AVIATION SAFETY'S CONTRIBUTIONS TO THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)

This Strategic Objective is ICAO and aviation's most fundamental priority. The ICAO Global Aviation Safety Plan (GASP) outlines the key activities and global targets, while numerous programmes and coordinating bodies help drive collaborative safety improvements in every world region.

The mapping below correlates Aviation Safety activities and deliverables contained in the ICAO Business Plan with the supporting targets of the Sustainable Development Goals (SDGs). Aviation Safety related activities contribute to 11 out of 17 SDGs and relevant supporting targets.

AVIATION SAFETY'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 2:
End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Supporting Target(s): 2.1

ICAO Activity

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 13th Air Navigation Conference in 2018 developed recommendations across a wide range of technical subjects and agreed to strategies to guide the development and implementation of the GASP. These strategies include the implementation of safety management by States and aviation service providers which focuses on a performance-based approach to complement compliance with prescriptive regulations.

Unmanned aircraft systems (UAS) and artificial intelligence are being used to improve food quality during crop production or to collect soil samples which will support precision agriculture. While the UAS can bring change in the way we do business to support SDG 2, due regulations are required to fully unleash their potential so that they operate in a safe, secure, efficient and environmentally responsible manner. ICAO - as platform of States for international aviation and through its convening power (e.g. Global Remotely Piloted Aircraft System Symposium and Unmanned Aircraft Systems Industry Symposium) - is ideally positioned to support the development of scalable and interoperable provisions that will accommodate the rapid, yet disparate, pace of technological advancement in unmanned systems.

ICAO assists States in the development of ICAO Plans of Action and technical assistance projects.

ICAO also supports States' rapid and coordinated response to emergencies through its crisis response policy and disaster risk reduction strategy in aviation. ICAO provides urgent assistance to States to develop action plans to address Significant Safety Concerns (SSCs) and contingency plans.

These actions aim at enhancing aviation safety to contribute to SDG 2 by improving accessibility in remote areas and therefore facilitating urgent access to sufficient food to all people, particularly those in vulnerable situations, all year round.

AVIATION SAFETY'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 3:
Ensure healthy lives and promote well-being for all at all ages

Supporting Target(s): 3.3; 3.d

ICAO Activity

ICAO implements the Collaborative Arrangement for the Prevention and Management of Public Health Events in Civil Aviation (CAPSCA) that coordinates the international aviation response to public health risks, such as pandemic. Through this coordination, ICAO promotes the eradication of communicable diseases, including Ebola and Zika, which support the attainment of SDG 3 by strengthening the capacity of all ICAO Member States, in particular developing countries, for early warning, risk reduction and management of national and global health risks. CAPSCA is a multilateral partnership that includes the World Health Organization (WHO) and other stakeholders in this endeavour.

ICAO has implemented a health promotion amendment to its medical standards, requiring Aviation Licensing Authorities of states to implement appropriate aviation-related health promotion for licence holders subject to a Medical Assessment to reduce future medical risks to flight safety. Licensing Authorities are expected to collaborate with national health departments to provide information. ICAO has issued guidance material to states on health promotion and has published a book for pilots with the title "Fitness to fly – a medical guide for pilots". Through these initiatives, the general health and lifestyle of pilots and their families will be enhanced, resulting in preventing or mitigating the effects of lifestyle-related chronic diseases of the general population.

Unmanned Aircraft Systems (UAS) represents one of the fast-evolving technologies in aviation, challenging regulators to appropriately design regulations that ensure safety and security while allowing the industry to thrive. Industries are discovering the multiple applications UAS offer, some of which go beyond basic surveillance, photography, or videos. UN agencies and NGOs are exploring more possibilities of using UAS solutions to deliver vaccines, blood, food and supplies in the most needed areas. As such ICAO works with its 193 Member States and industry groups to reach consensus on Standards and Recommended Practices (SARPs) for aviation, manned and unmanned. The SARPs developed by ICAO's Remotely Piloted Aircraft Systems Panel (RPASP) support IFR operations in controlled airspace and at controlled aerodromes. The regulatory framework that will support remotely piloted aircrafts operating internationally, as a routine part of the air traffic management system is progressing through the RPAS Panel and other groups. ICAO's work on UAS supports progress towards the achievement of SDG3.

