TURKS AND CAICOS ISLANDS AIRPORTS AUTHORITY

STRATEGIC MASTER PLAN FOR THE TCIAA

B.4. Environmental and social strategy for the TCIAA

October 2024

ALG

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Disclaimer

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The E&S strategy proposal presented within this document has been adapted to the reality of the TCIAA. This proposal is based on the knowledge of the ALG E&S Team at both strategic and operational levels, aiming to develop a feasible E&S Strategy that could be implemented in the coming years

Objectives

The **objective** of this report is to **define a common environmental and social strategy for all the TCIAA network, considering TCIAA Headquarters, Sustainable Airport and Green Airports in a cycle of continuous improvement**. For this purpose, the following works have been performed:

1. **General framework for the E&S strategy for the TCIAA**: Includes the mission and vision of the strategy, stakeholders' governance, main risks and impacts, etc.
2. **Scope and Pillars to the E&S Management System**: Definition of the E&S Management System Concept for the TCIAA, with its main pillars and proposed approach for the entire network
3. **E&S action plan**: Definition of an E&S action plan for the TCIAA, along with some performance indicators for future monitoring

The document also includes a summary of general E&S guidelines based on a series of international best-practices and standards

Content

The TCIAA E&S strategy shall be based on a continuous improvement framework that allows for better results, productivity and efficiency

Continuous improvement cycle

The continuous improvement cycle is a process that ensures the achievement of objectives linked to overall performance in accordance with the policy of the organization. It is a structured process in which everyone in the organization should participate with the aim of increasing competitiveness, productivity and efficiency in the use of resources, while minimizing impacts and reducing costs in a changing environment.

The continuous application of this process generates:

- **Reduction of resources** utilized through an increase in efficiency
- Decrease in the time spent, **increasing productivity**
- **Reduction of the number of errors**, favoring their prevention
- A **systematic overview** of the organization's activities
- **Improved relationships** and communication

The continuous improvement process allows for **synergies and knowledge sharing in management**. To guarantee the success of this process at the TCIAA, the main proposal entails the development of a monitoring and review system using indicators, with a triple objective:

1. Structuring of the follow-up and **monitoring of the TCIAA E&S Strategy**
2. Definition of the **TCIAA's headquarters E&S management indicators**
3. Definition of the **TCIAA's airport network E&S management indicators** both for sustainable and green airports

Continuous Improvement Cycle

Source: ALG Analysis

The TCI participates, both as a Government and through the UK's representation, in various international environmental agreements

Environmental and Social International Framework (1/3)

Non exhaustive

Basel Convention on the control of transboundary movements of hazardous waste

The **Stockholm Convention** on Persistent Organic Pollutants, an international agreement that regulates the treatment of toxic substances

The **Rotterdam Convention** in relation to importation of hazardous chemicals

The **Paris Agreement** that establishes a global framework to avoid dangerous climate change by limiting global warming to less tan 2°C and continuing efforts to limit it to 1.5°C

The **Minamata Convention** is an international treaty designed to protect human health and the environment from anthropogenic emissions and releases of mercury

United Nations Framework Convention on **Climate Change** to strengthen public awareness, on a global scale, of the problems related to climate change

Convention on International Trade in Endangered Species of Wild Flora and Fauna (**CITES**)

United Nations Convention to **for the treatment of harmful substances and hazardous waste (UNEP Program)**

The **Montreal Protocol** is a protocol to the **Vienna Convention** for the Protection of the Ozone Layer

The United Nations **Cartagena Protocol on Biosafety** which aims to ensure the safe handling, transport and use of living modified organisms (LMOs) and the **Convention on Biological Diversity**

Bern Convention. The Convention on the Conservation of European Wildlife and Natural Habitats. To ensure conservation and protection of wild plant and animal species and their natural habitats

Bonn Convention. The Convention on the Conservation of Migratory Species of Wild Animals. Contracting Parties work together to conserve migratory species and their habitats by providing strict protection for endangered migratory species

RAMSAR Convention. The Convention on Wetlands of International Importance especially as Waterfowl Habitat. It provides the only international mechanism for protecting sites of global importance

Source: Parties to the United Nations Framework Convention on Climate Change, ALG Analysis

The TCI is also a signatory to the Chicago Convention, so air transport facilities and procedures must be compliant with ICAO general rules

Environmental and Social International Framework (2/3)

Organization	Document
ICAO	Annex 14 - Volume I Aerodrome design and operations - Doc 9501
	Annex 16 - Environmental protection: Volume 1: Aircraft noise Volume 2: Aircraft engine emissions Volume 3: Aircraft CO_2 emissions Volume 4: CORSIA
	Doc 9889. Airport Air Quality manual Doc 9750. Global Air Navigation Plan
	AN/898 Airport Services Manual, Part 3 Doc 9137
	Noise Reduction: Doc 9888. Noise abatement procedures Doc 9184. Airport Planning Manual Part 2 Land use and environmental control Doc 9911. Noise contours Doc 9829. Balance approach Doc 9931 Continuous Descent Opoerations (CDO)
	Document 9332 Manual on the ICAO bird strike information system Notification Bird strike. Doc 9332 CAR/SAM Regional Bird/Wildlife Hazard Prevention

Organization	Document
FAA	AEDT - Aviation Environmental Design Tool
	Environmental Programs – Airport Sustainability and Policy and Guidance Resources
	Environmental Programs – Airport Air Quality
	Environmental Programs – Airport Recycling
	Environmental Programs – Compatible Land Use
	Environmental Programs – Best Practices Management

Another reference entity for the TCI is the FAA, which has various programs to improve the impact of aviation on the environment

Source: ICAO, FAA, ALG Analysis

ICAO cooperates with its members States and other organizations of the United Nations in pursuit of common goals

Environmental and Social International Framework (3/3)

SAFE SKIES. SUSTAINABLE FUTURE. A UNITED NATIONS SPECIALIZED AGENCY

No Country Left Behind

*The **No Country Left Behind** (NCLB) initiative highlights ICAO's efforts to assist States in implementing ICAO Standards and Recommended Practices (SARPs). The main goal of this work is to help ensure that SARP implementation is better harmonized globally so that all States have access to the significant socio-economic benefits of safe and reliable air transport.*

The NCLB effort also promotes ICAO's efforts to solve Significant Safety Concerns (SSCs) brought to light through ICAO's safety oversight audits as well as other safety, security and emissions-related objectives.

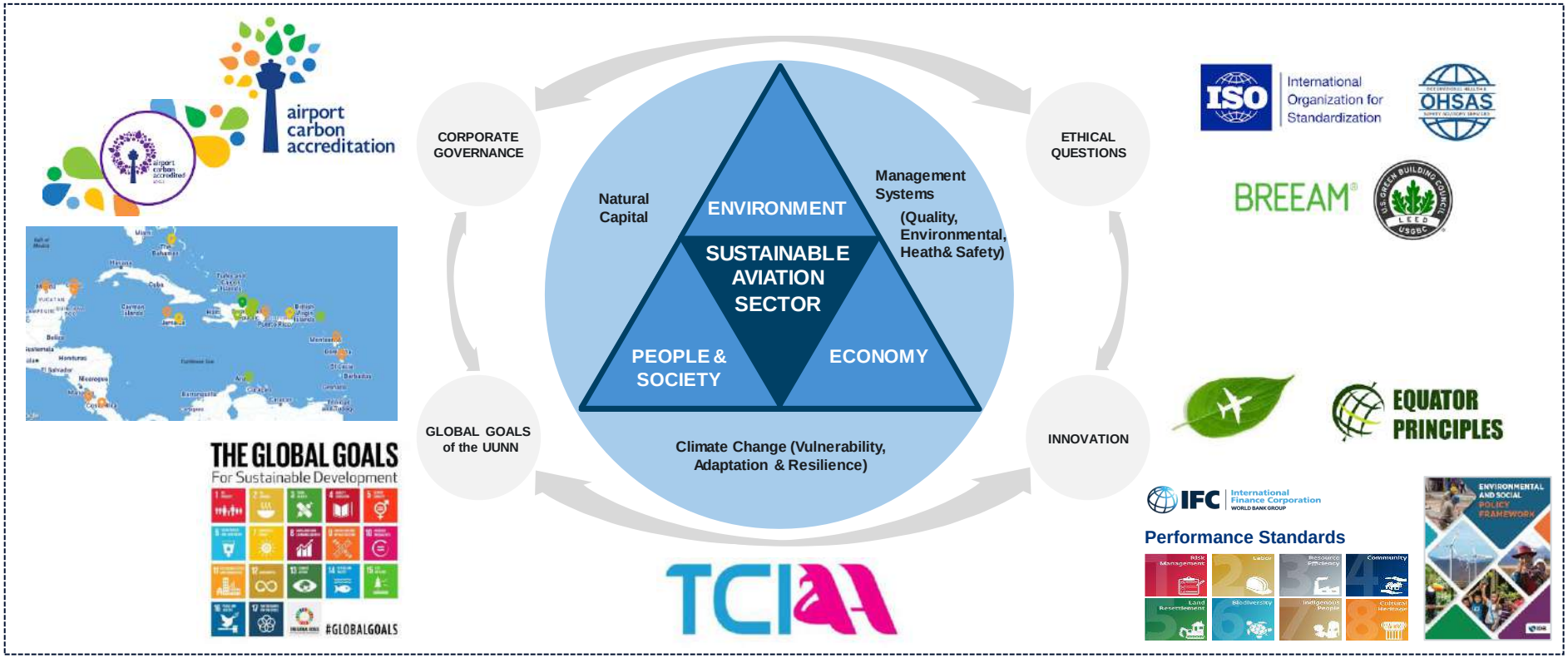
SUSTAINABLE DEVELOPMENT GOALS

	United Nations SDGs	ICAO Strategic Objectives				
		Operational safety	Efficiency Capacity	Safety facilities	Economic development	Environment
1	Ending poverty in all its forms around the world					
2	Ending hunger, achieving food security and promoting sustainable agriculture					
3	Ensuring healthy living and promoting wellbeing for all population at all ages					
4	Ensuring inclusive, equitable, quality education and promoting opportunities					
5	Achieving gender equality and empowering all women and girls					
6	Ensuring water availability and its sustainable management and sanitation					
7	Ensuring access to affordable, secure, sustainable and modern energy					
8	Promote sustained, inclusive and sustainable economic growth and full employment					
9	Building resilient infrastructure, promoting inclusive and sustainable industrialization					
10	Reducing inequality within and between countries					
11	Making cities and human settlements inclusive and safe					
12	Ensuring sustainable consumption and production modalities					
13	Taking urgent action to combat climate change and its impacts					
14	Preserve and make sustainable use of the oceans, seas and marine resources					
15	Protect, restore and promote sustainable use of terrestrial ecosystems					
16	Promote equitable, just, peaceful and inclusive societies as well as access to justice					
17	Revitalize the Global Partnership for SDG and strengthen the mechanisms					

Source: ICAO, UN, ALG Analysis

A major challenge for the aviation sector in the TCI, particularly in the short term, is the transformation towards a sustainable airport system

Sustainable airport system



The ultimate target of an Airport Authority should be developing a sustainable airport system that is economically viable, socially responsible, and environmentally respectful

Source: IFC, IDB, UN, EP, ACA/ACI, ALG Analysis

Content

The TCIAA's E&S strategy must ensure a sustainable development of the airport system through the preservation of environmental quality

E&S Strategy of the TCIAA – Mission and vision

Proposal

*The TCIAA seeks to **modernize the airport system by integrating the environmental, social and economic perspective** into the infrastructure. In the last decade, efforts to minimize environmental and climate impacts in all sectors have been focused through action and guided by the **Sustainable Development Goals towards the United Nations 2030 Agenda.***

*TCI is a country made up of a group of small islands in the Caribbean region, each of which has **environmental and social particularities** that have a **direct or indirect impact on airport infrastructure**.*

*TCIAA believes that only through **shared environmental management practices** will the system be made economically viable from an environmental point of view, which includes **climate change as one of the most relevant aspects to be considered**.*

*Regarding economic aspects, some of the airfields in Turks and Caicos are not economically viable, but they do fulfill the **social function of internal connectivity between the islands,** as well as between islands and continents.*

This Environmental Strategy is a tool to reinforce the leadership in the modernization of airport infrastructure, relying on sustainable development goals and mainstreaming environmental and social management in the operational management of airports.

MISSION

To ensure the **sustainable development** of the Turks and Caicos airport system through the **preservation of natural resources, as well as the environmental quality of the islands,** for the benefit of people and the environment in a decentralized manner and articulated with all stakeholders within the framework of environmental and social governance

VISION

An airport system that **takes into account the fragile environment of the islands in the Caribbean region**, allowing reliable internal and external connectivity with the support of well-sized, **energy-efficient facilities**, **responsible in water consumption**, innovative in waste management, noise and air emissions, while taking into **account social and cultural aspects to support the sustainable development of TCI**

Source: ALG Analysis

The TCIAA must develop a Policy which integrates environmental and social dimension in airport management, aligned with int'l standards

E&S Strategy of the TCIAA – E&S policy

Proposal

Proposal for the E&S Policy for the TCIAA

The TCIAA is as an agent of change for TCI population through the modernization of the aviation sector. Within the framework of airport management, the TCIAA **must ratify its commitment to excellence in environmental and social management in all airports** of its network.

For this purpose, the TCIAA has initiated the **Strategic Master Plan** of TCI airport system. This strategic planning process, along with the definition of an **E&S Management System**, will allow the TCIAA to establish the framework for the **sustainable development of air transport** in the coming years, making its activity compatible with the conservation of the natural environment and the improvement of all nationals and visitors.

