



DIRECTORS GENERAL OF CIVIL AVIATION-MIDDLE EAST REGION

Seventh Meeting (DGCA-MID/7) (Riyadh, Saudi Arabia, 19 – 20 May 2024)

Agenda Item 7: Economic Development of Air Transport

MID REGION AIR TRANSPORT STRATEGIC PLAN 2025-2040

(Presented by the Secretariat)

SUMMARY

This paper presents the MID Region Air Transport Strategic Plan 2025 - 2040 at **Appendix A** for review and endorsement by the meeting.

Action by the meeting is at paragraph 3.

1. INTRODUCTION

1.1 The meeting may wish to recall that the DGCA-MID/5 meeting recognized that the adoption of a regional vision of the future promotes the opportunity for mutual cooperation and optimization of the use of resources to achieve common objectives aligned with the ICAO vision of achieving the sustainable development of the global civil aviation system. It was also underlined that the benefits enabled by air transportation can only materialize if States have a safe, efficient, secure, economically viable and environmentally sound air transport system.

1.2 Further to the DGCA-MID Conclusion 5/8, ACI presented WP/37 to the DGCA-MID/6 meeting suggesting:

- a) foundations and overarching principles based on which the ICAO MID Region Air Transport Strategic Plan should be established;
- b) how the Plan should be structured; and
- c) high-level objectives that should be aimed at.

1.3 Based on the above, the DGCA-MID/6 meeting agreed to the following Conclusion:

DGCA-MID/6 - CONCLUSION 6/6: MID REGION AIR TRANSPORT STRATEGIC PLAN 2025-2040

That, in order to support the sustainable development of air transport in the MID Region, in line with the Strategic Objectives of ICAO and at the same time supporting the achievement of the United Nations Sustainable Development Goals (UN SDGs):

- a) *States and International Organizations designate Focal Points to support the ICAO MID Office in the drafting of the MID Region Air Transport Strategic Plan 2025-2040;*
- b) *ICAO MID and ACI are designated as the Rapporteurs of the Drafting Group;*
- c) *ACI proposals be considered by the Drafting Group during the development of the MID Region Air Transport Strategic Plan 2025-2040; and*
- d) *the Draft MID Region Air Transport Strategic Plan 2025-2040 be presented to the DGCA-MID/7 meeting for endorsement.*

2. DISCUSSION

2.1 As a follow-up action to the DGCA-MID/6 Conclusion 6/6, the ICAO MID Office issued State Letter Ref.: ME 5- 22/301 dated 8 December 2022 requesting States and Organizations to nominate Focal Point to support the drafting/development of the MID Region Air Transport Strategic Plan 2025-2040. Bahrain, Iraq, Jordan, Kuwait, Saudi Arabia, UAE, AACO and ACI replied positively to the State Letter and nominated their members of the Drafting Group.

2.2 The Drafting Group was composed of the following Experts:

- Mr. Abdulla Al Qadhi from Bahrain;
- Dr. Mohammed Jawdat from Iraq;
- Mr. Wisam Al Akhras from Jordan;
- Mr. Khaled Al Harthi from Saudi Arabia;
- Mrs. Valerie Browne from UAE;
- Mrs. Manal Fares from AACO;
- Mr. SL Wong from ACI;
- Mr. Mohamed Smaoui from ICAO MID (*Rapporteur)

2.3 Six (6) online meetings of the Drafting Group were conducted from March 2023 to May 2024 to agree first on the Layout of the MID Region Air Transport Strategic Plan 2025-2040 and review the parts developed by the volunteers from the Drafting Group members, as assigned.

2.4 The development of the different parts of the Strategic Plan went through a consultative process within the Administrations of the Drafting Group members, including inputs/comments from the Air Transport Bureau in ICAO HQ.

2.5 The purpose of the MID Region Air Transport Strategic Plan 2025 -2040 (“the Plan”), is to present a strategy recommending coordinated regional and national government policies and industry actions aimed at enhancing connectivity in the ICAO Middle East Region (MID) all the while maintaining high levels of safety, security, air navigation efficiency and with due regard to environmental protection.

2.6 The Final version of the MID Region Air Transport Strategic Plan 2025 - 2040 submitted to the meeting for review and endorsement is at **Appendix A**.

2.7 Concerned Government Authorities such as Civil Aviation Authorities, Ministries of Transport, Tourism development boards, and industry stakeholders should consider adopting the recommendations detailed in Chapter 3 and summarized in the Executive Summary. They should also consider adapting this Plan to a National Air Transport Development Plan based on specific National priorities, challenges and circumstances.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) review and endorse the MID Region Air Transport Strategic Plan 2025 - 2040 at **Appendix A**; and
- b) encourage States and concerned stakeholders to implement the Recommendations contained therein.



INTERNATIONAL CIVIL AVIATION ORGANIZATION

MID REGION

AIR TRANSPORT STRATEGIC PLAN 2025 - 2040

DRAFT

Date: May 2024

ACKNOWLEDGEMENTS

The following list shows the persons that have actively contributed to the production of the Document:

- Mr. Abdulla Al Qadhi from Bahrain;
- Dr. Mohammed Jawdat from Iraq;
- Mr. Wisam Al Akhras from Jordan;
- Mr. Khaled Al Harthi from Saudi Arabia;
- Mrs. Valerie Browne from UAE;
- Mrs. Manal Fares from AACO;
- Mr. SL Wong from ACI;
- Mr. Mohamed Smaoui from ICAO MID (*Rapporteur)

Special thanks also to all those who reviewed the Document and contributed to its improvement, in particular the Staff from the different Sections from the ICAO Air Transport Bureau.

DRAFT

Disclaimer

This Document makes use of information, which is furnished to the International Civil Aviation Organization (ICAO) by third parties. All third party content was obtained from sources believed to be reliable and was accurately reproduced in the Document at the time of writing. However, ICAO specifically does not make any warranties or representations as to the accuracy, completeness, or timeliness of such information and accepts no liability or responsibility arising from reliance upon or use of the same. The views expressed in this Document do not necessarily reflect individual or collective opinions or official positions of ICAO Member States.

DRAFT

TABLE OF CONTENTS

Executive Summary	1
1. Introduction.....	3
2. Importance of Aviation in the Middle East Region	4
2.1 Economic Impact of Aviation	4
2.2 Challenges and Priorities	5
3. Sustainable development of civil aviation by 2040	8
3.1 Economic Development of Air Transport in the MID Region	8
3.1.1 <i>Statistics and Forecasts</i>	8
3.1.2 <i>Air connectivity</i>	10
3.1.3 <i>Traffic Rights and Liberalization</i>	13
3.1.4 <i>Competition and Consumer Protection</i>	14
3.1.5 <i>Airports and Air Navigation Charges and Taxation</i>	17
3.1.6 <i>Aviation Infrastructure and Investments</i>	21
3.1.7 <i>Resilience</i>	25
3.2 Aviation Safety	29
3.3 Aviation Security and Facilitation	34
3.4 Air Navigation	39
3.5 Environmental Protection	43
4. Conclusions	50

EXECUTIVE SUMMARY

Purpose

The purpose of this document, the MID Region Air Transport Strategic Plan 2025 -2040 (“the Plan”), is to present a strategy recommending coordinated regional and national policies and industry actions aimed at enhancing connectivity in the ICAO Middle East Region (MID) all the while maintaining high levels of safety, security, air navigation efficiency and with due regard to environmental protection.

Background

Despite the last COVID-19 pandemic and other interruptions in the past, history has taught us that aviation is a resilient industry which defies and recovers unflinchingly from repeated setbacks. The MID Region is forecast to experience a twofold increase in air traffic by 2040 compared to 2019, the year before the outbreak of COVID-19 that plunged passenger numbers by two-thirds in MID. A strategy is needed so that such air services demand is adequately met in a sustainable manner.

ICAO as the global aviation organization has been working with its Contracting States to promote sustainable aviation development. There have been two significant milestones relevant to MID in this matter:

The first was the 39th Assembly of ICAO held in 2016 where a resolution (resolution A39-25) was adopted, inter alia, to urge Member States to recognize the significant contributions of aviation to sustainable development.

The second was the 5th Conference of the Middle East Directors General of Civil Aviation Conference (DGCA-MID/5) held in 2019 where MID States agreed to develop a long-term strategy to promote the development of air transport in the Middle East and to help achieve the relevant goals of United Nations Sustainable Development Goals (UNSDGs). A group tasked with drafting such Plan was formed further to the DGCA-MID/6 meeting held in 2022, consisting of Bahrain, Iraq, Jordan, Saudi Arabia, UAE, and two industry organizations: Arab Air Carrier Organization (AACO) and Airports Council International (ACI), and the Regional Office of ICAO MID.

Challenges and Policy Recommendations

The Plan analyzes challenges that the air transport industry faces in the MID Region in the key areas of market access and development, taxation and regulatory regimes for airport and air navigation pricing, capital investments, safety, security, air navigation efficiency and environmental protection; all these on the basis of relevant UNSDGs, in particular, economic growth, infrastructure, climate action, and life below water and on land.

Concerning the promotion of air connectivity, a key driver of economic growth, the Plan recommends further liberalization of access to the air transport market in the MID Region, engagement with industry stakeholders in the policy making processes, and the facilitation of visa applications. See Chapters 3.1.2 and 3.1.3.

Chapter 3.1.4 emphasizes the need for protection of the consumers of air transport, i.e. passengers and shippers, including market access via fair slot allocation and the importance of relevant ICAO principles and resolutions in this area, with a view of promoting competition and service quality.

With regard to the regulation of pricing and taxation, the Plan emphasizes the importance of differentiating between “charges” and “taxes” which are two distinct but often confused concepts in the public domain and such confusion may hinder the development of policies favorable to the promotion of air transport in the long term. Here the long-established and universally accepted ICAO policy in taxes and charges are recommended. Consultation with industry and transparency in taxation regimes are recommended as methods conducive to achieving the common goal of promoting air transport developments. See Chapter 3.1.5.

In the area of infrastructure developments, States are encouraged to establish a long-term national aviation infrastructure plan in order to meet the growing market demands in time, in particular the establishment of airport master plans as recommended in Annex 14 to the Convention on International Civil Aviation. Such plans should be established taking into account the impacts of climate change. The adverse effects of climate changes, for example, unusually high temperatures, heavy rains and changing wind directions should all be considered in the

design and building of infrastructure to minimize interruptions to flight operations and negative impacts on infrastructural capacities. Public/Private Partnership is also recommended when private capital and expertise are needed. See Chapter 3.1.6.

Concerning aviation safety, the unnegotiable pillar of air transport, the Plan recommends allocating adequate resources and building human capacity to enhance safety oversight, establishing a national aviation safety plan and a State Safety Programme, and implementing ICAO Standards and Recommended Practices related to safety. See Chapter 3.2.

For aviation security, the low-level of implementation of the Critical Elements 7 and 8 of the ICAO Universal Aviation Security Programme, i.e. Quality Control and Resolution of Security Concerns, is highlighted. Adequate allocation of resources and building of human capacity are recommended to resolve these issues. To reinforce security it is recommended that the long-established measures: Public Key Directories (PKD), Passenger Name Record (PNR) and Advance Passenger Information (API) be implemented as soon as possible. With regard to Facilitation, i.e. the facilitation of formalities in the clearance of aircraft, passengers and cargo and other necessary processes such as security screening of passengers and their baggage, it is recommended that One-Stop Security be implemented in collaboration with the industry as necessary to expedite the transfer of passengers at hub airports and thereby to facilitate flight connections and stimulate traffic network developments. See Chapter 3.3.

On air navigation, the Plan recommends the modernization of air traffic management (ATM) equipment and facilities as needed and the adoption of performance-based navigation (PBN), advanced ATM technologies, and the benchmarking of air navigation performance to promote efficiency enhancements, all these measures aimed at reducing airspace congestions and flight delays to ensure the region has the capacity to handle the expected growth in traffic demand in the future. See Chapter 3.4.

Lastly not to be forgotten is the protection of the environment in the midst of air traffic development. The Plan recommends ICAO and industry best practices in aircraft noise management, carbon management, the combat against wildlife trafficking via air transport to protect biodiversity; the adoption of more efficient air navigation practices; and the management of waste and water during airport and flight operations. These are all related to UNSDG for good health, clean water and sustainability. See Chapter 3.5.

1. Introduction

- 1.1. The 5th Meeting of the Directors General of the Middle East Region, which met in Kuwait from 4 to 6 November 2019, in their Report on Agenda Item 10: MID Region Strategic Plan reached the following conclusion:

DGCA-MID/5 CONCLUSION 5/8 – MID REGION AIR TRANSPORT STRATEGIC PLAN 2020 -2035

That, in order to support the sustainable development of air transport in the MID Region, in line with the Strategic Objectives of ICAO and at the same time supporting the achievement of the United Nations Sustainable Development Goals (UN SDGs):

- a) States and International Organizations designate Focal Points to support the ICAO MID Office in the drafting of the MID Region Air Transport Strategic Plan 2020 -2035; and
 - b) the Draft MID Region Air Transport Strategic Plan 2020 -2035 be presented to the DGCA-MID/6 meeting for review and fine-tuning before presentation to a Ministerial Conference for endorsement.
- 1.2. Obviously, sustained action on the above conclusion of these DGs was interrupted by the onset of COVID-19 and the required re-focusing of the MID Region on dealing with and recovering from the impact of this pandemic.
- 1.3. Subsequently, the Sixth Meeting of the Directors General of Civil Aviation-Middle East Region (DGCA-MID/6), held in Abu Dhabi, UAE, 1-3 November 2022, urged the re-start of action to develop the Air Transport Strategic Plan, agreeing as follows:

DGCA-MID/6 - CONCLUSION 6/6: MID REGION AIR TRANSPORT STRATEGIC PLAN 2025-2040

That, in order to support the sustainable development of air transport in the MID Region, in line with the Strategic Objectives of ICAO and at the same time supporting the achievement of the United Nations Sustainable Development Goals (UN SDGs):

- a) States and International Organizations designate Focal Points to support the ICAO MID Office in the drafting of the MID Region Air Transport Strategic Plan 2025- 2040;
- b) ICAO MID and ACI are designated as the Rapporteurs of the Drafting Group;
- c) ACI proposals be considered by the Drafting Group during the development of the MID Region Air Transport Strategic Plan 2025-2040;
- d) the Draft MID Region Air Transport Strategic Plan 2025-2040 be presented to the DGCA-MID/7 meeting for endorsement.

2. Importance of Aviation in the Middle East Region

2.1. Economic Impact of Aviation

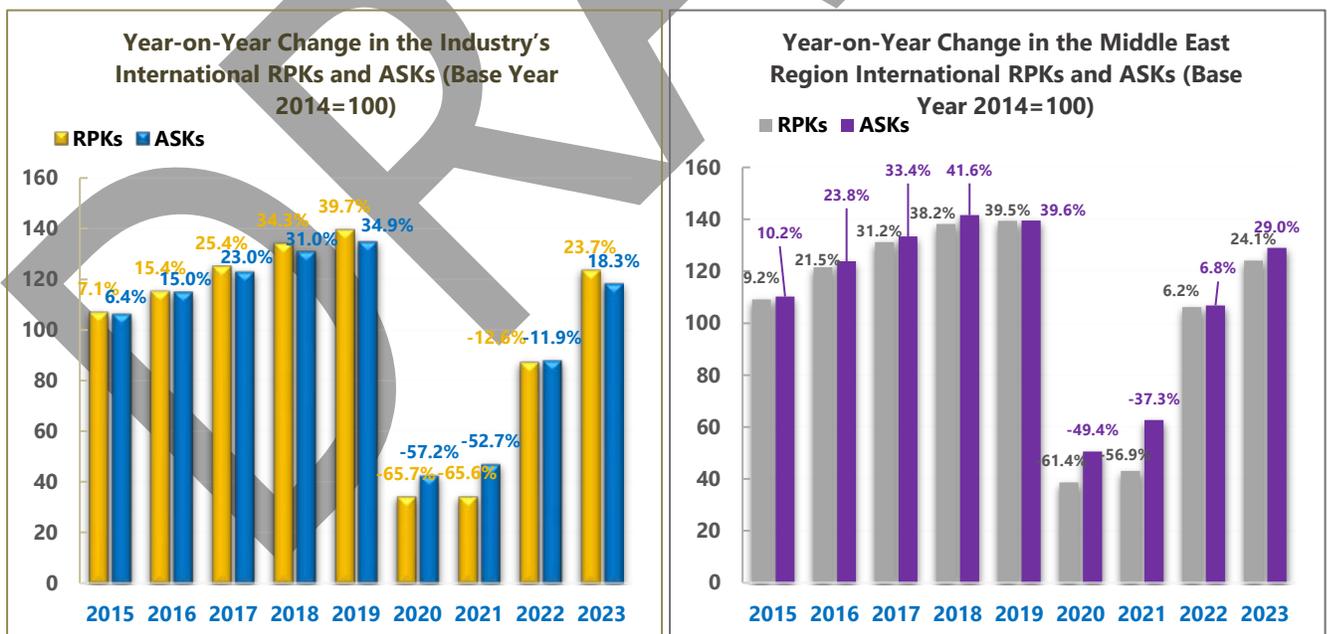
Prior to the pandemic, air transport carried 4.5 billion passengers and 58 million tonnes of freight in 2019. The industry achieved an airline operating result of USD 45 billion with a net profit of USD 31 billion. Furthermore, the industry added more than 1,400 brand-new aircraft. Passenger traffic in 2019 grew by 3.6% compared to 2018, which was faster than the GDP and trade growth at 3.0% and 0.9%, respectively, when comparing the same period. This shows that aviation has a direct and indirect global economic footprint in terms of revenue generated and created jobs.

