Civil Aviation Authority
Sri Lanaka

SRI LANKA SUSTAINABLE AVIATION ENVIRONMENTAL POLICY

Final March 2023

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1. Introduction and Purpose of this Document

Sri Lanka is among the 10 countries with highest climate risk[1]. Government of Sri Lanka (GOSL) has taken series of measures to mitigate the risk associated with climate changes. It is expected that GOSL will place greater emphasis significance on the environment while playing a leading role towards sustainable environment by investing towards greener Sri Lanka.

With this background, the first (draft) publication of a national policy on aviation environmental sustainability for Sri Lanka has been developed. In its current form, it is intended as an instrument for consultation and engagement with relevant ministries, organizations and stakeholders before making publicly available on Civil Aviation Authority of Sri Lanka (CAASL) website.

As a national level policy and not a strategy or plan, it is intended to be short, broad and avoid being overly detailed in terms of specific short-term targets. As a draft policy document it tries to be aspirational and with a long shelf-life aptitude. The supporting and separate strategy and planning instruments will be developed as part of State action plan on aviation environmental matters and finally towards the development of Civil Aviation Master Plan (CAMP) with required regular monitoring and upgrade instruments.

However, as a National Policy, it will only deliver if specific oversight structures are put in place to develop and ensure delivery of the more detailed strategies, plans and performance targets coupled with support and/or enforcement mechanisms if necessary.

This Policy sets out sufficient clarity on how its aims will be achieved, by which agencies and which processes and powers are being used.

The policy should, therefore, give a sense of answering the following questions:

- What is adequate progress toward delivering this policy?
- How it will be measured if this adequate progress is being achieved? and
- Who will do what, to ensure that sufficient progress towards the policy is being delivered? It is fair to say that whilst the core policy objective statements themselves may be short but-aspirational, the details on explaining where the policy sits, how it is related to existing State policy and how it will be delivered, typically takes more space than the policy statements themselves. Such references to the surrounding legislative framework will allow the policy document itself to focus on a clear and structured scope and show how it will rely on and integrate with other mechanisms of the State such as climate adaption plans, technology development policies, and wider land-use policies and so on.

As a virtuous policy document, this inherently states what is considered acceptable performance in order to formulate regulations. It does not however stipulate how this performance is to be achieved as this would accept liability for such mandatory rules

[1] https://www.dailymirror.lk/breaking_news/Sri-Lanka-among-the-10-countries-with-highest-climate-risk-Ruwan/108-246412

achieving the stated performance aim. Stipulating methods also dampens innovation and the development of novel solutions to problems. Therefore, it should be made clear, the diverse responsibilities that lies with the State, the regulators and aviation stakeholders.

2. Context

The aviation industry is of national strategic importance to Sri Lanka as the country depends on air transport to connect people and goods with the rest of the world. More importantly, aviation is a critical enabler for the broader economy. A safe, secure, efficient, and environmentally responsive aviation industry reinforces a range of activities such as trade and commerce, tourism, investment that contribute significantly to country's economic prosperity.

According to IATA, aviation industry in Sri Lanka has contributed immensely to national economy with overall economy impact of US $ 7.9 billion in 2019 before the pandemic which includes 8.9% of national GDP. In 2018 around 10.7 million passengers travelled by air, 268,496 Metric Tons of freight carried by air, 703,000 jobs supported by the industry, 67,158 scheduled flights flown by Airline companies. According to the same IATA report Air Transport in Sri Lanka is forecasted to grow by 143% (subject to post COVID adjustments) in the next 20 years creating 25 million passenger movements yearly at the airports.

The world's busiest international/regional air routes are in the Asia Pacific region and therefore it is expected that air traffic growth within the next 20 years will be driven by the Asia Pacific region. IATA further estimates that 36% of global air traffic will be from the Asia-Pacific region by 2034 compared to 21% from Europe. The Asia Pacific region is home to around 56% of the world's population and a rapidly expanding middle class. This region generates 31% of global GDP.