In this sense, the TCIAA assumes the following **principles** as a framework of reference:

- Have the **involvement and commitment** of its managers to achieve the proposed objectives, using values and strategies of TCIAA as the main reference
- Comply with the legal requirements applicable to its scope of action, as well as other requirements that the organization subscribes in terms of **environmental conservation, energy efficiency and the fight against climate change**
- Promote **permanent collaboration** and association with interested parties, both domestically and internationally, in a transparent manner with the aim of satisfying their needs and expectations in the field of the TCIAA's activity
- Promote **energy efficiency** and the **progressive implementation of renewable energies**, as mechanisms to reduce greenhouse gas emissions
- Promote actions aimed at **preventing air, water and soil pollution**, minimizing noise levels in the airport environment, reusing, recycling and properly managing waste derived from our activity, as well as **efficient consumption** of natural resources
- **Manage resources efficiently** and ensure the availability of information to promote and achieve established objectives and goals, as well as continually improve the performance of the organization's processes and results
- Periodically **evaluate the sustainable performance of the organization** and the perception of the clients to achieve continuous improvement of the TCIAA's management and services, establishing priority lines of action based on the results obtained
- Guarantee the **continuous training and education of TCIAA's professionals** through training and awareness programs on quality and environment for the correct development of their activities
- **Communicate the Policy to all employees and companies** operating in TCIAA airports and make it available to interested parties

Source: ALG Analysis

To ensure the success of the E&S strategy, it is paramount to establish a permanent structure of collaboration between institutions

E&S Strategy of the TCIAA – Stakeholder Engagement National Structure

Proposal

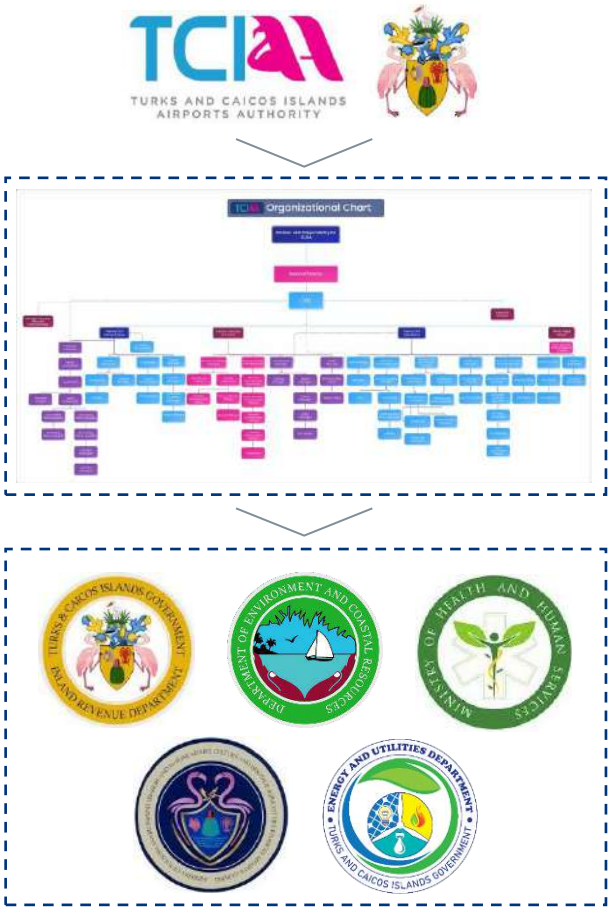
One of the distinctive aspects of the TCIAA E&S Strategy is to **define a system that allows achieving objectives to improve the environmental performance** of the airports in the Turks and Caicos Islands.

For this, it is important to **establish a permanent structure of collaboration between institutions** and achieve the following objectives to guarantee the success of the implementation of the E&S Strategy:

- Define the **responsibilities for the environmental and social aspects of each of the stakeholders**
- **Guarantee the implementation of environmental plans and projects** that are essential to improve environmental aspects inside and outside the airport complex
- **Have within the organization trained professionals in airport environmental management** and specialists for critical issues that may compromise the environmental viability of the airports infrastructure

The stakeholder engagement structure must be **reliable and efficient**, so that consensual decisions can be made. **All agents in the country must be represented** and it must be flexible enough to guarantee its long-term viability.

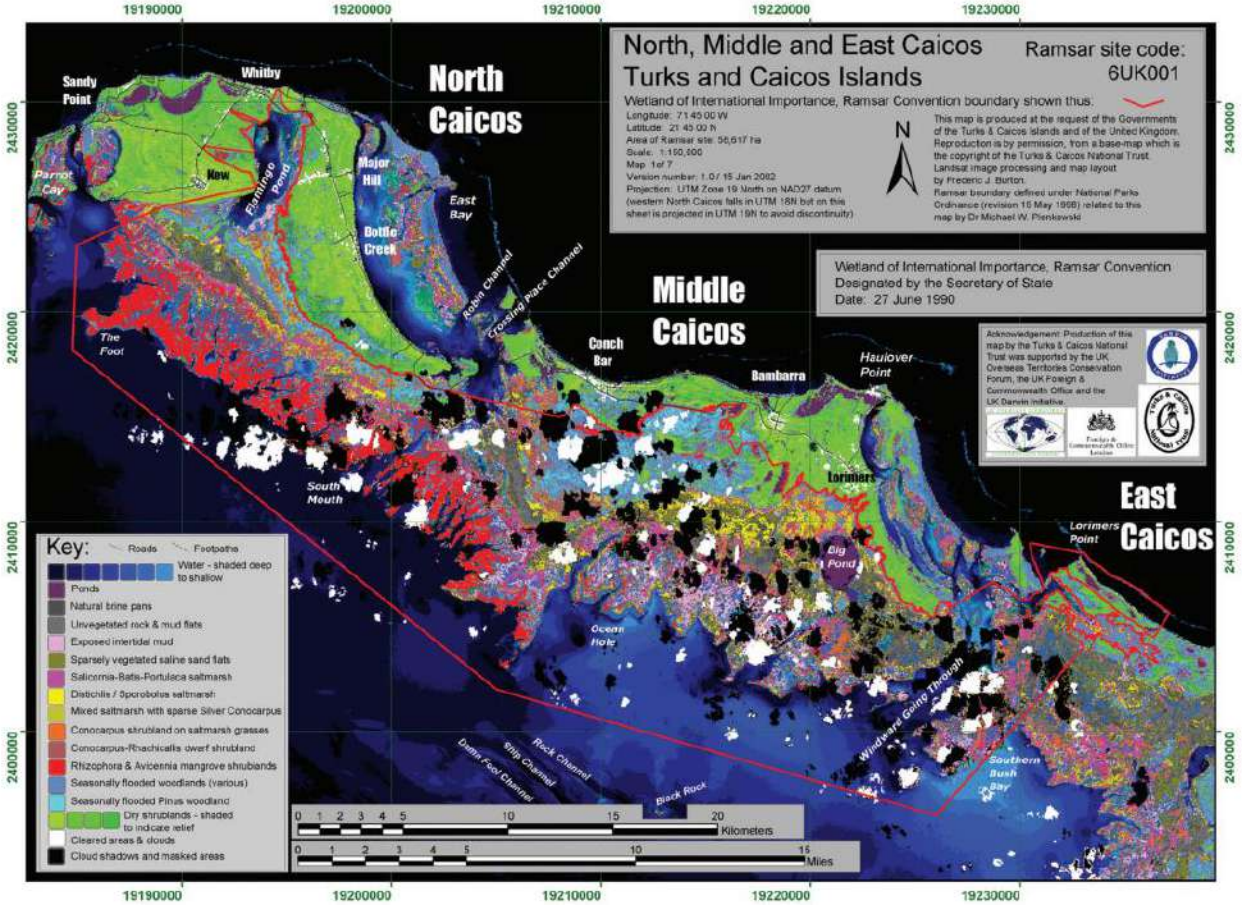
Despite the complexity of defining a Stakeholder Engagement National Structure, it is necessary to **promote and initiate the management of change towards a modern airport system**, which incorporates environmental and social aspects in its management, and which **is a model for the society of the Turks and Caicos Islands and for the aviation sector in the Caribbean and in the SIDS** (Small Island Developing States).

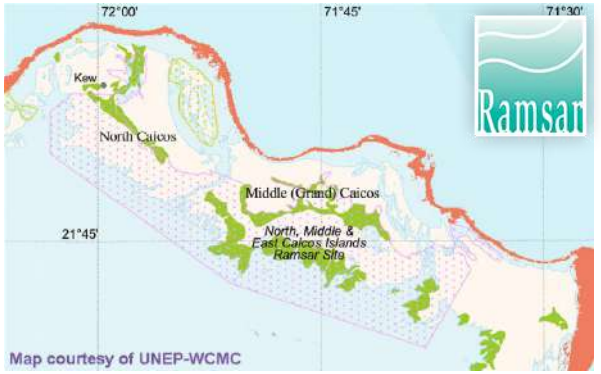


Source: ALG Analysis

The fragility of the marine-terrestrial environment is one of the most relevant challenges in the environmental management of airports

Relevant environmental and climate change challenges





Reducing the vulnerability of the airport infrastructure and improving airport management to ensure greater adaptability and resilience to climate change are two other challenges for the coming years

Source: Ramsar, ALG Analysis

The management of natural aspects linked to climate change will prove key for the viability of TCIAA airports in the long-term

Main E&S impacts of the airport network

*The development of a **shared model** with an **integrated management approach**, focused on energy efficiency and consumption minimization, should allow defining a strategy for operational management at the TCIAA, both at **the organizational level and at the airports level***

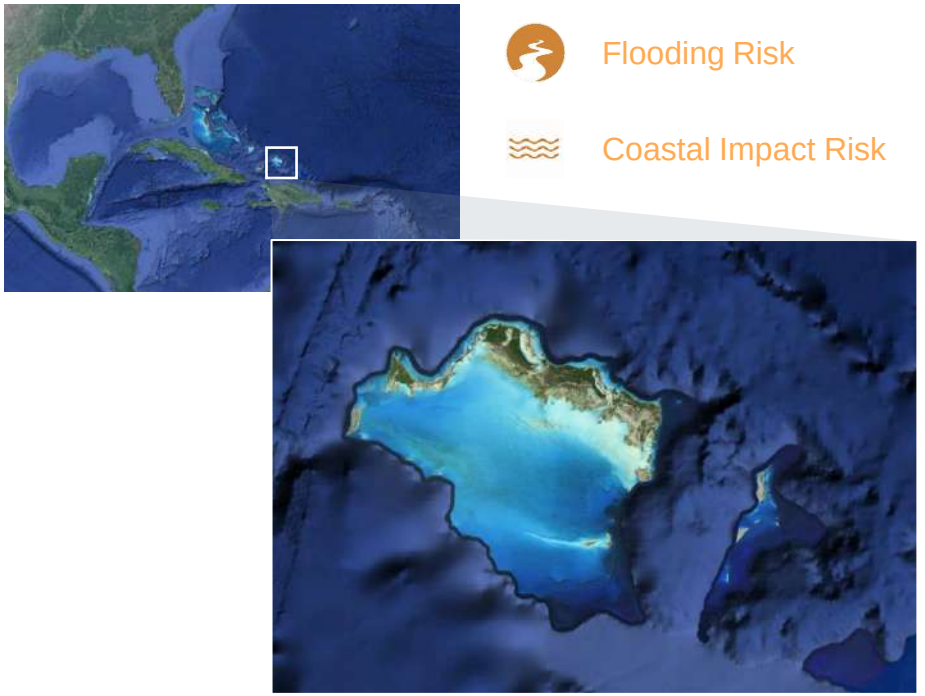
Impacts of the airport on the environment

- Energy Consumption and GHG emissions
- Waste & Hazardous materials consumption
- Water pollution
- Loos of habitats and biodiversity
- Ecosystems pollution

Other E&S aspects

- Labor and working conditions (including gender perspective)
- Community safety

Impacts of the environment towards the airport



- Flooding Risk
- Coastal Impact Risk

Source: Google Earth, ALG Analysis

Content

The E&S Management System is based on the management of the organization and the risks and impacts linked to the airport network

E&S Management System concept

E&S Management System

SCOPE

Organization	**Environmental, Social,** Quality, and Safety & Health
Sustainable Airport	PLS – Monitoring and control of the PPP Contract
Green Airports	GDT, XSC, SLX and NCA Airports Management

PILARS

These 5 pillars constitute the environmental and social commitment both from the point of view of the organization's commitment and the airport infrastructure management. These pillars will allow to move towards the implementation of environmental and social management in accordance with the strategic mission and vision, as well as in relation to the principles of the organization E&S policy.