The economic contribution of aviation was estimated at USD 3.5 trillion in annual global GDP, which was translated into an economic multiplier of 1\$:4\$, i.e., each dollar spent in aviation generates four dollars in the economic cycle. In addition, aviation supported an excess of 90 million jobs during the same year.

All of the above make aviation one of the leading economic sectors globally and in the Middle East region. Total passenger traffic in the Middle East region grew by 5.1% in 2019 to reach 227.9 million passengers, mostly of international operations which constitute around 83% of the total operations to and from the region. Daily, an excess of 3,000 flights connects the continents of the world through the Middle East region, making it an international hub for both passenger and cargo activity.

In the Middle East region, aviation directly supported more than 5 million jobs and contributed around 9% to the regions' GDP*. In addition, aviation has indirectly contributed to the generation of around USD 98.7 billion international tourism receipts, transporting more than 20 million tourists to the region.

Despite the unprecedented crisis that affected the aviation industry in 2020, and wiped out more than 10 years of growth, the industry has regained momentum and is now getting closer to reaching 2019 figures, which will restore its notable economic and social contribution (see below charts).



*based on a sample of nine countries in the Middle East region reporting their numbers

2.2. Challenges and Priorities

2.2.1. Challenges:

The air transport industry faces several challenges, ranging from economic and environmental concerns to regulatory and technological issues. The key challenges are:

- a) **Economic Volatility:** The airline industry is highly sensitive to economic fluctuations. Similarly, airports, like many asset-intensive businesses, the cost structure is characterized by predominantly high fixed costs in the operation and maintenance of major infrastructure components, such as runways, aprons and terminal buildings. During economic downturns, people and businesses tend to cut back on travel, leading to decreased demand for flights.
- b) **Environmental Concerns:** Although the aviation industry contributes to 2% of the Global Greenhouse Gas Emissions, yet it is exerting a lot of ongoing efforts to mitigate this contribution; and that represents a significant challenge.
- c) **Safety and Security:** Ensuring the safety and security of passengers and crew is a top priority for the aviation industry. Air transport stakeholders constantly invest in training, technology, and infrastructure to prevent accidents and respond to security threats effectively. The industry in the Middle East region is particularly vulnerable to geopolitical tensions which exist in many states in the region.
- d) **Regulatory Challenges:** Aviation stakeholders are subject to a complex web of regulations and agreements that vary between countries. Navigating this regulatory landscape, including safety standards, security protocols, and international agreements, climate change regulations and targets can be challenging.
- e) **Digitization of the air transport industry:** Although the industry is digitized in some areas, however, there are still challenges to reaching a fully digitized travel experience. Such challenges include data privacy, interoperability, legacy systems, regulatory compliance, skills gap, cybersecurity, infrastructure and connectivity. Addressing these challenges requires a coordinated effort from airlines, airports, regulatory authorities, and technology providers.
- f) **Technological Advancements:** Aircraft and engine manufacturers are constantly urged to develop technologies that are efficient economically and with respect to their environmental performance. The pace of such advancements is complicated and mostly slow as compared to what environmental efficiencies require.
- g) **Infrastructure Constraints:** Aging infrastructure can lead to delays and inefficiencies. Timely expanding and upgrading, and developing new airports and air traffic control systems require significant investment and careful planning.
- h) **Talent Shortage:** There is a shortage of skilled personnel in various sectors of the aviation industry, including pilots, mechanics, and air traffic controllers. Recruiting and retaining talented professionals is an ongoing challenge.
- i) **Pandemics and Health Crises:** The COVID-19 pandemic highlighted the vulnerability of the aviation industry to health crises. Travel restrictions, reduced demand, and health concerns significantly impacted airlines and airports' operations and revenue. The industry must be prepared to respond to future pandemics and health emergencies effectively.

Addressing these challenges requires collaboration between governments, regulatory bodies, airlines, airports, ANSPs and technology providers. Innovation, investment in research and development, and international cooperation are essential for the sustainable growth of the air transport industry.

2.2.2. *Priorities:*

While enhancing the safety and security of civil aviation is always an all-time priority, the recommended action can be read in following sections of this strategic plan. Meanwhile, two major priorities are highlighted here below:

a) Reaching a Seamless Travel Experience for Passengers

Digital Transformation of the Air Transport Industry:

- Digital technologies have become an essential aspect of human life. It has taken the lead in many aspects of the human race. It is now a cultural evolution and a social phenomenon, and all industries, and aviation is no exception, have adopted digital transformation.
- For many years, and ongoing still, the aviation industry has been undergoing digital transformation, with many airlines adopting cloud-based applications, big data, and IoT to enhance customer experience, airline performance, and competitiveness; because digital technologies enable airlines to shorten planning cycles and become more agile and flexible leading to increased safety, efficiency, and convenience for passengers.
- With the influx of demand, travel, commercialization, and advancements, the travel industry has introduced the online booking facilities, mobile apps, automated check-in, and e-tickets which have made booking a flight more accessible and convenient. Digital transformation has also led to smart airports that use technology to improve the traveler experience. However, the interlinking between the various systems is missing as many of the solutions are not interoperable.

Digital Identity

- The adoption of digital identity and the implementation of biometric technology play a pivotal role in creating a seamless and efficient travel journey for passengers at airports and by airlines and it can be at its optimum when adopted by governments.
- Digital identity and biometric technology can make travel more efficient, safe, and passenger friendly. However, airlines, airports, and government must work together to ensure a seamless and secure travel journey for passengers.

b) Reduce & Eradicate Aviation's Environmental Footprint

- Aviation is dealing with a variety of environmental requirements and targets. That includes obligations under ICAO's CORSIA, LCAF production and its certification readiness to support the energy transmission, Sustainable Aviation Fuel uplifting mandates in some countries including the Refuel EU law that also includes a green labeling scheme managed by EASA, aviation environmental policies that might arise following ICAO's Global Framework for Aviation Alternative Fuels (GFAAF), and the road to Net Zero Emissions by 2050 (ICAO's LTAG 2050), add to that taxes and charges under the green banner
- The 41st Session of the ICAO Assembly resolved that "ICAO and its Member States are encouraged to work together to strive to achieve a collective long-term global aspirational goal for international aviation (LTAG) of net-zero carbon emissions by 2050, in support of the Paris Agreement's temperature goal". To achieve the LTAG, a comprehensive strategy consisting of a variety of measures, such as technology (21%), LCAF, sustainable fuels and other cleaner energy (55%), infrastructure & operational enhancements (11%), and market-based measures (13%), is required.

- Sustainable Aviation Fuels (SAF), Lower Carbon Aviation Fuels (LCAF), and other aviation cleaner energies are anticipated to have the largest impact on reducing aviation CO₂ emissions by 2050, and while there are increasing initiatives to develop and deploy these fuels, their production levels are still extremely low, accounting for only 0.1% of all aviation fuel consumption.
- ICAO's Global Framework for Aviation Alternative Fuels was adopted in November 2023 at ICAO's Third Conference for SAF, LCAF and other cleaner energies that was held in Dubai, UAE. The Global Frameworks includes four building blocks including: Policy and Planning, Regulatory Framework, Implementation Support, and Financing. The objective of the Framework is to facilitate the global scale up in the development, production and deployment of aviation cleaner energies. Through the Framework, ICAO and its Member States strive to achieve a collective global aspirational Vision to reduce international aviation CO₂ emissions by 5 per cent by 2030, through the use of SAF, LCAF and other aviation cleaner energies.
- To achieve the anticipated goals or vision set by states under the umbrella of ICAO, while safeguarding the sustainable growth of air transport ensuring that the sector continues to deliver its contribution to economic growth, all stakeholders need to do their part to including governments, operators, technology providers, SAF, LCAF, and cleaner energies producers, airports, and air navigation service providers, The role and recommendations for stakeholders are included in the Environmental Protection Section of this Plan in section 3.5.

DRAFT

3. Sustainable development of civil aviation by 2040

3.1. Economic Development of Air Transport in the MID Region

3.1.1 Statistics and Forecasts

Air Traffic Data: The year 2022 has been marked with much stronger recovery in air travel compared to 2021. In particular, international travel has gained significant momentum after a long period of traffic decline. According to ICAO’s Economic Impact Analysis of COVID-19 on Civil Aviation, in 2022, seat capacity offered by airlines recovered to around 80 per cent of the pre-pandemic levels, and the number of passenger traffic recovered to over 70 per cent. (<https://prod-useast-b.online.tableau.com/#/site/icaodatasolution/projects/245090>)

Passenger traffic growth rate in the Middle East region in 2023 was higher than the world average, with total passenger traffic growing at around 3 per cent of the pre-pandemic level. International passenger traffic in the region in 2023 grew approximately 4 per cent year on year, while domestic passenger traffic recovered over 95 per cent, both on a basis of the pre-pandemic traffic levels in 2019.

Air cargo traffic in the Middle East in 2023 declined approximately 12 per cent compared to the pre-pandemic level in the MID region.

As of 2021, the top 15 MID States by Revenue Passenger Kilometres (RPKs) are the United Arab Emirates, Qatar, Saudi Arabia, Iran, Egypt, Kuwait, Bahrain, Jordan, Oman, Lebanon, Sudan, Iraq, Libya, Syrian Arab Republic, and Yemen (Fig 1). Meanwhile, the top 15 airlines in MID region in 2021 are Qatar Airways, Emirates, Saudia, Etihad Airways, FlyDubai, Air Arabia, Egypt Air, Flynas, Gulf Air, Royal Jordanian, Flyadeal, MEA, Kuwait Airways, Oman Air, and Jazeera Airways (Fig 2).

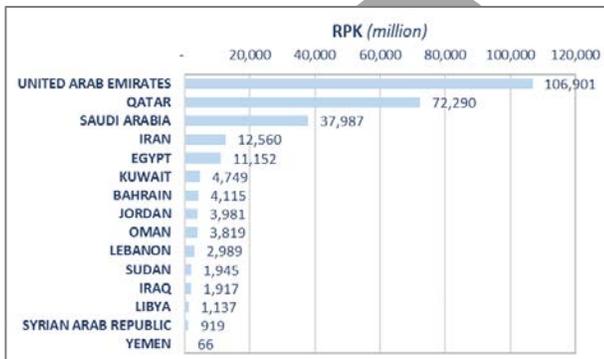


Fig 1. Top 15 MID States



Fig 2. Top 15 MID airlines by

Looking ahead, ICAO forecasts that air passenger demand from 2025 to 2040 will continue to achieve the high growth rate as we saw before the pandemic in the Middle East Region (Fig 3). In terms of Compound Annual Growth Rate (CAGR), this translates to a growth of 4.4 per cent over the 2025-2040 period by mid-scenario, which is more than the world average of 4.0 per cent CAGR. International traffic is expected to grow at a faster pace at 4.8 per cent than 2.8 per cent CAGR for domestic traffic during the same period. Forecasted passenger traffic for each Middle East route group over the 2025-2040 period is presented in Appendix 1.

Meanwhile, the cargo traffic in Freighter Tonne Kilometres (FTKs) in the Middle East Region is expected to grow at a pace of 6.1 per cent CAGR in the period of 2025-2040. This is much higher than the global average of 3.5 per cent CAGR in the same period.

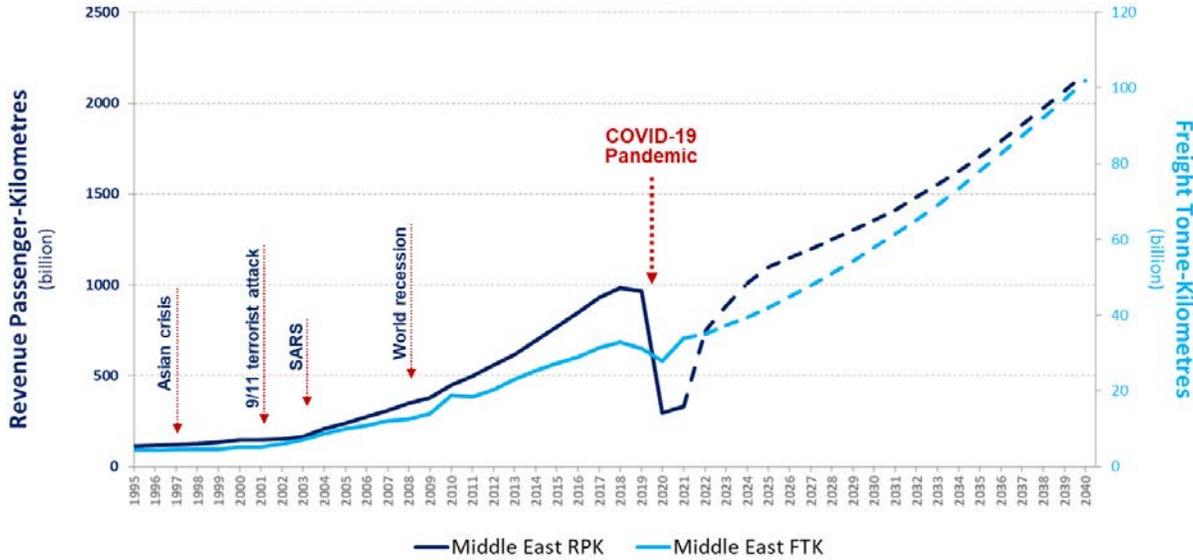


Fig 3. MID Air Traffic Results and Projection

Aviation Personnel: During the last decade, commercial air transport has shown a strong traffic growth pattern, leading to many new commercial air transport operators and the highest number of aircraft orders ever registered, particularly in the MID region. Our recent study in 2018 reveals that 44,692 commercial pilots will be required in 2037 (91 per cent increase compared to 2017); 4,056 air traffic controllers will be required in 2037 (38 per cent increase compared to 2017); 47,760 maintenance technicians will be required in 2037 (93 per cent increase compared to 2017); and 93,435 cabin crew will be required in 2037 (89 per cent increase compared to 2017) in the MID region. The upcoming revision of the aviation personnel forecast is planned shortly to reflect the latest traffic demand and trends in the industry.

Personnel Forecast 2037

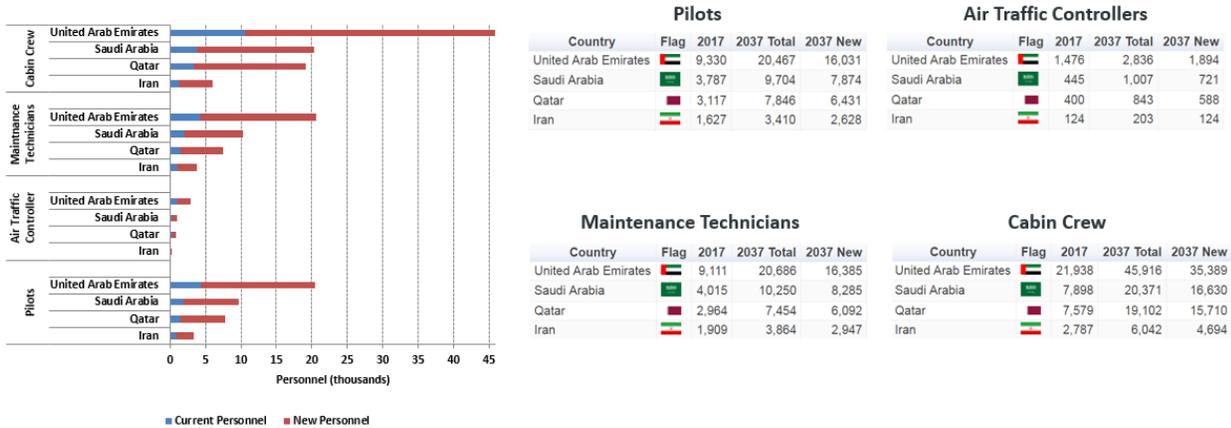


Fig 4. Top 4 MID States driving the demand for new

Gender Equality: The ICAO Global Aviation Gender Summit 2023, which was held in Madrid, resulted in a “Call to Action” that comprises several clear and actionable steps and strategies towards resolving the aviation sector’s significant gender equality challenges. Our 2021 statistics clarified the gender gap for aviation personnel holding licenses.

For air traffic controllers, the percentage of women in the MID region is at 6.7 per cent, which is relatively less than the global average of 21.1 per cent. For airline pilots, the percentage of women in the MID region is at 2.7 per cent, which is relatively less than the global average of 4.1 per cent. For aircraft engineers or technicians, the percentage of women in the MID region is at 1.8 per cent, which is relatively less than the global average rate of 3.1 per cent. Overall, women aviation personnel rate in the MID region in 2021 was at 2.9 per cent, which is lower than the global level at 4.9 per cent.