Sri Lanka has the potential to leverage the advantages from the regional and global aviation markets and transform its aviation sector into a catalyst for economic growth, including new green employment and investment opportunities. Therefore, it is vital for GOSL to support and encourage the development of the aviation industry to contribute to the economic prosperity of the country.

CAASL recognizes the contribution of the aviation industry to climate change and the challenges posed by the latter to the long-term resilience, sustainable development, and future growth of the aviation sector keeping in line with the national policy framework on environmental matters and international obligations.

As the responsible entity for the establishment of national aviation policy guidelines CAASL is committed to the development of sound aviation environmental management strategies within the context of sustainable development in Sri Lanka.

In this regard, this Sustainable Aviation Policy has been developed with the consent of internal stakeholders. As the first step towards consultation of key outside stakeholders, the document will be shared with the Ministry of Ports and Aviation, Ministry of Environment, and National Air Transport Facilitation Committee (NATFC). Further, the document will be placed on the CAASL website for wide consultation with the general public and other relevant stakeholders. The consultation process will be inclusive and transparent enabling stakeholders to have full ownership of the policy.

3. Sustainability & Environmental Concerns

Aviation is one of the fastest-growing sources of greenhouse gas emissions globally and currently it contributes to 2% of overall anthropogenic Greenhouse Gas (GHG) Emission[2]."If aviation only accounts for 2% of the total CO2 emissions, why are we talking so much about this"? If left unaddressed, aviation emissions are expected to double or triple by 2050, potentially consuming a significant portion of the global carbon budget under the Paris Agreement goals.

ICAO has warned that the aviation industry needs to prepare for severe disruptions due to climate change and that it needs to make full use of clean technology and policy tools to reduce its carbon footprint along with other environmental impacts. Along with the use of Sustainable Aviation Fuel (SAF), energy efficient infrastructure, electric vehicles, green taxing vehicles etc. proper regulatory frameworks and favourable market conditions will help in Aviation GHG reduction.

Aircraft noise pollution near airports poses major health risks raising public concerns and is likely to impact future operations, as well as expansion and development activities at airports. The aviation stakeholders are consistently working together to reduce the noise impact through technology, process improvement and land use planning. However, the "noise pollution" around airports may be significantly reduced by proper land use planning, which needs to be addressed collectively with government stakeholders.

The development and operation of an airport cause gaseous and particulate emissions from different sources including aircraft operations, ground support equipment, airport infrastructure and landside access traffic. Increased level of air pollution in the country may result in operational constraints and reduced international travel and tourism; it may also lead to low visibility situations around the airports.

Effective land use planning around the airports in cooperation with Development Agencies, Authorities, Public Transport Departments, and potential Metro Rail companies etc. with a focus on enhanced connectivity to Airport and dedicated services to airport will enable smooth airport operations with reduced environmental footprints and will be beneficial for sustainable aviation.

Increased infrastructure development supported by the growth of civil aviation in Sri Lanka has raised a growing concern about resource consumption by the aviation sector. There is a strong need for all stakeholders to adopt resource conservation measures, green building concepts, etc.

Waste Management by relevant bodies around the airports is also one of the concern areas for airport & aircraft operation. Improper waste management leads to birds, canines and wildlife attraction which is a threat to aircraft operation at all major airports. There is a strong need for all the concerned agencies to ensure proper waste management around the airports.

The study of the factors affecting the incidence of collisions with wildlife is on the rise. In this context, creating awareness, improving technology and safety levels can be utilized to minimize collisions between aircraft and wildlife.

The lengthy and complex process of obtaining Environment clearance of airport projects (new and expansion) sometimes sets back the developmental activities which are required

[2] Intergovernmental Panel on Climate Change (IPCC), 2004

to cater to the needs of the rapidly growing aviation sector of the country. The Ministry responsible for environment along with central and local govt. bodies, need to work collaboratively for simplification of these processes to ensure timely completion of developmental activities with due care to minimise environment pollution and sustainability.

