

ICAO Input to the Thematic Review of the High-Level Political Forum on Sustainable Development (HLPF) of 2023

Background:

Transport, including air transport, is at the center of many economic and social development challenges and opportunities. In the *2030 Agenda for Sustainable Development*, sustainable transport is mainstreamed across several SDGs and targets, especially those related to food security, health, energy, economic growth, infrastructure, and cities and climate change. Safe, secure, efficient, viable and sustainable international civil aviation is a cornerstone for worldwide socio-economic development, especially in the Least Developed Countries (LDCs), Landlocked Developing Countries (LLDCs) and Small Island Developing States (SIDS).

Over the past few years, the world has witnessed multiple global crises such as climate change, sustainable development, conflicts, food and energy crises, and the challenges of digital transformation. Despite having endured a tremendous shock amid COVID-19 pandemic and other crises, the aviation industry continues to play its role as a key enabler of many other economic activities.

In 2022, the 41st session of ICAO's Assembly adopted Resolution A41-24, *Aviation Contribution towards the United Nations 2030 Agenda for Sustainable Development*. The new Resolution notably encourages Members States to enhance their efforts around collaboration and effective partnerships in support of development of civil aviation in particular in LDCs, LLDCs and SIDS, especially through development assistance, South-South and triangular cooperation. The Resolution further requests the Secretary General to consider the special needs and characteristics of LDCs, LLDCs and SIDS, identified within the frameworks of the United Nations, in the coordination, prioritization, facilitation and implementation of assistance programmes aimed at enhancing these countries' air transport systems.

ICAO Headquarters and its Regional Offices continue to actively support States at regional and national levels, in collaboration with relevant international and regional organizations. The analytical mapping of how ICAO's work around its Strategic Objectives is supporting the SDGs provides a powerful testimony on just how deeply the Strategic Objectives and the SDGs are intertwined. Other resources such as the Aviation Benefits Report and ATAG's Benefits Beyond Borders report reinforce the overall message around aviation's contribution to the achievement of the Goals of the 2030 Agenda.

Within the framework of the 2030 Agenda, ICAO is an official observer on the Inter agency and Expert Group on Sustainable Development Goal Indicators and is also the custodian agency of global indicator 9.1.2 Passenger and Freight Volumes, by Mode of Transport. The data and analysis ICAO provides is reflected in the annual global SDG progress report and in the online UN platform for monitoring the progress towards the SDGs.

Below is a brief overview of areas aviation can support implementation of SDGs 6, 7, 9, 11 and 17 to be discussed at the HLPF in 2023, as well as some of the actions and measures taken by ICAO including in response to the COVID-19 pandemic, which help put the world back on track to achieve the SDGs by 2030, within the decade of action and delivery for sustainable development.

Goal 6. Ensure availability and sustainable management of water and sanitation for all

Generally speaking, transport emissions, transport-related waste or infrastructure works can impact on water quality. In addition, transport infrastructure and emissions impact on ecosystems. The relevance of aviation, however, to this area is usually identified as less substantive. Nevertheless, the aviation industry works to reduce its environmental footprint, including through the sustainable management of water. Today, a large number of airports have robust water management plans. For example, new 'dry wash' techniques for aircraft reduce the use of water. As part of its Eco Airport Toolkit, ICAO produced guidelines on [Water Management at Airport](#).

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

With a view to minimizing the adverse effects of international civil aviation on the environment, the ICAO develops policies, develops and updates Standards and Recommended Practices (SARPs) on aircraft noise and emissions, and conducts capacity building and outreach activities. These activities are conducted by the ICAO Secretariat, with technical support provided by the ICAO Council's Committee on Aviation and Environmental Protection (CAEP). In pursuing its activities, ICAO also cooperates with other United Nations bodies and international organizations. In this connection, significant advances were made in reducing the amount of noise and emissions produced by international civil aviation. For example, technological progress has resulted in aircraft produced today being more than 75 per cent quieter and over 80 per cent more fuel efficient per passenger kilometre than in the 1960s. This progress continues - new innovative technologies and energy sources for aviation are under development at a fast pace, and much work by ICAO will be required to keep pace with the timely environmental certification of such new technologies.