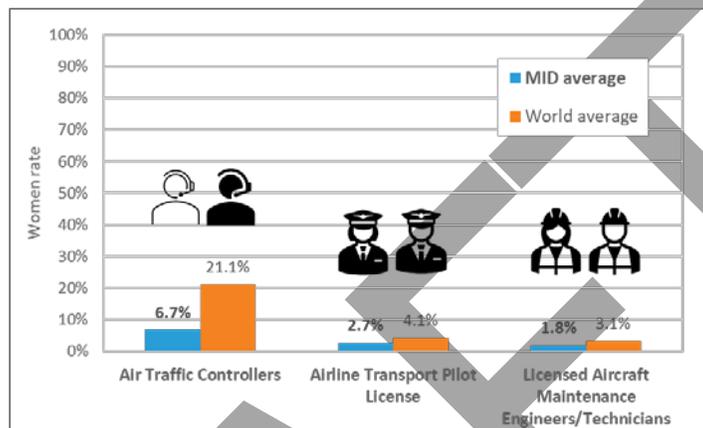


Fig 5. MID Aviation Personnel Women Rate (2021 ICAO)

3.1.2 Air connectivity

a) Introduction & Scope

Air connectivity, with its foundation in passenger experience, signifies the accessibility of global air transport networks. This encompasses vital factors like destination choices, frequency of services, onward connections, and competitive pricing. Instruments like the ACI Asia-Pacific and Middle East Airport Connectivity Index are invaluable in providing a comprehensive evaluation of such connectivity, considering both direct and indirect flights.

b) Core Elements of Air Connectivity

The backbone of air connectivity consists of flight frequency, adequate seat capacity, varied destinations with economic importance, and flight quality (factoring in domestic/international flights and carrier types). Additionally, elements like connection times, the number of stops, and fare accessibility determine how user-friendly and accessible air travel is to passengers. ¹

c) Data & Analytical Approach

Reliable metrics and indicators such as flight frequency, seat capacity, destination coverage, and fare affordability, sourced from industry bodies like IATA and ACI, offer a comprehensive view of air connectivity. ²Advanced analytical tools like network analysis and demand forecasting models further support strategic decision-making processes, optimizing air travel.

d) Socio-Economic Impact

Air connectivity acts as an economic catalyst, boosting global mobility, strengthening international trade, promoting tourism, and fostering cross-border investments. It plays a transformative role, generating

¹ Source: ACI Asia-Pacific and Middle East Study on Air Connectivity (2023)

² Source: IATA's Global Air Connectivity Index (2023); ACI Asia-Pacific and Middle East Study on Air Connectivity (2023).

employment, fueling economic multipliers, and supporting UN's Sustainable Development Goals. In remote regions, it bridges geographical gaps, providing essential services and opportunities.

e) Regulatory & Infrastructure Review

A thorough evaluation of existing aviation policies, bilateral and multilateral agreements, and current infrastructure capabilities is paramount. By understanding these aspects, we can identify areas for improvement, addressing potential regulatory challenges, and infrastructure constraints, leading to seamless air travel.

Leveraging the competitive advantage of the Middle East as both a destination and platform for connecting to other parts of the world through a policy of revision of ASAs that aims at further opening the sky with third countries.

f) Role of Airlines & Economic Dynamics

Airlines, through their network strategies, route development, partnerships, and emerging business models, shape air connectivity. Understanding their strategies in tandem with market competition, adoption of low-cost models, and the interplay with tourism, gives insights into potential growth trajectories.

g) Technological Enhancements

Digital transformation, biometric technologies, and smart airport infrastructure are revolutionizing passenger experiences. Embracing these innovations, from e-commerce platforms to data-driven models, offers significant growth and efficiency opportunities in the aviation sector.

h) Collaborative Future

Effective collaboration among all stakeholders, including: States, airlines, airports, and industry bodies, is essential. Such collaborations, combined with public-private partnerships, provide a blueprint for addressing challenges and maximizing the potential of air connectivity.

i) Conclusion & Roadmap

Air connectivity, a pillar for global development, trade, and cultural exchange, demands strategic focus. For growing regions like the Middle East, investments in modern infrastructure, technological advancements, and fostering collaborations are essential steps toward a seamlessly connected future.

Stakeholders	Recommendation #	Policy recommendations
1. States/Authorities	1.1	Evaluate and update aviation policies and regulations to promote air connectivity within and outside the region.
	1.2	Facilitate market access and streamline bilateral and multilateral air services agreements (ASAs) to encourage international connectivity. Liberalize their market access policies in terms of traffic rights on a bilateral and multilateral basis, as well as policies on air carrier ownership and control, in facilitating new routes, higher frequencies, increased seat capacities, as well as fostering increased competition, lower airfares and better value proposition of air transport for the aviation ecosystem.
	1.3	Support the development of sustainable tourism by implementing policies that promote responsible practices and conservation efforts.
	1.4	Monitor and assess the effectiveness of existing aviation policies and regulations in promoting air connectivity.
	1.5	Foster collaboration among stakeholders through public-private partnerships to address connectivity challenges.

Stakeholders	Recommendation #	Policy recommendations
		Authorities should be more supportive and responsive by actively involving airport stakeholders in key decision-making processes. This requires a strong relationship and communication gateway between airport operators and authorities, creating a mutually beneficial platform for shared strategic plans.
	1.6	Simplify and streamline visa processes for inbound international travelers, where applicable
	1.7	Collaborate with airlines, airport operators, and local governments to promote tourism growth through enhanced air connectivity.
	1.8	Encourage innovation and the adoption of emerging technologies in air connectivity to enhance passenger experiences.
	1.9	Establish clear guidelines and standards for airport infrastructure development and sustainability.
	1.10	Recognizing the capital expenditure (CAPEX) needs and decarbonization challenges to accommodate future demand for air travel, States/Administrations are recommended to develop economic and financing frameworks to incentivize and facilitate CAPEX for airport infrastructure development, support the energy transition and facilitate access to green finance for aviation
2. Airlines	2.1	Develop comprehensive network strategies to enhance connectivity within the region and with global destinations.
	2.2	Actively engage in route development and explore partnerships to expand route networks.
	2.3	Invest in cargo airlines and freight connectivity to support trade and economic growth.
3. Airport operators	3.1	Assess and timely expand airport infrastructure capacity to accommodate increasing passenger demand.
	3.2	Improve connectivity by integrating airports with multimodal transportation systems.
	3.3	Actively engage in route development and explore partnerships to expand route networks.
	3.4	Embrace technology and innovation to create smart airport infrastructure and enhance passenger experiences. Airport operators should prioritize and implement user-friendly technology along with the traditional procedures in place, as not all travelers may be proficient in utilizing advanced technology
	3.5	Develop marketing strategies to attract investment and position the region as a tourism hub.
4. Other Industry Stakeholders	4.1	Develop reliable data sources and measurement metrics to assess air connectivity and identify gaps.
	4.2	Conduct risk assessments and provide recommendations for mitigating potential disruptions to connectivity.

Stakeholders	Recommendation #	Policy recommendations
	4.3	Provide insights on emerging opportunities and trends in air connectivity to inform decision-making.

In the field of aviation, various stakeholders, including airlines, airport authorities, and international organizations, develop and utilize a range of air connectivity indices and indicators. These tools serve to measure and analyze the efficiency, reach, and quality of air travel networks across the globe. While the methodologies and specific metrics used can vary significantly among these indices, most tend to incorporate a core set of variables that capture essential aspects of air connectivity. Commonly included variables are:

- The number of direct routes available, which reflects the direct accessibility between different destinations.
- The number of indirect routes, offering a broader perspective on connectivity through one or more transit points.
- The total number of seats offered, indicating the capacity to accommodate passengers.
- Frequencies of flights, capturing how often flights are available to passengers.
- The level of competition among airlines, which can influence service quality and prices.
- Convenience, often measured by the connecting times required for passengers making indirect flights.
- Affordability, reflecting the cost of air travel for consumers.

By integrating these variables, air connectivity indices aim to provide a comprehensive view of how well different regions and airports are connected to the global air transport network, offering valuable insights for decision-making and strategic planning in the aviation industry.

This perspective aligns with the ICAO definition of connectivity, which emphasizes the efficient and user-oriented movement of passengers, mail, and cargo. According to ICAO, connectivity is based on the following concept: "Movement of passengers, mail and cargo involving the minimum of transit points which; makes the trip as short as possible; with optimal user satisfaction; at the minimum price possible." This definition highlights the importance of creating air transport networks that not only span vast distances and connect numerous destinations but also prioritize efficiency, passenger satisfaction, and affordability.

3.1.3 Traffic Rights and Liberalization

ICAO Long Term Vision for international air transport liberalization

a) This vision states:

“The Member States of the International Civil Aviation Organization, resolve to actively pursue the continuous liberalization of international air transport to the benefit of all stakeholders and the economy at large. We will be guided by the need to ensure respect for the highest levels of safety and security and the principle of fair and equal opportunity for all States and their stakeholders.”

b) In this regard, the 41st ICAO Assembly passed Resolution A41-27, which in Section I (Basic principles and long-term vision) of Appendix A (Economic regulations of international air transport):

“1. Urges all Member States to give regard to, and apply, the ICAO Long-term Vision for International Air Transport Liberalization in policy-making and regulatory practices;

2. Encourages Member States to pursue liberalization of market access at a pace and in a manner appropriate to needs and circumstances, giving due regard to the interests of all stakeholders, the changing business environment and infrastructure requirements, as well as to the principles pertaining to safeguard measures designed to ensure the sustained and effective participation of all States, including the principle of giving special consideration to the interests and needs of developing countries;

3. Urges Member States to avoid adopting unilateral and extraterritorial measures that may affect the orderly, sustainable and harmonious development of international air transport and to ensure that domestic policies and legislation are not applied.

6. Urges Member States to keep the Council fully informed of serious problems arising from the application of air services agreements or arrangements and of any significant developments in the liberalization process;”

- c) It is obvious that any full implementation of the above quoted long-term vision revolves around the issue of liberalization of market access, specifically the unrestricted exchange of traffic rights. However, it is quite appropriate that ICAO cautions that the pursuit of this objective should be at a pace and in a manner appropriate to needs and circumstances. As is well known, the stage of development of the air transport sector in the ICAO-MID region varies from State to State.
- d) ICAO MID is committed to facilitating the movement and free flow of trade and tourism, by enhancing air transport flights which connect the region to the world. The air transport sector is one of the main sectors which contribute to the economic growth and gross domestic product of countries of the region. It is of course critical that aviation decision makers give due attention to this sector to ensure progress towards air transport liberalization, as appropriate.
- e) In this regard, at a general level, depending on the nature of regional economy, as a whole, the following are, inter alia, the expected results of liberalization:

Aviation Sector: additional economic activity in the aviation sector is generated by the servicing, management and maintenance of the additional air services. This includes activities at airlines, airports, air navigation and other businesses that support the aviation sector. The impact would have a ripple effect into the wider economy (indirect or multiplier impacts) – e.g., food wholesalers that supply food for catering on flights, trucking companies that move goods to and from the airport, refineries processing oil for jet fuel, etc.

Tourism Sector: air service facilitates the arrival of larger numbers of tourists to a region or country. This includes business as well as leisure tourists. The spending of these tourists can support a wide range of tourism related businesses: hotels, restaurants, theatres, taxis, car rentals, etc.

Catalytic Impacts: this includes the role of air transportation in facilitating growth and productivity in the general economy by increased trade, business activity and greater personal productivity.

3.1.4 Competition and Consumer Protection

a) Safeguarding competition

Safeguarding competition within the international air transport ecosystem is paramount for fostering an environment that encourages innovation, efficiency, and accessibility in global connectivity. The International Civil Aviation Organization (ICAO) has long recognized the critical role that a competitive landscape plays in the advancement and sustainability of the aviation sector. Through its various frameworks, policies, and documents, ICAO emphasizes the importance of promoting fair competition among airlines and other aviation service providers to ensure that consumers benefit from a wider choice of services, more competitive fares, and higher service quality.

ICAO's policies and guidelines, such as those outlined in the ICAO's Policies on Charges for Airports and Air Navigation Services (Doc 9082) and the ICAO's Policy and Guidance Material on the Economic Regulation of International Air Transport (Doc 9626), serve as foundational texts that advocate for the liberalization of air transport markets. They underscore the necessity for transparent, fair, and equitable practices that support the efficient use of

aviation infrastructure and resources while protecting consumer interests and ensuring the economic viability of air transport operations.

The organization also works closely with states and industry stakeholders to develop Policy and Guidance Material that facilitate healthy competition. These efforts are aimed at preventing unfair competitive practices that can arise from governmental and non-governmental interventions, ensuring a level playing field for all market participants. By advocating for policies that support open skies agreements and the fair allocation of slots at congested airports, ICAO plays a pivotal role in ensuring that the air transport market remains dynamic, innovative, and responsive to the needs of passengers and cargo shippers alike.

In this context, the emphasis on competition is not just about the economic performance of airlines but also about the broader impact on global connectivity, economic development, and the integration of world markets. ICAO's commitment to safeguarding competition is a testament to its vision of a seamlessly connected world, where the benefits of air transport are accessible to all societies and contribute to the sustainable development of the global economy.

Access to infrastructure is essential to safeguard competition:

Proper slot allocation plays a crucial role in maintaining a balanced and competitive air transport market, in alignment with the Worldwide Airport Slot Guidelines (WASG) and pertinent local regulations. Effective slot allocation ensures equitable access to airports for airlines, fostering a competitive environment that inhibits monopolistic practices and promotes service diversity. This process is vital for safeguarding the interests of passengers and other end users of air transport by encouraging airlines to optimize their schedules, improve efficiency, and potentially lower fares. Additionally, adherence to the WASG and local rules ensures that slot allocation is conducted in a transparent, fair, and non-discriminatory manner, which is essential for maintaining consumer trust and ensuring that the air transport market operates smoothly and responsively to the needs of its users. Through such regulatory compliance, the strategic plan aims to enhance the operational landscape of the aviation sector in the Middle East, supporting sustainable development and ensuring that the benefits of air transport are widely accessible.

Competitiveness in aviation is the framework under which a country's economic, aero-political, financial, and regulatory structures and policies interact to allow market forces and the resulting competition to maximize market output, economic efficiencies, and productivity.

Competition is a scenario where different commercial firms are in fair and equal opportune contention to obtain resources (capital, labor, technology) -- that are limited only by individual firm-level variations in assets, strategy, price, product, promotion and place -- and causes them to develop new or more products, services, and technologies which give consumers greater selection and better products. The greater the selection of products and goods and services in a market (and therefore the greater the competition in the product market), the lower the prices are for such products compared to what prices would be in the absence of competition.

There is an ongoing project that aims to provide a comprehensive and objective assessment of the performance of States in the aviation sector, based on a set of indicators that cover various aspects of aviation competitiveness, such as economic, aeropolitical, financial, regulatory, and infrastructure. The index is expected to serve as a valuable tool for policy makers, regulators, industry stakeholders, and researchers to benchmark and monitor the progress and challenges of the aviation sector, as well as to identify and implement best practices and strategies to enhance aviation competitiveness.

b) ICAO Core Principles on Consumer Protection:

The ICAO Core Principles on Consumer Protection stress that:

“Government authorities should have the flexibility to develop consumer protection regimes which strike an appropriate balance between protection of consumers and industry competitiveness and which take into account States' different social, political, and economic characteristics, without prejudice to the safety and security of aviation. National and regional consumer protection regimes should:

- (i) reflect the principle of proportionality
- (ii) allow for the consideration of the impact of massive disruptions,
- (iii) be consistent with the international treaty regimes on air carrier liability established by the Convention for the Unification of Certain Rules Relating to International Carriage by Air (Warsaw, 1929) and its amending instruments, and the Convention for the Unification of Certain Rules Relating to International Carriage by Air (Montréal, 1999).

Hence, a strong emphasis is placed on the passenger having access to all relevant information, before travel, during travel and after travel:

Before travel. In the context of the variety of air transport products in the market, clear and transparent on the nature of the air transport product, being purchased, including price and conditions.

During travel. Information on any special circumstances affecting their flight, especially in the event of a service disruption. (Persons with disabilities should be specially assisted.

After travel. Passengers should be able to access an efficient complaint process.

c) Resolution A41-27: Consolidated statement of continuing ICAO policies in the air transport field

At its 41st Assembly, ICAO passed Resolution A41-27: Consolidated statement of continuing ICAO policies in the air transport field. (This Resolution superseded A40-9.)