Recognizing the fact that Sri Lanka aviation sector is likely to experience sturdy growth in coming years, addressing the environment and sustainability concerns are very important. To overcome the above stated concerns and address these issues, the need for a National Sustainable Aviation Policy on Environment has been envisaged with a clear objective of achieving sustainable growth of the civil aviation.

National Air Transport Facilitation Committee along with the key aviation stakeholders will conduct stakeholder meetings and formulate a task force and working groups to deliberate on the requirement of a National Sustainable Aviation Policy on Environment The task force and working groups include representatives from Ministry responsible for of Civil Aviation, Ministry of Environment (MoE), Civil Aviation Authority, Airport Operators, Airlines, Air Navigation Services (ANS) and Ground handling service providers. The inputs from the members of Task force, working groups and stakeholders will be obtained through meetings, brainstorming sessions, and questionnaires. Based on the responses received from diverse stakeholders the final policy document on National Sustainable Aviation Policy on Environment will be developed.

4. Vision, Mission, Goals, Objective and Principles

Vision:

"To enable, promote and strengthen the sustainable growth of civil aviation system in Sri Lanka by minimizing the adverse environmental impacts of civil aviation activities"

Mission:

"Civil Aviation Authority of Sri Lanka is committed to the sustainable growth of the civil aviation sector in the country keeping in line with national policy framework while mitigating its negative impacts on environment at the same time. This Policy sets out high level guidelines to guide decisions and achieve the desired outcomes"

Goals:

Policy Goal	Relevant Policy Thematic Areas (PTA)
Net Zero Carbon from Aviation by 2050	• Greenhouse Gas Emissions and Climate Change • Air Quality
Annual Average fuel efficiency improvement	• Greenhouse Gas Emissions and Climate Change • Air Quality
Adopt resource efficiency measures including technology and operational improvements to reduce fuel consumption and improve electrical consumption efficiency of aircraft operations.	• Energy & Resource Conservation
Minimize or mitigate the adverse effects of aircraft noise	• Noise management
Preserve and enhance the land, soil, water bodies and habitat on and near their properties to preserve the ecology and biodiversity, but without compromising the safety of aircraft operations	• Land, Soil, Habitat and Biodiversity
Promote the culture of avoiding solid waste generation and, where possible, extracting value from remaining waste with the goal of sending zero waste to landfills in aviation industry.	• Waste Management
Minimize the use of potable water, to process wastewater in the most efficient way possible, reuse of treated water and to manage the quantity and quality of storm water run-off.	• Water Management

Objective:

The objective of the Policy is to set out guidelines with national policy framework for the growth of the aviation industry that will facilitate Sri Lanka becoming an environmentally friendly nation and a competitive aviation industry globally within the next three decades and ensuring safe, Security and efficient.

Principles:

1. Sustainable Development

Sustainable Development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Since signing on to the 2030 Agenda for Sustainable Development in September 2015, the GOSL has taken numerous initiatives towards facilitating the Sustainable Development Goals. The Sustainable Development Act was passed in Parliament in October 2017. The National SDG Action Plan (2017-2020) was formulated, roles and responsibilities of all ministries and public-sector institutions were mapped, and the findings have been presented across local, provincial, national, regional and international forums.

2. Efficiency in resource use

Efficient use of environmental resources is applied in the sense of reduction in the use per unit of economic output to minimize adverse environmental impacts. This policy principle is guided by the fact that the inefficient use of resources has initiated critical scarcities and caused environmental challenges such as climate change, ozone depletion and environmental degradation- all of which have negative impacts on the well-being of the planet and its people.

3. Planetary Boundaries

The planetary boundary notion aimed to define the environmental limits within which humanity can safely operate. It presents a set of nine planetary boundaries namely; biosphere integrity, climate change, novel entities, stratospheric ozone depletion, atmospheric aerosol loading, ocean acidification, biochemical flows, freshwater use, and land system change. It invigorates the case for international cooperation so that the world community can maintain their actions within the limits of safe operations.