- **Resource Efficiency and Pollution Prevention**
- **Aeronautical Impacts**
- **Vulnerability and Resilience to CC**
- **Management of Land Use Around the Airport**
- **Natural Resources and Biodiversity**

Source: ALG Analysis

The scope of the E&S Management System entails a triple approach to integrate the entire aviation sector managed by the TCIAA

E&S Management System scope

SCOPE

Organization — **Environmental, Social,** Quality, and Safety & Health

Objective:

1. Carry out structured airport management through the implementation of an **Integrated Management System that includes quality, health and safety, environment and social aspects**. The E&S Strategy and the E&S Management System are the initial approaches for integrated operational management
2. Establish an **organizational structure, capacity and competency** to implement E&S Strategy
3. **Efficiently manage the aviation sector** at TCI both at the aeronautical and airport level

Sustainable Airport — PLS – Control and supervision of the PPP Contract

Objective:

1. Carry out the **control and supervision of the E&S KPIs of PLS PPP contract** and support the concessionaire to achieve the objectives proposed by the Government

Green Airports — GDT, XSC, SLX and NCA Airports Management

Objective:

1. **Initiate environmental and social management throughout the secondary airports of the network in a balanced and efficient manner**, improving environmental performance and focusing on the adaptation and resilience of the airport system

This approach is aligned to the international financial institution's (IFIs) requirements

TCIA

E&S Management System

Source: ALG Analysis

The pillars of the E&S Management System show a holistic perspective linked to environmental and social international standards

E&S Management System pillars

PILLARS

Resource Efficiency and Pollution Prevention

It is intended to influence some environmental aspects such as **Energy Efficiency, Water, Solid & Hazardous Waste and Hazardous Materials management**, to become more efficient and prevent general pollution

Aeronautical Impacts

Aircraft noise and aircraft emissions with direct impact on the community are considered. Minimizing aircraft noise is essential to guarantee the long-term viability of airport infrastructure in urban environments, and thus minimizing aircraft emissions is a global Net Zero Carbon and local air quality objective

Vulnerability and Resilience to CC

A comprehensive vision of the impact of **climate change on airport infrastructure, risks and impacts** in the medium and long-term is incorporated. The set of small islands within the country makes the vision of the climate impact on airports and aerodromes a priority for environmental and social management

Management of Land Use Around the Airport

The management of **land use around the airports** is a very relevant aspect in operational management, since they can be limiting for potential airport expansions and are also linked to social responsibility

Natural Resources and Biodiversity

Biodiversity management focused on operational safety is an intrinsic part of airport management. However, a new **biodiversity and business** approach should be considered, focused on the **preservation of natural resources and ecosystem services**. The fragility of small islands requires a special management of natural resources, some of which are scarce but essential to guarantee the airports viability

The 5 pillars are based on an integrated holistic perspective since they consider the protection of the environment and the health & safety of people, along with the operation of the airport network infrastructure

TCIA
E&S Management System

Source: ALG Analysis

Content

Adhering to international E&S standards is a mandatory requirement set by international financial institutions in new investment projects

E&S Management System aligned with IFIs environmental performance

The Equator Principles, the IFC Performance Standards and the IDB Environmental and Social Policy Framework are the most relevant references for the TCIAA, both for future investment projects and for the access to green funds

The E&S management system proposed for the TCIAA includes a management proposal for the organization and two differentiated management proposals for airports, aligned with International best-practices

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E&S Management into the Organization

01/ **Sustainable Airport**

IFC & IDB Framework References

PLS GDT XSC SLX NCA MDS

02/ **Green airports**

E&S Integrated Management System

PLS **GDT** **XSC** **SLX** **NCA** **MDS**

PLS, through the PPP project, should become a **fully sustainable airport**, while de **rest of the TCIAA network** must adopt a **common strategy to improve their E&S performance**

MDS The advice for Middle Caicos is to do some refurbishment works so the airport becomes operational for emergency services and occasional air transport for the community, thus not having major environmental impact

OPERATIONAL COST

NC	No cost
$	<15.000 $/Year
$$$	>100.000 $/Year

STAFFING

Effort
- 1 staff person with part-time E&S responsibilities
- E&S Department

Knowledge
- General E&S aspects
- Minimal E&S regulatory Knowledge
- Detailed E&S regulatory Knowledge

Frequency
- Daily
- Monthly
- Seasonal (twice/year)

Source: IFC, IDB, UN, EP, ALG Analysis

The TCIAA should lead the transition towards a sustainable system that quantifies and implements a long-term set of objectives

E&S Management System into the Organization

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E&S Management into the Organization

- **Environmental management in all the departments of the organization**
- **QSHE Department** with full time staff
- **Specialized staff** with detailed E&S regulatory knowledge
- **E&S budget** (OpEx)
- **Training and communication actions** available for all TCIAA staff

Cost	$$
Effort	
Knowledge	
Frequency	Daily

QSHE Department

SMS PROGRAM

E&S Strategy Management

- E&S Strategy organisational management
- Communication with stakeholders
- Internal and external environmental education
- Comprehensive documentation system

PLS PPP contract monitoring

- Control and supervision of all related E&S aspects and support to the concessionaire
- Coordination with the Stakeholders Engagement Plan from PLS

E&S green airport management

- E&S management (energy, waste & hazardous materials, water, biodiversity, habitats and ecosystems)
- Control of environmental licenses and authorizations to the green airports

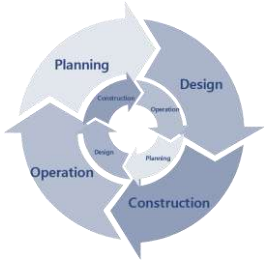
QSHE: Quality, Safety, Health and Environment

Source: ALG Analysis

For the environmental mgmt. of the TCIAA airport network, two different management systems are proposed, both aligned with int'l best-practices

E&S Management System for the TCIAA airports

01/



Sustainable airport

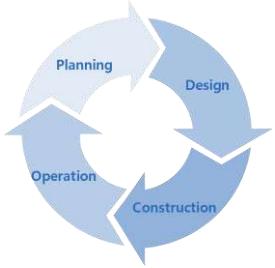
Compliance with international standards

PLS GDT XSC SLX NCA MDS

- **Environmental management in all phases of the infrastructure life cycle**, probably with phase overlap
- **Environmental & Social Department** with full time staff
- **Specialized staff** with detailed E&S regulatory knowledge
- **E&S budget** (CapEx and OpEx)
- To be developed by the **private operator** (PPP), and **supervised by the TCIAA**

Cost	$$$
Effort	
Knowledge	
Frequency	Daily

02/



Green airports

Management like to TCIAA

PLS **GDT** **XSC** **SLX** **NCA** **MDS**

- **Environmental cooperative management** in all phases of infrastructure life cycle
- **Minimal intervention in the terminals** to become more efficient
- **Multifunctional staff of the TCIAA** (E&S aspects included), to work in all the airports (staff with part-time E&S responsibilities)
- **Staff with general knowledge of E&S aspects** and minimal regulatory knowledge
- **Minimum E&S budget** (OpEx)

Cost	$
Effort	
Knowledge	
Frequency	Adaptative

Source: ALG Analysis

It is imperative that PLS complies with int'l standards for sustainable airports (IFC PS, ESPF or EP) during the PPP process

E&S Management System – PLS sustainable airport

Environmental and Social Management System

01/

Sustainable airport

Compliance with international standards

- The airport must have an **Environmental and Social Management System** (ESMS), or an **Integrated Management System** (Quality, Safety and Environment) implemented and **certified**
- The **environmental team** should have the **capacity and competence for performing the management** in all phases of the airport life cycle
- The environmental team must have **technological tools to monitor programs and established procedures**
- The ESMS needs to have **properly defined KPIs** that allow taking management decisions aligned with the Policy and Objectives of the TCIAA E&S Strategy
- **All environmental aspects should be considered** (energy, water, waste, hazardous materials, emissions, climate change, etc.)
- **Social aspects** shall also be included (workers, cultural aspects..)
- Major **environmental and social international best-practices** should be implemented
- **The airport should become a reference in the country** with regards to environmental management

IFC PS: IFC Performance Standard, ESPF: Environmental and Social Policy Framework; EP: Equator Principles

Source: IFC, IDB, ALG Analysis

For the rest of TCIAA network, a Management Model based on an E&S Management Framework needs to be developed

E&S Management System – TCIAA secondary green airports

02/

Green airports

E&S Management

All environmental and social aspects to be considered (for the environment, workers and the community)

1

Reduction of operating costs
- Lower energy and water costs
- Greater durability and fewer repairs
- Minimal maintenance required

2

Environmental benefits
- Reduced contributions to local/regional air pollution
- Reduced local water pollution
- Protection of biodiversity and natural vegetation
- Increased environmental awareness

3

Attractiveness of the airports
- Positive public image
- Increasing the visibility of the airports in tourism areas
- Greater comfort for passengers
- Airports as a meeting point for the community

Comprehensive approach to E&S Management

- **Design aspects:** Building orientation and façade design to reduce solar gain; Protection from both the rain and sun; Natural ventilation promotion (openings on the façades, ventilation and light shafts to generate thermal drafts)
- **Materials:** Local materials selection according to their durability and resistance to weathering
- **Efficiency systems:** Achieving enhanced energy efficiency and minimizing use of artificial lighting system by creating the optimum conditions for the use of passive and active solar strategies (LEDs, photovoltaic cells….); Water efficiency within the buildings to provide fresh water; Using LED technology for airfield lighting
- **Maintenance:** Regulatory compliance in pollution prevention of waste and FOD, hazardous materials, water, green areas
- **Biodiversity and natural resources management:** Management of wildlife and bird strike; Identification and natural resources
- **Staff (TCIAA Organization):** Multifunctional staff to work in all the airports (staff with part-time E&S responsibilities), and with general knowledge of E&S aspects and minimal regulatory knowledge

Source: ALG Analysis

Content

The E&S action plan has been prepared considering strategic pillars, transversal operational objectives, and action blocks in a 2030-horizon

Rationale of the E&S action plan

5 Holistic Pillars

- Resource Efficiency and Pollution Prevention
- Aeronautical Impacts
- Vulnerability and Resilience to CC
- Management of Land Use Around the Airport
- Natural Resources and Biodiversity

8 Transversal Operational Objectives

- Energy Efficiency
- Waste & Hazardous materials Management
- Water Conservation
- Noise & Land use Management
- Biodiversity and Ecosystem Conservation
- Stakeholder Engagement
- Labor and working conditions
- Community Health & Safety

4 Action Blocks

- Capacity Building
- Technical Assessments
- Risk Assessment
- Promotion E&S Strategy

Timeline

YEAR 2025 | YEAR 2026 | YEAR 2027 | YEAR 2028 | YEAR 2029 | YEAR 2030

Source: ALG Analysis

The proposed operational objectives are focused on improving the E&S performance of the all the airports of the network

Transversal operational objectives of the E&S action plan

	Quantitative objectives
Energy Efficiency Implement energy-efficient measures throughout the airports to reduce energy consumption and greenhouse gas emissions (climate change and air quality)	**100% of the airports into the Airport Carbon Accreditation Program - ACI**
Water Conservation Water conservation practices, such as low-flow fixtures, rainwater harvesting and water efficient landscaping, to reduce water consumption and protect local water resources	**Reduction of 30% water consumption in all the airports (vs. 2025 baseline)**
Waste & Hazardous materials Management Waste management practices, such as recycling and composting, to minimize the amount of waste generated and divert waste from landfills	**Reduction of 30% waste land fields in all the airports (vs. 2025 baseline)**
Noise & Land use Management Measures to reduce noise pollution from airport operations, such as implementation of noise abatement procedures, use of quieter GSE and investment in noise reduction technologies	**Noise footprints and SLOs guaranteed in all the airports**
Biodiversity and Ecosystem Conservation Implement measures to protect and enhance local biodiversity and promoting biodiversity education and awareness	**Minimum 1 action completed per year in all airports + Zero chemical pesticides**
Labor and working conditions Establish labor and working conditions linked to climate effects and establish a training plan to improve the E&S capacities and capabilities	**100% of TCIAA workers trained in the E&S Strategy and QSHE Management**
Stakeholder Engagement The company's stakeholder engagement activities are designed to promote transparency, open communication and collaboration to build trust and understanding between stakeholders	**Minimum 1 activity carried out per year in all the airports**
Community Health & Safety Establish an Emergency Plan shared with the airport community and with the government of Turks and Caicos Islands	**Once every two years carry out an emergency drill at all the airports**

Source: ALG Analysis

Four action blocks are defined to improve knowledge, manage environmental and technical aspects, and promote the E&S Strategy

Action blocks to develop the E&S action plan

Capacity Building

1. E&S Strategy Management of the TCIAA
2. Control of the E&S aspects of Providenciales PPP Contract
3. E&S management of Green Airports

Technical Assessments

1. Consumption reduction (energy, water, waste and hazardous materials)
2. Net Zero Carbon
3. Biodiversity & Bussines focus management

Risk Assessment

1. Operation of airports considering the effects of climate change
2. Management of risks and impacts related to the operational aspects

Promotion E&S Strategy

1. Promotion of the E&S Strategy throughout the airport community
2. Promotion of the E&S through the Turks and Caicos Islands and other Caribbean territories

The implementation of this Action Plan is a **responsibility of the TCIAA**. It requires a **budget** that allows all the proposed actions to be carried out at both operational and technological levels.

For the TCIAA network to operate in a cooperative manner, it will necessarily require **mechanisms to share documentation, information and knowledge**.

Source: ALG Analysis

E&S Action Plan roadmap: 2025

Pillars

Objectives

Average compliance

10%

YEAR 2025	YEAR 2026	YEAR 2027	YEAR 2028	YEAR 2029	YEAR 2030

Capacity Building

- **Recruiting a technical team** capable of initiating the change management towards a sustainable airport system
- **Defining an organizational structure** to implement the E&S Strategy and QSHE Management
- Ensuring **adequate training courses for the technical team** to implement E&S Strategy and QSHE Management
- Promoting the development of **operational procedures** for the documentary system to the E&S Strategy

Technical Assessments

- Developing a **detailed baseline assessment for each airport** to identify their current environmental and social situation (quantification of all environmental aspects and identification of gaps)
- Paving the way to advance in the **Airport Carbon Accreditation Program** (ACI)
  - Replacing **LED lighting** where necessary and introducing **photovoltaic cells** where it is possible

Risk Assessment

- Identifying and prioritizing actions to **minimize the impacts of climate change**
- Initiating **flagship actions** in relation to minimizing the impacts of climate change (with focus on 2030; multiannual actions linked to obtaining green founds)

Promotion E&S Strategy

- **Identifying stakeholders** at a national and an airport level and develop a stakeholder map
- **Spreading the E&S Strategy** and its policy throughout all the airport community
- Elaborating an **annual E&S report with a specific chapter** on biodiversity & ecosystems protection
- **Promoting carpooling** for employees and customers

airport carbon accreditation

airport carbon accredited MAPPING

PLS GDT XSC SLX NCA

Source: ALG Analysis

E&S Action Plan roadmap: 2026

Pillars

Objectives

Average compliance

20%

YEAR 2025	**YEAR 2026**	YEAR 2027	YEAR 2028	YEAR 2029	YEAR 2030

Capacity Building

- Ensuring **adequate training courses for the technical team** to implement E&S Strategy and QSHE Management
- Ensuring **adequate specific training courses at each airport** based on environmental and climate change risks
- Completing the **general and specific documentation** required to implement the E&S Strategy
- Developing an **emergency drill with all the airport community** and all the stakeholders involved

Technical Assessments

- Carrying out **detailed technical studies** in relation to the relevant aspects of each airport
  - **Energy system**: inventory of sources, consumption, etc.
  - **Waste management analysis** and identification of improvements
  - **Water cycle**: location of wells, capacity of aquifers, condition of septic tanks or water treatment plants, etc.
  - Signing of **green electricity purchase contracts** with a guarantee of origin
  - Controls on conditions attracting animals to the airports
- Ensuring the **incorporation of clauses in contracts with third parties** (e.g., substitution of pesticides)

Risk Assessment

- Continuing with the development of **flagship actions** in relation to minimizing the impacts of climate change (with focus on 2030; multiannual actions linked to obtaining green founds)

Promotion E&S Strategy

- **Spreading the E&S Strategy** and its policy throughout all the at TCI and some Caribbean territories, in relation to the stakeholders engagement plan
- Elaborating an **annual E&S Strategy report with a specific chapter** on coral protection

airport carbon accreditation

airport carbon accredited MAPPING PLS GDT XSC SLX NCA

airport carbon accredited REDUCTION PLS GDT XSC SLX NCA

Source: ALG Analysis

E&S Action Plan roadmap: 2027

Pillars

Objectives

Average compliance

40%

YEAR 2025	YEAR 2026	YEAR 2027	YEAR 2028	YEAR 2029	YEAR 2030

Capacity Building

- Conducting a **workshop explaining the main takeaways** related to the environmental and social strategy acquired during the 3 years at all the airports of the network
- **Identifying new training needs** (e.g., green founds)

Technical Assessments

- Carrying out **detailed technical studies** in relation to the relevant aspects of each airport
  - Continuous **optimization of sanitary facilities** with water saving devices
  - Replacement of existing HVAC by **more energy-efficient HVAC systems**
  - Replacement of ground handling equipment with **greener equipment**
  - Improvement of waste management linked to **zero waste land field**
  - Elaborate the **noise footprint** in all airports
  - **Reduce de use of pesticides** to zero

Risk Assessment

- Continuing with the development of **flagship actions** in relation to minimizing the impacts of climate change (with focus on 2030; multiannual actions linked to obtaining green founds)

Promotion E&S Strategy

- **Spreading the E&S Strategy** throughout all the TCIAA network, both within the organization and to users and customers, in relation to the stakeholders engagement plan
- Elaborating an **annual E&S Strategy report with a specific chapter** on fauna protection (e.g., iguanas, flamingos, etc.)