In relation to consumer protection and competition, APPENDIX A (Economic regulation of international air transport) Section I. (Basic principles and long-term vision) states, inter alia:

“Whereas consumer interest should be given due regard in the development of national or regional policies and regulations of international air transport”;

The Assembly:

- Urged “Member States and concerned stakeholders to give regard to, and apply, the ICAO high-level, nonbinding, non-prescriptive core principles on consumer protection in policy-making and regulatory and operational practices, including in case of massive disruptions impacting aviation, and to keep ICAO informed of the experiences gained or issues encountered in their application”;
- Requested “the Council to strongly support the exchange of views and good practices on the application of the ICAO core principles on consumer protection as this effort could help encourage compatibility among national or regional regimes, taking into account the needs of States for flexibility given their social, political and economic characteristics;”

Recognizing that passengers can benefit from a competitive air transport sector, which offers more choice in fare-service trade-offs and which may encourage carriers to improve their offerings to all passengers, including those with disabilities, so that all passengers benefit from consumer protection regimes.

Government authorities should have the flexibility to develop consumer protection regimes which strike an appropriate balance between protection of consumers and industry competitiveness, and which take into account States' different social, political, and economic characteristics, without prejudice to the safety and security of aviation. National and regional consumer protection regimes should (i) reflect the principle of proportionality (ii) allow for the consideration of the impact of massive disruptions, (iii) be consistent with the international treaty regimes on air carrier liability established by the Convention for the Unification of Certain Rules Relating to International Carriage by Air (Warsaw, 1929) and its amending instruments, and the Convention for the Unification of Certain Rules Relating to International Carriage by Air (Montréal, 1999).

3.1.5 Airports and Air Navigation Charges and Taxation

a) Introduction to the aviation industry's financial mechanisms:³

The aviation industry is a dynamic and complex sector, heavily reliant on a multifaceted system of charges and taxes to support its expansive operations, ensure the maintenance of essential infrastructure, and uphold its commitment to environmental responsibility. By levying these charges and taxes on airlines, passengers, and aviation service providers, the industry not only generates pivotal revenue but also channels funds into services that prioritize traveler safety and convenience.

b) Deciphering air navigation and airport charges:

When airlines navigate the skies, they make use of a comprehensive air traffic management system, for which they compensate through air navigation charges. These fees are of paramount importance as they facilitate the upkeep, seamless operation, and advancements in air navigation infrastructure. This ensures every aircraft's safe and efficient movement within airspace, reducing potential delays and optimizing air travel.

Airports, the bustling hubs of aviation, impose an array of charges on airlines and their passengers to recoup costs linked to their expansive services and facilities to meet the increasing demand in air traffic, especially in the Middle East and Asia. Among these are the landing charges, which airlines pay based on parameters like the weight of the aircraft, contributing largely to an airport's revenue stream and ensuring the upkeep of runways. Passenger service charges encompass fees for utilizing various airport facilities such as check-in counters, baggage handling systems, and passenger lounges. The umbrella of airport charges also includes fees for ensuring security, long-term aircraft parking, and specialized terminal navigation services that guide aircraft within the airport's immediate vicinity.

c) The intertwined nature of air travel and taxation:

In the aviation financial landscape, the lines between aviation charges and taxation are tightly intertwined. However, while aviation charges specifically offset the costs of essential services provided to airlines and passengers, taxation is set by Governments impose taxes for multiple purposes, not necessarily related to aviation. These taxes, from those on aviation fuel to carbon emissions, play a dual role: they replenish government coffers while acting as policy tools that can drive environmental sustainability within the aviation sector. Striking the right balance between these charges and taxes is a delicate act, crucial for fostering a robust, economically sound aviation industry that also addresses environmental challenges.

³ Source: ICAO's Policies on Charges for Airports and Air Navigation Services" (Doc 9082)

d) Understanding the depth of taxation in aviation:

Taxation stands as a cornerstone for the financial health of both the aviation sector and the governments that oversee it. In essence, taxation is the mechanism through which governments mandate levies on the industry's stakeholders, funneling these funds into public services, infrastructure augmentation, and measures to lessen the environmental repercussions of air travel. Within the aviation industry, there are generic taxes like income and excise taxes, as well as those specifically designed for aviation nuances, such as passenger and fuel taxes.

The broader economic ripple effects:

The impact of aviation taxation goes far beyond the confines of the industry. It disincentivizes air travel demand to the overall health of the broader economy. Intertwined with global trade, tourism, and business networks, any upheavals in air travel resulting from taxation nuances can cascade through various sectors. Airports operators and airlines consider that the proliferation of various taxes and duties on airports, passengers and air transport represent an impediment to air transport. Only justifiable, equitable and non-discriminatory taxes on airports, passengers and air transport are acceptable, as they otherwise engender a negative economic impact hindering the sustainable development of airports and of air transport.

e) Regulatory context and the role of ICAO:⁴

The International Civil Aviation Organization (ICAO) stands as the guiding light in the global aviation industry, providing member states with invaluable guidelines on numerous matters, including the intricate subjects of charges and taxation. While ICAO does not directly impose charges or taxes, it promotes international cooperation and standardization in charging and taxation policies.

ICAO's policies on charges and taxation can be found in *ICAO's Policies on Charges for Airports and Air Navigation Services* (Doc 9082) and *ICAO's Policies on Taxation in the Field of International Air Transport* (Doc 8632), respectively.

ICAO's policies make a conceptual distinction between a charge and a tax in that "charge is a levy that is designed and applied specifically to recover the costs of providing facilities and services for civil aviation, and a tax is a levy that is designed to raise national or local government revenues which are generally not applied to civil aviation in their entirety or on a cost-specific basis."

The 41st Session of the ICAO Assembly adopted resolutions related to charges and taxation in A41-27 Appendix C, Section I and Appendix B, respectively. The Assembly, inter alia:

"Urges Member States to ensure that airport and air navigation services charges are applied towards defraying the costs of providing facilities and services for civil aviation;"

"Urges Member States to adopt the principles of non-discrimination, cost-relatedness, transparency and consultation, as set out in ICAO's policies in Doc 9082, in national legislation, regulation or policies, as well as in air services agreements, to ensure compliance by airports and air navigation services providers;"

"Urges Member States to follow the ICAO's Policies on Taxation in the Field of International Air Transport as contained in Doc 8632, and to avoid imposing discriminatory taxes on international aviation;"

"Urges Member States to avoid double taxation in the field of air transport."

⁴ Source: ICAO's Policies on Taxation in the Field of International Air Transport" (Doc 8632)

f) *Observations and forward path:*

To ensure the continued success and acceptance of policies on aviation charges and taxation, a few key aspects come to the fore. Firstly, it is imperative to transparently distinguish aviation charges from taxes. Secondly, it is important to ensure that charges are applied towards defraying the costs of providing facilities and services for aviation. Thirdly, it is essential to ensure transparency of how revenues generated from aviation taxes are allocated and, to the maximum extent possible, reinvested to modernize and decarbonize the air transport system. Fourthly, the process of collecting these taxes needs to be streamlined and efficient, minimizing undue administrative burdens. Lastly, in designing and implementing taxation policies, the collective wisdom of the aviation community, from airlines to service providers, should be harnessed, ensuring policies that are both effective and equitable.

In conclusion, while the world of aviation charges and taxes might appear labyrinthine, it is these very mechanisms that ensure the industry's vibrancy, safety, and commitment to a greener future. The challenge lies in continuously recalibrating the scales to maintain harmony between economic growth and environmental stewardship.

Table 2: Policy recommendations for charges and taxation⁵ in the aviation industry in the Middle East by key stakeholder

Stakeholder	Recommendation #	Policy recommendations for taxation	Policy recommendations for charges
1. States/Authorities	1.1	Ensure transparency in taxation policies, providing clear guidelines and regulations to govern their implementation.	Develop clear, transparent, and public policies on airport charges, including details on how charges are calculated, applied, and what they are intended to cover.
	1.2	Consider the impact of taxation on airlines, passengers, and the broader economy when formulating policies and to avoid discriminatory taxes on international aviation.	Ensure a regulatory framework is in place that allows for the efficient and fair resolution of disputes between airlines and airports over charges.
	1.3	Promote collaboration and consultation among stakeholders, including airports, airlines, and industry associations, to establish a balanced and sustainable framework for taxation.	Encourage the use of performance-based charges that incentivize efficient and environmentally sustainable airport operations.
	1.4	Align taxation policies with international standards and guidelines set by organizations such as the International Civil Aviation Organization (ICAO).	Implement ICAO's Policies on Charges for Airports and Air Navigation Services (Doc 9082)
	1.5	Avoid double taxation in the field of air transport.	Adopt the principles of non-discrimination, cost-relatedness, transparency and consultation, as set out in ICAO's policies in Doc 9082, in national legislation,

⁵ Source: ACI Asia-Pacific and Middle East (2023)

Stakeholder	Recommendation #	Policy recommendations for taxation	Policy recommendations for charges
			regulation or policies, as well as in air services agreements, to ensure compliance by airports and air navigation services providers;
	1.6	Ensure a clear understanding of the conceptual distinction between a charge and a tax whereby a tax is a levy that is designed to raise national or local government revenues which are generally not applicable to civil aviation in their entirety or on a cost-specific basis.	Adopt appropriate form of economic oversight on airports and air navigation services providers, in accordance with the market situation.
	1.7	To the extent possible, allocate revenues generated from aviation taxes to modernize and decarbonize the air transport sector, given its social and economic benefits.	Strike an appropriate balance between service providers and users when Implementing economic and financial measures in times of crisis, including revision of charges.
2. Airport operators	2.1	Regularly engage with airlines, government authorities and other stakeholders to obtain feedback on taxation policies.	Implement a consultative process with airlines and other stakeholders for the setting and revision of airport charges.
3. Airlines	3.1	Advocate for a transparent and fair taxation framework, actively participating in consultations and discussions with regulatory authorities.	Collaborate with airports and ANSPs in maintaining constructive exchange of information.
	3.2	Engage in dialogue with regulators and policymakers to ensure that taxation policies do not unduly burden airlines and hinder market competition.	Engage in meaningful dialogue and information exchange with airports and ANSPs on charges consultation
4. Passengers	4.1	Advocate for transparency in taxation, ensuring that these costs are clearly communicated and included in the overall price of air travel tickets.	Encourage airports and airlines to invest in passenger-centric services and facilities to enhance the value and experience of air travel.
	4.2	Seek representation in discussions and consultations related to aviation taxation to voice concerns and provide feedback on the impact of these costs on passengers.	
5. Regulatory authorities	5.1	Provide guidance and oversight to ensure that aviation taxation policies are reasonable, non-	Evaluate the economic situation of airports and ANSPs, and perform

Stakeholder	Recommendation #	Policy recommendations for taxation	Policy recommendations for charges
		discriminatory, and in line with national and international regulations.	appropriate form of economic oversight
	5.2	Monitor and assess the economic impact of aviation taxation, considering the effects on competition, air travel demand, and the overall aviation industry.	Monitor and assess the economic situation of airports and air navigation services charges in relation to infrastructure development needs.
	5.3	Facilitate collaboration and information sharing among stakeholders to promote best practices and ensure consistent implementation of taxation policies.	Provide guidance on the implementation of ICAO's policies on charges.
6. Industry associations	6.1	Represent the collective interests of airports, airlines, and passengers in discussions and negotiations related to taxation.	Facilitate regular dialogue between airports and airlines to foster mutual understanding and cooperation in the determination and application of airport charges.
	6.2	Conduct research and analysis to assess the economic impact of taxation, providing evidence-based recommendations for policy development and decision-making.	Provide guidance and training to airport operators on the implementation of ICAO's policies on airport charges, including methodologies for cost allocation and the setting of charges.
	6.3	Promote transparency, fairness, and sustainability in taxation through the development of industry guidelines and best practices.	Encourage airports to consider environmental incentives in their charging policies to support the aviation industry's transition to greener practices.

3.1.6 Aviation Infrastructure and Investments

Over the long horizon, air traffic will continue to expand and is expected to more than double by 2040. To foster this projected growth in a sustainable manner, large-scale investments in the modernization and expansion of quality aviation infrastructure will be required over a long period to ensure that the capacity of the global aviation system can meet future demand, and that expanding traffic can be accommodated safely, efficiently and sustainably, while ensuring public confidence and satisfaction.

The 41st Session of the ICAO Assembly adopted resolutions related to aviation infrastructure management and financing (A41-27, Appendix C, Section II). The Assembly recognized the increasing emphasis placed by Member States on improving efficiency and cost-effectiveness in the provision of airports and air navigation services. In terms of infrastructure investment, the Assembly recognized the need for making substantial investments over the long term in the development and modernization of quality aviation infrastructure commensurate with the level of predicted traffic growth, including the future needs of new entrants and relevant Sustainable Development Goals. The Resolution, *inter alia*:

“Urges Member States to establish good governance, for example, the creation of enabling institutional, legal and regulatory frameworks, the use of a data -driven approach, and the cooperation and compatible decision-making among transport authorities and other ministries in charge of related portfolios, which can provide a strong impetus to boost investment in aviation infrastructure;”

“Urges Member States to develop national and/or regional aviation infrastructure programmes and plans, which should be aligned and integrated with an appropriately-balanced development of transport modes, linked with national and/or regional development frameworks and strategies, and harmonized with the international economic and financial frameworks;” and

“Encourages Member States to establish a transparent, stable and predictable investment climate to support aviation infrastructure development, for example, by engaging stakeholders, diversifying funding sources and elevating the role of private sector, including through private investment, business reform, private finance initiatives, public-private partnership and various incentive schemes;”

In-depth examination of aviation infrastructure development needs⁶:

a) Introduction to aviation infrastructure:

The backbone of the intricate global air travel system is undeniably the aviation infrastructure. This comprehensive system, which includes airports, air traffic control towers, runways, terminals, and many other integral components, facilitates the swift and efficient movement of both passengers and cargo across the globe. As the demand for air travel escalates, there is an increasing need to emphasize the significance of a durable, high-quality aviation infrastructure. This infrastructure not only underpins the aviation industry but is also a catalyst for economic growth and global connectivity.

b) An in-depth look at key infrastructure components:

Aviation infrastructure is a multifaceted entity, enveloping a plethora of critical facilities. This includes the likes of airports, air traffic control towers, expansive runways, bustling terminals, specialized cargo facilities, and pivotal navigational aids. This infrastructure does not merely serve as a physical platform for aircraft; it is a driving force behind broader economic growth. By fostering business travel, facilitating global trade, enhancing tourism opportunities, and providing avenues for regional development, it becomes a cornerstone for global economic dynamics. Additionally, it plays a multifaceted role by promoting regional development, enhancing overall mobility, facilitating cargo transport, contributing to the hospitality sector, and being a bastion for national security.

c) Capital investments in infrastructure (CAPEX) – an overview:

Capital Expenditure, commonly termed as CAPEX, is a primary investment avenue that airport authorities and air navigation services providers (ANSPs) leverage for progress. These investments, channeled into the construction, expansion, enhancement of tangible assets like terminals and runways, and air navigation system upgrade, etc., are long-term commitments. Their role is to augment the capacity of airports and ANSPs, boost efficiency, and elevate overall performance. Such financial commitments ensure that airports and ANSPs remain prepared to cater to the burgeoning demands of air travel. When it comes to financing these investments, a combination of government subsidies, private sector investments, and airport-generated revenues are typically leveraged.

⁶ Sources: ACI Global Outlook of Airport Capital Expenditure (2021); ICAO Doc 9082: “ICAO’s Policies on Charges for Airports and Air Navigation Services”; ICAO Doc 9161: “Manual on Air Navigation Services Economics”; ICAO Doc 9184: “Airport Planning Manual”; ICAO Doc 9562: “Airport Economics Manual”.

d) The imperative nature of operating and repairs expenditure (REPEX):

Operating and Repairs Expenditure, abbreviated as REPEX, signifies the continuous financial commitments made towards the upkeep of existing infrastructure. Unlike CAPEX, which focuses on expansion, REPEX is about preserving what is already in place. This includes a slew of activities ranging from routine maintenance tasks to more comprehensive safety enhancements. To fund these operations, airports often rely on a blend of their operational revenues, carefully curated reserve funds, and collaborative public-private partnerships.

e) The rise of sustainable airport and air navigation services infrastructure:

The call for sustainability in today's world cannot be ignored, especially within the realm of airport and air navigation infrastructure. Airports worldwide are pivoting towards sustainability, aiming to diminish their environmental impact by integrating energy-efficient measures, tapping into renewable energy sources, and adopting water conservation techniques. Similarly, the transition for air navigation services infrastructure to use renewable energy and move to more energy-efficient equipment could deliver sizeable potential emissions savings. As part of this paradigm shift, green financing models like green bonds and sustainable loans have also gained traction.

f) Decarbonization in aviation – an urgent requirement:

With the aviation sector being a substantial contributor to global carbon emissions, primarily due to fossil fuel consumption, addressing its carbon footprint is paramount. Some strategies being deployed include the electrification of ground support equipment, the adoption of Sustainable Aviation Fuels (SAFs), and a more extensive integration of renewable energy sources. To further bolster these efforts, governments globally are offering financial incentives and framing policies that promote decarbonization.

g) Emergence of advanced technologies in aviation:

Technological evolutions are undeniably reshaping the entire landscape of aviation infrastructure. As we look towards the future of airports, the vision is clear: the creation of “smart airports.” These are facilities where operations are streamlined through digitalization, ranging from self-check-in systems to automated baggage solutions. Technology can help to make ATM more efficient by increasing airspace capacity, reducing congestion and delays, improving safety and reducing aviation's environmental impact. Additionally, autonomous vehicles and drones are seeing increasing adoption, optimizing various facets of airport operations. An emerging facet of aviation is Advanced Air Mobility (AAM). This innovation promises to revolutionize transport, and its integration requires thorough consideration from operational, certification, regulatory, and charging perspectives. As AAM becomes more prominent, there will be challenges to overcome, especially in terms of regulatory standards, safety certifications, operational efficiency, and cost structures.

h) Technology Integration:

Airlines can collaborate with airports to implement advanced technologies that enhance overall operational efficiency. This includes technologies related to baggage handling, access control, security screening, equipment and integration systems, passenger processing, and communication systems.

i) Long-Term Planning:

Collaborative long-term planning between airlines and airport authorities and ANSP is crucial. Airlines can actively engage in discussions about future capacity needs, anticipated growth, and technological advancements to ensure that infrastructure development aligns with industry requirements.

j) Conclusive thoughts:

A sustainable and resilient aviation infrastructure stands as a pressing need in our contemporary world. Appropriate expansion and development plans, including efforts to attract additional operators and flights, allow for the maximization of airports' commercial potential and the strengthening of their role as significant drivers and facilitators of regional and global economies. In addition, given the ever-increasing threats of

climate change and extreme weather phenomena, airports globally need to be both environmentally conscious and resilient to disruptions.

