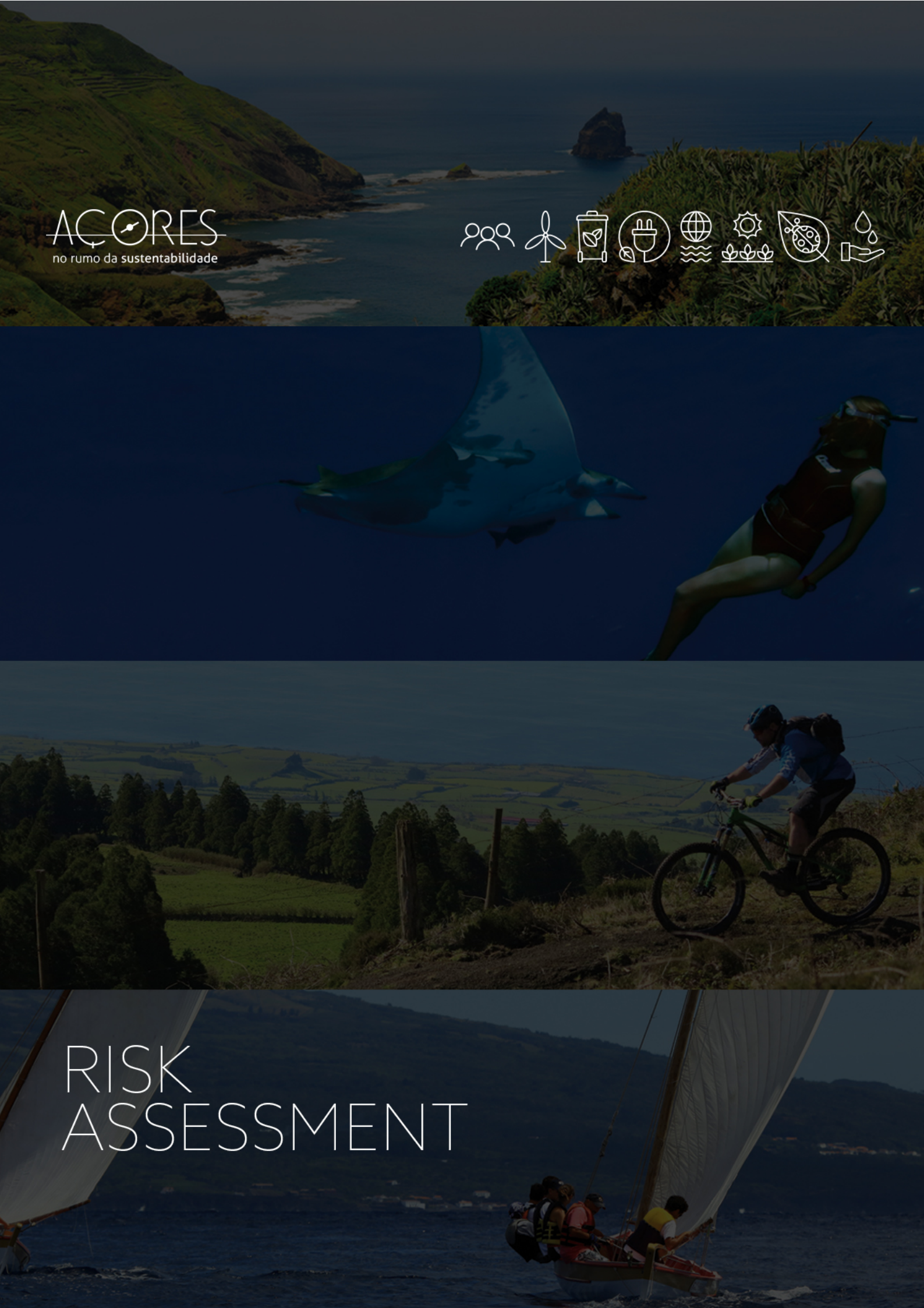
GRACIOSA		LEVEL OF GRAVITY				
		Residual	Reduced	Moderate	High	Critical
LEVEL OF PROBABILITY	High				Constant gas emissions	
	Medium-high		Landslides			
	Medium					
	Medium-low				Earthquakes	
	Low	Local tsunamis			Volcanic gases	Lava flows
					Remote tsunamis	Pyroclastic falls
						Pyroclastic flows

PICO		LEVEL OF GRAVITY				
		Residual	Reduced	Moderate	High	Critical
LEVEL OF PROBABILITY	High				Constant gas emissions	
	Medium-high			Landslides		
				Flooding		
	Medium				Earthquakes	Lava flows
					Volcanic gases	Pyroclastic falls
	Medium-low					
	Low				Remote tsunamis	Pyroclastic flows

FAIAL		LEVEL OF GRAVITY				
		Residual	Reduced	Moderate	High	Critical
LEVEL OF PROBABILITY	High				Constant gas emissions	
	Medium-high					
	Medium			Flooding	Landslides	
	Medium-low				Volcanic gases	Earthquakes Pyroclastic falls
	Low	Local tsunamis			Remote tsunamis	Lava flows Pyroclastic flows

FLORES		LEVEL OF GRAVITY				
		Residual	Reduced	Moderate	High	Critical
LEVEL OF PROBABILITY	High					
	Medium-high				Landslides	
	Medium			Flooding		
	Medium-low				Regional tsunamis	
	Low	Earthquakes		Remote tsunamis	Volcanic gases	Lava flows Pyroclastic falls Pyroclastic flows

CORVO		LEVEL OF GRAVITY				
		Residual	Reduced	Moderate	High	Critical
GRAU DE PROBABILIDADE	High					
	Medium-high					
	Medium		Landslides			
	Medium-low					
	Low	Earthquakes		Remote tsunamis	Volcanic gases Regional tsunamis	Lava flows Pyroclastic falls


AÇORES
no rumo da sustentabilidade
RISK
ASSESSMENT