As it relates to Goal 7 and sustainable energy, technical analysis done at ICAO shows that Sustainable aviation fuels (SAF) have the greatest potential to reduce CO₂ emissions from international aviation. In this respect, ICAO is working to facilitate SAF development and deployment through four main streams:

- 1) **Globally-accepted environmental Standards for SAF:** ICAO continues making steady progress in the area of environmental protection, including intense work on implementation of the *Carbon Offsetting and Reduction Scheme for International Aviation* (CORSIA). CORSIA includes specific methodologies that allow aircraft operators to reduce its offsetting requirements through the use of SAF and Lower Carbon Aviation Fuels (LCAF), including globally-accepted sustainability criteria and life cycle methodologies. Research is ongoing on possible technologies that may allow the production of fossil fuels with a smaller carbon footprint, such as Carbon Capture, Utilization and Storage (CCUS) and the use of renewable energy in oil refineries. ICAO Annex 16 Volume IV also brings the concept of "CORSIA lower carbon aviation fuel", defined as "a fossil-based aviation fuel that meets the CORSIA Sustainability Criteria under this Volume".
- 2) **SAF goals, policies, and measures:** The 41st ICAO Assembly adopted a Long-Term Global Aspirational Goal (LTAG) for international aviation of net-zero carbon emissions by 2050 in support of the UNFCCC Paris Agreement's temperature goal. This is a historic agreement that reinforces the leadership of ICAO on issues relating to international aviation and climate change. In November 2022, the Council recognized the importance of the means of implementation to achieve the long-term global aspirational goal for international aviation, highlighting the consideration of the establishment of a climate finance initiative or funding mechanism under ICAO while addressing the possible financial, institutional and legal challenges, as well as the critical role of non-State stakeholders and financial organizations to facilitate better access to

financing for aviation CO₂ reduction projects, and the importance of contributions to the ICAO Environment Fund to support implementation, including Sustainable Aviation Fuels feasibility studies in interested States, as well as to explore establishing a SAF accounting and reporting system as part of methodologies to monitor the LTAG progress.

- 3) **ICAO Assistance, Capacity-building and Training for Sustainable Aviation Fuels (ACT-SAF):** The ICAO ACT-SAF Programme was launched on 1st June 2022. It will provide opportunities for States to develop their full potential in SAF development and deployment, in line with the ICAO's No Country Left Behind initiative, the 2050 ICAO Vision for SAF, and the three main pillars of sustainable development recognized by the United Nations. In this connection, four successful feasibility studies on the use of SAF were developed as part of the ICAO-EU assistance project "Capacity building for CO₂ mitigation from international aviation". As of January 2023, 67 States and 17 organizations have formally joined the ACT-SAF programme, and are recognized on the ICAO website.
- 4) **Outreach of information and best practices:** ICAO promotes knowledge sharing in relation to SAF, including through ["Rules of Thumb"](#) developed by CAEP experts to help make order of magnitude estimations related to SAF costs, investment needs and production potential, Guidance on potential policies and coordinated approaches for the deployment of SAF (2022), ICAO Stocktaking processes, and ICAO Global Framework for Aviation and Alternative Fuels (GFAAF).

It is pertinent to note that in 2017, ICAO held the second Conference on Aviation and Alternative Fuels (CAAF/2) in Mexico, which resulted in a declaration endorsing the 2050 ICAO Vision for Sustainable Aviation Fuels as a living inspirational path and called on States, industry and other stakeholders for a significant proportion of conventional aviation fuels to be substituted with SAF by 2050. In this context, and in light of Assembly Resolution on international aviation and climate change, ICAO will hold the third ICAO Conference on Aviation and Alternative Fuels (CAAF/3) toward the end of 2023, with a view to updating the 2050 ICAO Vision for SAF to include a quantified proportion of SAF to be used by 2050, as decided by CAAF/2.

In addition, the concept of 'electric aircraft' hold tremendous potential to improve emission, noise, and operating economics across a range of different applications in support of the aviation industry's goal of achieving net-zero CO₂ emissions by 2050. Today a consistent increase is happening in the electrification of aircraft systems, research on electrical propulsion, and investments in electric or hybrid aircraft designs.

ICAO also conducts studies on the economic aspects of the environmental and social impacts of aviation and promotes the results of these economic analyses on emerging issues of global importance with other international organisations.

