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## ENVIRONMENTAL PROTECTION'S CONTRIBUTION TO THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)

This Strategic Objective covers all aviation-related environmental activities, including aircraft noise and emissions that affect local air quality and climate change. It provides policies, standards, guidance and tools, as well as assistance to countries, taking into account other UN environmental policies.

The mapping below correlates Environmental Protection activities and deliverables contained in the ICAO Business Plan with the supporting targets of the Sustainable Development Goals ([SDGs](#)). Environmental Protection related activities contribute to 14 out of 17 SDGs and relevant supporting targets.



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## ENVIRONMENTAL PROTECTION'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 2:

*End hunger, achieve food security and improved nutrition and promote sustainable agriculture*

**Supporting Target(s): 2.3; 2.4; 2.a**

### ICAO Activity

Sustainability criteria proposed by ICAO for the production of sustainable aviation fuels, as requested by the ICAO Assembly, will contribute to SDG 2 by ensuring that the production of these fuels avoids competition with food supply.

In addition, sustainable aviation fuels production shall help to end hunger and all forms of malnutrition by enhancing the implementation of resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaption to climate change, extreme weather, drought, flooding and other disasters. This might comprise increased investment, including through enhanced international cooperation, in rural infrastructure, agricultural research, technology development to enhance agricultural productive capacity in developing countries, in particular least developed countries.



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## ENVIRONMENTAL PROTECTION'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 3:

*Ensure healthy lives and promote well-being for all at all ages*

### Supporting Target(s): 3.9

#### ICAO Activity

ICAO contributes to SDG 3 by limiting the impact of international civil aviation operation on local air quality around airports and public health by establishing international Standards and Recommended Practices ([SARPs](#)) to regulate aircraft noise and engine emissions, including NOx and particulate matter (PM).

Through the work of its Committee on Aviation Environmental Protection ([CAEP](#)), ICAO fosters greater understanding of the impacts of noise and emissions that affect local air quality and health, and develops and maintains the environmental Standards contained in Annex 16 – *Environmental Protection*, Volumes I and II to the *Chicago Convention* and other guidance material to address these impacts.

In addition, ICAO cooperates with the World Health Organization ([WHO](#)) and other relevant international organizations to improve knowledge of the human health impacts of aviation noise and emissions.



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## ENVIRONMENTAL PROTECTION'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 is supporting the achievement of SDG 4 by convening hands-on training Seminars and Symposia for Member States focused on the exchange of latest knowledge on environmental subjects, as well as assisting States to implement environment-related ICAO policies, Standards and Recommended Practices ([SARPs](#)) and guidance, providing inclusive and equitable quality education to all.

This includes training Seminars on States' Action Plans to reduce CO<sub>2</sub> emissions from international civil aviation (more than 130 Focal Points trained) [[https://www.icao.int/environmental-protection/Pages/ClimateChange\\_ActionPlan.aspx](https://www.icao.int/environmental-protection/Pages/ClimateChange_ActionPlan.aspx)], the [Global Aviation Dialogues](#) and the Regional Seminars and Workshops on the Carbon Offsetting and Reduction Scheme for International Aviation ([CORSIA](#)), ICAO's landmark agreement adopted by the 39th Assembly in 2016. [<https://www.icao.int/Meetings/RS2017>], [<https://www.icao.int/Meetings/RS2018>], [<https://www.icao.int/Meetings/RS2019>].

In partnership with [UNITAR](#) and under the ICAO-EU joint assistance project, ICAO developed a [tutorial](#) on States' Action Plans.

ICAO also developed a three-day [CORSIA Verification Course](#) that provides training on how to verify CO<sub>2</sub> Emissions Reports that are prepared by aeroplane operators, in accordance with the provisions of Annex 16, Volume IV.

In addition, ICAO launched the ICAO ACT-CORSIA (Assistance, Capacity-building and Training for the CORSIA) Programme, to harmonize and bring together all relevant actions and promote coherence to capacity building efforts related to CORSIA implementation.



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## ENVIRONMENTAL PROTECTION'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 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 promotional 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.



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## ENVIRONMENTAL PROTECTION'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 7:

*Ensure access to affordable, reliable, sustainable and modern energy for all*

**Supporting Target(s): 7.2; 7.3; 7.a**

### ICAO Activity

ICAO encourages its Member States to set a coordinated approach in national administrations for policy actions and investment to accelerate the appropriate development, deployment and use of clean and renewable energy sources for aviation, including the use of sustainable aviation fuels

Recognizing the need for greater exchange of information on sustainable aviation fuels, ICAO held its first Conference on Aviation and Alternative Fuels in 2009 and launched the ICAO Global Framework on Aviation Alternative Fuels ([GFAAF](#)). This online platform provides a continuously updated database of activities and developments in the field of sustainable aviation fuels. The GFAAF also includes an online map illustrating, as a live feed, flights operating with such fuels.