Investment in air navigation services infrastructure also requires a long-term planning horizon, considering the long lead times for procuring new equipment such as the latest surveillance equipment. It is the role of States to ensure that improvements in ATM infrastructure are properly financed in collaboration with airports, airlines and ANSPs.

By intertwining sustainability and resilience, airports and ANSPs can significantly contribute to the global combat against climate change, invigorate regional economies, and enhance passenger experiences. This proactive approach is essential for ushering in an era of environmentally conscious and sustainable aviation that can cater to the needs of both present and future generations.

Aviation Infrastructure Policy Recommendations

To achieve sustainable funding and financing for aviation infrastructure development, it is vital to have a regional and national policy frameworks, enhanced cooperation among all conventional and non-conventional stakeholders, diversified funding sources, and an elevated role of the private sector, including through private investment, private finance initiatives and public-private partnerships (PPPs).

Table 3: Policy recommendations for aviation infrastructure development and investments in the Middle East⁷

Stakeholder	Recommendation #	Policy recommendations
1. States	1.1	Develop long-term national aviation infrastructure plans that align with economic and sustainability goals, considering both CAPEX and REPEX requirements in National Aviation Development Plans.
	1.2	Establish clear and transparent regulatory frameworks for infrastructure development and investment, ensuring streamlined approval processes and environmental impact assessments.
	1.3	Provide financial support, such as grants, subsidies, and incentives, to facilitate airport and air navigation infrastructure projects, particularly in underserved regions or for sustainable initiatives.
	1.4	Foster public-private partnerships (PPPs) to attract private investments in airport and air navigation infrastructure, leveraging expertise and capital from the private sector.
2. Airport operators and ANSPs	2.1	Conduct comprehensive feasibility studies and cost-benefit analyses for infrastructure projects to ensure sound investment decisions and realistic project estimates.
	2.2	Implement effective project management practices to minimize delays, cost overruns, and disruptions during the construction and expansion of airport and air navigation infrastructure.
	2.3	Prioritize sustainable infrastructure designs, incorporating green initiatives, energy efficiency measures, and climate resilience strategies into development plans.

⁷ Source: ACI Asia-Pacific and Middle East

Stakeholder	Recommendation #	Policy recommendations
	2.4	Establish master plan as per Recommendation 1.5.1 of ICAO Annex 14.
3. Investors	3.1	Conduct thorough due diligence on airport and air navigation services infrastructure projects, including evaluating the economic viability, environmental impact, and regulatory compliance of potential investments.
	3.2	Support and invest in sustainable airport and air navigation services infrastructure projects that align with environmental and social responsibility goals, considering green financing options and frameworks.
	3.3	Collaborate with airport operators, ANSPs and governments to explore innovative financing models, such as green bonds and sustainable loans, to fund airport infrastructure development.
4. Industry associations	4.1	Advocate for supportive regulatory frameworks and government policies that encourage investment in aviation infrastructure, considering sustainability and future-proofing measures.
	4.2	Facilitate knowledge sharing and best practices among industry stakeholders to promote innovation, technological advancements, and sustainable infrastructure development.
	4.3	Provide guidance and resources for airports, ANSPs and investors on emerging technologies and trends in aviation infrastructure, enabling informed investment decisions and strategies.

3.1.7 Resilience

Introduction:

The air transport industry has long been a symbol of connectivity, enabling global trade, tourism, and collaboration. However, the outbreak of pandemics, such as the COVID-19 crisis, has tested the resilience of this essential sector. Despite facing unprecedented challenges, the air transport industry has demonstrated remarkable adaptability, innovation, and resilience in navigating through turbulent times.

Air transport supports all other sectors of the economy. It is a global sector that has faced a global crisis during COVID-19; hence, global solutions are necessary to ensure that the sector and consequently the economy would recover in the fastest way possible while managing the health risks of the COVID19 pandemic or any future pandemic that may arise.

Scientific and medical updates, global biosafety travel guidelines, governments' approach to air transport, and the consumers' perspective on air travel in association with the pandemic, all dictate the progress of recovery of air travel demand in times of pandemics.

ICAO's role in dealing with COVID-19 has been multifaceted, encompassing guidance provision, coordination, advocacy for operational flexibility, economic support, and efforts to facilitate the safe transportation of vaccines.

ICAO has worked closely with the World Health Organization (WHO) to develop guidelines for the implementation of public health measures in the aviation sector. This includes recommendations on passenger health screening, crew protocols, aircraft disinfection, and other measures aimed at preventing the spread of COVID-19 during air travel.

With the development and distribution of COVID-19 vaccines, ICAO has played a role in coordinating efforts to ensure the efficient and secure transportation of vaccines by air. This involved addressing logistical challenges, providing guidance on handling and transportation procedures, and supporting the development of vaccination-related travel documentation.

Historical Context:

To understand the resilience of air transport during pandemics, it is essential to consider the industry's historical responses to previous global health crises. The aviation sector has faced challenges like the H1N1 influenza pandemic, SARS, and Ebola outbreaks. Each event prompted the industry to enhance its preparedness and response mechanisms, laying the foundation for improved resilience.

Technological Advancements:

Technological innovations have played a pivotal role in bolstering the resilience of air transport. Advanced aircraft design, improved navigation systems, and enhanced safety protocols have not only ensured passenger safety but also facilitated the industry's ability to adapt to changing circumstances. The integration of digital technologies has allowed airlines to optimize operations, streamline processes, and provide real-time information to passengers. While digital technology (touchless travel) is an urgency to the industry on many levels; whether for enhancing the passenger experience or ensuring health safety while traveling through touchless technology, the industry is calling and working towards a completely touchless and seamless travel experience for passengers. This requires intensive cooperation between governments, airports, airlines, and all relevant stakeholders.

Adaptive Strategies:

The air transport industry has shown adaptability by implementing various strategies to cope with pandemics. Airlines have revised their routes, adjusted schedules, and adopted flexible pricing models. Some carriers have diversified their services, emphasizing cargo transport to compensate for reduced passenger traffic. Collaboration between airlines, airports, and health authorities has been crucial in establishing effective protocols, ensuring the safety of passengers and crew.

Health and Safety Measures:

The implementation of stringent health and safety measures has become a top priority for the air transport industry. Enhanced cleaning protocols, contactless check-ins, and the widespread use of personal protective equipment (PPE) have created an environment that minimizes the risk of virus transmission. The industry's commitment to maintaining the highest standards of hygiene has been a key factor in restoring public confidence and encouraging a gradual return to air travel.

Government and Industry Cooperation:

Collaboration between governments and the air transport industry has been instrumental in mitigating the impact of pandemics. Financial support, regulatory flexibility, and the development of standardized health protocols have provided a framework for the industry to navigate through unprecedented challenges. Coordinated efforts between stakeholders have facilitated the establishment of "travel bubbles" and other measures to safely resume international travel.

Environmental Considerations:

The pandemic has prompted the air transport industry to reevaluate its environmental impact. Airlines are increasingly investing in sustainable aviation fuels, exploring energy-efficient technologies, and adopting eco-friendly practices. This commitment to environmental responsibility not only aligns with global goals but also enhances the industry's ability to weather challenges by fostering positive public sentiment.

Recommendations for Action:

The resilience of air transport during pandemics is a testament to the industry's ability to adapt, innovate, and prioritize the safety and well-being of passengers and crew. By learning from past experiences, embracing technological advancements, and fostering collaboration, the air transport sector continues to play a crucial role in connecting the world even in the face of unprecedented challenges. As the industry evolves, its commitment to resilience ensures that it remains a vital force in global connectivity and economic development.

Accordingly, for a faster recovery when a pandemic is hit, the following enablers are essential:

- **Speed of Economic Recovery**

Global economic recovery is mainly tied to vaccination campaigns. The faster the economy recovers the speedier air travel goes back to normal. The other way also applies.

- **Inoculation Rates**

Wider and faster inoculation rates play a major role in the recovery of the sector. The higher vaccination rates the lower is the risk of transmission of the virus and more trust by governments to ease restrictions on air travel.

- **Transparency in Measures**

When adopting travel procedures, governments need to be transparent about the criterion followed and involve aviation stakeholders in discussions leading to measures implemented on air transport.

- **Harmony in Biosafety Measures**

States need to apply harmonious biosafety risk-based measures as per the guidelines of ICAO & WHO, while easing up travel restrictions.

- **Recognition of Certificates**

Health certificates issued by countries need to be recognized by other states. Dialogue and talks between states to reach mutual recognition is essential.

- **Financial Support to the Sector**

Air transport is a major contributor to economic development. Airlines and other aviation entities need to receive more financial support to be able to sustain their operations and play their role of connecting the world.

- **Air Services Agreements**

Existing air services agreements should be the basis for opening travel with any other country. When establishing Public Health measures as temporary measures, air services agreements should be respected.

- **Technology**

Stakeholders, including governments, need to work towards having travel processes digitized in one platform which allows the integration of passengers' travel and health data with their biometrics.

Having mentioned all the above, it is essential to finally note that it was proven scientifically that air transport was not a spreader of the COVID-19 virus, accordingly closing borders was not mitigating the spread of the virus, This was shown as 97.1 % of infections were locally transmitted cases, while infections from inbound travelers were only 2.9%, meanwhile, 0.0000004 % of infections happened during air travel and this was due to advanced Aircraft

Airflow Systems, High Efficiency Particulate Air (HEPA), The Natural Barrier of the Seatback, High rates of air exchange, Mask-wearing, and Other biosafety measures onboard & at airports.

Accordingly considering the above enablers of recovery from any pandemic with harmonized and global solutions would ensure in the future that mitigating the spread of viruses should not necessarily be through closing borders as has happened during COVID-19.

DRAFT

3.2. Aviation Safety

Introduction/Background

In aviation, safety determines the very existence of the industry. Aviation safety fundamentally contributes to the sustainable development of the international civil aviation system.

To keep passengers and flight crew safe while flying, Safety always comes first. Aviation safety is important because there are lives involved in every operation of aircraft.

The benefits enabled by air transportation can only materialize if States have a **safe**, efficient, secure, economically viable and environmentally sound air transport system.

The continuous improvement of global aviation safety is fundamental to ensuring that air transport continues to play an important role in promoting sustainable economic and social development around the world.

The primary objective of ICAO continues to be the improvement of safety and an associated reduction in the number of accidents and related fatalities within the international civil aviation system.

By 2050, it is expected that over 10 billion passengers will be carried by air, some 20 trillion kilometres each year. With the expected important increase of air traffic over the next 15 years, it becomes imperative to anticipate current and emerging safety risks and to carefully manage such significant capacity growth with strategic regulatory and infrastructure actions. It is therefore imperative that States and all stakeholders continue to focus on establishing, updating and addressing their safety priorities in their efforts to promote the development of their air transport sectors.

The ICAO Aviation Safety related activities contribute to 11 out of 17 United Nations Sustainable Development Goals (UN SDGs) and relevant supporting targets.

ICAO leads the continuous evolution of the Global Aviation Safety Plan (GASP) that sets out a strategy to support the prioritization and continuous improvement of civil aviation safety, provides a framework for the development and implementation of regional, sub-regional and national plans, and promotes the uniform and consistent implementation of ICAO safety related ICAO Standards and Recommended Practices (SARPs) contained in 16 out of the 19 Annexes to the Chicago Convention

The Global Aviation Safety Plan (GASP) presents the global strategy for the continuous improvement of aviation safety. The purpose of the GASP is to continually reduce fatalities, and the risk of fatalities, by guiding the development of a harmonized aviation safety strategy

The GASP promotes the effective implementation of a State Safety Programme (SSP) including National Aviation Safety Plan (NASP), a State's safety oversight system, and a risk-based approach to managing safety as well as a coordinated approach to collaboration between States, international organizations, and industry.

The vision of the GASP is to achieve and maintain the aspirational safety goal of zero fatalities in commercial operations by 2030 and beyond, which is consistent with the United Nations' 2030 Agenda for Sustainable Development. The plan's mission is to continually enhance international aviation safety performance and resilience by providing a collaborative framework for States, regions and industry.

The Regional Aviation Safety Group for the Middle East Region (RASG-MID) is the governing body responsible for the development of the Regional Aviation Safety Plan (RASP) and the monitoring of safety performance in the MID Region.

The growth of air transport requires a high-performing aviation system including airlines, airports and ATM. Regional collaboration among States, international organizations and industry is required to support the harmonized and

sustainable development and growth of air transport.

Safety oversight

The continuous monitoring approach (CMA) of the ICAO universal safety oversight audit program (USOAP) provides up-to-date information on the effective implementation of the eight critical elements (CE) of a State's safety oversight system.

In spite of a large number of initiatives over several decades, by ICAO, other international organizations, individual Contracting States and industry stakeholders, to improve civil aviation safety in many regions, a number of States have failed to establish the capability for effective safety oversight. Despite these efforts as well as numerous initiatives designed to help States meet their safety oversight responsibilities, a number of States still experience major challenges in developing the capability for effective safety oversight. At the same time, USOAP results indicate a strong statistical correlation between States' safety oversight capabilities and accident rates, which clearly underlines the importance of robust safety oversight capabilities. As identified by the USOAP audits, the main reason why States fail to develop the capability for effective safety oversight is lack of adequate resources, specifically in terms of qualified technical expertise. The audit results and other sources of information have therefore convinced ICAO that for many States a viable means of ensuring effective safety oversight is through the pooling of resources for the purpose of establishing Regional Safety Oversight Organization (RSOO). The pooling of resources enables the RSOO to effectively utilize appropriately qualified and experienced personnel.

The analysis of the MID States USOAP CMA results showed the Critical Elements (CEs) 4, 7 and 8 and the AIG, ANS, and AGA audit areas are those with the lowest effective implementation rates. Therefore, these CEs and audit areas should be given priority in the planning of corrective actions, which States should include in their NASPs to resolve the identified deficiencies and improve their oversight capabilities.

The establishment of regional/sub-regional aviation safety and safety oversight bodies, including Regional Safety Oversight Organizations (RSOO), could have great potential to assist States in complying with their obligations under the Chicago Convention through economies of scale and harmonization on a larger scale.

Safety Management

ICAO Annex 19 – Safety Management SARPs, aim to assist States in managing aviation safety risks, in coordination with their service providers. The foundation of this proactive safety strategy is based on the implementation of a State safety programme (SSP) that systematically addresses safety risks and complements the implementation of safety management systems (SMSs) by service providers.

Reference is made to the ICAO Doc 9859 (Safety Management Manual), Safety management seeks to proactively mitigate safety risks before they result in aviation accidents and incidents. Through the implementation of safety management, States can manage their safety activities in a more disciplined, integrative and focused manner. Possessing a clear understanding of its role and contribution to safe operations enables a State, and its aviation industry, to prioritize safety risks and more effectively manage its resources for the optimal benefit of aviation safety.

The effectiveness of a State's safety management activities is strengthened when implemented in a formal and institutionalized way through a State safety programme (SSP) and through safety management systems (SMSs) for its service providers. A State's safety programme, combined with the SMSs of its service providers, systematically addresses safety risks, improves the safety performance of each service provider, and collectively, improves the State's safety performance.

