



ICAO

ENVIRONMENT



International Civil Aviation Organization Environmental Work

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ICAO

ENVIRONMENT

International Civil Aviation Organization

UN specialized agency

Established by the “Chicago Convention” in 1944

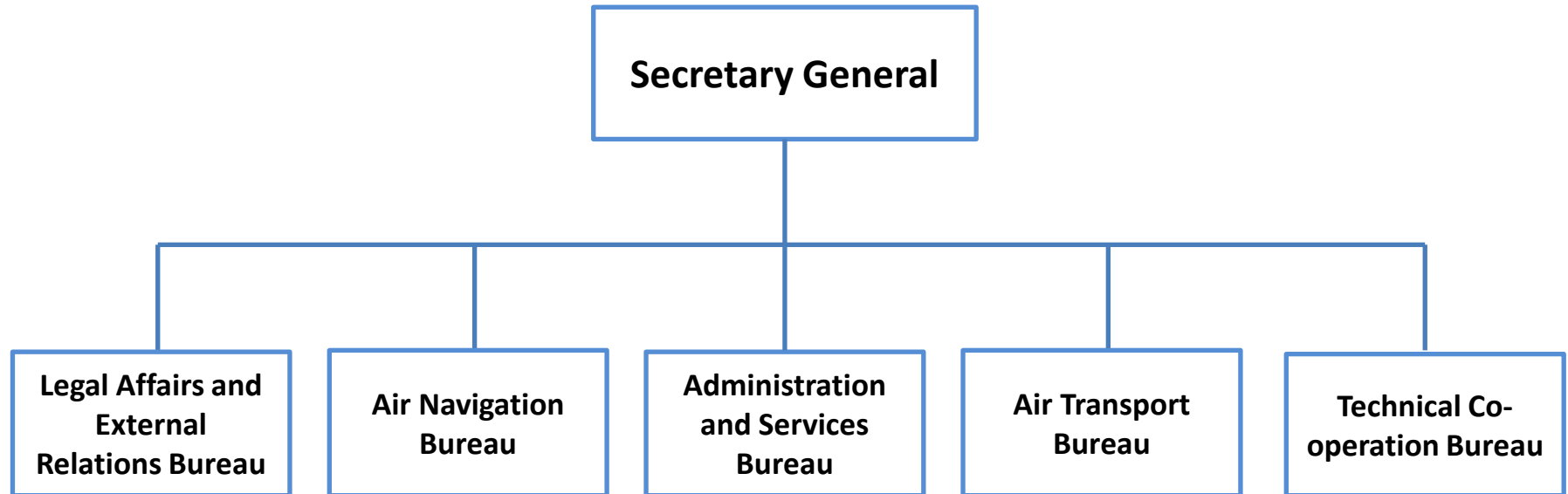
Forum for cooperation in all fields of civil aviation

191 Contracting States

Standards, policies & guidance for environmental protection since 1960's

Focus on aircraft noise, local air quality and global climate





ICAO Environment Branch is under the Air Transport Bureau (ATB)





SOCIETY

3 billion passengers per year carried worldwide¹

56.6 million jobs supported by aviation worldwide²

Scheduled worldwide passenger traffic forecast to **grow at 4.4%** per year¹

ECONOMY

2.2 trillion USD global economic impact²

Up to **3.5% of global GDP** supported²

35% of world trade by value carried²

ENVIRONMENT

2% of global human-made CO₂ emissions³, approximately **65% of this 2% are from international aviation (≈1.3%)**

Fast, reliable, and safe mode of transport

No comparative alternatives for long haul passenger transport

Source: 1. ICAO Facts and Figures retrieved 27 March 2014, 2. ATAG "Aviation Benefits Beyond Borders,"2010, 3. IPCC 4th Assessment Report, 2007.