Another consideration in relation to aviation's role in advancing SDG 7 is related to the energy efficiency of flights and air navigation services. In this connection, ICAO seeks to assist States in ensuring the delivery of efficient and comprehensive air navigation services through globally planned initiatives as outlined in the Global Air Navigation Plan (GANP), optimization of airspace and airport usage and promoting more efficient take-offs and landings using Performance-based Navigation (PBN), improved Air Traffic Flow Management, and modernization and harmonization of the global air traffic management system, which can contribute to SDG 7 by improving energy efficiency and improvements to reducing fuel burn.

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Aviation contributes to building resilient and sustainable infrastructures as envisioned by the *2030 Agenda for Sustainable Development*, as its infrastructure connects people to jobs, markets, education, health care, and each other. This is in line with the mandate of ICAO, which through its normative work, oversight and technical assistance and cooperation, serves the people of the world in facilitating international civil air transport that is safe, secure, efficient, economically viable and environmentally responsible. This includes through development of SARPs, as well as ensuring safety, security and delivery of efficient and comprehensive air navigation services through globally planned initiatives notably as outlined in the Global Aviation Safety Plan (GASP), Global Air Navigation Plan (GANP), Global Aviation Security Plan (GASeP) and regulatory aspects of Unmanned Aerial Systems (UAS). Facilitation and the air passenger experience relating to effective travel document and border management, information sharing is another key component of building resilient and sustainable aviation infrastructures. Quality aviation infrastructure should safely accommodate the increase in air traffic demand, and respond to the diversified needs of providers, users and consumers, global environmental concerns, and other issues inherent in the global air transport system.

Moreover, aviation is one of the most innovative industries in the world. The manufacturing sector is continually developing new technology and creates significant urban infrastructure through the building of airports, as well as air traffic management. The 40th Session of the ICAO Assembly adopted Resolution A40-27, *Innovation in Aviation*. The Resolution recognizes that innovations carry significant potential in improving aviation safety, efficiency, security, facilitation, environmental sustainability, and economic development of air transport. They can also lead to more efficient and streamlined aviation regulatory processes. Technological advances and progresses made in aviation include, inter alia, solar airplanes and hybrid/electric technologies for aviation, sustainable aviation fuels, suborbital flights, flying taxis, unmanned aircraft systems (UAS) and their traffic management systems, provision of regular communication services from platforms on high-altitude balloons, new technologies for border management, and machine learning, artificial intelligence and blockchain in applications developed for aviation.

As it related to aviation environmental protection and building resilience, adaptation is recognized as an essential component to enhance resilience to the impacts of climate change. Climate adaptation in aviation involves adjusting, changing, or improving air traffic operations, and infrastructure to prepare for projected climate changes and to limit adverse impacts to an acceptable level. It may also include adjustments to schedules, or provide opportunities to take advantage of beneficial impacts. In the same vein, aviation climate resilience is the ability for the aviation system operations and infrastructure to be able to withstand and recover from external perturbation resulting from the impacts of climate change. Therefore, anticipation of and adaptation to these impacts are vital to ensure a reduction in the magnitude of consequences of climate change to the whole aviation system (See [ICAO Climate Adaptation Synthesis Report](#) and [ICAO Climate Risk Assessment, Adaptation and Resilience Guidance](#) for more information).

On the area of disaster risk reduction and in line with its Assembly Resolution A41-13, *Strategy on Disaster Risk Reduction and Response Mechanisms in Aviation*, ICAO, as chair of the Humanitarian Assistance and Disaster Response in Aviation (HADRA) Experts Group, has been working alongside humanitarian/crisis response partners to implement tools that will allow responders to plan relief operations more efficiently, while ensuring that their humanitarian and aviation stakeholders have reliable information critical to crisis planning and response. The objective of the HADRA is to enhance preparedness and response capabilities of States, aviation stakeholders and humanitarian stakeholders in the event of a disaster. The activities the

group undertakes is intended to incentivize the integration of airport preparedness in countries' disaster preparedness planning and other sectoral programs of relevance, ultimately contributing to a number of SDGs including SDG 9 and 11, and the Sendai Framework for Disaster Risk Reduction, to the SAMOA Pathway.

Supporting the availability and use of data for advancing sustainable, innovative and resilient infrastructures, ICAO is the custodian agency of global indicator 9.1.2 Passenger and Freight Volumes, by Mode of Transport. The data and analysis provided is reflected in the annual global SDG report and in the [online UN platform](#) for monitoring the progress towards the SDGs. This indicator assists ICAO Member States to monitor and benchmark air transport infrastructure and to facilitate related investments. These actions drive the sustainable growth of air transport and benefit from the potential offered by intermodal transport.