There are many benefits to implementing safety management, some of which include:

- a) Strengthened safety culture
- b) Documented, process-based approach to assure safety
- c) Better understanding of safety-related interfaces and relationships

- d) Enhanced early detection of safety hazards
- e) Safety data-driven decision-making
- f) Evidence that safety is a priority, resulting in increased confidence by the aviation community
- g) Cost avoidance – Through the proactive identification of hazards and safety risk management (SRM), the cost incurred due to accidents and incidents can be avoided

In the Consolidated Annual Report to Council on Planning and Implementation Regional Groups (PIRGs) and Regional Aviation Safety Groups (RASGs) for 2019, SSP implementation was identified as a common challenge.

Accident and Incident Investigation

The ICAO Universal Safety Oversight Audit Programme (USOAP) audit findings indicate that a number of States have not been able to implement an effective accident and incident investigation system for their aviation activities.

Assembly Resolution A36-10, inter-alia:

- urges Contracting States to undertake every effort to enhance accident prevention measures, particularly in the areas of personnel training, information feedback and analysis and to implement voluntary and non-punitive reporting systems, so as to meet the new challenges in managing flight safety, posed by the anticipated growth and complexity of civil aviation;
- urges Contracting States to cooperate with ICAO and other States in a position to do so, in the development and implementation of accident prevention measures designed to integrate skills and resources to achieve a consistently high level of safety throughout civil aviation;

Owing to the growing sophistication and complexity of modern aircraft, the conduct of an accident or serious incident investigation requires participation by experts from many specialized technical and operational fields and access to specially equipped facilities for investigation. Many States in the Region and worldwide do not have such specialized technical and operational expertise and appropriate facilities. The costs of salvage and investigation of major aircraft accidents may also place a heavy financial burden on the resources of the State where the accident occurred.

The ICAO Universal Safety Oversight Audit Programme (USOAP) audit findings indicate that a number of States have not been able to implement an effective accident and incident investigation system for their aviation activities. The USOAP findings have been associated, in general, with a lack of resources (both human and financial), lack of appropriate legislation and regulations, lack of an organization for the investigation of accidents and incidents, lack of a training system for investigators, lack of equipment to conduct investigations and lack of policies, procedures and guidelines for accident and incident investigations.

In regions where individual States do not have investigation capability, implementing a regional investigation system could provide economies of scale by allowing for the sharing of required resources; and would ensure the effectiveness of investigations, reinforce conformity with the provisions of Annex 13, and contribute to the enhancement of aviation safety.

Aviation Safety Main Challenges in the MID Region

The main aviation safety challenges and priorities identified in the MID Region are related mainly to the following:

- Lack of financial and human resources in some States
- Strengthening of States' safety oversight capabilities
- Implementation of effective State Safety Programme including NASP development and implementation
- Aerodrome certification & SMS acceptance/monitoring
- Accident and Incident Investigation (AIG)

Strategic Plan to maintain/improve Aviation Safety in support of the sustainable development of Air Transport in the MID Region

From a proactive perspective, the best strategy for aviation safety is prevention, which can be achieved through various means. One of these is the identification of any hazards before they become risks, and the finest tool for this is reporting.

The rapid development of technology should be used to ensure adequate information protection to enable the sharing of vital information on safety by States and industry, supporting the identification of hazards and their mitigation before they are manifested as an accident or an incident.

As the aviation system changes, it is imperative to ensure that human factors and the impact on human performance are taken into account, both at service provider and regulatory levels.

State' entities in charge of guaranteeing the safe, orderly and sustainable development of air transport should be empowered institutions able to develop their functions efficiently and effectively, generating confidence, stimulating innovation and promoting the continued growth of the sector.

States and the industry should systematically adopt civil aviation safety improvement measures.

In accordance with Assembly Resolution A41-6, States are urged to, inter-alia:

- develop sustainable solutions to fully exercise their safety oversight and air navigation responsibilities which can be achieved by sharing resources, utilizing internal and/or external resources, such as regional and sub-regional organizations and the expertise of other States.
- implement national aviation safety plans (NASP) consistent with the GASP to continually reduce fatalities and the risk of fatalities

Actions/Recommendations:

In order to enhance aviation safety in the region in support of the sustainable development of air transport:

- States should support aviation safety sustainability and development at regional and national levels through effective implementation of the ICAO SARPs, guided by the Global Aviation Safety Plan (GASP) and MID Region Aviation Safety Plan (MID-RASP), and in accordance with the Assembly Resolutions related to aviation safety and RASG-MID Conclusions.
- States should develop and implement National Aviation Safety Plans, linked to their SSP and in line with the GASP and MID-RASP.
- To achieve the GASP goals, authorities within States need to provide sufficient resources and qualified technical personnel for the effective implementation of the State's safety enhancement initiatives.
- States should work to continually improve their effective implementation of the eight CEs of the State's safety oversight system in all relevant areas, as appropriate to their aviation system complexity. Effective safety oversight requires investment in human and technical resources to achieve the GASP goals and to ensure that SEIs yield the intended benefits. States may rely on assistance provided by ICAO, other States and/or organizations, including RSOO and ARCM.

- States should foster partnership with the industry and cooperation with other States, inter-alia, within the framework of the RASG-MID, to develop a proactive approach in which a strategy is established to set goals, targets and indicators to manage organizational challenges and operational safety risks to achieve further improvements in aviation safety.
- States should ensure the integration of human performance considerations in the planning, design, and implementation of new technologies, systems and processes as part of a safety management approach.
- States should include strategies, which promote safe, consistent, efficient and effective operational performance of the individual and across teams of individuals to address safety priorities.

DRAFT

3.3. Aviation Security and Facilitation

Introduction/Background

The Air Transport System and air passenger experience benefit from adherence to a variety of requirements set by local, regional and international regulatory bodies and coordination amongst stakeholders in the implementation of harmonized processes. States aspiring to sustainable development of their civil aviation systems must address these requirements in an effective and efficient manner if to offer a high quality experience that support the sector's growth and resilience. Continuous development and enhancement of aviation security and facilitation processes and capabilities must be a core activity. States must ensure security measures are in place to protect civil aviation against acts of unlawful interference while also assuring efficiency in border management and operations.

Enhancing global civil aviation security and facilitation contributes to the sustainable development of the international civil aviation system and the socioeconomic development of States. The International Civil Aviation Organization (ICAO) has the objective of supporting ICAO Member States that require assistance to build capacity and strengthen their ability to meet obligations for civil aviation security and facilitation under the Convention on International Civil Aviation.

The recovery, sustainability and resilience of international civil aviation is dependent on a robust global aviation security and facilitation framework, based on the requirements of inter alia, Annex 9 –*Facilitation*, Annex 17 – *Aviation Security* and on the key priority outcomes of the Global Aviation Security Plan (GASeP), namely:

- 1) enhance risk awareness and response;
- 2) develop security culture and human capability;
- 3) improve technological resources and innovation;
- 4) improve oversight and quality assurance; and
- 5) increase cooperation and support.

Considering that the threats and risks faced by the civil aviation community continue to evolve, the GASeP roadmap remains a “living” document and shall be periodically reviewed and adjusted as necessary, taking into account new and emerging aviation security threats and risks in alignment with the regional roadmaps.

In November 2017, the Council of ICAO approved the GASeP. Its targets are based on the Universal Security Audit Programme – Continuous Monitoring Approach (USAP-CMA) sustainability indicator, which represents the level of Effective Implementation (EI) of the Critical Elements (CEs) of a State aviation security oversight system. The aspirational targets established in the GASeP are:

- 80 per cent of States reach above 65 per cent EI of CEs by 2020;
- 90 per cent of States reach above 80 per cent EI of CEs by 2023; and
- 100 per cent of States reach above 90 per cent EI of CEs by 2030.

Security Oversight

The objective of the USAP-CMA is to promote global aviation security through auditing and continuous monitoring of the aviation security performance of all Member States, in order to enhance their aviation security compliance and oversight capabilities. The USAP-CMA incorporates a risk-based approach to auditing, by establishing the priorities and frequency of audit activities based on each State's USAP-CMA risk profile, which is regularly updated to reflect the changes in the aviation security situation in Member States. States' audit results are the primary metric used to measure progress in achieving the aspirational goals of the GASeP.

Since the inception of the USAP, States have made significant efforts to strengthen their aviation security systems, resulting in a positive impact on global aviation security. As at 31 December 2023, the average level of EI of the CEs in the MID region stood at 75.92%. An analysis of the results from the MID States showed that the lowest levels of EI were related to CEs 7 (Quality Control Obligations) and 8 (Resolution of Security Concerns, which also incorporates the operational implementation of security measures). Therefore, in order to improve States' EI as quickly as possible, attention should be paid to these CEs, which may involve addressing them directly, but which may also involve establishing a strong regulatory foundation prior to prioritizing oversight and implementation. Overall, regional audit results showed that 50% of audited MID States have achieved the GAsEP aspirational target of 80% EI, and 29% of audited MID States achieved the aspirational target of over 90% EI.

As identified by the USAP-CMA audits and missions to States, the main reason why States fail to develop the capability for a higher effective security oversight is the lack of adequate qualified technical expertise and financial resources.

Facilitation

Air transport facilitation provides States with means necessary for maximizing the efficiency and effectiveness of their border clearance formalities, general operations for the entry and departure of persons, baggage and cargo, and adherence to international health provisions. Facilitation aims to harmonize the interests of all entities involved in facilitation, such as public authorities, aircraft operators, commercial air transport users and airport operators, to promote the growth of a safe, reliable, and viable air transport industry. The potential benefits it hopes to achieve are to maintain or increase the quality of aircraft, crew, passenger, and cargo flow, to enhance the level of passenger service and the cost-effectiveness and efficiency of processes and procedures, facilitate, accommodate and encourage the growth of air transport; and to contribute to a positive experience meeting the needs of the travelling public. These objectives are achieved through coordinated activities across the three facilitation programmes, namely, Annex 9 Policy, ICAO Traveller Identification Programme Strategy and ICAO Public Key Directory

Annex 9 to the Convention on International Civil Aviation embodies the SARPs pertaining to facilitation of border control formalities. It sets the regulatory framework for Facilitation. Annex 9 specifies procedures for carrying out clearance operations, with the objectives of effective compliance with national laws and the productivity of operators, airport staff and government inspection agencies involved.

The policy with respect to the implementation of facilitation-related SARPs by States is strengthened by Article 22 of the Chicago Convention, which expresses the obligation accepted by each Contracting State “to adopt all practicable measures, through the issuance of special regulations or otherwise, to facilitate and expedite navigation by aircraft between the territories of contracting States, and to prevent unnecessary delays to aircraft, crews, passengers and cargo, especially in the administration of the laws relating to immigration, quarantine, customs and clearance”, and by Article 23, which expresses the undertaking of each Contracting State “so far as it may find practicable, to establish customs and immigration procedures affecting international air navigation in accordance with the practices which may be established or recommended from time to time, pursuant to this Convention

The ICAO Traveler Identification Programme (TRIP), meanwhile, provides a framework for implementation of high quality procedures and capabilities for traveller identification. The mission of the TRIP Programme would be to contribute to the capacity of Member States to uniquely identify individuals. Its aim would be to provide appropriate authorities worldwide with the relevant tools to confirm the identity of travellers. Such confirmation would assist Member States to:

- a) facilitate the clearance of persons across international borders;
- b) prevent the movement of persons such as terrorists and illegal migrants across borders; and
- c) enhance aviation security.

The ICAO Public Key Directory (PKD) is a foundational resource that supports issuance and verification of electronic and digital identity credentials and health credentials for use in travel. When integrated with national systems, it provides for assurance of technical conformance of credential data with ICAO specifications and efficient sharing of that data internationally, as necessary for trusted verification globally. Given that participation in the ICAO PKD contributes to implementation of capabilities that can be quickly adapted to the verification of new credentials globally – as was necessary during the COVID-19 pandemic – it is clear that joining and actively using the PKD enhances a State’s resilience to emergencies, conflicts and pandemics.

Cybersecurity

The number of cyber incidents impacting the civil aviation sector has been reportedly increasing, although this increase could be the result of increased reporting of cyber incidents rather than an actual increase in numbers. Either way, there has not been any reported cyber-attack against civil aviation that had an impact on aviation safety or security.

However, the increased digitalization of the sector in areas related to communication, screening, surveillance, air traffic management, etc., in addition to the foreseen integration of new entrants (Remotely Piloted Aircraft Systems, Advanced Air Mobility, etc.) into classified airspace and its management, will expose the sector to cyber threats that may have an impact on aviation safety and/or security, in addition to efficiency and/or capacity.

As such, addressing cybersecurity in civil aviation must be a priority over the next 15 years, when the aviation sector is expected to be fully digital. ICAO is developing a framework that encompasses all aspects of civil aviation to support States and stakeholders benefit from the digitalization of aviation operations while addressing the cyber threats and risks associated with those technological advancements.

Human Trafficking

Human Trafficking is a global priority where the aviation industry is one of the primary modes of transportation utilized by traffickers. In recognition to the significant impact the aviation industry can have in combatting human trafficking, ICAO Annex 9 – Facilitation includes provisions on trafficking in persons relating to procedures to combat trafficking in persons, awareness training on trafficking in persons for aircraft and airport personnel in direct contact with the travelling public. ICAO emphasizes that the entire global aviation community must unite to prevent trafficking in persons. ICAO took an important stride forward launching guidelines for reporting trafficking cases within the international civil aviation network and launched Document 10171 “Manual on a Comprehensive Strategy for Combating Human Trafficking in the Aviation Sector” in its first edition in 2023. States are encouraged to adopt an approach most beneficial to victims and survivors and develop programmes that increases the quality of efforts in combatting human trafficking.

Industry stakeholders, including airports and airlines, are ideally positioned to assist, both through the training of staff in recognizing and dealing with trafficking situations, and by providing information to the public to raise awareness.

ACI guidance material to help airports combat human trafficking is available [HERE](#).

Aviation Security and Facilitation Main Challenges in the MID Region

The main AVSEC/FAL challenges and priorities identified in the MID Region are related mainly to the following:

- The continuing threat faced by civil aviation from individuals and groups interested in perpetrating acts of unlawful interference, and which have the means to do so.
- Lack of financial and human resources in some States and competing Priorities.
- The need to continuously and sustainably strength States’ security and facilitation oversight capabilities
- Gaps in the active use of the ICAO PKD

- Low level of implementation of API and PNR
- The need to further develop and implement detailed National Civil Aviation Security Programmes (NCASPs) and National Air Transport Facilitation Programmes (NATFPs)
- The need to develop and implement National Civil Aviation Security Committees (NCASCs) and National Air Transport Facilitation Committees (NATFCs)
- The need to develop and apply risk-based mechanisms for determining appropriate security controls, where applicable.

Strategic Plan to maintain and improve aviation security and Facilitation in support of the sustainable development of air transport in the MID Region

The GASeP includes an ambitious framework for enhancing international aviation security over the coming years. By implementing the actions and tasks identified in its Roadmap, the aviation security community will be better prepared and more effectively aligned with Security Council Resolution 2309, which is a call for all States to work with each other and ICAO to continuously adapt measures to meet that “ever-evolving global threat”.

The best strategy to enhance aviation security is to fine-tune the Global Aviation Security Roadmap and use this to develop a Regional Roadmap specific to the MID Region, which will highlight to States their specific responsibility towards the safety and security of air services operating within their territory, their obligation to work with ICAO to ensure that national security requirements are reviewed, updated, adapted and implemented based on Annex 17 Standards and in response to current risks.

Sustainable development is driven by air connectivity growth. Given the positive impact and the drive towards innovation and technological advancements, States are to adopt policies that positively influence air connectivity while integrating technological developments in a sensible and coordinated manner. Facilitation forms an integral pillar in the regulatory framework that can drive such advancements, and can increase States’ air transport competitiveness through improved connectivity. Thus, States must establish effective policies aimed at encouraging growth in air connectivity such as one-stop security, issuance and verification of electronic and digital health and identity credentials leveraging the ICAO PKD, implementation of pre-arrival checks taking advantage of API, PNR and digital travel portals, offering of efficient border clearance tools leveraging, biometric identification, etc. Such measures will enhance travel experience while making air transport more resilient through the offering of robust, efficient and potentially contactless processes.

Key to undertaking security sustainability and development is continued cooperation and capacity building through ICAO’s No Country Left Behind (NCLB) initiative. States are to cooperate on a global, regional, and national level to raise the level of effective implementation of global aviation security and facilitation. The current cooperation among MID States has positioned them well in terms of implementing the outcomes of ICAO’s Assembly Resolutions in the security area and enhanced cooperation is anticipated particularly on border control.

One of the key objectives of the Cooperative Aviation Security Programme - Middle East (CASP-MID) is to develop a standing aviation security structure for cooperation and coordination in aviation security matters amongst the participating States, thus States are encouraged to join and reap the benefits of the CASP-MID.

States shall implement effective oversight, including remote techniques when restrictions or other circumstances do not allow for on-site monitoring activities, over all aspects of their aviation security and facilitation regimes to ensure that relevant measures are effectively and sustainably implemented. Most importantly, the measures should be evidence- and risk-based, wherever possible, and operationally viable for the prevention of acts of unlawful interference and enhancement of system efficiency.