4. Common but Differentiated Responsibilities

The common but differentiated responsibilities principle is applied, especially in international environmental challenges, to imply that all states are responsible for addressing global challenges yet may be with differentiated responsibilities. While acknowledging the common responsibility for finding solutions to global problems by all states/parties, the principle also recognizes the necessity of assigning differentiated responsibilities to each state/party/actor according to variable contributions by different parties/actors to the problem concerned, stage of development of respective countries and their distinct capacities to address the problem.

CAASL shall coordinate and promote the sustainable growth of the aviation sector through its dedicated environmental principles in coordination with relevant stakeholders.

Policy implementation process will be developed in the Action plan and will be used to guide and track path of actions important managing Sri Lanka’s aviation GHG emissions from 2023 onwards.

The Policy will be aligned with the relevant National and International frameworks:

- Share and support ICAO's Vision, Mission and ambitious goals towards environmental protection including development and monitoring of a State Action Plan (to reduce international aviation's carbon emissions) and voluntary participation in CORSIA
- United Nations' Sustainable Development Goals (SDG) 2030
- Sri Lanka 's Intended Nationally Determined Contributions (INDC) under UNFCCC-Paris Agreement
- The Kyoto Protocol to the UNFCCC, which requires developing countries and economies in transition to reduce their greenhouse gas (GHG) emissions.
- Vienna Convention and Montreal Protocol on Ozone Depleting Substances
- Actively participate in the International Aviation Climate Coalition
- Ministry responsible for aviation objective to achieve Sustainable Aviation as outlined in National Civil Aviation Policy 2016.

5. Policy Statement

This first version of Sri Lanka's Sustainable Aviation Policy on the environment is aimed to address key aspects of aviation's environmental impact. It presents the policy statements formulated to achieve the vision, mission, goals and objectives of the SLSAEP. Policy statements are presented under seven Policy Thematic Areas (PTA) from 5.1. to 5.8., namely

5.1 Greenhouse Gas Emissions and Climate Change

5.2 Air Quality

5.3 Noise Management

5.4 Energy & Resource Conservation

5.5 Land, Soil, Habitat and Biodiversity

5.6 Waste Management

5.7 Water Management

5.8 Solar and other Renewable Energy

5.1 Greenhouse Gas Emissions and Climate Change

All aviation stakeholders including Airlines, Airports, Ground Support Service Agencies, Air Navigation Service Provider, etc. shall adopt the best energy and fuel-efficient solutions that are technically feasible, economically viable and environment friendly for reduced GHG emission.

Operational stakeholders need to adopt measures to reduce emissions in all areas—aircraft, ground support, airport infrastructure and landside access traffic.

All the aviation stakeholders shall adopt GHG management framework for their operation, including routes apart from routes covered under Carbon Offsetting and Reduction Scheme

for International Aviation (CORSIA) and The EU Emissions Trading System (ETS) scheme. Airports, ANS, Ground Service Agencies shall adopt GHG management frameworks as per Airport Council International (ACI)'s Airport Carbon Accreditation & ISO 14064 and progressively move towards achieving carbon neutral status.

All aviation stakeholders shall adopt best energy and fuel-efficient solutions that are technically feasible, economically viable and environment friendly for reduced GHG emission and preventing climate change.

For all new green field airport developments, serious consideration should be given to providing Bridge Mounted Equipment (BME), with Fixed Electrical Ground Power Units (FEGPU) and Pre-Conditioned Air (PCA) supply provisions, with appropriate cost recovery mechanism. All existing airports should explore the possibilities of retrofitting such facilities.

All airlines should use the BME facilities if the option of using such facility is available in Airports as the preferred choice for meeting on gate power and conditioned air requirements. CAASL should ensure that airlines are incentivised, not dissuaded to use such facilities (due to costs).

Airports and airlines will work collaboratively with CAASL to make green taxiing feasible in Sri Lanka, with an objective of reducing ground emissions by airlines.

All airlines should operate current generation aircraft with less noise and fuel efficiency. CAASL and airport authorities should incentivise airlines to maintain their fleets with less noisy and more fuel-efficient aircraft.

Airlines shall use advanced software tools to analyse post flight data to make better strategic decisions regarding fuel burn patterns.