In the context of COVID-19, ICAO worked closely with the UN Committee for the Coordination of Statistical Activities (CCSA) and contributed to their publication "*How COVID-19 is changing the world: a statistical perspective*", which provided latest information on how COVID-19 affected different aspects of public and private life, from economic and environmental fluctuations to changes that affected individuals in terms of income, education, employment and violence and changes affecting public services such as civil aviation and postal services.

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

The work of the UN Secretary-General's High-Level Advisory Group on Sustainable Transport (2016) and the first and second Global Sustainable Transport Conference (2016 and 2021 respectively) highlighted the need to integrate all sustainable transport planning efforts with balanced development of transport modes. Intermodal or multi modal connectivity with air transport should encompass all modes of transportation flows to, from and within the airport. The strategic placement of quality intermodal infrastructure does not only enhance the connectivity of airports but also supports sustainable social, economic and environmental development at the global, regional and national levels. This has been placed at the core of ICAO's effort to support Member States in overcoming challenges linked to the development of national aviation infrastructures and ensuring efficient integrated transport planning.

Sustainable mobility through various modes of transport is therefore an important component of urban planning and design, infrastructure development and accessibility. This includes integration of air transport systems, as a crucial segment of a multimodal transport system, into the sustainable urbanization planning to facilitate the smooth transport of passengers and cargo traffics. This is particularly important as airports have evolved from simple grass and gravel airfields to airport cities (Aerotropolis), with large scale airport infrastructure to handle aircraft movement, passenger and cargo traffic, as well as non-aviation related undertakings, such as conference centres. Development policies based on transit oriented development models applied to airport development and urban development are crucial determinants in the level of economic activity and the spread of the value of goods and services associated with the use of airport facilities (See ICAO and UN-Habitat joint report *Promoting Synergy Between Cities and Airports for Sustainable Development*).

Good governance of border control and identity management are cornerstones of safe and orderly migration. Harmonized traveller identification management is one of the ways to ensure that identification of individuals by their travel document is conducted with the highest possible degree of certainty, security and efficiency. Identification systems are even more important as there are an estimated one billion people

worldwide who are unable to prove their identity. Those are typically among the poorest and from the most vulnerable groups.

In addition, healthier cities and communities are dependant on the compatibility of airports with their environs, which can be achieved by proper planning and management of airports and land-use planning of the area surrounding the airport. ICAO develops Standards and recommended practices, contained in Annex 16 to the Convention on International Civil Aviation, as well as guidelines to address matters related to airports and metropolitan infrastructure development, land-use and planning, noise, environment and capacity-building. ICAO Airport Planning Manual Part 2, *Land-use and Environmental Management* (Doc 9184) is a principal document which provides a comprehensive analysis of international aviation environmental impacts and outlines strategies to reduce them from the design, planning and operations of airports. Aircraft noise being the primary concern of communities around the airports, the Airport Planning Manual Part 2 introduces a detailed approach to robust noise management, of which land-use planning and associated zoning policies are an integral part. ICAO's *Guidance on the Balanced Approach to Aircraft Noise Management* (Doc 9829), ICAO's *Airport Air Quality Manual* (Doc 9889), and ICAO's Circular 351 – *Community Engagement for Aviation Environmental Management* are other guidance material to address health related issues for people and communities from the adverse effects of operation of airports. ICAO's Eco-Airport Toolkit e-collection is another tool which provides practical and ready-to-use information to support the development of airport infrastructure projects.

The above are a testimony to the importance of integrated urban system planning and multi-sectoral and multi-stakeholder coordination when addressing issues around inclusive, healthier and safer cities and communities that are able to withstand destabilizing effects of negative social phenomena, such as corruption, drug and illicit firearms trafficking and terrorism, unregulated migration, lack of access to public goods, widespread public protests etc.

Last but not least, unmanned industry is rapidly evolving with flying machines and various Unmanned Aerial Systems (UAS), and the complexity of operation of these needs adapting the traditional regulatory system. Unmanned aircraft systems hold the potential to offer solutions to some of today's sustainable mobility issues. For example, humanitarian aid and emergency response operations including scheduled and unscheduled medical deliveries or provision of emergency response to victims of natural or man-made disasters are some of the uses of UAS. The efficiency of the global supply chain, including 'last (and first) mile' deliveries at the local level, could benefit from more sustainable options such as the growing use of new technologies and drone deliveries.