Actions/Recommendations:

In order to strengthen aviation security and facilitation in the region in support of the sustainable development of air transport, States should:

- support security sustainability and development at the national and regional levels through effective implementation of the ICAO aviation security and facilitation SARPs, guided by the Global Aviation Security Plan (GASeP), and in accordance with the Assembly Resolutions related to AVSEC/FAL and MID-RASFG Conclusions.
- build capacity and allocate sufficient human resources to ensure they are able to sustainably meet their obligations under the GASeP. Thus, States are to strive towards the implementation of the ICAO NCLB initiative, which includes advocacy for resource mobilization to allocate sufficient funds for aviation development.
- oversee their aviation security and facilitation activities in support of aviation security, border control and border security objectives.
- recognize the need to evolve towards digital identity for travel, considering the world's move towards digital travel, and consider upgrading their technological capabilities while also enhancing security and facilitation initiatives taking into consideration cyber vulnerabilities and threats. Participation in the ICAO PKD should be an important early step in work towards implementation of the necessary capabilities.
- actively consider pursuing policies or measures in aviation security that could enhance air connectivity and operational efficiency of the air transport system, including but not limited to the establishment of one-stop security (OSS) arrangements in accordance with national regulatory frameworks with all States involved. In addition, as per ICAO and ACI's recommendations, States may consider inputs provided by airports and airlines when assessing opportunities for OSS and identifying potential OSS partner States.
- adapt facilitation policies that support air connectivity with the view to encouraging economic and social development in the region, taking into consideration resilience in response to emergencies and disaster relief.
- ensure that they strive towards a secure and seamless travel experiences through harmonization of security and facilitation practices.

3.4. Air Navigation

Introduction/Background

Aviation achieves its impressive level of macro-economic performance by serving communities and regions through clear cycles of investment and opportunity. Infrastructure development generates initial employment and the ensuing airport and airline operations generate new supplier networks, tourism influxes and access for local producers to distant markets.

Air Navigation has witnessed some important improvements in recent decades. Yet, a considerable remainder of the global Air Navigation system is still limited by conceptual approaches that arose in the twentieth century. These legacy Air Navigation capabilities limit air traffic capacity and growth and are responsible for unnecessary gas emissions being deposited in our atmosphere.

In aviation's fast and ever-changing landscape, achieving sustainable growth of international air transport strongly relies on a high-performing and seamless global air navigation system. It has become a well-accepted goal and forward-looking endeavor that requires careful planning, investment, and adaptation to emerging technologies and challenges.

To reach sustainable development for air navigation services, States should consider the evolving needs of the aviation industry, the increasing demand for air travel, and the imperative to balance growth with environmental and safety concerns. Collaboration among all stakeholders and a commitment to ongoing improvement are essential to achieving this goal.

Increasing the capacity and improving the efficiency of the global civil aviation system to support the sustainable development goals is a challenging undertaking; the challenge includes finding balance between the dimensions of sustainability (economic, environmental, social, and financial) and the objectives of air navigation services (enhanced capacity, improved efficiency, accessibility, safety and enhanced mobility).

To ensure that continuous safety improvement and air navigation modernization continue to advance hand-in-hand, ICAO has developed a strategic approach linking progress in both areas. This will allow States and stakeholders to realize the safe, sustained growth, increased efficiency and responsible environmental stewardship that societies and economies globally now require.

ICAO developed the Global Air Navigation Plan (GANP) to bring the aviation community together to achieve an agile, safe, secure, sustainable, high-performing and interoperable global air navigation system. It provides a vision of the evolution of the Global ATM system and the potential requirements to industry, for better anticipation in its products.

The GANP represents a rolling, 15-year strategic methodology which leverages existing technologies and anticipates future developments based on State/industry agreed operational objectives. This structured approach provides a basis for sound investment strategies and will generate commitment from States, equipment manufacturers, operators and service providers. Moreover, it is a key contributor to the achievement of ICAO's Strategic Objectives and has an important role to play in supporting the Sustainable Development Goals.

The GANP's Aviation System Block Upgrade (ASBU) methodology is a programmatic and flexible global system engineering approach that allows all Member States to advance their Air Navigation capacities based on their specific operational requirements. The Block Upgrades will enable aviation to realize the global harmonization, increased capacity, and improved environmental efficiency that modern air traffic growth now demands in every region around the world.

The GANP promotes a performance-based approach for the implementation of the ASBU modules, enabling States and regions to review the existing performance of their Air Navigation system and to take actions if needed to fill the gap between the existing and desired level of performance.

Fortunately, many of the procedures and technologies being proposed to address today's need for increased capacity and efficiency in our skies also enhance many positive factors from a safety standpoint.

Additionally, the more efficient routes facilitated by performance-based procedures and advanced avionics serve to significantly reduce aviation emissions – a key factor supporting more fuel-efficient modern aircraft as aviation pursues its commitment to comprehensively reduce its environmental impacts.

Although the GANP has a global perspective, it is not intended that all ASBU modules are implemented at all facilities and in all aircraft. Nevertheless, coordination of deployment actions by the different stakeholders, within a State, and within or across regions are expected to deliver more benefits than implementations conducted on an ad hoc or isolated basis.

Guided by the GANP, the regional and national planning process should be aligned and used to identify those ASBU Threads/Elements, which best provide solutions to the operational needs identified. Depending on implementation parameters such as the complexity of the operating environment, the constraints and the resources available, regional and national implementation plans will be developed in alignment with the GANP. This planning requires interaction between stakeholders including regulators, users of the aviation system, the Air Navigation Service Providers (ANSPs), aerodrome operators and supply Industry, in order to obtain commitments to implementation. Accordingly, deployments on a global, regional and sub-regional basis and ultimately at State level should be considered as an integral part of the global and regional planning process through the planning and implementation regional groups (PIRGs).

The MID Air Navigation Plan (MID ANP) provides for the planning and implementation of air navigation systems within the MID Region, in accordance with the agreed global and regional planning framework. It is developed to meet those needs of specific areas not covered in the global provisions. And to guide and harmonize the development of individual State/National Air Navigation Plans (NANP).

The MID ANP contains provisions that States can follow in the planning of aerodrome and air navigation facilities and services activities, with the assurance that facilities and services provided in accordance with the plan will form with those of other States an integrated system adequate for the foreseeable future.

The MID Region Air Navigation Strategy sets regional objectives in line with the global air navigation objectives and addresses specific air navigation operational improvements identified within the framework of the Middle East Regional Planning and Implementation Group (MIDANPIRG).

The 41st ICAO Assembly urged States that are developing new air navigation plans, for their own air navigation modernization, to coordinate with ICAO and align their plans to ensure regional harmonization, and global compatibility and interoperability.

At Regional Level, MIDANPIRG/20 (Muscat, Oman, 14 – 17 May 2023), through Conclusion 20/9, urged States to develop NANP based on a performance-based approach and the six-step performance management process described in the Manual on Global Performance of the Air Navigation System (Doc 9883) and the MID ANP.

Through Resolution A41-9, the ICAO Assembly, recognized that there is an increasing need to facilitate, within a global, harmonized framework, operations by New Entrants and that there is a large disparity in performance in the types of vehicle expected to comprise this new airspace user group. States are requested to arrange their regulations and procedures governing the operation of New Entrants as well as the common use by all airspace users of certain facilities and services so as to facilitate the integration of these operations, while not compromising safety and security, duly addressing environmental implications, and, where necessary, ensuring that these new operations comply with the rules of the air in Annex 2 — Rules of the Air.

With the expected growth in aviation demand, economic pressures and attention to environmental impact, the ATM system will be increasingly reliant on accurate and timely information. Such information must be organized and provided by solutions that support system-wide interoperability and secured seamless information access and exchange. Global improvements in information management are needed in order to integrate the ATM network for a performance-enhancing operational scenario. These improvements are envisioned to be applied on a System Wide Information Management (SWIM) basis.

The implementation of the future aviation systems will result in changes in roles for aviation professionals requiring work across multi-disciplinary teams to support collaborative decision-making. Human performance needs to be embedded both in the planning and design phases of new systems and technologies as well as during implementation. Early involvement of operational personnel is also essential.

Amongst other priorities, the management of change should include human performance-related considerations in the following areas:

- a) Initial training, competence and/or adaptation of new/active operational staff.
- b) New roles and responsibilities and tasks to be defined and implemented.
- c) Social factors and management of the cultural changes linked to increased automation.

Main challenges in the MID Region

- 1- Natural and human-made disasters (Air traffic contingency cases, cyber-attacks, etc.)
- 2- Lack of adequate human and financial resources in some States to support the required modernization of the air navigation system and adaptation to emerging technologies and challenges
- 3- Lack of understanding of the performance based approach and its benefits and necessary coordination between all stakeholders at National and Regional levels
- 4- Lack of automated tools in some States to collect the data necessary for the measurement of the ANS Performance (KPIs)
- 5- Enhancement of Civil/Military support to implement National and Cross Border Flexible Use of Airspace (FUA) and seamless ATM operations

Strategic Plan to maintain/improve Air Navigation services in support of the sustainable development of Air Transport in the MID Region

Developing a strategic plan to maintain and improve air navigation services in support of sustainable development of air transport in the Middle East (MID) region is a complex undertaking that involves various stakeholders, including governments, aviation authorities, Air Navigation service providers, airspace users and industry players.

Creating and implementing a strategic plan for air navigation capacity and efficiency in the MID Region requires a long-term commitment from all stakeholders and a focus on continuous improvement.

The assessment of current state should be performed initially and periodically, conducting a comprehensive assessment of the air navigation infrastructure at Regional and National levels, analyzing existing challenges and bottlenecks in the MID Region that hinder the safety and efficiency of air navigation.

The process should involve all relevant stakeholders, such as national aviation authorities, airlines, airports, and international aviation organizations. States should gather inputs from these stakeholders to understand their perspectives, concerns, and priorities.

States should develop a clear and comprehensive vision for the future of civil aviation by 2040, outlining key objectives related to air navigation safety, capacity and efficiency.

The MID Region Air Navigation Strategy and the MID Air Navigation Plan guide States to set clear and measurable goals, select focused key performance areas to be enhanced and key performance indicators (KPIs) that align with sustainable development objectives.

States should embrace the six-step approach in their planning and implementation for enhanced, sustainable, efficient, and safe air navigation services. The approach includes setting long-term Vision and Goals.

States should develop their NANPs to be their implementation roadmap with timelines and responsibilities for each action item. This should include key performance indicators (KPIs) to measure the air navigation system performance, implement monitoring and reporting mechanisms to track performance and make data-driven decisions. Based on the monitoring and reporting mechanisms, the challenges identified during implementation should be addressed.

States should identify the infrastructure and technology investments required to meet the established goals, considering funding sources, public-private partnerships, and cost-sharing models.

States should review and update relevant regulations and policies to facilitate air navigation improvements while ensuring safety and sustainability, regulations should be aligned with international standards and best practices.

Collaboration with neighboring regions and international aviation organizations is crucial. States should establish agreements for cross-border cooperation and airspace management. This should be facilitated also by the ICAO MID Regional Office.

Actions/Recommendations:

In support of the sustainable development of international air transport, there is a need for a high-performing and seamless global air navigation system, which requires careful planning, investment, and adaptation to emerging technologies and challenges. To achieve this goal:

- States should support the development and sustainability of the air navigation system in the Region and continuous improvement of its performance through effective implementation of the ICAO provisions and policies, guided by the Global Air Navigation Plan (GANP) and MID Air Navigation Plan (MID-ANP), and in accordance with the Assembly Resolutions related to Air Navigation and MIDANPIRG Conclusions.
- States, organizations and stakeholders should share performance issues and best practices and cooperate to support each other with expertise and training, and to make performance information available at regional and global level. This will allow comparisons to identify where improvements can be made and where best practices can bring benefits.
- States should use performance benchmarks to establish positive business cases on the status of their respective ATM systems and justify investments and efforts to its modernization for the airspace users and respective stakeholders to reach the desired level of performance.
- Implementation benefits and costs may be influenced by the scale of improvement and the operational and organizational environment, so solutions adopted by neighboring States or regions should, as far as relevant, be taken into account. Economies of scale when working together with multiple stakeholders and States (route structure improvement at regional scale for instance) have a direct impact on the costs for procurement, training, maintenance, operation but also on the benefits of the investment. The trade-off with the managerial aspects of a several-player scenario should be comprehensively balanced.
- States should invest in training and education programs for air traffic controllers, air navigation engineers and technicians, and aviation professionals to keep them up-to-date with evolving technologies.
- States should transition towards optimized, secure CNS systems based on complementary integration of suitable and independent aircraft capabilities, satellite- and ground-based infrastructure which maximize resiliency and robustness to any type of interference.
- States should ensure that ANS infrastructure is built with a focus on resilience to withstand natural disasters and other unforeseen events, such as cyber-attacks.
- States should embrace cutting-edge technologies, such artificial intelligence, automation, and satellite-based navigation and promote research and development in the area of air navigation services.
- Training programs and curricula should undergo careful oversight and audit to ensure they are in line with the standards set by the International Civil Aviation Organization (ICAO). Additionally, competency-based training courses should be developed to enhance the skills and capabilities of aviation professionals.
- States should take necessary measures for the enhancement of Civil/Military cooperation and implementation of Flexible Use of Airspace (FUA) and seamless ATM operations, at National and Cross Border levels.

3.5. Environmental Protection

Climate Change

Introduction/Background

In light of latest scientific evidence from the Intergovernmental Panel on Climate Change (IPCC), rapid actions are required now from all sectors to reduce anthropogenic CO₂ emissions. Defining and monitoring the achievement of ambitious goals for aviation to contribute to addressing climate change is a priority. For aviation, all stakeholders must take significant action and ensure that no country is left behind and it is crucial that ICAO maintains its leadership to address the climate impacts of international aviation through development and implementation of globally harmonized policies and frameworks, SARPs and guidance. Innovations will play a crucial part in building green transition pathways for a resilient international aviation sector, and progress will be closely monitored toward the achievement of global aspirational goals – net-zero carbon dioxide (CO₂) emissions from aviation by 2050.

States have worked under the umbrella of ICAO in recent years where three major agreements have been agreed upon as follows:

- 1- Long Term Aspirations Goal of Net Zero Emissions by 2050: To achieve this goal a basket of measures was agreed upon including technological advancements, operational improvements, sustainable aviation fuels (SAF, LCAF and cleaner energies), and the carbon offsetting.
- 2- ICAO's Carbon Offsetting and Reduction Scheme for International Aviation (2021 to 2035) where aircraft operators are required to offset emissions exceeding 85% of international aviation's emissions of 2019.
- 3- ICAO's Global Framework for Alternative Aviation Fuels where, among other things, ICAO and its Member States agreed to strive to achieve a collective global aspirational Vision to reduce CO₂ emissions in international aviation by 5 per cent by 2030 through the use of SAF, LCAF and other aviation cleaner energies (compared to zero cleaner energy use). In pursuing this Vision, each State's special circumstances and respective capabilities will inform the ability of each State to contribute to the Vision within its own national timeframe, without attributing specific obligations or commitments in the form of emissions reduction goals to individual States.

Main Challenges

1- Cleaner Energy Production Challenges:

- a. Feedstock Availability: SAF can be derived from various feedstocks; however, ensuring a consistent and sufficient supply of these feedstocks at a reasonable cost is a challenge.
- b. Production Cost: The production cost of SAF is generally higher compared to conventional fossil fuels.
- c. Certification and Standards: ICAO developed a standard for CORSIA eligible fuels however some sustainable aviation fuels are certified under different programs and cannot be used to offset emissions under CORSIA, hence the absence of a unified certification criteria or in the absence of the recognition of all SAF that is produced globally is a major challenge mainly for airlines.
- d. Infrastructure: Adapting or building new infrastructure to handle SAF distribution is necessary but requires significant investment and planning.
- e. Policy and Regulatory Frameworks: Supportive policies and regulatory frameworks are essential for fostering investment in SAF production.

2- Regulatory Environment Challenges

- a. A proliferation of market-based measures and regulations are witnessed although CORSIA was agreed as the only market-based measure to deal with international aviation's emissions.
- b. A proliferation of SAF sustainability standards is adding complications to the possibility of users to claim the reduction of emissions they achieve through the use of SAF, under the different regulations.

3- Other Challenges

- a. Some policies for the uplift of SAF are not meeting their objectives of increasing the production of SAF as suppliers are opting to pay penalties and passing those penalties to airlines which affects demand for travel when airlines pass the cost to passengers.
- b. Due to the scarcity of SAF, many suppliers are choosing to sell the SAF to one or two airlines hence there's no equitable distribution of SAF amongst airlines who are requesting to buy SAF but not receiving it.
- c. Many states are hesitating to support the development of a global Book & Claim system for SAF.