dB

Noise

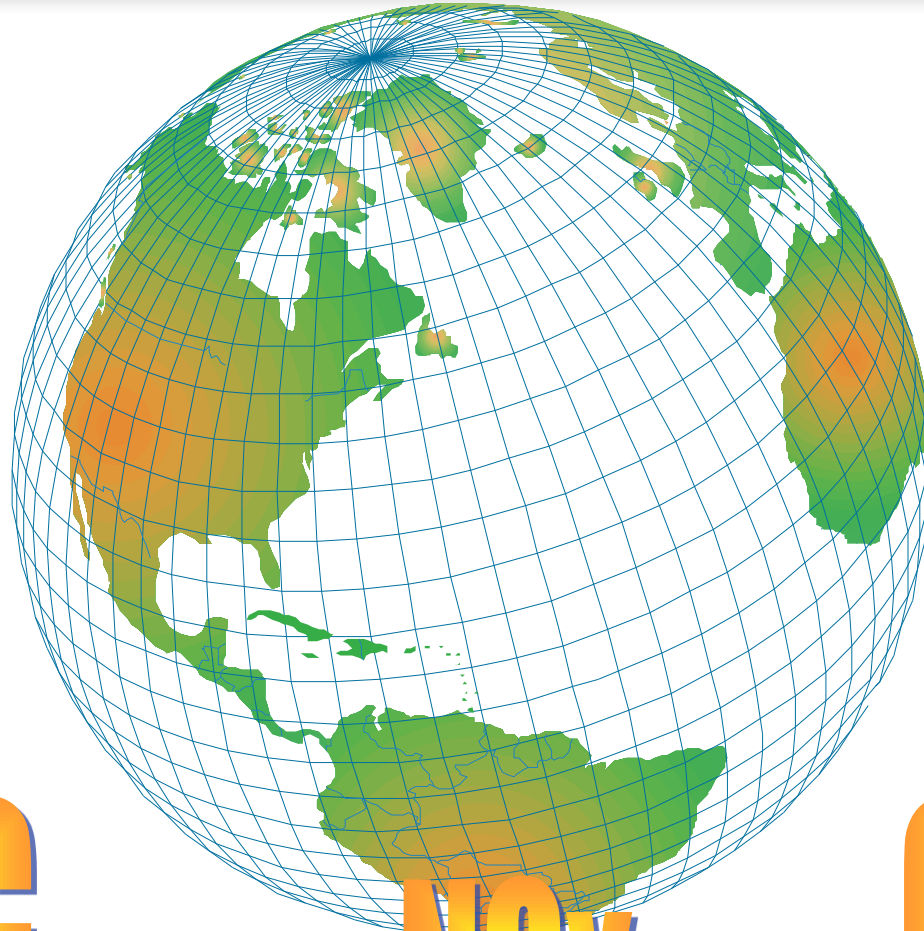
Emissions

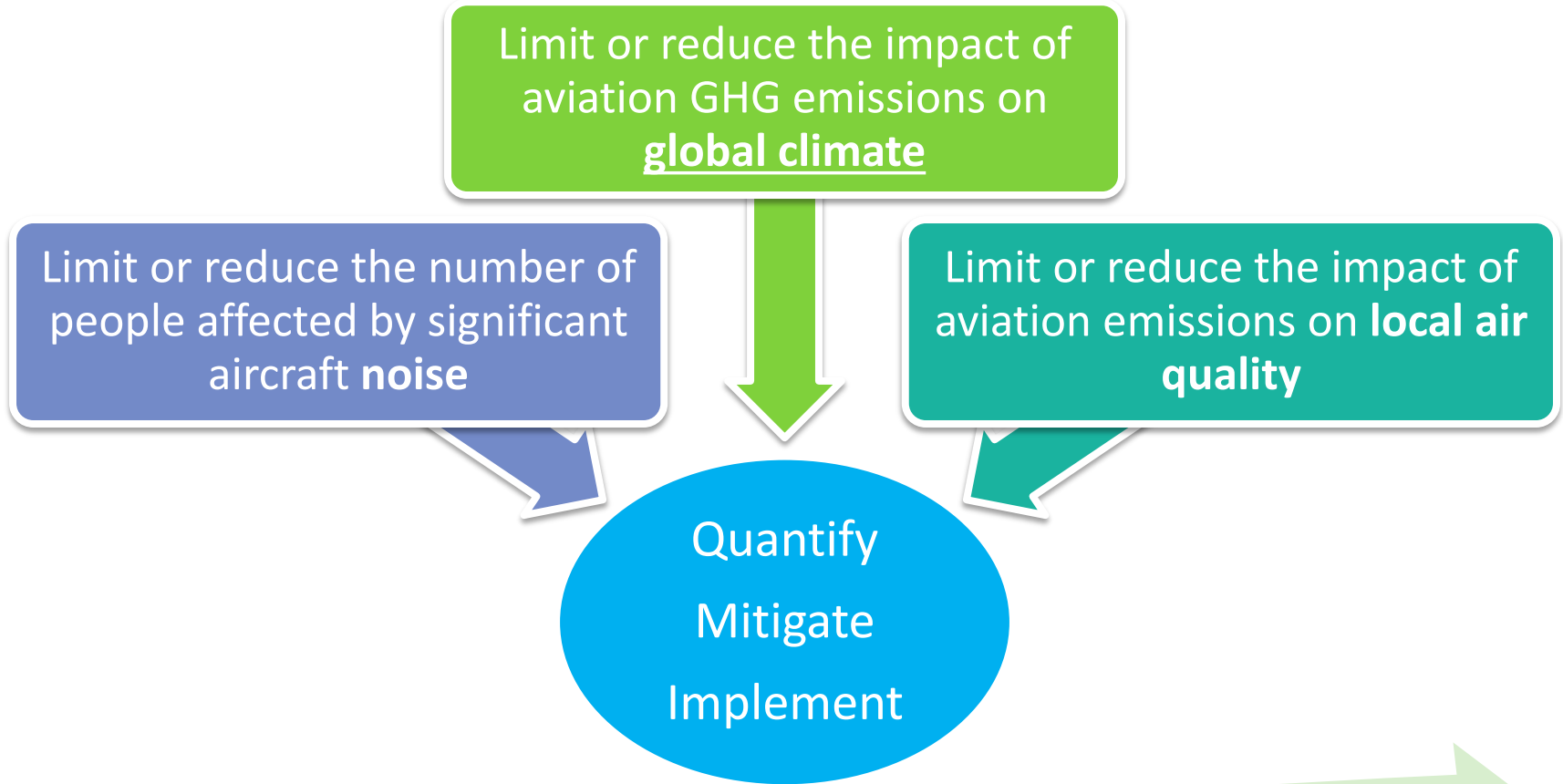
CO₂

HC

NO_x

CO





Minimize the adverse effect of global civil aviation on the environment



Approach to Quantification through:

- Data Collection and Compilation (RTK, Fuels and Emissions Reduction)
- Forecasting
- Modelling

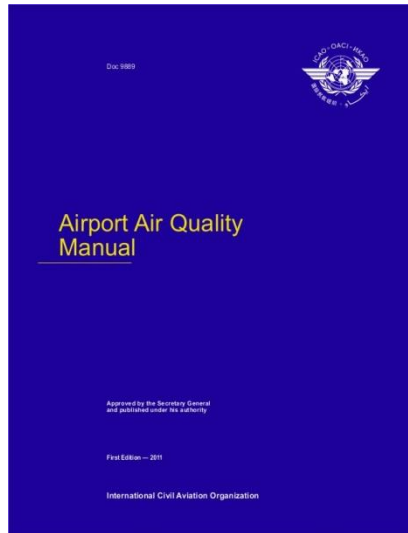
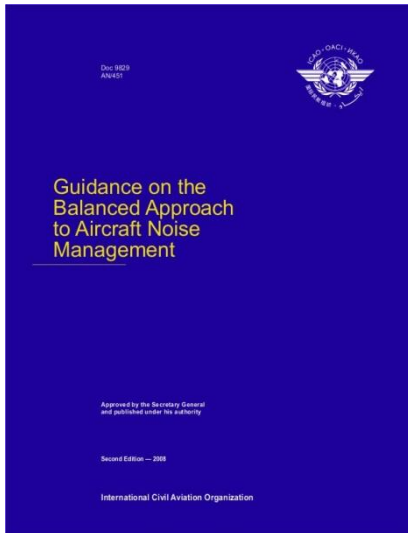
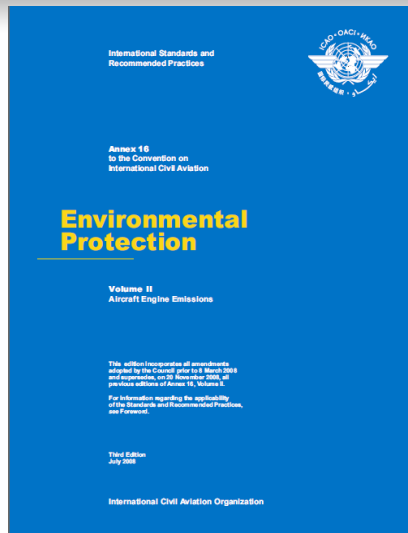
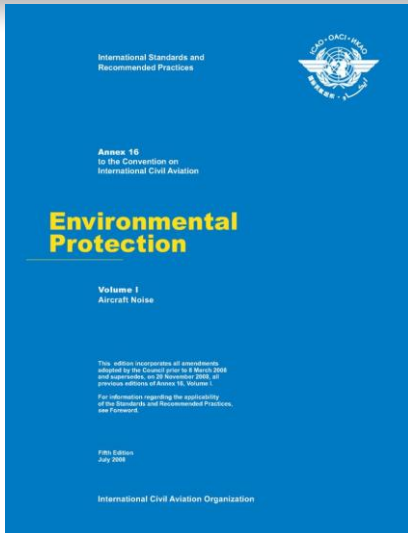
Approach to Mitigation through:

- Technology and Standards
- Operational Measures
- Market-based Measures
- Alternative Fuels

Approach to Implementation through:

- States' action plans and Assistance to States





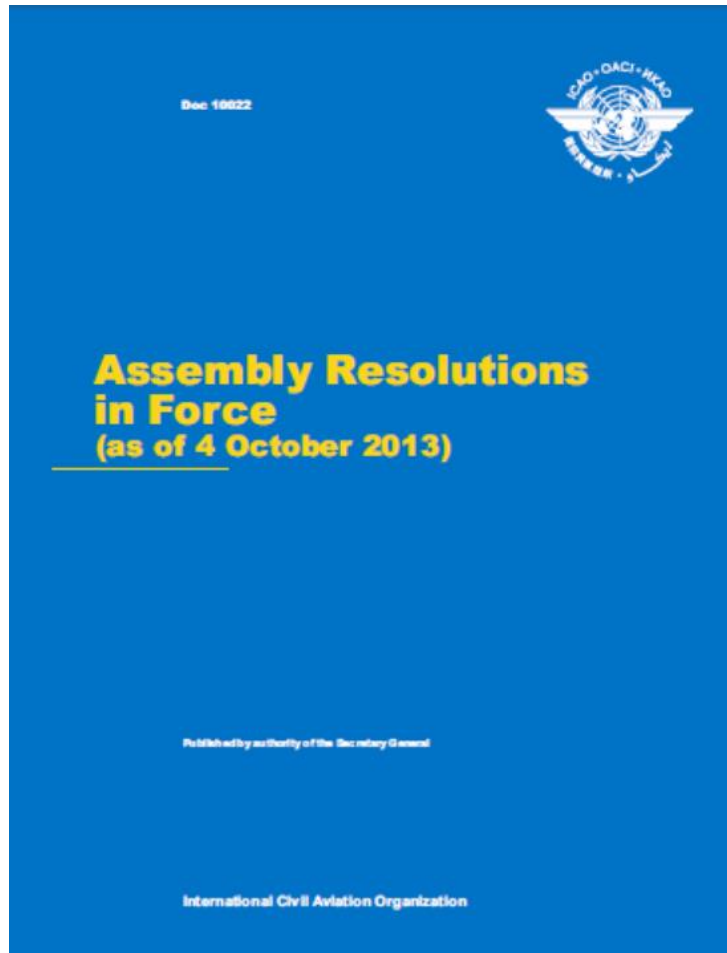
- **ICAO SARPs**
Annex 16 – Volume I, Aircraft Noise
Annex 16 – Volume II, Aircraft Engine Emissions

- **ICAO GUIDANCE**
 (examples)

NOISE – *Guidance on the Balanced Approach to Aircraft Noise Management* (Doc 9829)

EMISSIONS – *Airport Air Quality Manual* (Doc 9889)

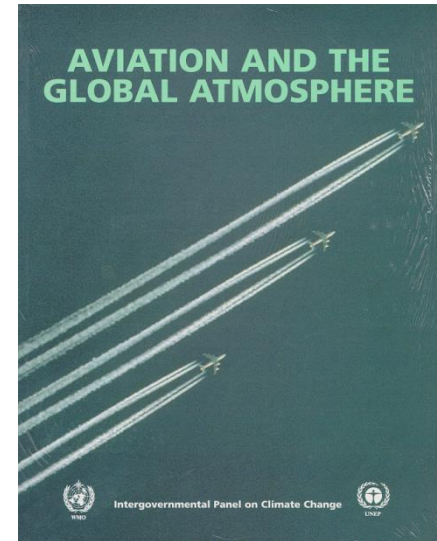




- **A38-17:** Consolidated statement of continuing ICAO policies and practices related to environmental protection – General provisions, noise and local air quality
- **A38-18:** Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change