GREEN AIRPORT RECOGNITION

airport carbon accreditation

airport carbon accredited OPTIMISATION

PLS GDT XSC SLX NCA

Source: ALG Analysis

E&S Action Plan roadmap: 2028

Pillars

Objectives

Average compliance

60%

YEAR 2025	YEAR 2026	YEAR 2027	**YEAR 2028**	YEAR 2029	YEAR 2030

Capacity Building

- **Identifying new training needs** (e.g., biodiversity and business)
- Developing an **emergency drill with all the airport community** and all the stakeholders involved

Technical Assessments

- Carrying out **detailed technical studies** in relation to the relevant aspects of each airport
  - **Land uses study** for all airports surroundings
  - **Biodiversity studies** (e.g., mapping habitats around the airports)
  - Installation of **water recovery systems**: rainwater, treated water, water of washing areas
  - Installation of **water recovery systems on training areas of ARFF trucks**
  - Installation of **solar panels** for self-consumption purpose
  - Pushing for a **fleet renewal with the aim of having less emissive technologies**

Risk Assessment

- Continuing with the development of **flagship actions** in relation to minimizing the impacts of climate change (with focus on 2030; multiannual actions linked to obtaining green founds)

Promotion E&S Strategy

- **Spreading the E&S Strategy** throughout all the TCIAA network, both within the organization and to users and customers (stakeholder engagement plan)
- Elaborating an **annual E&S Strategy report with a specific chapter** on flora protection (e.g., cacti, etc.)

airport carbon accreditation

airport carbon accredited REDUCTION PLS GDT XSC SLX NCA

airport carbon accredited NEUTRALITY PLS GDT XSC SLX NCA

Source: ALG Analysis

E&S Action Plan roadmap: 2029

Pillars

Objectives

Average compliance

80%

YEAR 2025	YEAR 2026	YEAR 2027	YEAR 2028	YEAR 2029	YEAR 2030

Capacity Building

- **Identifying new training needs** (e.g., climate change resilience)

Technical Assessments

- **Updating the baseline assessment of each airport** to identify the environmental and social situation after 5 years of implementation of the E&S Strategy and the technical studies carried out
- **Alignment with the International Bird Strike Committee** by developing best-practices such as permanent surveillance, modern and specialized monitoring equipment, or active dispersal and retention
- **Analysis of historical contamination / pollution / fuel spills episodes** and prioritization of decontamination actions

Risk Assessment

- Continuing with the development of **flagship actions** in relation to minimizing the impacts of climate change (with focus on 2030; multiannual actions linked to obtaining green founds)

Promotion E&S Strategy

- **Spreading the E&S Strategy** throughout all the TCIAA network, both within the organization and to users and customers, in relation to the stakeholders engagement plan
- Elaborating an **annual E&S Strategy report with a specific chapter** on the 5 years of integration of the environmental and social dimension into the TCIAA airport network

GREEN AIRPORT RECOGNITION

airport carbon accreditation

airport carbon accredited TRANSFORMATION

PLS GDT XSC SLX NCA

Source: ALG Analysis

E&S Action Plan roadmap: 2030

Pillars

Objectives

Average compliance

100%

YEAR 2025	YEAR 2026	YEAR 2027	YEAR 2028	YEAR 2029	YEAR 2030

Capacity Building

- **Identifying new training needs** (e.g., Net Zero Carbon)
- Developing an **emergency drill with all the airport community** and all the stakeholders involved

Technical Assessments

- Establishing a **new technical environmental and social baseline** for the new **E&S Strategy 2050**

Risk Assessment

- Analysis of the **flagship actions** in relation to minimizing the impacts of climate change (with focus on 2030; multiannual actions linked to obtaining green founds)
- Defining a **challenge for 2050** – long-term E&S strategy

Promotion E&S Strategy

- **Presenting the progress of the E&S Strategy** with KPIs and a detailed assessment of the actions carried out since 2025

Full execution of the TCIAA 2030 E&S strategy

Development of the TCIAA 2050 E&S strategy

airport carbon accreditation

airport carbon accredited OPTIMISATION — PLS GDT XSC SLX NCA

airport carbon accredited TRANSITION — PLS GDT XSC SLX NCA

airport carbon accredited LEVEL 5

Source: ALG Analysis

Content

Environmental and Social KPIs for the TCIAA (1/3)

	Category	Performance indicator (KPI)	Unit	TCIAA Headquarters	Sustainable Airport PLS	Green Airports GDT & XSC	Green Airports SLX & NCA
Resource Efficiency and Pollution Prevention (1/2)	**Energy Efficiency**	Energy consumption of direct (fuel, gas, coal), indirect (electricity, heat and cooling, steam) and renewable sources	*Kg // J // kW*	*Monthly*	*Monthly*	*Quarterly*	*Yearly*
		Energy saved due to conservation and efficiency improvements	*Kg // J // kW*	*Monthly*	*Monthly*	*Quarterly*	*Yearly*
	Water Management and Optimization	Water consumption by source (rainwater, surface water, groundwater, wastewater)	*m^3*	*Monthly*	*Monthly*	*Quarterly*	*Yearly*
		Quality of storm water	*Industry standards*	*N/A*	*Monthly*	*Quarterly*	*Yearly*
		Percentage of water recycled/reused	*%*	*N/A*	*Monthly*	*Quarterly*	*Yearly*
		Number of water-related incidents and type (contamination, shortage)	*#*	*N/A*	*Monthly*	*Yearly*	*Yearly*
		Total water discharged by type and destination	*m^3*	*N/A*	*Monthly*	*Quarterly*	*Yearly*
	Waste (solid & hazardous)	Waste disposed [weight] by type and disposal method (including hazardous waste)	*Kg*	*Monthly*	*Monthly*	*Quarterly*	*Yearly*
	Hazardous Materials	Materials used by weight/volume and type (hazardous, non-hazardous)	*Kg // m^3*	*Monthly*	*Monthly*	*Quarterly*	*Yearly*
		Percentage of materials recycled	*%*	*Monthly*	*Monthly*	*Quarterly*	*Yearly*

Source: ALG Analysis

Environmental and Social KPIs for the TCIAA (2/3)

	Category	Performance indicator (KPI)	Unit	TCIAA Headquarters	Sustainable Airport PLS	Green Airports GDT & XSC	Green Airports SLX & NCA
Resource Efficiency and Pollution Prevention (2/2)	**Soil and Groundwater**	Total number and volume of significant spills	# // m^3	N/A	Monthly	Quarterly	Yearly
		Aircraft and pavement de-icing/anti-icing fluid used by volume/weight	m^3 // Kg	N/A	Monthly	Quarterly	Yearly
	Noise and Vibrations	Injuries, lost days, absenteeism among employees due to high noise levels	#	Yearly	Yearly	Yearly	Yearly
	Air Quality	Ambient air quality levels according to pollutant concentrations	$\mu g/m^3$ // ppm	Yearly	Yearly	Yearly	Yearly
Aeronautical impacts	**Aircraft Noise**	Number of people affected by aircraft noise	#	N/A	Yearly	Yearly	Yearly
	Aircraft Gas Emissions	Total GHG emissions from aircraft	Kg	N/A	Monthly	Quarterly	Yearly
Climate Change	**Vulnerability & Resilience to Climate Change**	Total direct and indirect GHG emissions	Kg	Half-yearly	Half-yearly	Yearly	Yearly
		Emissions of Ozone, NO, SO or other significant air emissions	Kg	Half-yearly	Half-yearly	Yearly	Yearly

Source: ALG Analysis

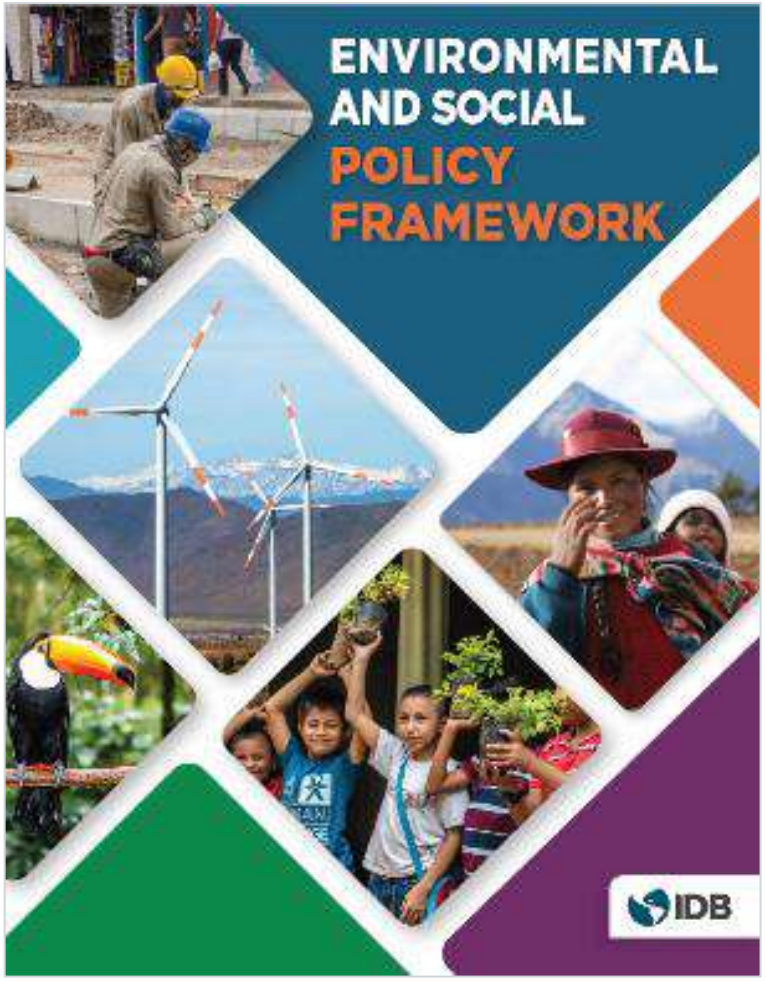
Environmental and Social KPIs for the TCIAA (3/3)

	Category	Performance indicator (KPI)	Unit	TCIAA Headquarters	Sustainable Airport	Green Airports	
					PLS	GDT & XSC	SLX & NCA
Management of Land Use Around the Airport	**Land Safeguards**	Number of non-compliances found with regard to ICAO SARPs	#	*N/A*	*Yearly*	*Yearly*	*N/A*
	Communities Management	Total workforce by age, gender, ethnicity and religion	#	*Yearly*	*Yearly*	*Yearly*	*N/A*
		Total number and rate of new employee hires and employee turnover by age, gender, ethnicity and religion	#	*Yearly*	*Yearly*	*Yearly*	*N/A*
		Ratio of basic salary of women to men by employee category	*ratio*	*Yearly*	*Yearly*	*Yearly*	*N/A*
	Cultural Heritage	Total number of cultural heritage areas in land owned, leased, managed or adjacent to the airport	#	*N/A*	*Yearly*	*Yearly*	*Yearly*
		Total number of incidents related to cultural heritage areas in land owned, leased, managed or adjacent to the airport	#	*N/A*	*Yearly*	*Yearly*	*Yearly*
Biodiversity and Natural Resources	**Protection & Conservation of Biodiversity**	Location and size of land owned, leased, managed or adjacent which is protected area or of high biodiversity value	*m^2 // location*	*N/A*	*Yearly*	*Yearly*	*Yearly*
		Number of significant impacts derived from activities on protected areas or areas with high biodiversity value	#	*N/A*	*Yearly*	*Yearly*	*Yearly*
	Birdstrike Management	Number of bird strikes and accidents caused per aircraft movements	#	*N/A*	*Yearly*	*Yearly*	*Yearly*

Source: ALG Analysis

Content

The main international reference in Latin America and the Caribbean is the IDB Environmental and Social Policy Framework (ESPF)



- **Performance Standard 1:** Evaluation and Management of E&S Risks and Impacts
- **Performance Standard 2:** Labor and Working Conditions
- **Performance Standard 3:** Resource Efficiency and Pollution Prevention
- **Performance Standard 4:** Community Health and Safety
- **Performance Standard 5:** Land Acquisition and involuntary resettlement — *Does not apply*
- **Performance Standard 6:** Biodiversity Conservation and Sustainable Management of Living Natural Resources
- **Performance Standard 7:** Indigenous peoples — *Does not apply*
- **Performance Standard 8:** Cultural heritage — *Does not apply*
- **Performance Standard 9:** Gender equality
- **Performance Standard 10:** Stakeholder Participation and Information Disclosure