AVIATION SAFETY'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 4:

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Supporting Target(s): 4.4

ICAO Activity

ICAO has numerous training and events focused on assisting States in implementing ICAO Standards and Recommended Practices (SARPs), policies and programmes. The Organization supports human resources development strategies established by Member States to ensure their access to a sufficient number of competent personnel to operate the air transport system based on international standards for all its Strategic Objectives, including Aviation Safety. ICAO training activities encompass training development and delivery of courses in areas in which ICAO has intellectual property, such as Global Plans and SARPs, and are accomplished through the TRAINAIR PLUS Programme, ICAO's network of recognized training organizations and industry partners. An ICAO Training Catalogue listing courses under specialized training areas, including flight safety and safety management, is available at https://www.icao.int/training/Pages/Training-Catalogue.aspx. ICAO also convenes global and regional aviation training events to exchange best practices in aviation training, discuss opportunities for the enhancement of human resources development, and identify new effective training tools and techniques. Events such as the Global Aviation Training and TRAINAIR PLUS Symposium build aviation training intelligence by leveraging the abundance of data collected to provide optimal training solutions for the future. These efforts contribute to provide quality education and promote lifelong learning opportunities to all.

ICAO leads the Next Generation of Aviation Professionals Programme (NGAP) that aims at ensuring that enough qualified and competent aviation professionals are available to operate, manage and maintain the future international air transport system. ICAO is working with the United Nations Educational, Scientific and Cultural Organization (UNESCO), International Labour Organization (ILO), the International Telecommunication Union (ITU) and UN Women in support of the NGAP Programme. ICAO and its stakeholders have set up structures and mechanisms to further the work of the Programme

These activities contribute to SDG 4 by increasing the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

AVIATION SAFETY'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 5:

Achieve gender equality and empower all women and girls

Supporting Target(s): 5.5; 5.c

ICAO Activity

ICAO's Gender Equality Programme aims at promoting participation of and enhanced representation of women at all professional posts and higher levels of employment in the global aviation sector. The Gender Equality Programme also urges States, regional and international aviation organizations and the international aviation industry to demonstrate strong, determined leadership and commitment to advance women's rights and to take the necessary measures to strengthen gender equality. In 2018, the South African Civil Aviation Authority (SACAA) and ICAO hosted the first ever Global Aviation Gender Summit. This gathering was supported by the Government of the Republic of South Africa, through the Department of Transport. The Summit was co-organized by SACAA and ICAO, in collaboration with UNESCO. UN Women supported the development of the Summit's programme. The Summit concluded with the adoption of a communique detailing a set of concrete actions that will advance the implementation of Assembly Resolution A39/30 and globally accelerate gender equality as well as empower women throughout the aviation sector.

ICAO collaborates with Member States, aviation industry partners and professional associations, academia, and the UN system on programmes and projects to attract young girls to aerospace and to assist in providing career development opportunities to women working in aviation by undertaking professional assignments at ICAO through which they are able to contribute to specific aspects of the Organization's technical work programmes. These principles are also embedded in the Next Generation of Aviation Professionals Programme (NGAP). ICAO also hosts networking and outreach events aimed at raising awareness for gender in aviation and the advancement of talented women within the global aviation community.

These efforts contribute to SDG 5 by promoting equal leadership opportunities for women and encouraging their full participation in aviation.

AVIATION SAFETY'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 8 :

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Supporting Target(s): 8.2; 8.5; 8.6; 8.8

ICAO Activity

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 13th Air Navigation Conference in 2018 developed recommendations across a wide range of technical subjects and agreed to strategies to guide the development and implementation of the GASP. These strategies include the implementation of safety management by States and aviation service providers which focuses on a performance-based approach to complement compliance with prescriptive regulations.

ICAO also assists States in the development of ICAO Plans of Action and technical assistance projects. These actions aim at enhancing aviation safety which is a prerequisite for sustainable development that will enable higher levels of economic productivity. Through the implementation of these plans and projects, ICAO contributes to SDG 8 by fostering technological upgrade and innovation.