ICAO convened the Second Conference on Aviation and Alternative Fuels ([CAAF2](#)) in October 2017, where the conference adopted a Declaration and endorsed the “2050 ICAO Vision for Sustainable Aviation Fuels” as a living inspirational path and calls on States, industry and other stakeholders, for a significant proportion of aviation fuels to be substituted with sustainable aviation fuels by 2050.

In addition, electric aircrafts are expected to undertake a critical step in a grand technological revolution in aviation, that in the near future might match the present migration of the automotive industry from combustion engines to electric motors. ICAO is expected to play an important role in this regard, particularly in the certification of these new technologies.

ICAO also promotes energy innovation at airports, such as solar-at-gate projects, including through the development of a Clean Development Mechanism (CDM) methodology in cooperation with the United Nations Framework Convention on Climate Change ([UNFCCC](#)) secretariat, and pilot projects for solar-powered gates at airports under the ICAO partnerships with [UNDP](#) and the EU. These actions contribute to SDG 7 by increasing the share of renewable energy in the global energy mix and improving energy efficiency.

Moreover, through the convening of international Conferences and Seminars, such as the [ICAO Green Airports Seminar](#), and the Seminar on Global Aviation Partnerships on Emissions Reductions ([E-GAP](#)), ICAO encourages and facilitates the exchange of information and best practices amongst stakeholders on clean energy to reduce the impact of airport operations on the environment, as well as promote cooperation and action on a global level.

The Organization cooperates with international organizations and NGOs, such as SE4ALL and International Renewable Energy Agency ([IRENA](#)), as well as regional and international financial institutions such as the World Bank, to facilitate the development and deployment of innovative clean energy technologies for aviation.

These actions contribute to this SDG 7 by enhancing international cooperation to facilitate access to clean energy research and technology.



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## ENVIRONMENTAL PROTECTION'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; 8.4; 8.9**

### ICAO Activity

ICAO supports inclusive green growth as a pathway to sustainable development for the aviation sector, and as a mean to improve resource efficiency in consumption and production while decoupling economic growth from environmental degradation.

ICAO fosters green economy initiatives as enablers of improvements in new green technologies and clean energy for the aviation sector, and investments in aviation biofuels produced through sustainable agricultural practices and processing processes, creating green jobs. A green economic growth for the aviation sector, among other effects, has the potential to generate significant social benefits, including safe and secure working environments for all workers, and sustainable tourism that creates additional jobs and promotes local heritage, culture and products.

These actions contribute to SDG 8 by promoting higher levels of economic productivity through diversification, technological upgrade and innovation.



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## ENVIRONMENTAL PROTECTION'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**

### ICAO Activity

ICAO recognizes the need to consider adaptation as the consequences of climate change that need to be anticipated and effectively addressed.

ICAO's work on adaptation to climate change includes: improving the resilience of aviation infrastructure in cooperation with the World Meteorological Organization ([WMO](#)) and [EUROCONTROL](#); and the work programme of the Committee on Aviation Environmental Protection ([CAEP](#)) Working Group 2 (Airports and Operations) and the Impacts and Science Group (ISG), to serve as a starting point for further work to identify the potential impacts of climate change on international aviation operations and related infrastructure and adaptations measures to address the impacts, contributing to SDG9.

ICAO recently developed a Climate Change Adaptation Synthesis report which is aimed at identifying the impact of climate change on international aviation infrastructure and services, the level of awareness of stakeholders and possible actions to enhance resilience. These guidance documents are relevant to all ICAO Member States and bring particular added value to States with limited resources and environmental capabilities.





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## ENVIRONMENTAL PROTECTION'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 10:

*Reduce inequality within and among countries*

### Supporting Target(s): 10.b

#### ICAO Activity

At the suggestion 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. 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.

Regarding the environmental protection, ICAO developed a robust assistance and capacity-building strategy for its Member States to undertake meaningful action to address emissions from international civil aviation. An essential pillar of this strategy has been to promote the development of State Action Plans to reduce emissions from aviation operations, by providing guidance material in the context of State Action Plans (Doc 9988) and hands-on assistance and training to States, through the convening of regional seminars and on-site training at ICAO headquarters.