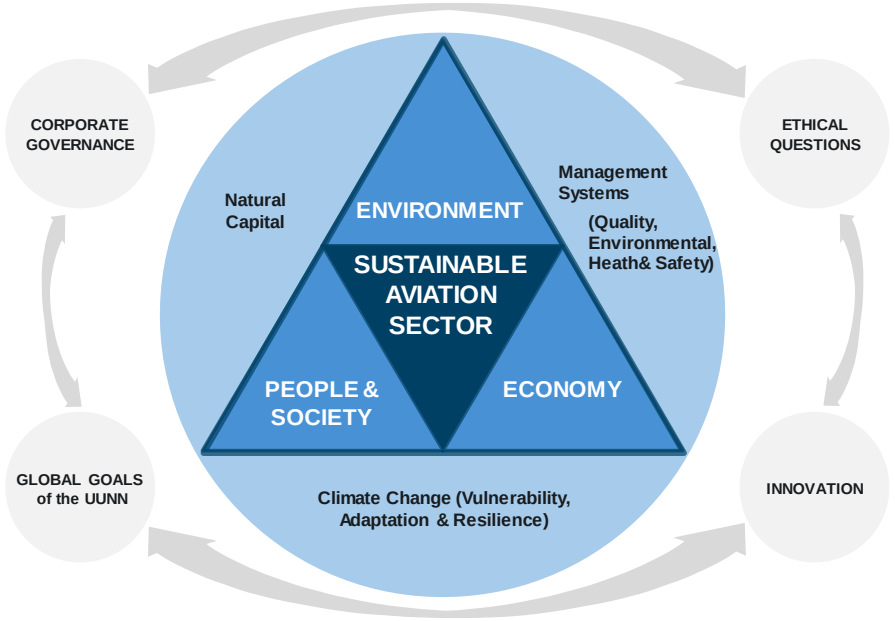
Source: IADB, ALG Analysis

Strategic planning and operational management through an E&S Mgmt. System is key for moving towards sustainable airport concept

Evaluation and Management of E&S Risks and Impacts

An Environmental & Social Management System (ESMS) helps a company comply with environmental and social regulations, improve efficiency and reputation, and improve health and safety practices for its employees and the public.

To implement an ESMS, management must commit to environmental improvements, respect human rights, gender equality, promote non-discrimination and inclusion of vulnerable groups, respect the rights of indigenous and Afro-descendant people, and improve the participation of interested parties, establishing the company's Sustainability Policy, which will be the basis of the ESMS.



ISO is a universally recognized standard for management, based on the plan – do – check – act methodology

- During the planning stage, the scope, objectives, goals and schedules are defined
- It is crucial that all employees know the ESMS and are trained for its implementation.
- After implementation, the results are evaluated and reviewed by management, who will adjust the policy and plan accordingly

Environmental and Social Performance Standard 1
Evaluation and Management of E&S Risks and Impacts

Source: IADB, ALG Analysis

Job creation and income generation must be accompanied by fundamental rights according to ILO conventions

Labor and Working Conditions

The workforce is a valuable asset, and good employee-employer relations are essential for any company's sustainability.

From the point of view of workers, three categories must be considered:

1. **Direct workers**: people employed or contracted directly to work on the airport. It should take into account:
   - Working conditions and management of labor relations
     - Labor management policies and procedures
     - Working conditions and terms of employment
     - Labor organizations
     - Non-discrimination and equal opportunities
     - Workforce reduction
     - Complaint mechanism
   - Workforce protection
     - Child labor
     - Forced labor
   - Health and Safety at Work
2. **Workers hired by third parties**
3. **Workers in the main supply chain**

Reference organizations

International Labour Organization

UNITED NATIONS

Example: Working teams at Chimore Airport (Bolivia)

Environmental and Social Performance Standard 2
Labor and Working Conditions

Source: IADB, ALG images data base, ALG Analysis

Risks and impacts related to the use of resources, waste generation and emissions must be assessed in a sustainable airport framework

Resource Efficiency and Pollution Prevention

Making more efficient and effective use of resources and applying technologies and practices to prevent pollution and mitigate or prevent GHG emissions is nowadays more accessible and feasible.

Project-related risks and impacts linked to resource use, waste generation and emissions must be assessed in the context of the project location and local environmental conditions.

It is important to adopt appropriate mitigation measures, technologies and practices to use resources effectively and efficiently, prevent and control pollution, and avoid and minimize greenhouse gas emissions, in line with internationally widespread technologies and practices.

Among the aspects to highlight in this area of work are:

1. **Efficiency in the use of resources**
    - Greenhouse gases
        - Adoption of renewable or low-carbon energy sources
        - Reduction of fugitive emissions and gas combustion
        - Direct emissions (energy and materials)
    - Water consumption
2. **Contamination prevention**
3. **Waste**
    - Handling of hazardous materials
    - Use and management of pesticides

Considering the disaster-related effects of climate change and meeting goals related to disaster risk reduction and climate change is an objective for all projects.

Efficiency in the consumption of energy, water and other resources and inputs is essential to establish environmental and economic sustainability criteria.

Resilience measures must be identified in all IDB operations where disasters or climate change pose significant risks. Projects that finance disaster recovery and reconstruction require special caution to avoid rebuilding or increasing vulnerability.

Commitment to support the design and implementation of pathways towards decarbonisation, focusing on formulating strategies in collaboration with all national stakeholders, maximizing synergies with socio-economic development and minimizing or offsetting transition costs.

With >25,000 Tn of CO_2 equivalent annually, the borrower must quantify the gross emissions caused, both direct and indirect related to the project.

Environmental and Social Performance Standard 3
Resource Efficiency and Pollution Prevention

Source: IADB, ALG Analysis

Identifying activities that generate impacts and minimization measures allows establishing action plans for continuous improvement

Resource Efficiency and Pollution Prevention – Energy efficiency

Energy efficiency is defined as the ratio between the amount of energy consumed and the products or services obtained from it. It can also be understood as the reduction in the energy consumption, while keeping the same level of energetic services, without decreasing the comfort level and quality of life.

Energy efficiency is a key point of the airport environmental management, since it is one of the main direct cost reduction drivers in short term planning.

IDENTIFICATION OF AIRPORT ACTIVITIES AND IMPACTS

Sources of CO_2 emissions can be originated within the airport limits towards the environment, or from the environment towards the airport site. Electricity sources in the airport site include:

- Electric power plant: generation of heat, cooling and electricity
- Fleet vehicles: transportation of passengers, maintenance vehicles and machinery working at airside and landside
- Maintenance activities: cleaning, repairs, maintenance of green areas, etc.
- Ground Service Equipment (GSE): service the aircraft between flights
- Waste disposal: incineration or treatment of waste generated at the airport
- Wastewater treatment plant

IMPACT MINIMIZATION MEASURES

Potential mitigation measures to reduce electricity consumption at the airport:

- Taking into account the climate change impact on investments during the decision-making processes
- Implementing incentives to promote the use of good practices (e.g. applying different airport fees depending on the aircraft emissions)
- Incorporating climatic considerations in outsourced contracts
- Monitoring fuel and energy consumption through the installation of automatic measurement systems
- Developing control mechanisms to guarantee emissions minimization during operations
- Analyzing and reducing the emissions generated during the supply chain and choosing renewable or more efficient energy sources
- Carrying out promotion and training

Source: ALG Analysis

A cooperative and shared management of waste together with the competent administration is key for moving towards sustainability (1/3)

Resource Efficiency and Pollution Prevention – Solid, hazardous and special waste

Airport waste is understood as any solid and semi-solid waste resulting from activities of diverse origin (industrial, sanitary, commercial, services, etc.) developed within the airport boundaries or at the aircraft operating in the airport. Solid waste can be classified according to its nature and type of treatment required, including common or domestic, biological, chemical, special.

Apart from the basic safety, hygiene and health concerns on waste treatment processes, new environmental concerns are now being considered when deciding the best approach for waste disposal. These considerations include the control, segregation and final secure disposal of wastes, the reduction, reutilization and recycling of materials, the lifespan of sanitary tanks, the pollution resultant from the incineration of waste and the cost-benefit of each type of treatment.

IDENTIFICATION OF AIRPORT ACTIVITIES AND IMPACTS

The main airport activities that generate waste are related to:

- Airport management
  - Facilities and roads maintenance
  - Terminal and offices operation and maintenance
  - Sewage treatment and fuel supply
  - Commercial activities
- Aviation management
  - Aircraft operation and maintenance
  - Fuel management and runway refueling
- Catering

IMPACT MINIMIZATION MEASURES

First step of waste management at an airport is elaborating an inventory of the types of waste generated, since its characteristics can set the basis for its classification and define the most appropriate form of treatment and final destination, both from a technical and economic point of view. Minimization measures to reduce the impact of waste include:

- Establishing a “green purchasing” protocol at an airport level material and equipment
- Defining a waste management system
- Installing bins and containers that allow a selective collection of waste in the airport facilities
- Finding waste managers that guarantee the waste recycling and reuse
- Training all airport stakeholders in the selective waste management practices and minimization alternatives

Source: ALG Analysis

A cooperative and shared management of waste together with the competent administration is key for moving towards sustainability (2/3)

Resource Efficiency and Pollution Prevention – Solid, hazardous and special waste

Example: San Jose Airport (Costa Rica)

Example: Liberia Daniel Oduber Quirós (Costa Rica)

Example: Curitiba Airport (Brazil)

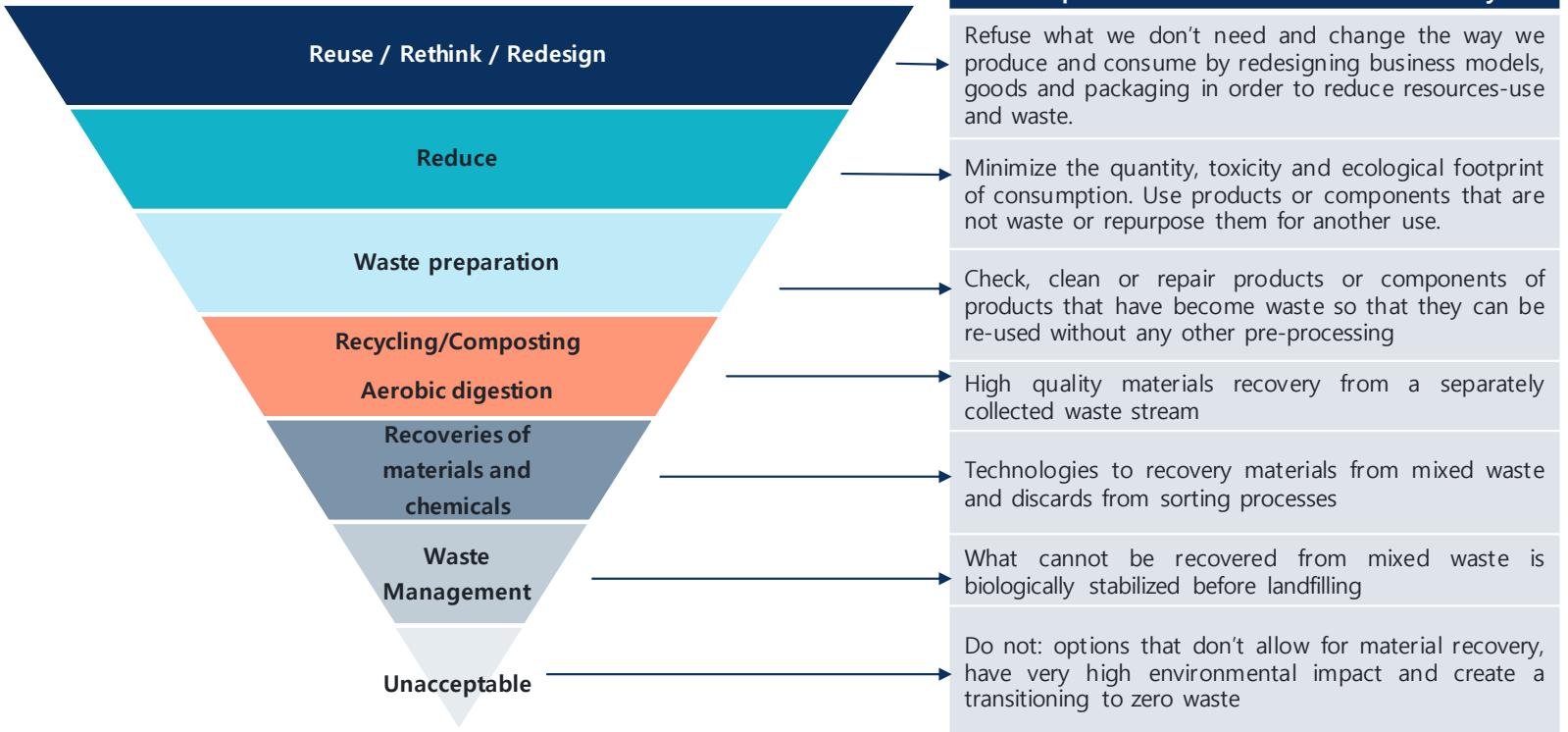
Example: Manaus Airport (Brazil)

Source: ALG images data base, ALG Analysis

A cooperative and shared management of waste together with the competent administration is key for moving towards sustainability (3/3)

Resource Efficiency and Pollution Prevention – Solid, hazardous and special waste

There are initiatives to certify the adequate waste management, such as the "Zero Waste to Landfill", launched by The Carbon Trust. Figure below shows a summary of the steps to follow in order to get this accreditation.



Source: SDG, ALG Analysis

Updated inventories, order and cleanliness are basic aspects for an adequate, efficient and effective management of hazardous materials

Resource Efficiency and Pollution Prevention – Hazardous materials

Hazardous materials or dangerous goods are defined as materials that represent a risk to human health or the environment due to their physical or chemical characteristics.

IDENTIFICATION OF AIRPORT ACTIVITIES AND IMPACTS

The classification of the hazardous materials according to the type of hazard is shown in figure below:

Within the airport, hazardous materials can be found at the ARFF station, the water treatment and purification area, the electrical station, etc. and must be managed through authorized and certified managers under the conditions of the competent administration.