ICAO manages the Next Generation of Aviation Professionals Programme (NGAP) that ensures that enough qualified and competent aviation professionals are available to operate, manage and maintain the future international air transport system. This initiative contributes to SDG 8 by promoting higher levels of economic productivity and decent employment for all, particularly the youth.

ICAO determines global standards and policies concerning *inter alia* medical provisions on medical fitness requirements of licence holders and fatigue management that guide aviation service providers and operational personnel to address the safety implications of fatigue. The effective implementation of these requirements support safe and secure working environments for workers in the aviation sector.

AVIATION SAFETY'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 9:

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Supporting Target(s): 9.1; 9.4; 9.5; 9.a

ICAO Activity

ICAO leads the continuous evolution of the ICAO 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 safety related ICAO Standards and Recommended Practices (SARPs) contained in 16 out of the 19 Annexes to the Chicago Convention. The 13th Air Navigation Conference in 2018 developed recommendations across a wide range of technical subjects and agreed to strategies to guide the development and implementation of the GASP. These strategies include the implementation of safety management by States and aviation service providers which focuses on a performance-based approach to complement compliance with prescriptive regulations.

In particular, ICAO is leading the development and implementation of policies and provisions aimed at mitigating cyber security risks to international civil aviation as well as at fostering the coordinated evolution of the Unmanned Aircraft Systems (UAS) industry. Unmanned aircraft (UA) commonly referred to as "drones" are anticipated to support the development of goods delivery business models, in particular online sale of products and food; inspection of infrastructure and land; monitoring of people, agriculture and the environment; as well as medical logistics and humanitarian activities to name a few. ICAO is both responding to innovations from industry and focusing attention on the need to address the safe, secure and efficient insertion of new types of aircraft (e.g. "drones" and "flying taxis") accompanied by the introduction of new types of operators and operations. Regarding so-called "urban air mobility" infrastructure, tops of parking garages, existing aerodromes and heliports, and even unused land surrounding highway interchanges could form the basis of a distributed network of dedicated operating sites for "flying taxis". As the concept for these activities mature, ICAO will continue to facilitate dialogue and cooperation between regulators and industry stakeholders to assist decision-makers in planning for the safe and efficient integration of these new operations within urban ecosystems. This contributes to SDG 9 by enhancing scientific research, technological capabilities, research and innovation in all States.

ICAO assists States in the development and implementation of ICAO Plans of Action and technical assistance projects to develop and upgrade quality, reliable, sustainable and resilient aviation infrastructure and increase its efficiency. These actions improve safety of the international aviation system, aerodromes and in their vicinity fostering economic development and human well-being. A concrete example of these actions is the implementation of the Comprehensive Regional Implementation Plan for Aviation Safety in Africa (AFI Plan) which facilitates sustainable and resilient infrastructure development in all African Countries.

AVIATION SAFETY'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 10:

Reduce inequality within and among countries

Supporting Target(s): 10.3; 10.b

ICAO Activity

Aviation safety fundamentally contributes to the sustainable development of the international civil aviation system. 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. This framework for the development and implementation of safety-related regional, sub-regional and national plans promotes the uniform and consistent implementation of ICAO safety related Standards and Recommended Practices (SARPs) contained in 16 out of the 19 Annexes to the Chicago Convention. The 13th Air Navigation Conference in 2018 developed recommendations across a wide range of technical subjects, and agreed to strategies to guide the development and implementation of the GASP.

At the initiative of its Council, ICAO launched the No Country Left Behind (NCLB) initiative to assist States that continue to face challenges in effectively implementing these SARPs policies, plans and programmes and with the resolution of Significant Safety and Security Concerns (SSCs and SSeCs). The NCLB is implemented through ICAO's day-to-day operations by focusing and expanding assistance so that all States have an equal opportunity for development. To date, the NCLB initiative, in conjunction with the technical assistance and cooperation programmes as well as the Universal Safety Oversight Audit Programme (USOAP) audit programme have galvanized and focused our support to States to resolve significant safety and security concerns, as well as to strengthen their aviation systems with the aim that all States can realize the benefits that result from a robust civil aviation sector. Since the inception of the NCLB initiative, significant progress was made in increasing the global overall Effective Implementation (EI) level, while the number of States with SSCs has decreased. States are progressing with their State Safety Programme (SSP) Implementation by addressing issues identified in the GAP analysis. This initiative contributes to SDG 10 in reducing inequalities by promoting appropriate legislation, policies and action for the safe development of an air transport system. These actions are aimed at enabling the sustainable growth of the sector and its associated socio-economic benefits.