In addition, the Organization facilitates access to financial resources, technology transfer, and capacity-building to reduce the environmental impact of their aviation sectors, such as through the [ICAO-EU joint assistance project](#), and the [ICAO-UNDP joint assistance project](#) (with funding from the GEF).

Recently, emphasizing the importance of a coordinated and harmonized approach under ICAO for "Assistance, Capacity-building and Training" of Member States to implement [CORSIA](#), ICAO launched in the ACT-CORSIA programme. Under this programme ICAO developed training materials and organized "Training of Trainers" sessions in which the experts from donor States were trained to deliver on-site training to recipient States. An impressive number of buddy partnerships have been established under ACT-CORSIA, involving 15 donor States and more than 95 recipient States. The ACT-CORSIA initiative is one of the most successful examples of No Country Left Behind thanks to all Member States who have cooperated hand-in-hand with ICAO to make it a complete success.



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## ENVIRONMENTAL PROTECTION'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 11:

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

**Supporting Target(s): 11.3; 11.6; 11.a**

### ICAO Activity

ICAO develops and maintains guidance on eco-friendly airports, evaluates policies for aircraft recycling and establishes Clean Development Mechanism (CDM) methodologies for aviation, which will allow aviation projects to qualify for the generation of carbon credits under the CDM of the United Nations Framework Convention on Climate Change ([UNFCCC](#)).

ICAO also implements and monitors environmental assessment guidance including on matters regarding Performance-based Navigation ([PBN](#)). These activities, along with the development and update of SARPs addressing local air quality, through the maintenance of Annex 16 – Environmental Protection, Volume II, the update of Doc 9501, Environmental Technical Manual and Doc 9889, Airport Air Quality Manual, the Eco-Airport e-collection, as well as the work undertaken by the Committee on Aviation Environmental Protection ([CAEP](#)) working groups, allow ICAO to contribute to SDG 11 by supporting sustainable urbanization and human settlement planning at the national level, support the establishment of positive environmental links between regions and thus, reduce adverse environmental impacts of cities through improvements in air quality and waste management.



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## ENVIRONMENTAL PROTECTION'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 12:

*Ensure sustainable consumption and production patterns*

### Supporting Target(s): 12.4

#### ICAO Activity

ICAO develops and maintains guidance on eco-friendly airports and evaluates policies for aircraft recycling. The Organization thus directly contributes to SDG 12 by promoting the environmentally sound management of wastes through their life-cycle, preventing air, water and soil pollution, and consequently minimizing their adverse impacts on health and the environment.

ICAO's environmental SARPs, which are addressed and maintained in Annex 16 - *Environment*, and relevant guidance material, including the Environmental Technical Manuals and Doc 9184, Airport Planning Manual, contribute to enhancing sustainable consumption and production patterns.

In addition, a series of e-publications is being developed by the Committee on Aviation Environmental Protection ([CAEP](#)) and made publicly available under the "[Eco-Airport Toolkit E-collection](#)" and information on circular economy in aviation is included in the [ICAO Environmental Report 2019](#).



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## ENVIRONMENTAL PROTECTION'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 13:

*Take urgent action to combat climate change and its impacts*

**Supporting Target(s): 13.2; 13.3; 13.a; 13.b**

### ICAO Activity

ICAO provides Member States with internationally-agreed policies, Standards, guidance and tools, aimed at reducing or limiting the environmental impact of CO<sub>2</sub> emissions from international aviation, including the development and implementation of a "basket of measures" to meet the global aspirational goals of a 2% annual fuel efficiency improvement, and carbon neutral growth from 2020.

Significant progress has been achieved on the implementation of all the elements of the basket of measures, namely innovative aircraft technologies, more efficient operational procedures, sustainable aviation fuels, and a global market-based measure.

Regarding aircraft technologies, ICAO adopted in March 2017 the first-ever CO<sub>2</sub> emissions Standard for aeroplanes. In this regard, this new aeroplane CO<sub>2</sub> emissions Standard represents the world's first global design certification standard governing CO<sub>2</sub> emissions for any industry sector. The Standard will apply to new aircraft type designs from 2020, and to aircraft type designs already in-production as of 2023.

Considerable progress has also been achieved with respect to operational improvements, for instance by realizing more efficient take-offs and landings using Performance-based Navigation ([PBN](#)), bringing increased flexibility in our approach to airspace use and route design, as well as improved Air Traffic Flow Management.