IMPACT MINIMIZATION MEASURES

The overall objective of hazardous materials management is to avoid or minimize uncontrolled leakage, releases or accidents during their production, handling, storage or usage. This can be achieved by:

- Identifying those facilities where hazardous materials could hinder or affect the airport or any particular project
- Avoiding or minimizing the use of hazardous materials, where possible
- Using engineering controls (alarms, shut-off systems, etc.)
- Implementing management control tools (procedures, inspections, communication, training and drills) to address residual risks
- Training the airport staff in the nature and management of hazardous materials (types, usage, management, environmental implications, etc.)

Example: Storage of hazardous materials at Navegantes Airport (Brazil) - Brasil

Source: ALG images data base, ALG Analysis

Control over consumption and adequate maintenance are the best way to have an efficient and responsible water cycle at the airport

Resource Efficiency and Pollution Prevention – Water management system

Many airport facilities and services make direct or indirect use of potable water, including bathrooms, food and beverage areas, cleaning, landscaping, firefighting, cooling systems, etc. Thus, water availability is required to ensure continuity of airport operations. Planning and managing the water cycle must be carried out to minimize the risk of contamination of water sources, especially in desertic environments where water is a scarce resource.

IDENTIFICATION OF AIRPORT ACTIVITIES AND IMPACTS

There are significant negative impacts on the water cycle of an airport, such as:

- Exploitation of aquifers
- Water consumption
- Contamination of surface waters due to the lack of wastewater treatment from effluents
- Contamination of surface waters and groundwater due to uncontrolled spills

These impacts can be generated/worsened by some airport activities:

- Ground service maintenance activities and aircraft maintenance, which may contaminate storm waters due to the generation of pollutants associated with leaks and spills (oil, diesel, jet fuel)
- De-icing of aircraft, runways and taxiways due to de-icing contaminants fluids
- Firefighting training activities

IMPACT MINIMIZATION MEASURES

Best practices to ensure an optimized water cycle and the correct management of the water resources include:

- Conducting aquifer capacity studies to guarantee the potable water supply and the feasibility of the infrastructure un the short, medium and long term, based on the forecasted demand
- Minimizing the water demand and water losses and having storage tanks to guarantee the supply in case of water shortage or aquifer contamination, as well as monitoring water collection systems
- Carrying out an adequate water treatment for human consumption, along with the required sampling in line with current legislation and maintaining the drainage systems in good condition for rainwaters re-use
- Having plants or other natural purification system to treat wastewater from terminals and other facilities, as well as wastewater from aircraft
- Training airport's personnel on the importance of making a rational use of water and on water as a scarce resource and implementing educational and awareness campaigns for terminal area users

Source: ALG Analysis

Training and interdepartmental coordination are key aspects that influence the prevention of contamination of soil and groundwater (1/2)

Resource Efficiency and Pollution Prevention – Soil and groundwater

The relatively thin layer of soil that covers the earth's surface is essential for life, as its destruction can cause an imbalance of ecosystems. The main factors that can lead to its destruction are soil occupation, erosion and groundwater contamination. Within the occupation plan of the airport area, it is of vital importance to consider the maintenance of natural habitats, as they are key in the prevention of erosive processes.

IDENTIFICATION OF AIRPORT ACTIVITIES AND IMPACTS

The construction and expansion of airport facilities, together with the inadequate practices used during construction works, and the compaction of the soil and the waterproofing of large areas during paving process, could start an erosive process.

Thus, airport activities that could incur in erosive processes, which may lead to soil and groundwater contamination, include:

- Construction or expansion projects (terminal, airfield, access roads, parking lots, etc.)
- Re-pavement of runway and taxiways
- De-icing and anti-icing activities
- Firefighting training and fire extinguishing activities
- Waste treatment
- Fueling activities
- Overexploitation of an aquifer
- Lack of maintenance of fertile soil and vegetative cover

IMPACT MINIMIZATION MEASURES

The mitigation measures to be adopted include, among others:

- Implementing a pollution control and prevention process
- Maintaining the drainage system in optimal condition
- Ensuring proper water evacuation in case of flooding

In relation with erosion due to wind action, mitigation measures include:

- Implementing an erosion control and prevention process
- Locating those areas resistant to erosion and protecting the most exploited areas with windbreaks
- Maintaining an equilibrium between herbaceous and woody plants
- Designing mechanisms to reduce wind speed
- Establishing systems and processes to identify drought episodes
- Ensuring rangeland management in the airport site
- Ensuring rehabilitation of degraded land and developing preventive measures for not-yet-degraded lands

Source: ALG Analysis

Training and interdepartmental coordination are key aspects that influence the prevention of contamination of soil and groundwater (2/2)

Resource Efficiency and Pollution Prevention – Soil and groundwater

Example: ARFF training zone in Belfast Airport (UK)

Example: Recycling water from ARFF trucks in Curitiba Airport (Brazil)

Example: Adequate protection to drinking water in Manaus Airport (Brazil)

Source: ALG images data base, ALG Analysis

Emissions negatively influence air quality and the health of the communities both at a local and an airport level environment (1/2)

Resource Efficiency and Pollution Prevention – Emissions and air quality

Analyzing the air quality is essential to ensure the quality of life and health of the population and the environment. It is of vital importance to understand which pollutants affect these and where they originate to apply preventive and corrective measures.

A pollutant is any substance introduced into the environment that has undesirable effects and that may cause damage. Depending on their origin, pollutants can be classified as primary (when they come directly from the emission sources) and secondary (originated in the atmosphere through different processes and reactions among primary pollutants).

These substances are not always of anthropogenic origin; some natural actions, such as volcanic eruptions, and sand and dust storms, can also cause episodes of air pollution. The main air pollutants are Smog and Soot; Pollen and Mold, Greenhouse Gases and other hazardous air pollutants.

IDENTIFICATION OF AIRPORT ACTIVITIES AND IMPACTS

Airport operations that incur in gas emissions, and thus in the detriment of the local air quality, include:

- Aircraft exhaust gases released during take-off and landing
- APUs, GSEs, and ground vehicle's engines
- Aircraft and airport maintenance activities
- Power/heating plants, boilers and generators
- Fuel farms, hydrant systems and vehicle refueling stations
- Construction activities
- Waste treatment and incinerators

IMPACT MINIMIZATION MEASURES

Best practices in terms of air quality management include:

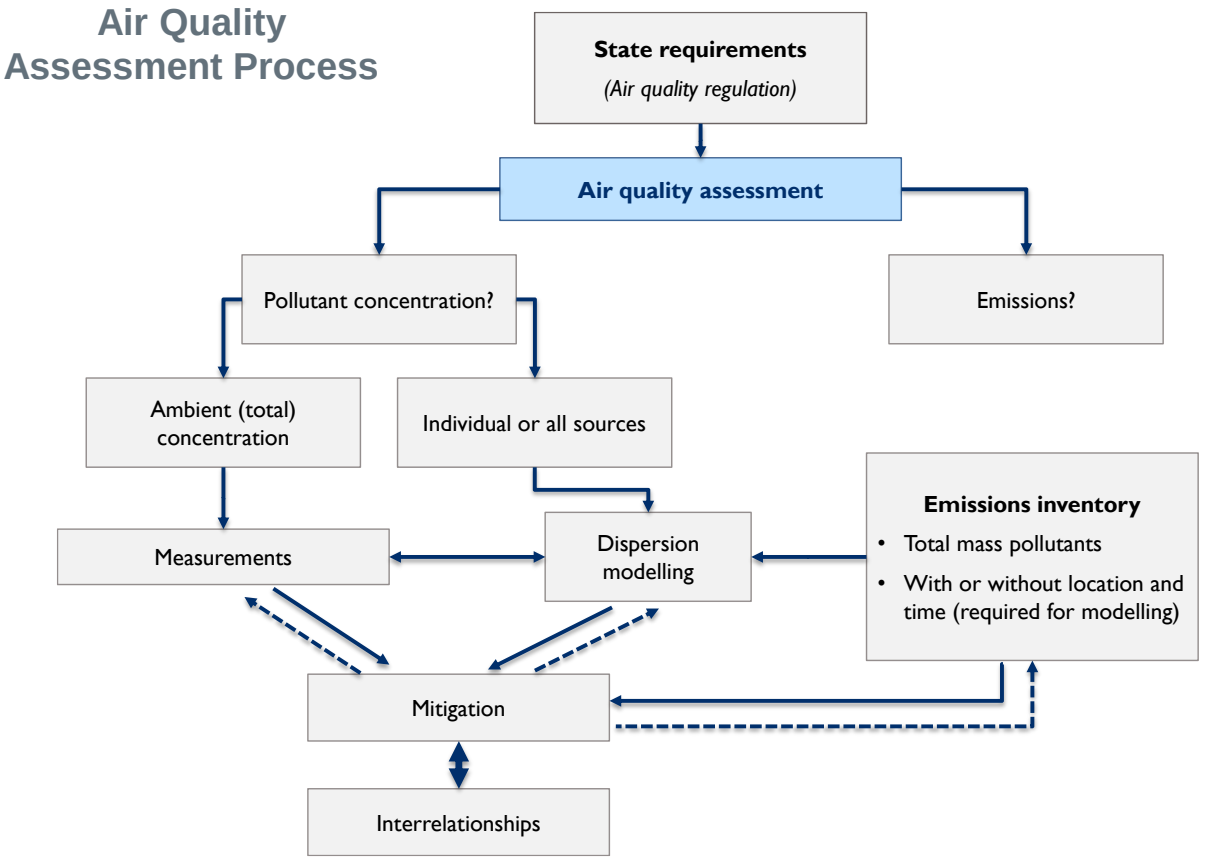
- Preparing and monitoring environmental health criteria
- Establishing air quality standards and regulation for pollution emissions from specific sources
- Developing and implementing control strategies to reduce air pollution
  - It is recommended to develop a continuous monitoring system to assess the level of compliance of the different pollution sources and to determine the adequacy of the strategies
- Implementing a regular maintenance and repair program for ground vehicles in the airport and instructing drivers in better driving practices

Source: ALG Analysis

Emissions negatively influence air quality and the health of the communities both at a local and an airport level environment (2/2)

Resource Efficiency and Pollution Prevention – Emissions and air quality

Further detailed information on air quality management is provided in ICAO's Airport Air Quality Manual (Doc 9889), whose objective is to mitigate and reduce the negative effects of airport operations on air quality, one of the most relevant negative effects caused by the civil aviation industry. In this manual, the recommended air quality assessment process is depicted.



Source: ICAO, ALG Analysis

The decarbonization of the aviation sector involves having aircraft with more powerful, more efficient and less polluting engines

Resource Efficiency and Pollution Prevention – Emissions and air quality

Aircraft gas emissions are a particular impact of air quality impacts. At airports, gas emissions occurring during take-off and landing of aircraft are directly affecting the local air quality. There are six common air pollutants resulting from aircraft emissions: O_3, Pb, CO, SO_2, NO_2 and particulate matter (such as PM10 and PM2.5).

IDENTIFICATION OF AIRPORT ACTIVITIES AND IMPACTS

Airport operations emit gasses that contribute to air pollution. ICAO summarized the main sources of air pollution in the airport environment as follows:

- Aircraft engines
- GSE engines
- Landside surface traffic engines
- Particulates from vehicles' tires and brake wear
- Particulates from asphalt erosion (runway, taxiway, access roads, etc.)
- Fuel handling and storage tanks
- Heating and power plants, backup generators and incinerators (e.g. fires for aircraft rescue and firefighting training)
- Construction works emissions

IMPACT MINIMIZATION MEASURES

International aviation organizations propose mitigation measures:

- **ICAO standards and recommendations.** They define the emissions limits that all aircraft must meet to be certified by ICAO member states
  - Annex 16-Volume II: SARPs on engine emissions below 3,000 feet for a reference landing/takeoff
  - Annex 16-Volume III: includes SARPs on CO_2 emissions
- **Airport Council International (ACI).** Own "Management of GHG emissions at airports" methodology to help airport operators measure and mitigate emissions
  - Airport Carbon Accreditation Certification
- **International Air Transport Association.** IATA supports the ICAO environmental management programme, recommending the inclusion of an assessment of the local air quality situation, considering the respective contribution of all emission sources, as well as defining air quality objectives and an analysis to assess the profitability of all potential measures

Source: ALG Analysis

ACI's Airport Carbon Accreditation program allows to be compare the effort and efficiency of airport emissions management globally

Resource Efficiency and Pollution Prevention – ACI's Airport Carbon Accreditation

The program launched by ACI (Airports Council International) called ACA (Airport Carbon Accreditation) is currently the global standard for the management of CO2 emissions at the airport level.