Action/Recommendations

All relevant stakeholders need to work together and do their parts in order to mitigate international aviation's emissions. To achieve the global net zero target by 2050, for CORSIA to meet its objectives, and for states to achieve the vision of ICAO's Global Framework for Aviation Alternative Fuels, the following is needed:

1- States/Governments:

- a) as per resolution A41/21, accelerate the production and deployment of Lower Carbon Aviation Fuel, sustainable aviation fuel (SAF) and other cleaner energy sources for aviation, namely through a coordinated approach on policy and investments, the use of incentives, and support to accelerate research, certification and deployment of fuels;
- b) as per the third International Civil Aviation Organization Conference on Aviation and Alternative Fuels (CAAF/3), strive to achieve a collective global aspirational Vision to reduce carbon dioxide emissions in international aviation by 5 per cent by 2030 through the use of SAF, Lower Carbon Aviation Fuel (LCAF) and other aviation cleaner energies;
- c) include the adoption of Airport Carbon Accreditation as a tool to reduce carbon emissions at airports in State Action Plans and encourage airports to develop net zero roadmap through ACI guidance and advisory service such as High-level Guidance for Developing and Costing an Airport Net Zero Roadmap and Net Zero Roadmap Decarbonise your airport to be offered in 2025;
- d) monitor environment-driven innovations and take stock of CO₂ emissions reduction;
- e) develop and update the State policies, legal frameworks, and guidance to facilitate the creation and implementation of innovations in aircraft technologies, operational improvements, sustainable fuels and clean energy sources, toward realization of collective aspirational goals by States;
- f) ensure the continued implementation of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA);
- g) refrain from enacting unilateral policies on international air transport
- h) reform the infrastructure to ensure relief from congestion in airspace and airports
- i) work under the umbrella of ICAO to develop a global SAF accounting mechanism based on a robust chain of custody to enable SAF to be used by airlines anywhere in the world, even if physical availability is restricted.
- j) work under ICAO to resolve the discrepancies in SAF certification criteria to enable airlines to be credited for emissions reduction when using SAF.
- k) ensure that any policies for the use of SAF, LCAF or cleaner energies involve fuel suppliers as the responsible entities for ensuring that the needed amounts of SAF are available for airlines' use, while ensuring that any penalties imposed on suppliers for not making available the needed amounts of SAF are not passed on to airlines as that does not incentivize suppliers to supply the SAF and hence does not benefit the environment.
- l) develop, regularly update, and implement their State Action Plans and roadmaps on aviation CO₂ emissions reduction, in light of new green innovations and ICAO global aspirational goals; and
- m) address other important and emerging areas, such as climate adaptation and infrastructure resilience, as well as recycling and circular economy.

2- Aircraft and Engine Manufacturers:

- a) To provide a clear plan for the development of propulsion and airframe systems in line with the target roadmap.
- b) To plan and develop game-changing technologies.
- c) To place particular attention for the propulsion and airframe systems that would enable long haul operators from reducing their exposure to using offsets.

3- Air Navigation Service Providers:

The Air Navigation Service Providers (ANSPs) play a crucial role in the aviation industry's efforts to meet environmental goals, such as reducing greenhouse gas emissions and minimizing the environmental impact of air travel. Here are some operational improvements that ANSPs can implement to support these goals:

Optimized Routing: ANSPs should develop more efficient flight paths, considering factors like wind patterns and weather conditions. This can reduce the distance traveled and, in turn, fuel consumption and emissions.

Continuous Descent Approaches (CDO) and Continuous Climb Operations (CCO): Implementing CDO and CCO procedures can reduce fuel burn and emissions during the arrival and departure phases of flights.

Direct Routing: Promoting and implementing direct routing concepts and Free Route Airspace in States airspace should improve the efficiency and environmental performance. This concept allows aircraft to fly more direct routes, which can have several positive environmental impacts:

- Shorter flight paths result in less fuel consumption, which, in turn, reduces greenhouse gas emissions.
- Lower Emissions: With reduced fuel consumption, there are fewer emissions produced per flight. This is an important contribution to reducing the aviation industry's overall environmental impact.
- Direct routing increases airspace efficiency. It minimizes congestion and airspace restrictions, leading to smoother traffic flow. This can reduce the time aircraft spend in holding patterns, which further decreases fuel burn and emissions.

Reduced Holding Patterns: ANSPs can minimize or eliminate holding patterns, where aircraft circle in the air waiting for landing clearance.

Dynamic Airspace Management: ANSPs can employ dynamic airspace management to optimize route availability, especially during off-peak hours, reducing congestion and fuel consumption.

Collaborative Decision-Making (CDM): By fostering closer cooperation between ANSPs, airlines, and airports, CDM can help optimize operations and reduce unnecessary delays and taxi times, thus saving fuel and reducing emissions.

Air Traffic Flow Management (ATFM): ANSPs can enhance ATFM practices to better manage air traffic flows, reducing the need for aircraft to stack or hold patterns.

Capacity Building and Training: Training air traffic controllers and other staff on environmentally-friendly practices and techniques can contribute to the reduction of emissions.

4- Air Operators:

Adopt Lower Carbon Aviation fuel, sustainable aviation fuel (SAF) and other cleaner energy sources for aviation, under a coordinated approach led by the State.

Air operators can take several actions to improve environmental sustainability:

- 1- **Advocacy and communication:** advocate and communicate and collaborate with relevant governmental and non-governmental entities to promote for a fair and constructive regulatory framework for environmental sustainability in general and the use of alternative aviation fuels in particular.
- 2- **Encouraging Sustainable Travel:** Promoting and incentivizing sustainable travel practices among passengers, such as choosing direct flights, packing light, and offsetting carbon emissions, can help reduce the overall environmental impact of air travel.
- 3- **Investing in fuel-efficient aircraft:** Upgrading to newer, more fuel-efficient aircraft can significantly reduce fuel consumption and greenhouse gas emissions.
- 4- **Optimizing flight routes:** Using modern technology and data analytics to optimize flight routes can reduce fuel consumption and emissions by minimizing flight distance and time.
- 5- **Using sustainable aviation fuels (SAF):** Using Sustainable aviation fuel and low carbon aviation fuel, if available in the market.
- 6- **Improving operational efficiency:** Implementing measures to improve operational efficiency, such as reducing aircraft weight, optimizing ground operations, and improving maintenance practices, can help reduce fuel consumption and emissions.
- 7- **Investing in carbon offset programs:** Air operators can invest in carbon offset programs to mitigate the environmental impact of their operations.
- 8- **Reducing single-use plastics and waste:** Implementing measures to reduce single-use plastics and waste on board flights.
- 9- **Improving air traffic management:** Collaborating with air traffic control authorities to optimize airspace usage and reduce congestion can help minimize fuel consumption and emissions.
- 10- **Investing in research and development:** Investing in research and development to develop and implement new practices.
- 11- **Emissions Monitoring and Reporting:** Regularly monitoring and transparently reporting emissions data can help air operators track their environmental performance and identify areas for improvement.

5- Aerodrome Operators:

Climate change (related to UNSDG 7, 9 and 13):

Mitigation of climate change:

Airports have long been implementing decarbonization initiatives through programs such as electrification of currently fossil fuel powered equipment (GSE, airside passenger bus, APUs alternatives) and on-site renewable energy infrastructures and recognized by Airport Carbon Accreditation. To pursue aviation's net zero goal, new airport infrastructures are needed to cater for innovative technologies such as electric, hybrid, hydrogen powered and SAF fueled aircrafts.

For Middle East Airports, under a business-as-usual scenario, the growth in demand and associated increased energy requirements will not be fully offset by the projected decarbonisation of the electricity grid, resulting in an additional increase of approximately 67% in total emissions (by 2050 compared to which year?). The implementation of energy efficiency enhancement measures, including fuel switching for on-site thermal and electrification measures, could further accelerate the decarbonisation of MID airports, bringing total emissions under 0.8 Mt CO₂e by 2050, a decrease of approximately 30% compared to 2019 levels. More aggressive national grid decarbonisation policies and on-site initiatives will be required to bridge the gap to Net Zero Carbon emissions by 2050. A high grid decarbonisation scenario could bring total emissions closer to 0.2 Mt CO₂e by 2050⁸, then further gap will require carbon removal initiatives to achieve the goal.

Airport Operators are recommended to:

- integrate mitigation measures into airport master planning, operations planning, facilities design;

⁸ [ACI World Long Term Carbon Goal Study Report 2021](#)

- enhance management of greenhouse gases through programs such as electrification of currently fossil fuel powered equipment (GSE, airside passenger bus, APUs alternatives) and on-site renewable energy infrastructures;
- establish long term carbon goal and roadmap; and
- participate in *Airport Carbon Accreditation*.

Adaptation to Climate Change:

Airports bear a significant risk from a changing climate which are likely to become more severe and dangerous in the future. The negative impacts caused by climate change are disruptive and have serious potential consequences for airport safety, asset management and operational resilience.

Climate change impacts range from an increase in frequency of extreme weather events to heatwaves and public health concerns. The specific impacts on each airport will depend on the actual changes in climate experienced, for example, higher temperatures or droughts, which will vary from place to place.

Climate change adaptation is the process of preparing for, and adjusting proactively to, climate change – both negative impacts as well as potential opportunities. As airports are dynamic systems that face unique climate impacts, their adaptation must be location specific and tailored to local circumstances. The recommended starting point in managing risks and building long-term resilience for an airport is to gain an understanding of its exposure and sensitivity to a given set of anticipated impacts through a climate risk assessment, in order to develop responsive measures and investments that address these vulnerabilities.

Airport Operators are recommended to:

- perform climate change risk assessment for airport infrastructure and establish adaption plans; and
- include adaptation of airport infrastructure and operations to climate change in airport master plans.

Environmental, Social and Governance (ESG) (UNSDG 6, 7, 8, 9, 11, 12, 13, 14 and 15):

ESG offers an inclusive institutional framework to hold aerodrome operators, and other ESG adopters, accountable for practices and projects that achieve good governance, compliance, and stewardship, which is why ESGs are now, and are increasingly expected to be, nationally mandated. States should encourage aerodrome operators to consider adopting ESG objectives into their business in particular with environmental emphasis on:

Waste Management

Waste management including recycling and circular economy (UNSDG 12). ACI provides “ACI IATA Cabin Waste Recycling Guidance and Recommended Practices” to its members, “Green Airports Recognition Publication” on “Waste Minimization and Single Use Plastic Elimination”. These publications are available [online](#).

Airport Operators are recommended to:

- promote the culture of avoiding solid waste generation;
- avoid, reduce, reuse and recycle waste, with the goal of eliminating the waste going to landfills; and
- adopt the principle of circular economy whereby the complete life cycle of materials and products is considered with a focus on system- or society-wide benefits that go beyond the traditional waste management concept, and lifespans of resources are extended through alternative business models which are integrated into other stakeholders’ business models extracting the maximum value of a product before it is recovered or regenerated.

Water Management

Water management (UNSDG 6) include water resource management and wastewater treatment, ACI provides Green Airports Recognition publication on “Water Management” publicly available [online](#);

Airport Operators are recommended to:

- minimize the use of potable water by processing wastewater in the most efficient way possible, reusing treated water, and managing the quantity and quality of storm water run-off;
- reuse treated water for non-potable water uses; and
- avoid the pollution or contamination of surface and underground water bodies through proper storm water management.

In most jurisdictions, the quality and quantity of water flowing from an airport site (via streams, pipes or seepage) are subject to strict regulation and monitoring. This includes controlling flow to receiving waters and avoiding excessive impermeable surfaces and run-off contamination.

Aircraft Noise Management

Aircraft noise management (UNSDG 3 and 11) has long been many airports’ focus to obtain social permission to grow and operate with their communities. ACI and CANSO provide guidance on the [use of performance-based navigation \(PBN\) for noise management](#) and [managing the impacts of aviation noise](#). ICAO provides some guidance to manage aircraft noise on an airport-by-airport cases, based on the specificities of airport situation, in Doc 9829 — Guidance on the Balanced Approach to Aircraft Noise Management. Furthermore, ICAO Doc 9184 — Airport Planning Manual, Part 2 - Land Use and Environmental Control provides some guidance on the use of tools to minimize, control or prevent the impact of aircraft noise in the vicinity of airports.

Airport Operators are recommended to:

- strive to minimize or mitigate the adverse effects of aircraft noise on communities through the overarching ICAO policy on aircraft noise - the balanced approach, which consists of identifying the noise problem at a specific airport and analyzing various measures available to reduce noise through the exploration of various measures which can be classified into four principal elements: reduction at source, land-use planning and management, noise abatement operational procedures and operating restriction;
- communicate and engage local community for noise impact and aircraft noise management plan; and
- collaborate and cooperate with all relevant stakeholders, including airports, ANSPs, aircraft operators and the communities surrounding the airports.

Combat Against Wildlife Trafficking via Air Transport

The combat against wildlife trafficking via air transport is related to UNSDG 14 and 15.

Combatting wildlife trafficking requires collective efforts across different aviation stakeholders, ranging from airports to airlines to law enforcement to government authorities. Under the leadership of ICAO, an integrated regulatory framework and a **collaborative approach** should be adopted to further foster collaboration and coordination between different stakeholders.

Despite having no law enforcement capabilities to intervene the illegal trafficking activities, airport operators can, however, play a critical role in assisting other agencies in detecting and thereby disrupting potential occurrences of wildlife trafficking.

Airport Operators are recommended to:

- Adopt a zero-tolerance policy regarding illegal wildlife trade;
- Raise awareness among passengers, staff and the wider airport communities about the nature, scale, and consequences of illegal wildlife trade;
- Provide training to staff within the airport sector to enable them to detect, identify and report suspected illegal wildlife trade as per Annex 9 Recommendation 8.51;
- Cooperate with regulators and government authorities, e.g. customs, to support the development and implementation of relevant policies and measures;
- Provide awareness training on identifying wildlife contraband, and encourage security screeners to report unusual items, such as samples of endangered species, other than security prohibited items, to police or border control if they raise suspicion; and
- Consider sharing x-ray images with other relevant parties, such as customs and border control agencies thereby ensuring security screeners to focus on their core mandate, while allowing other authorities to look for illegal wildlife items.

ACI offers a guidance materials and training to help airports combat wildlife trafficking. Details are available [here](#).

4. Conclusions

The Middle East region has a high potential in air transport developments. It is singularly well situated between the Asian, European and the African continents and within the operating range of commercial jet aircraft from the Americas and Australasia. The region's economic resilience was demonstrated by the strong rebound of its air traffic in 2022 and 2023 from the COVID 19 pandemic. Its air passenger traffic volume is forecast to grow at an average rate of 4 percent per annum from 2025 to 2040.

Air transport is well recognized as a catalyst of economic and social developments and should be considered as a means to help achieve related UNSDG (United Nations Sustainable Development Goals) such as “no poverty”, “decent work and economic growth”, “gender equality” and “reduced inequalities” through the direct and indirect jobs that air services create.

Yet a coordinated approach is needed to ensure that the forecast demand for air services is met in a safe, secure, operationally efficient, and environmentally and socially sustainable manner, and to the benefit of all the communities in the region, even of those in the relatively remote areas, as equally as economically viable. Such coordination requires close collaboration between government policy makers and industry players, e.g. airlines, airports, air navigation service providers, and tourism bodies.

Of utmost importance is the requirement for funding, either public or private, or a combination of the two, to support the development, operations and maintenance of aviation infrastructure, hence the need for government policies adapted to promote investments per the national circumstances and priorities and by extension the consultation on user charges.

Concerned government authorities such as civil aviation authorities, ministries of transport, tourism development boards, and industry stakeholders should consider adopting the recommendations made in this Plan, detailed in Chapter 3 and summarized in the Executive Summary. They should also consider adapting this Plan to a national air transport development plan based on specific national priorities, challenges and circumstances.

References

- ICAO Doc 9626: Guidance Material on the Economic Regulation of International Air Transport
- ICAO Doc 9082: Policies on Charges for Airports and Air Navigation Services (Doc 9082)
- ICAO Doc 8632: Policies on Taxation in the Field of International Air Transport
- ICAO Doc 9859: Safety Management Manual
- ICAO Doc 10171: Manual on a Comprehensive Strategy for Combating Human Trafficking in the Aviation Sector
- ICAO Doc 9750: Global Air Navigation Plan
- ICAO Doc 9854: Global Air Traffic Management Operational Concept
- ICAO Doc 9882: Manual on Air Traffic Management System Requirements
- ICAO Doc 9883: Manual on Global Performance of the Air Navigation System
- Doc 9708: ICAO MID Air Navigation Plan
- ICAO Doc 10039: Manual on System Wide Information Management (SWIM) Concept
- ICAO Doc 9829: Guidance on the Balanced Approach to Aircraft Noise Management
- ICAO Doc 9184: Airport Planning Manual, Part 2 - Land Use and Environmental Control
- ICAO Doc 9161: "Manual on Air Navigation Services Economics";
- ICAO Doc 9184: "Airport Planning Manual";
- ICAO Doc 9562: "Airport Economics Manual
- ACI Combatting Human Trafficking Handbook (2019)
- ACI World Long Term Carbon Goal Study Report 2021
- ACI Asia-Pacific and Middle East Study on Air Connectivity (2023)
- IATA's Global Air Connectivity Index (2023); ACI Asia-Pacific and Middle East Study on Air Connectivity

- END -

DRAFT