ICAO Assembly recognized the importance of GASP as a global framework to support this Strategic Objective and raised the need for ICAO to develop a formal global aviation safety programme, including tools, guidance and training materials to assist States and stakeholders meet the GASP objectives. This NCLB initiative provides direction to ICAO, the Regional Aviation Safety Groups (RASGs) and other key stakeholders. This programme also aims at monitoring the on-going work at ICAO, regions and States to improve traceability. It reinforces commitment to current safety initiatives and contributes towards the reduction of inequalities by promoting appropriate policies.

The implementation and monitoring of the GASP at the local level allows ICAO and its Member States to identify common deficiencies in a State safety oversight system and its aviation infrastructure, which may require foreign aid to be resolved. The Organization assists States to prioritize the sector into their national plans, in particular least developed countries (LDCs), landlocked developing countries (LLDCs) and Small Island Developing States (SIDS), with the aim of encouraging foreign aid, including Official Development Assistance (ODA) and also supports the identification and coordination of donors' support.

AVIATION SAFETY'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 11:

Make cities and human settlements inclusive, safe, resilient and sustainable

Supporting Target(s): 11.2; 11.5; 11.b

ICAO Activity

ICAO assists States in the provision of safe and sustainable transport systems for all through the implementation of the Global Aviation Safety Plan (GASP) and safety improvements at and around aerodromes which will contribute to SDG 11 by reducing the number of deaths and people affected by disasters. The effective implementation of the GASP actions are consistent with the sustainable aviation development linkages contained in the New Urban Agenda that contributes to this SDG by strengthening of national and regional development planning.
The concentration of population, economic activities, social and cultural interactions in metropolitan areas has a potential positive implication on the growth and development of air transport and cities. It is with this understanding that ICAO and UN-Habitat forged a partnership specifically examining the synergies between sustainable airports and urban development. The outcome of this partnership was a joint study report finalized in 2018 titled "Promoting Synergy between Cities and Airports for Sustainable Development". This report reflects in general terms the coordination of activities concerning facilitation, safety and security, airport emergency procedures and response, and the management of air navigation facilities installed in the local area and flight safety in the local airspace.

ICAO has a structure that links States with industry to enable newly developed techniques into pragmatic implementation. This structure improves reliability of flight operations that significantly facilitates accessibility to adequate, safe and sustainable transport systems in remote areas.

ICAO supports States' rapid and coordinated response to emergencies through the implementation of its crisis response policy and disaster risk reduction strategy in aviation. In particular, the Organization supports States' in developing action plans to address Significant Safety Concerns as well as crisis response and contingency plans that are focused on the provision of coordinated urgent assistance to populations affected by disasters, in line with the Sendai Framework for Disaster Risk Reduction. These actions contribute to SDG 11 by reducing the impacts of disasters on mortality levels and economic growth and increasing States' resilience.

AVIATION SAFETY'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 13:

Take urgent action to combat climate change and its impacts

Supporting Target(s): 13.1

ICAO Activity

ICAO manages the rapid and coordinated response to emergencies through its crisis response policy and disaster risk reduction strategy in aviation. In particular, the Organization supports States' in developing action plans to address Significant Safety Concerns (SSCs) as well as crisis response and contingency plans that are focused on the provision of coordinated urgent assistance to populations affected by disasters, in line with the Sendai Framework for Disaster Risk Reduction. Through these activities, ICAO provides urgent assistance to Member States that contributes to SDG 13 by increasing their adaptive capacity when faced with natural disasters and strengthening the resilience of aviation infrastructure to natural disasters.

AVIATION SAFETY'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 16:

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Supporting Target(s): 16.1; 16.3; 16.10

ICAO Activity

The development of global standards and policies pertaining to global flight tracking and conflict zone risks as well as use of small unmanned aircrafts contribute to SDG 16 by reducing violence and related death rates around the world. Small unmanned aircraft are increasingly used to monitor at-risk societies; to collect data to be used in humanitarian/emergency response; as well as to support delivery of life-saving aid; and to establish land use and mapping surveys.