ACA is the World's only institutionally endorsed carbon management certification program for airports. Independently evaluates and recognizes airports' efforts to manage and reduce their carbon emissions through 7 levels of certification:

- **Level 1 Mapping**
- **Level 2 Reduction**
- **Level 3 Optimisation**
- **Level 3+ Neutrality**
- **Level 4 Transformation**
- **Level 4+ Transition**
- **Level 5 Net Zero balance**

There are currently 84 ACA accredited airports in LatAm and the Caribbean

Depending on the airports already accredited or in the process of accreditation, the main advantages of participating in the program are:

- Facilitates obtaining a better understanding of airport emissions
- Allows establishing a long-term strategic approach to carbon management
- Leads to a real reduction in emissions and, consequently, economic savings
- Promotes operational and cost efficiency for the airport and third parties
- Facilitates the exchange of best practices between airports
- Improves the reputation and brand image of the airport

These airports have implemented a wide variety of initiatives to reduce their CO_2 emissions, including improving insulation, adopting renewable energy, investing in hybrid or electric vehicles, encouraging the use of public transport by part of employees, passengers and visitors, collaborating with airlines and air traffic management to reduce taxiing times, and applying "green" landing procedures

Source: ACI, ALG Analysis

Each of the 7 levels of certification is one more step towards the decarbonization of the airport sector

Resource Efficiency and Pollution Prevention – ACI's Airport Carbon Accreditation

Level 1 "Mapping"

- Determine emissions sources within the operational boundary of the airport company
- Calculate the annual carbon emissions
- Compile a carbon footprint report

Level 2 "Reduction"

- Provide evidence of effective carbon management procedures
- Show quantified emissions reductions

Level 3 "Optimisation"

- Widen the scope of carbon footprint to include third party emissions
- Engage third parties at and around the airport

Level 3+ "Neutrality"

- Offset remaining emissions for all emissions over which the airport has control with high quality carbon credits

Level 4 "Transformation"

- Define a long-term carbon management strategy oriented towards absolute emissions reductions, aligned with the objectives of the Paris Agreement
- Demonstrate evidence of actively driving third parties towards delivering emissions reductions

Level 4+ "Transition"

- Offset the residual carbon emissions over which the airport has control, using internationally recognized offsets

Level 5 " Net Zero"

- Maintaining a Net Zero balance on scopes 1 and 2 and actively addressing scope 3 emissions, strengthening approach to 3rd party engagement, offset removals for residual emissions

EACH CERTIFICATION MUST COMPLY WITH THE PREVIOUS LEVEL

Source: ACI, ALG Analysis

Noise and vibrations are aspects linked to the health and safety of workers, in addition to noise pollution (1/2)

Resource Efficiency and Pollution Prevention – Noise and vibrations

Noise is defined as an inarticulate and confusing sound, loud, annoying, useless and unpleasant to the person who hears it. They are classified into four types, according to their duration and nature: continuous noise, intermittent noise, variable noise and impulsive noise. A vibration is an oscillatory movement of a rigid body. Many times, vibration is undesirable, it wastes energy and creates an unwanted sound.

IDENTIFICATION OF AIRPORT ACTIVITIES AND IMPACTS

Noise and vibrations are environmental impacts that can be generated at an airport by both construction activities and operations.

The main sources of noise and vibration at an airport are aircraft during landing and takeoff operations, and those generated by various equipment such as:

- Taxiing of airplanes
- Operation of ground support vehicles
- APUs
- Aircraft engine testing activities
- Construction activities

IMPACT MINIMIZATION MEASURES

Recommended noise management practices include:

- Provide aircraft with a power source that reduces or eliminates the need for APUs
- Develop and implement an equipment maintenance plan
- Install mufflers on engine exhausts and compressor components
- Improving the acoustics of buildings through insulation
- Installation of vibration isolation in mechanical equipment
- Supply of personal protective equipment to workers

Regarding vibrations, it is recommended to establish a preventive maintenance program that includes the following actions and/or measures:

- Avoid the transmission of vibrations between elements or to the operator, avoiding the use of rigid structures
- Reduce the exposure time whenever there is an excessive level of vibrations that cannot be reduced, and ensure that operators have anti-vibration hand tools

Source: ALG Analysis

Noise and vibrations are aspects linked to the health and safety of workers, in addition to noise pollution (2/2)

Resource Efficiency and Pollution Prevention – Noise and vibrations

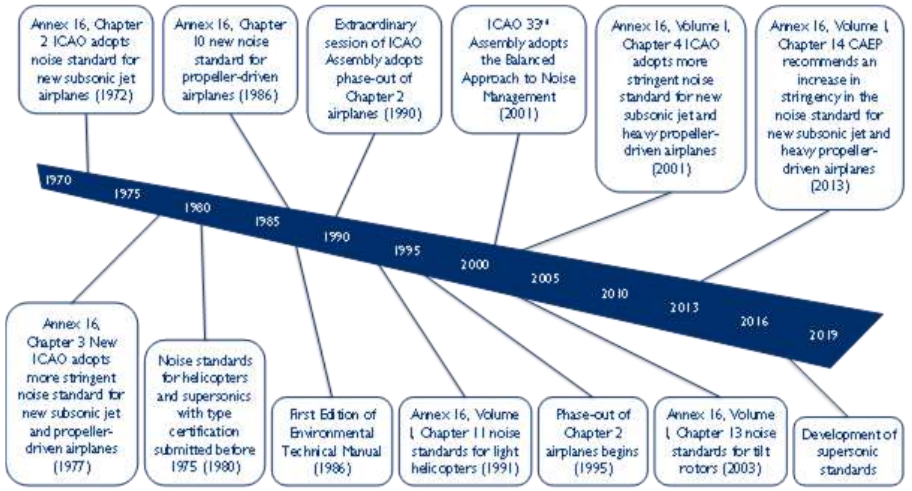
ICAO developed its initial version of the environmental management recommendations in 1972. Annex 16 included aircraft noise standards for subsonic jet aircraft and propeller-driven aircraft.

Since then, strategies and recommendations to minimize this environmental impact have focused on the airport area and have been addressed more exhaustively.

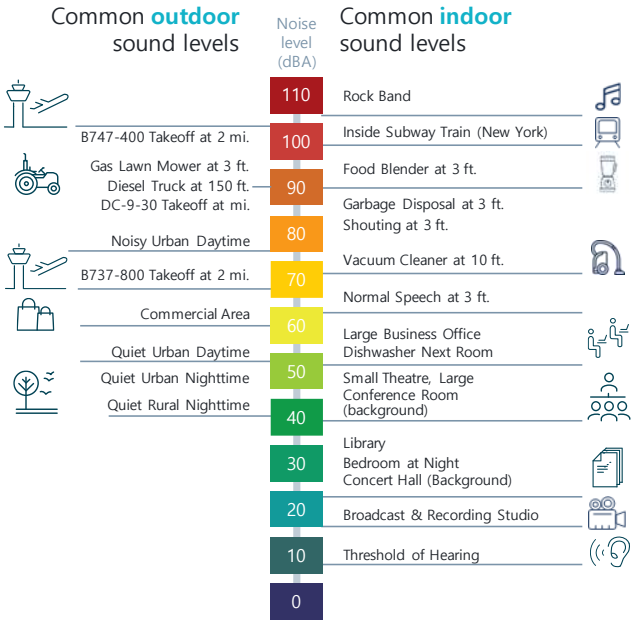
To evaluate aircraft noise, it is necessary to know well the different elements that surround noise, for example its perception, its metrics, its acceptable levels and the factors that affect it.

Sound levels are measured in dB, which represent the relationship between two sound pressure values on a logarithmic scale.

Evolution of ICAO noise standards



Comparative Sound Levels



Source: ICAO, ALG Analysis

The need to adapt and create resilient infrastructure is key to success in the future scenarios derived from climate change (1/2)

Resource Efficiency and Pollution Prevention – Climate change

Climate change is one of the most worrisome long-term environmental problems globally, and thus is of vital importance for the aviation industry.

IDENTIFICATION OF AIRPORT ACTIVITIES AND IMPACTS

ICAO, aware of the great environmental and climatic challenges that civil aviation must face, has established a set of long-term objectives to be met by the industry, and encourages actions aimed at covering those objectives and analyzing its performance.

The main challenges and difficulties derived from climate change that aviation will have to face in the near future are:

- Higher maximum temperatures: an increase in soil temperature significantly reduces air density, reducing both engine thrust and wing lift
- Rising sea level and more cyclones in extra-tropical areas
- Change in wind patterns, modifying optimal flight paths and fuel consumption, causing possible changes in procedures and noise distribution

High costs may arise from these challenges, and they are expected to be higher in those countries that are more vulnerable to climate changes like in the small islands.

IMPACT MINIMIZATION MEASURES

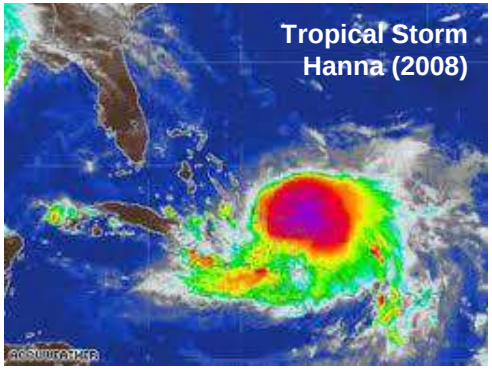
It is necessary to build climatic resilience in order to face the identified challenges and difficulties. For this purpose, these four actions must be followed:

- Problem understanding to analyze the challenge from a holistic perspective, identifying the potential impacts for each stakeholder and evaluating the level of awareness of each impact identified
- To develop an impact matrix to be able to evaluate the potential challenges and impacts, and identify the required actions to be triggered to ensure a coordinated and effective adaptive process
- To identify the operational measures and infrastructure adequacy measures to build resilience in case of more severe disruptions and changing conditions
- All the stakeholders should collaborate, both regionally and globally, and share knowledge among regions and sectors until awareness is raised and best practices to build resilience are spread

Source: ICAO, ALG Analysis

The need to adapt and create resilient infrastructure is key to success in the future scenarios derived from climate change (2/2)

Resource Efficiency and Pollution Prevention – Climate change



Key social dimensions of disasters at TCI airports

The last major hurricane caused widespread damage to the **Grand Turk Airport:**

- Significant damage to the glass surrounding the control tower and its instruments
- Loss of some of the runway lights
- Damage to the roof and ceiling of the terminal building
- Damage to the roof of the main office building and the old hangar
- Damage to the perimeter fencing
- **The airport was down for a four-day period**, and at limited capacity for further six days

In South Caicos Airport, there was additional recorded damage:

- Damage to runway lights
- Destruction of the control tower, including instrumentation
- Damage to perimeter fencing
- **The airport was down for a period of 10 days**, plus further six days for restorations

In Providenciales HHIA, the damage recorded included:

- Damage to the perimeter fencing and the windsock
- Damage to the roof of the terminal building
- **The airport was down for six days**, which led to cancellations of many of the int'l flights
- Most of the losses incurred by this subsector were a result of these cancellations, which led to non-payment of departure tax, landing fees, parking fees and air navigation fees

Source: Independent UK, CNN images, ALG Analysis

Airport operations should guarantee the health and safety of the community, both inside and outside the airport perimeter

Community Health and Safety

Community Health and Safety should become a priority aspect to the airport operation, since there are many airport risks that could potentially impact the community.

	Impact minimization measure
General management and planning	• Establish a coordination team to ensure the participation of all parties • Perform an analysis of resource to adapt the measures adopted to passenger volumes
Human resources management	• Educate airport staff on health information and advice • Have backup teams in case any team is quarantined • Regularly monitor the health of airport staff • Supply personal protective equipment when required
Passenger management	• Request health declaration forms to passengers coming from specific areas • Provide hand sanitizers to passengers • Provide information to pax on required procedures
Facilities management	• Reduce the risk of transmission by eliminating high-risk elements • Clean and disinfect common areas and staff facilities and ensure a proper ventilation

There are multiple airport risks that affect **the health and safety of the community**.

Some of them are **specific to the airport activity** (fuel transportation, aircraft traffic, etc.), while others are related to other **external factors** (a recent example is the Covid-19 pandemic, an external factor but with a severe impact within the airport community).

There are **two mechanisms that reinforce actions to guarantee the health and safety of the community**:

1. The **implementation of an ESMS** that, through its procedures, guarantees the **continuous improvement of airport operations and the level of service**
2. The **definition, design and implementation of an adequate Stakeholder Management Plan** that helps the community in relation to the minimization of risks and impacts

Environmental and Social Performance Standard 4
Community Health and Safety

Source: IADB, ALG Analysis

The management of biodiversity in the airport environment is part of the Social Responsibility of the operators

Biodiversity Conservation and Mgmt. of Living Natural Resources – Biodiversity

Impacts on biodiversity can affect the correct provision of ecosystem services, so it is important to manage and mitigate any possible impact on it. Biodiversity management at an airport is linked to operational security, mainly with regards to wildlife, birds and collisions with the perimeter fence and, sometimes, the intrusion of domestic animals from neighboring communities.

IDENTIFICATION OF AIRPORT ACTIVITIES AND IMPACTS

Airport activities that could potentially generate impacts on the natural resources include:

- Construction and expansion projects within the airport boundaries, either for the terminal building, airside facilities (runway, taxiways) or ancillary facilities (power plant station, fuel farm, hangars, etc.)
- Operational activities: fuel handling, waste and wastewater treatment, maintenance works, aircraft landing and take-off operations, firefighters' training activities

Environmental and Social Performance Standard 6
Biodiversity Conservation and Sustainable Management of Living Natural Resources

IMPACT MINIMIZATION MEASURES

Some specific actions to minimize impacts on biodiversity and habitats are:

- Ensure an integrated approach to species management, depending on protection status
- Carry out differentiated management based on the field information collected
- Create collaborative structures that include communities living near the airport (e.g. signing agreements with universities and research centers to carry out habitat surveys and studies.
- Have baseline studies on the biodiversity and habitats present in the airport area for adequate management according to the protection status, national red lists or IUCN standards (in relation to fauna)
- Adjust the construction/planning/expansion design to minimize impacts on sensitive resources.
- Manage habitats and ecosystems towards minimizing climate change effects

Source: IADB, ALG Analysis

Guaranteeing operational safety is the main objective of airport management; fauna, especially birds, generate significant risks

Biodiversity Conservation and Mgmt. of Living Natural Resources – Birdstrike

The control and monitoring of birds and other wild animals' movements in the airport vicinities is key to ensure operational safety. Bird/wildlife strike is an increasing safety and economic concern globally, due to the increase of air traffic and the increase of wild animals' population. It has resulted in hundreds of fatalities and annual loss of over one billion USD to the aviation industry. According to ICAO statistics, 96% of bird/wildlife strikes occurred on or near airports, among which 39% occurred during take-off and climb phases, and 57% occurred during descent, approach or landing phases.