ANS/ATC shall use Continuous Descent Operation & Continuous Climb Operation and share information related to aircraft tracking and situational awareness at airspace and ground movement with the concerned Airport for fuel efficiency and noise reduction.

CAASL will work with other government agencies and private agencies for ensuring availability of bio jet fuels (SAF) for aircraft use which is commercially viable. All aviation stakeholders shall also explore the possibilities of the use of biofuel and other alternate fuels with lower emissions for ground vehicle application.

5.2 Air Quality

CAASL should assess and understand emissions from all aviation-related sources, their contribution to the local air quality and their effect on compliance with local air quality regulations /Emission control guidelines.

CAASL will work with aviation stakeholders and other government authorities within the framework to adopt measures to monitor and reduce emissions in all relevant areas: aircraft, ground support, airport infrastructure, and landside access traffic.

Airports shall adopt local air quality monitoring systems and programs for monitoring and modelling the air quality around airports and make the information openly accessible to the general public.

It is expected that measures to reduce Greenhouse Gases (above) should also deliver benefits in improved air quality around airports.

5.3 Noise Management

All aviation stakeholders shall strive to minimize or mitigate the adverse effects of aircraft noise on communities by implementing effective noise management programs as per ICAO's balanced approach.

Airlines will explore possibilities to avoid or minimize use of reverse thrust to reduce noise while landing.

Airports should optimize their infrastructure to promote a distributed use of runways (such as mixed mode operation) wherever possible.

Air traffic control should share radar data with concerned stakeholder including airports and airlines for monitoring the effectiveness of noise mitigation measures.

CAASL may comply with the noise level standards prescribed by the regulatory body.

5.4 Energy & Resource Conservation

All aviation stakeholders shall adopt resource efficiency measures including technology and operational improvements to reduce fuel consumption and improve electrical consumption efficiency.

All aviation stakeholders should minimize the energy demand of their infrastructure and operations and move towards less polluting modes of energy and fuel use, including generating and using energy from renewable sources.

All aviation stakeholders shall adopt ISO 50001 systems for Energy Management for effective monitoring and conservation of energy.

All aviation stakeholders shall focus on developing renewable energy within their facility. Use of offsite renewable energy shall also be explored, wherever possible.

All new and upcoming airports shall make provision for onsite renewable energy generation as a part of the Airport Master Plan.

5.5 Land, Soil, Habitat and Biodiversity

All stakeholders shall endeavour to preserve and enhance the land, soil, water bodies and habitat on and near their properties to preserve the ecology and biodiversity, but without compromising the safety of aircraft operations. As well as adopt native and adaptive landscaping to protect biodiversity.

All airports shall adopt land and soil protection measures during construction and operation of airport infrastructure.

5.6 Waste Management

All aviation stakeholders shall promote the culture of avoiding solid waste generation and, where possible, extracting value from remaining waste with the goal of sending zero waste to landfills.

All aviation stakeholders should promote the “5 R's: Refuse, Reduce, Reuse, Repurpose, Recycle” concept for waste management and shall promote source segregation of waste including on board waste generated by Airlines.

All aviation stakeholders should minimise the utilization of single use plastics. All stakeholders shall explore eco-friendly alternatives to plastics.

All aviation stakeholders shall work closely with government agencies, local bodies for effective waste management around the airport to ensure reduced bird and wildlife hazards and safe airport operation by:

1. Total waste should be separated as hazardous waste and non-hazardous waste and should be store separately.
2. Cleanliness and good house-keeping activities shall be adopted in waste management area.
3. Hazardous waste should be stored separately as per the waste types and the storage facility should be in proper condition. – Waste oil/ oil sludge – E-waste – Clinical waste – Hazardous waste contaminated waste – Paint waste or paint sludge – Other identified scheduled waste etc.
4. At least 15m buffer zone should be maintained in between boundary of the land and the hazardous waste storing building.
5. Hazardous waste should be disposed only through the facilities having proper authorization of the Central Environmental Authority.
6. In accordance with section 23(A) of the National Environmental Act No. 47 of 1980 and its subsequent amendments, a Scheduled Waste Management License should be obtained from Hazardous Waste and Chemical Management unit of CEA in order to manage the scheduled waste.