While technical and operational improvements are well under way, cleaner and more sustainable energy sources will be a real game-changer for aviation emissions reduction and sustainable aviation fuels are essential to ICAO's environmental strategy. While the technical feasibility, environmental impacts and safety of biofuels have been well-demonstrated, ICAO is now fostering their large-scale deployment. ICAO launched the Global Framework on Aviation Alternative Fuels ([GFAAF](#)). This online platform provides a continuously updated database of activities and developments in the field of sustainable aviation fuels, as well as useful documentation and links, to support information sharing and dissemination for the benefit of the aviation fuels community.

In 2016, the ICAO adopted a landmark Assembly Resolution A39-3 on the Carbon Offsetting and Reduction Scheme for International Aviation ([CORSIA](#)). This historic agreement on CORSIA, the first-ever market based measure addressing carbon emissions of a major industry sector at the global level, reflected several years of intensive efforts by ICAO and its Member States, in cooperation with the aviation industry and other stakeholders.

For the implementation of CORSIA, ICAO adopted a new Standards and Recommended Practices ([SARPs](#)) containing requirements for Monitoring, Reporting and Verification (MRV) of CO<sub>2</sub> emissions, applicable from 1 January 2019. ICAO is presently in the process of determining eligible emissions units which airlines will purchase in order to meet their offsetting requirements under CORSIA.

ICAO is currently working on issues related to the adaptation to climate change impacts on aviation infrastructure and operational procedures, through the development of new guidance material on this subject.

ICAO also assists States to integrate and implement CO<sub>2</sub> reduction measures included in their state Action Plans, in particular in developing States and Small Island Developing States (SIDS), with the aim of providing technical assistance, including with resources from the [ICAO – UNDP and the Global Environment Facility](#) (GEF), and from [ICAO-EU assistance projects](#), and through a capacity building strategy for effective climate change-related action.



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## ENVIRONMENTAL PROTECTION'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 15:

*Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss*

**Supporting Target(s): 15.3; 15.b**

### ICAO Activity

ICAO and its Member States have been working together expeditiously with the industry to foster the development and deployment of Sustainable Aviation Fuels ([SAFs](#)). SAF will consider land-use change effects that may be associated with SAF production. This will contribute to a sustainable use of terrestrial ecosystems, such as forests. For example, the production of SAF from forestry residues can be an essential component of sustainable forest management.



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## ENVIRONMENTAL PROTECTION'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 functions of ICAO 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 this SDG by promoting the rule of law at the national and international level.



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## ENVIRONMENTAL PROTECTION'S CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOAL 17:

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

**Supporting Target(s): 17.3; 17.6; 17.7; 17.8; 17.9 17.13.; 17.14; 17.15; 17.16; 17.18; 17.19**

### ICAO Activity

ICAO assists States to integrate and implement CO<sub>2</sub> reduction measures included in their [State Action Plans](#), in particular in developing States and Small Island Developing States (SIDS), with the aim of providing technical assistance, including with resources from the [ICAO – UNDP and the Global Environment Facility](#) (GEF), and from [ICAO-EU assistance projects](#), and through capacity building strategy for effective climate change-related action.

ICAO also works on enhancing the recognition of its leadership regarding aviation environmental matters through international cooperation and the support of UN environmental initiatives. ICAO contributes to the appropriate mechanisms established to attain the SDGs, providing input to United Nations Framework Convention on Climate Change ([UNFCCC](#)) process and participating at the Conference of the Parties ([COP](#)) to the UNFCCC, exploring opportunities for financing green aviation initiatives and fostering strategic partnerships, including with the World Health Organization ([WHO](#)), World Meteorological Organization ([WMO](#)), International Maritime Organization ([IMO](#)), and International Renewable Energy Agency ([IRENA](#)), among others, on matters affecting international aviation and climate change.

ICAO also contributes to the Intergovernmental Panel on Climate Change ([IPCC](#)) Assessment Reports and United Nations Environment ([UNEP](#)) publications and publishes ICAO's triennial Environmental Reports. Through these efforts, ICAO contributes to SDG 17 by facilitating the generation of knowledge, technology transfer and resource sharing, through various types of partnerships. The Secretariat developed a Partnership Framework with the aim to provide guidance on the policies, processes and procedures related to ICAO partnership activities in support of the SDGs.

In addition, ICAO cooperates with private-sector stakeholders on the understanding of aviation impacts on the environment and on the establishment of policies to address such impacts.

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 financial resources from multiple sources and implements effective and targeted capacity-building activities. ICAO also runs the ICAO Programme for Aviation Volunteers ([IPAV](#)). This work mobilizes and share knowledge, expertise, technology and financial resources, to support the achievement of the SDGs in all countries, in particular those developing.