IDENTIFICATION OF AIRPORT ACTIVITIES AND IMPACTS

Bird and wildlife strikes pose a hazard mainly to the following airport activities:

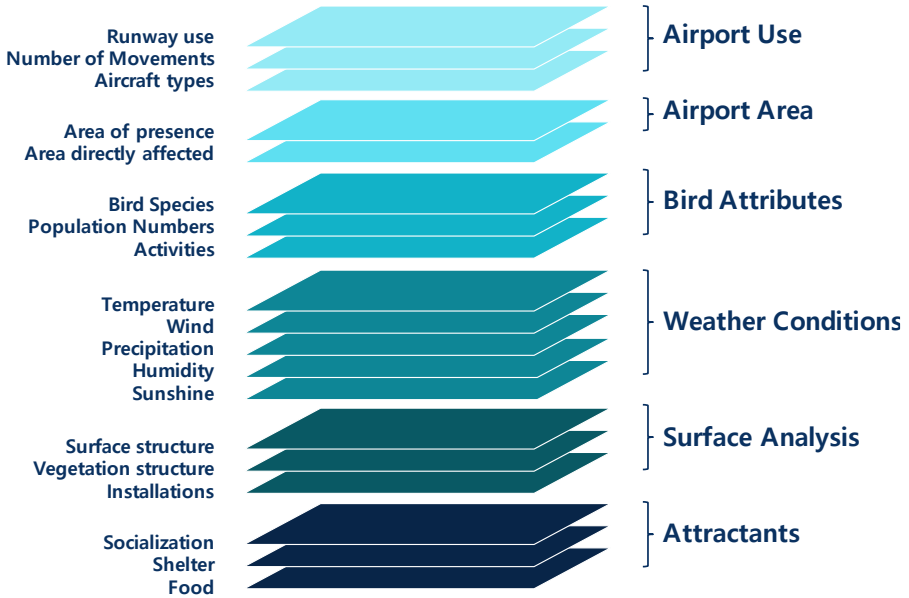
- Take-off and landing operations
- Climb, descent and approach phases

IMPACT MINIMIZATION MEASURES

To apply impact minimization measures, it is first recommended to carry out a bird impact risk assessment. This risk assessment must cover the following aspects:

- Airport use: in some cases, adapting flight schedules and runway use can reduce risk
- Airport area: determining the area of the airport affected by bird and wildlife strikes is essential to develop appropriate mitigation measures which could include fencing the airport area or installing repellent equipment

Levels of data required for bird strike risk assessment



Source: ALG Analysis

Falconry and trained dogs are key support in minimizing bird strike risks in the airport environment

Biodiversity Conservation and Mgmt. of Living Natural Resources – Birdstrike

Main aspects of a bird strike risk assessment

- Bird attributes: recording and analyzing all the species present in the vicinity of the airport is important to understand their behaviors, migration patterns, etc. Mitigation measures can be taken accordingly
- Weather conditions: assessment of weather conditions is essential as they can affect the behavioral patterns of birds and other wildlife, and can therefore help implement preventive measures
- Surface analysis: understanding the characteristics of the surface and vegetation, and their interaction with birds and fauna is a key element
- Attractants: Assess whether the airport offers easily accessible resources for birds and wildlife in terms of food, water, shelter or breeding sites. The measures consist of controlling and reducing any attractants present at the airport

Mitigation measures for the bird strike risk

Following the risk assessment, ICAO recommends taking the following measures to minimize potential incidents resulting from bird strikes:

- Appoint a **committee responsible for bird control**, including habitat management and develop a **management plan to eliminate bird attractants**
- **Implement repulsion techniques**, such as bird dispersal patrols; use of chemical, sound or visual repellents; use of falcons and trained dogs; using non-lethal projectiles to repel birds
- Carrying out **periodic inspections before and after each take-off and landing operation** to determine and alert of the presence of birds
- Establish a **shared management framework** for the use of land located in the vicinity of the airport to ensure compliance with ICAO SARPs
- Keep a **record of all bird/wildlife incidents** (categorized by confirmed strikes, unconfirmed strikes and serious incidents) to conduct a risk assessment of the bird strike situation at the airport, and use the results to help guide the existing management measures and monitor their effectiveness





Source: Google images & ALG images data base, ALG Analysis

Companies in the transport and logistics sector can play a key role in reducing wildlife tracking through the airports

Biodiversity Conservation and Mgmt. of Living Natural Resources – Wildlife trafficking

Wildlife trafficking is the illegal movement of wild species and their parts or products across borders and is estimated to be worth between $7 billion and $23 billion a year. It is one of the most prominent forms of international crime worldwide, comparable - and sometimes linked - to trafficking in other illicit goods, such as drugs and weapons.

Impact of wildlife trafficking in air transport sector

Companies in the transport and logistics sector can play a key role in identifying and reinforcing key risk points in the supply chain, as traffickers of wild animals and wildlife products rely heavily on the efficiency of air travel and cargo carriers for smuggling illicit goods. Successful smuggling means for the transport sector:

- Reputation risk from negative press and reports
- Legal risk of liability due to lack of due diligence
- Commercial and operational risk when legal and security issues result in financial losses
- Health and safety risks: spread of diseases, poisonous animals, invasive species, etc.

The main reasons for the existence of this illegal traffic are:

- Illegal trade in pet or collectible animals
- Medicine, decoration or status symbols
- Meal

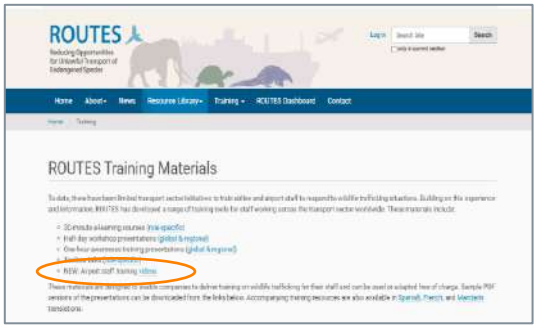
USAID, through the **Reducing Opportunities for Unlawful Transport of Endangered Species** (ROUTES) program, brings together transportation and logistics companies, government agencies, development groups, law enforcement, conservation organizations and private funders to disrupt wildlife trafficking by reducing use of legal transport supply chains, and constitutes a key element of the concerted international response to address wildlife poaching and associated criminal activities around the world. The main objectives of ROUTES are:

- Improving wildlife trafficking data and analysis for evidence-based action
- Engage company leaders to collaborate in the fight against wildlife trafficking
- Improve the capacity of transportation personnel to enforce the law and combat wildlife trafficking
- Integrate wildlife trafficking policies and protocols into sector regulations
- Increase collaboration with law enforcement

Source: ROUTES, USAID, ALG Analysis

ROUTES is the main global association against wildlife trafficking and is participated by IATA and ACI, representatives of aviation

Biodiversity Conservation and Mgmt. of Living Natural Resources – Wildlife trafficking

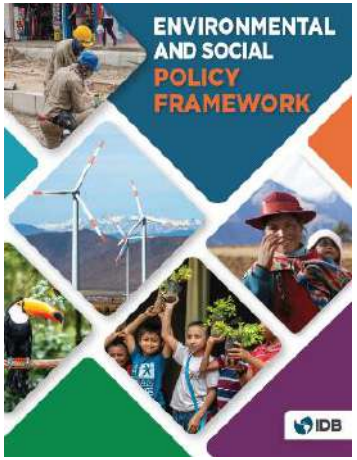


Example: Goods seized by customs at Bilbao Airport (Spain)

Source: USAID, ROUTES, ALG Analysis

Gender equality has intrinsic value as a driver of sustainable development, being a matter of justice and human rights

Gender equality and diversity



Gender analysis *considers how gender inequalities interact with other inequalities based on socioeconomic, ethnic, racial, disability and other factors, which could exacerbate barriers to opportunity and increase the vulnerability of people who face various forms of exclusion*

And if we **talk** about **equality**?

Analysis to determine potential risks and gender impacts should include, among other aspects:

- Existing gender inequalities in access and control of resources
- Gender gaps in employment and employment opportunities
- Income generating activities
- Access to credit
- Subsistence activities and the unequal distribution of unpaid work
- Participation in the public sphere and decision-making spaces
- Interests and priorities of people of all genders

At an airport level, a double approach should be considered, in addition to the use of inclusive language:

- Approach to users and passengers: needs in the facilities from arrival at the airport until boarding; use of air transport segregated by sex to have information and data for subsequent analysis
- Focus on female workers: equality in positions and salaries based on people's education and training

Environmental and Social Performance Standard 9
Gender equality

Source: IADB, ALG Analysis

Truthful, timely, equitable and transparent communication and interaction with interested parties is a key management element

Stakeholder Participation and Information Disclosure

Stakeholders should be present throughout the airport's operation life cycle, especially when an expansion project is planned.

The nature, scope and frequency of stakeholder participation will be commensurate with the nature and scale of the project, its development and execution schedule, and its potential risks and impacts. The steps to follow are those:

- Identification and analysis of interested parties
- Planning how the interaction will be carried out
- Disclosure and information
- Meaningful consultation
- Complaint mechanisms: attention and response
- Presentation of information
- Organizational capacity and commitment
- Making a documented record of participation
  - Description of interested parties consulted
  - Summary of feedback received
  - Brief explanation of how or why it was not considered

Example: Stakeholders engagement with the community in Deadman's Cay Airport (The Bahamas)

Environmental and Social Performance Standard 10
Stakeholder Participation and Information Disclosure

Source: IADB, ALG images data base, ALG Analysis

Content

E&S monitoring checklist

Assessment and management of environmental and social risk and impacts

	YES	NO	*Document is joined*
• Does the organization have an Environmental and social Management System?	☐	☐	☐
• Does the organization have an environmental policy?	☐	☐	☐
• Is it public?	☐	☐	☐
• Is there an environmental study or baseline?	☐	☐	☐
ESIA ☐ EIA ☐ Other _____	☐	☐	☐
• Does the organization have a E&S management program in place?	☐	☐	☐
• Are environmental legal requirements well identified?	☐	☐	☐
• Do the airport(s) have the following environmental Plans?			
• Emergency Plan (Emergency Preparedness and Response)	☐	☐	☐
• Energy Consumption Reduction Plan	☐	☐	☐
• Waste Management Plan or Waste Minimization Plan	☐	☐	☐
• Water Management Plan or Water Consumption reduction Plan	☐	☐	☐
• Emergency Plan for climatic phenomena	☐	☐	☐
• Worker Health and Safety Plan	☐	☐	☐
• Stakeholders Engagement Plan	☐	☐	☐
• Are the environmental plans in a Data room or site to share it?	☐	☐	☐
• Does the organization have a team / environmental department?	☐	☐	☐
• Does the organization have an environmental office?	☐	☐	☐

Source: ALG Analysis

E&S monitoring checklist

Labour and working conditions

	YES	NO	*Document is joined*
• Are there human resource policies and procedures?	☐	☐	☐
• Are there any labor organizations?	☐	☐	☐
• What is the number of women working at the airport(s)?	☐	☐	☐
• How many young people under 30 work at the airport(s)?	☐	☐	☐
• Is there a Training Plan for the workers?	☐	☐	☐
• Training actions on environmental risks?	☐	☐	☐
• Training actions on airport management?	☐	☐	☐
• Specialized training actions according to workplace?	☐	☐	☐
• Is there a complaint mechanism for workers?	☐	☐	☐
• What health and safety measures do workers use?			
• Helmets (hearing protection)	☐	☐	☐
• Safety shoes	☐	☐	☐
• Corporate dresses	☐	☐	☐
• _____	☐	☐	☐
• Are suppliers monitored to ensure that they comply with current legislation on the environment and worker safety?	☐	☐	☐
• Does the organization have a procedure?	☐	☐	☐
• Is there a study of the rate of accidents, lost work hours, etc.?	☐	☐	☐

Source: ALG Analysis

E&S monitoring checklist

Resource efficiency and pollution prevention (1/2)

	YES	NO	*Document is joined*
• Is there a hydrocarbon separation network on the apron?	☐	☐	☐
• Is there a treatment plant?	☐	☐	☐
• Once treated, where does the water go?			
◦ Return to the course of the river?	☐	☐	☐
◦ Reuse for the green of the airport?	☐	☐	☐
◦ Municipal sewage network?	☐	☐	☐
• Is there a specific place for the storage of hazardous materials?	☐	☐	☐
• What does the organization do with fire extinguishing chemicals and foams?			
• What kind of products are used for vegetation control?			
• Are herbicides and pesticides used?	☐	☐	☐
• Is there a special place to store the waste?	☐	☐	☐
• Is there a contract for collection and external processing?	☐	☐	☐
• Is there a separate collection?	☐	☐	☐
☐ Glass ☐ Paper & Cardboard ☐ Plastic ☐ Organic ☐ Rest			
• Are there any fuel spills around the fuel plant?	☐	☐	☐
• Have there been any spill episodes?	☐	☐	☐
• Is the fuel plant properly waterproofed?	☐	☐	☐

Source: ALG Analysis

E&S monitoring checklist

Resource efficiency and pollution prevention (2/2)

	YES	NO	*Document is joined*
• Is the energy consumption correctly identified?	☐	☐	☐
• Is there a energy minimization plan implemented? (i.e: LED lamps replacement)	☐	☐	☐
• Is water consumption correctly identified?	☐	☐	☐
• Is there a water minimization plan implemented?	☐	☐	☐
• Is there a risk at the airport due to the effects of climate change?	☐	☐	☐
☐ Floods ☐ Electrical storms ☐ Hurricanes ☐ Risk of sea level rise			
• Are actions linked to risks derived from extreme weather events carried out?	☐	☐	☐
• Which ones?			
_____			☐
_____			☐
_____			☐

Source: ALG Analysis

E&S monitoring checklist

Biodiversity conservation and sustainable mgmt. of living natural resources

	YES	NO	*Document is joined*
• Is there a biodiversity conservation plan?	☐	☐	☐
• Are there natural and critical habitats within the airport site?	☐	☐	☐
• Are there legally protected and internationally recognized areas?	☐	☐	☐
• Is there an avian hazard procedures according to Doc. 9137 Part 3. Reduction of Hazard Birds (ICAO)?	☐	☐	☐
• Are the migratory flows of birds known?	☐	☐	☐
• Who manages the bird and wildlife hazards? ☐ SSI ☐ External contract ☐ Airport staffing			
• Who are accidents reported to? _____	☐	☐	☐
• Is land use management linked to wildlife management?	☐	☐	☐
• What mechanisms are used to scare off and harass wild animals when necessary?	☐	☐	☐
• What does the organization do with retired animals?			
◦ They are taken to a management center?	☐	☐	☐
◦ They sacrifice themselves?	☐	☐	☐
◦ _____	☐	☐	☐
• Is there a contract with third parties for space management within the airport property?	☐	☐	☐

Source: ALG Analysis

ALG

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