The functions of the Secretariat of the organization in the legal field, include the provision of legal advice and assistance to ICAO Member States, and the governing bodies of the Organization, the President of the Council and the Secretary General; research and studies in international air law to promote its codification and, development; and assistance to the Council in the settlement of disputes between Member States. It also executes depositary and treaty registration functions in relation to certain international agreements which ensures public access to information. In carrying out these functions, ICAO contributes to SDG 16 by promoting the rule of law at the national and international level.

AVIATION SAFETY'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 17:

Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Supporting Target(s): 17.6; 17.8; 17.9; 17.13; 17.14; 17.15; 17.16; 17.17; 17.18; 17.19

ICAO Activity

Following the strategic direction of it's the Global Aviation Safety Plan (GASP), ICAO assists its Member States to enhance aviation safety that enables the sustainable development of the air transport system resulting in economic growth. Safety improvements can be identified through the ICAO Universal Safety Oversight Audit Programme (USOAP). The data of the USOAP reveals of improvement gaps at the global, regional and local basis (e.i. regional performance dashboards) facilitation the quantification of resources needed for the implementation of such improvements. This data can also be integrated with traffic demand and capacity forecasts to assess aviation infrastructure needs to meet future demand.

The Organization assists States in developing strategies for cooperation with Civil Aviation Authorities and non-State entities involved in civil aviation, and continuously explores additional sources of funding for technical cooperation and technical assistance projects. The organization thus mobilizes resources from multiple sources and implements effective and targeted capacity-building to support national plans. ICAO developed guidance to support a national aviation planning framework aimed at providing those responsible for sustainable development within a Civil Aviation Authority and other governmental entities with the context required to ensure that all relevant aspects of aviation are included in the strategic planning processes. Further, ICAO also assists its Member States to prioritize aviation into development plans and the mobilization of resources for the implementation of safety improvements. The implementation of the GASP and the international support for the prioritization of aviation in development frameworks contributes to SDG 17 by enhancing policy coordination and coherence while ultimately respecting each country's policy space.

ICAO also runs the ICAO Programme for Aviation Volunteers (IPAV). This work mobilizes and shares knowledge, expertise, technology and financial resources, to support the achievement of the SDGs in all countries, in particular developing countries.

ICAO leads and participates in numerous partnerships to assist States addressing safety challenges focused on sharing knowledge, expertise, technology and resources and performing targeted capacity building projects that facilitate the implementation of the SDGs. The data available for analysis in the area of safety and air navigation continued to grow, in particular through the automatic dependent surveillance — broadcast (ADS-B) network. Analysis of such data required enhanced machine learning algorithms. ICAO has launched pilot projects in relation to deep learning and has released a prototype on the evaluation of the criticality of Notices to Airmen (NOTAMS) for commercial air operations. ICAO also makes available publications, periodicals and including Annexes, Circulars, the ICAO Journal, and manages http://www.unitingaviation.com/. These actions promote international cooperation to foster access to science, technology and innovation and enhance knowledge sharing.

Through these partnerships, the aviation community shares safety data, supports the implementation of capacity building projects and renders assistance, supports safety improvements of aviation operations, and manages groups of technical and assistance experts including the RASGs, COSCAPs and RSOOs, the Comprehensive Regional Implementation Plan for Aviation Safety in Africa (AFI Plan), and the ICAO Aviation Safety Implementation Assistance Partnership (ASIAP).

Aiming to provide guidance on the policies, processes and procedures related to ICAO partnership activities, the Secretariat developed a Partnership Framework to identify targeted partnerships to achieve the SDGs. The international coordination provided by ICAO through multi-stakeholder partnerships ensures policy coherence for sustainable development.

ICAO's is leading actions to face emerging challenges to the aviation sector, including the implementation of a

Strategy on Disaster Risk Reduction and Response Mechanisms in Aviation which is closely coordinated with global and regional partners and is supported by the mobilization and sharing of necessary knowledge, expertise, technology and financial resources The development of provisions to mitigate cyber security risks that may affect air navigation services enhances the use of information and enabling technology.