ICAO developed draft guidance for States to establish a National Aviation Planning Framework as a means for coordinating, prioritizing and managing the development of a State's air transport system in a consistent and sustainable manner. The Framework includes a Civil Aviation Master Plan (CAMP) which addresses the interaction of various aspects of aviation at the State level including capacity and efficiency, safety, security, air transport facilitation as well as environmental protection, and includes a discussion of linkages to other planning processes at national, regional and global levels and tools to ensure implementation consistent with the State's overall national development goals.

Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development:

Partnerships and collaboration are essential components of ICAO's work and core to the organization's effective achievement of its mission. Involvement of different stakeholders working together in an

integrated manner by mobilizing and sharing knowledge, expertise, technologies and financial resources is crucial in paving the way for building a better future for aviation industry, as an essential component of the global economy and social progress and an enabler of the Sustainable Development Goals at national, regional and global levels.

The COVID-19 pandemic has demonstrated the importance of reinforcing and revitalizing global partnerships in areas related to assurance of international connectivity as an essential driver of sustainable development. Amid the COVID-19 pandemic, ICAO brought its 193 Member States together with stakeholders from the aviation sector who jointly displayed international cross-sectoral collaboration leading to the Council Aviation Recovery Task Force (CART) series of reports and guidance for “reconnecting the world”.

As the world continues to recover from the pandemic and respond to other pressing crises, national coordination across sectors is necessary to assure continued connectivity has been lacking in many cases. Entities responsible for civil aviation, border management, public health and security must have fora in which they can share views and make decisions collaboratively. These national structures must be mirrored regionally and internationally. It is essential that the UN bodies themselves embody this spirit of cross-sectoral collaboration to ensure that sustainable development considerations from all sides are input to the conversation and suitable decisions made on foot of this.

An example of such partnerships and cross-collaboration is the Collaborative Arrangement for the Prevention and Management of Public Health Events in Civil Aviation (CAPSCA), which is a key global health and travel coordination mechanism and is the only global programme that unites aviation with public health. Through its network of partners, CAPSCA offers an exceptional platform for national, regional and international cooperation at the public and private level, and in all areas of aviation that would be affected by a public health event. CAPSCA membership and activities have expanded this year and continues to be further strengthened in the future.

With the objective to help States and industry cope with economic fallout of the pandemic, ICAO has also developed a *Guidance on Economic and Financial Measures* ([ICAO Guidance on Economic and Financial Measures.pdf](#)). The guidance summarizes a range of possible measures that can be explored by States and the aviation companies to alleviate the imminent liquidity and financial strain on the industry, and more importantly, to strengthen the industry resilience to future crisis.

ICAO also conducts activities aiming for the sustainable development of air transport, which are designed to raise awareness of, and facilitate the implementation of, relevant ICAO policies and guidance while reducing a State’s costs in performing its economic regulatory functions. In this regard, ICAO organized the annual ICAO Air Services Negotiation (ICAN) event, which provides a central meeting place to conduct multiple bilateral (regional or plurilateral) air services negotiations or consultations.

Among several ICAO initiatives aimed at strengthening the means of implementation support and enhancing global partnership, necessitating enhanced coordination and collaboration amongst technical, operational and resource mobilization/partnerships entities within the ICAO Secretariat, is the ICAO iPacks which were introduced with a view to assisting States, in the short-term, to address COVID-19 recovery efforts and, in the medium- and long-term, to support the implementation of new ICAO Standards and Recommended Practices (SARPs).

ICAO’s Global Aviation Training Office (GAT) targeted partnerships on urgent post-pandemic recovery topics are a good example of SDG 17 (partnerships for the goals) since they bring together different sectors

of the economy. GAT has established partnerships to support the recovery of the aviation industry and the achievement of the 2030 Agenda goals.

Key messages and policy recommendations on ways to accelerate progress in achieving SDGs:

Progress on the implementation of SDGs would be improved by providing a clear political recommendation at the HLPF for enhanced coordination within the UN system in addressing the pressing global challenges such as climate change, supply chain and energy crises by building upon the synergies created by the specific mandates of respective UN entities and by recognizing the successful initiatives and achievements being made by specific sectors.

Special needs of LDCs, LLDCs and SIDS should continue to be placed front and centre of the UN efforts in advancing sustainable and inclusive development globally.