5.7 Water Management

All aviation stakeholders shall work to minimize the use of potable water, to process wastewater in the most efficient way possible, reuse of treated water and to manage the quantity and quality of storm water run-off.

All stakeholders shall establish water efficient infrastructures, system & performance measures for water conservation.

All stakeholders shall have sewage treatment plants and adopt zero discharge for effective reuse of treated water under specified tolerance limit

All stakeholders should adopt rainwater harvesting programs wherever possible to enhance the water availability and sustainability in the region.

All stakeholders shall implement/manage water efficient landscaping systems, improved cooling tower water management performance for water conservation.

All stakeholders shall prevent soil and groundwater contamination with effective spill management and land contamination prevention programs.

5.8 Solar and other Renewable Energy

All stakeholders shall focus on developing renewable energy within their facility.

All new and upcoming airports shall make provision of onsite renewable energy generation as part of Airport Master Plan.

6 Environment Management System

Systematic environmental management is the key to understanding and managing adverse environmental impacts from aviation.

All stakeholders shall adopt a systematic approach to environmental management by means of an Environment Management System (EMS) as per ISO 14001.

All environmental aspects shall be identified through an EMS and mitigation measures shall be adopted through an Environment Management Plan by each stakeholder.

7 Airport Master Planning

Airports while developing Airport Master Plan, shall take into consideration all policy areas, including environment impact assessment as per Ministry of Environment guidelines.

Due consideration shall be given to the Airport Master Plan by all government agencies, prior to the submission of the plan to the Ministry responsible for aviation. This will enable more efficient approval process.

Land use planning should be accounted for in the Master Planning process and should include government agencies like the Ministry of Urban Development and Housing and

other different state agencies to ensure that consideration of future growth of airport operations and their environmental impacts are considered.

8 Competency & Skill Development

In order to handle environmental related issues in a better and more efficient manner, all aviation stakeholders including Ministry responsible for aviation, CAASL, Airports & Airlines shall have a designation related to Environment in their organization and dedicated senior environmental professionals reporting to Chief of the Company with dedicated roles and responsibilities to improve environmental performance of their organization.

A purpose made capacity building programme shall be put in place to ensure that all staff working to support the sustainability objectives of this Policy, shall have access to best-in-class Training and Resources.

9 Power to Amend the Policy

Notwithstanding anything contained in the foregoing paras, the Ministry responsible for aviation, with the approval of Competent Authority, may amend various aspects of this Policy from time to time depending upon the experience gained during implementation, availability of funds, public interest etc.

10 Stakeholders inputs for National Sustainable Aviation Policy

Inputs on environmental frameworks, best practices, concerns and regulatory frameworks from the other stakeholders will be taken through questionnaires and discussion on following key areas:

- Environmental initiatives implemented
- Social impacts created and
- Environmental challenges faced by Aviation stakeholders

Abbreviations

ACI	Airport Council International
ANS	Air Navigation Services
ATC	Air Traffic Control
BMC	Bridge Mounted equipment
CAASL	Civil Aviation Authority of Sri Lanka
CAMP	Civil Aviation Master Planning
CORSIA	Carbon Offsetting and Reduction Scheme for International Aviation
COVID	Coronavirus disease
EMS	Environment Management System
ETS	Emission Trading System
EU	European Union
FEGPU	Fixed Electrical Ground Power Unit
GDP	Gross Domestic Products
GHG	Greenhouse Gas
GOSL	Government of Sri Lanka
IATA	International Air transport Association
ICAO	International Civil Aviation Organization
INDC	Intended Nationally Determined Contributions
NATFC	National Air transport Facilitation Committee
PCA	Pre-Conditions Air
PTA	Policy Thematic Area
SAF	Sustainable Aviation Fuel
SDG	Sustainable Development Goals
SLSAEP	Sri Lanka Sustainable Aviation Environment Policy
UNFCCC	United Nations Framework Convention on Climate Change