- IPCC Special Report on Aviation and the Global Atmosphere (1999)
- Climate Change 2007, the Fourth Assessment Report (AR4) published in 2007
- Kyoto Protocol, adopted 1997 came into effect 16 February 2005 – “... to pursue limitation or reduction of emissions of greenhouse gases from international aviation, working through ICAO”





Liaison with other UN Bodies and International Organizations

<p>UN Framework Convention on Climate Change (UNFCCC)</p> <ul style="list-style-type: none"> • Implementation of the Convention and Kyoto Protocol (Art 2.2) • Post-2012 Negotiation on Climate Change • Coordinate Activities and Inputs to SBI, SBSTA, ADP • Aviation Emissions Data and Methodological Issues • Flexible Mechanisms – Aviation Projects for CDM 	<p>Food and Agriculture Organization (FAO)</p> <p>Agricultural aspects of Sustainable Alternative Fuels</p>
<p>Intergovernmental Panel on Climate Change (IPCC)</p> <ul style="list-style-type: none"> • Special Report on Aviation and the Global Atmosphere – 1999 • IPCC 4th and 5th Assessment Reports • Coordination on Methodologies • IPCC Guidelines for National Greenhouse Gas Inventories • IPCC Emissions Factors Database • IPCC Emissions Scenarios – Aviation Scenarios Inputs 	<p>UN Economic Commission for Europe (UNECE)</p> <p>Conference on Transport and Environment</p>
<p>UN Environment Programme (UNEP)</p> <ul style="list-style-type: none"> • EMG/IMG – Carbon Neutral UN Initiative • EMG/IMG – Green Economy • EMG/IMG – Sustainability Management • Sustainable UN (SUN) 	<p>UNECE Convention on Long-Range Transboundary Pollution (CLRTAP)</p> <p>Protocols on Substances – NO_x, Volatile Organic Compounds (VOCs)</p>
<p>UN World Meteorological Organization (WMO)</p> <ul style="list-style-type: none"> • Adaptation • Data Collection • CAEP Technical Input 	<p>Ozone Secretariat (Montreal Protocol)</p> <ul style="list-style-type: none"> • Updates/guidance Regarding Montreal Protocol for the Depletion of Ozone • Scientific Assessment Panel • ANB in Charge of Use of Halons for Aircraft Fire-fighting
<p>UN Chief Executives Board for Coordination (UN CEB)</p> <ul style="list-style-type: none"> • Participation on High Level Meetings • Statements on Climate Change Mitigation 	<p>International Standards Organization (ISO)</p> <ul style="list-style-type: none"> • TC20 – Aircraft and Space Vehicles • TC70 – Internal Combustion Engines* • TC146 – Air Quality • TC207 – Environmental Management* <p><small>*Indirectly</small></p>
<p>UN Industrial Development Organization (UNIDO)</p> <ul style="list-style-type: none"> • Participation on High Level Meetings • Cooperation on Climate Change 	<p>Society of Automotive Engineers (SAE International)</p> <ul style="list-style-type: none"> • Aircraft Exhaust Emissions measurement (E-31) • Aircraft Noise Measure & Noise Aviation Emission Modeling (E-21) • Ac-9 Aircraft Environmental Systems Committee
<p>UN Commission on Sustainable Development (UN CSD)</p> <ul style="list-style-type: none"> • Agenda 21 and Further Developments • Rio+12 • MDG • SDG 	<p>International Electrotechnical Commission (IEC)</p> <ul style="list-style-type: none"> • Noise Measurement Instruments (Electroacoustic, Instrument Specifications, Performance Requirements) • IEC Publication Nos 179, 225, 651 and 804 • IEC 60942; 61094 (Parts 3 and 4); 61260/61672-1
<p>UN World Health Organization (WHO)</p> <p>Coordination on Noise and Health Legislation/Research Regarding Aviation</p>	<p>International Chamber of Commerce – Commission on Transport and Logistics (ICC CST)</p> <p>Cooperation on Air Transport and Environment</p>
<p>International Maritime Organization (IMO)</p> <p>Cooperation on climate change regarding sectoral approaches (bunkers)</p>	<p>World Economic Forum (WEF)</p> <p>Cooperation on Climate Change Projects</p>
<p>UN World Tourism Organization (UNWTO)</p> <p>Aviation Environmental Policies and Tourism</p>	<p>International Energy Agency (IEA)</p> <p>Data Sharing on Related Issues (Fuel, CO₂)</p>
<p>High level Committee on Programmes (HLCP)</p> <ul style="list-style-type: none"> • UN System Coordination • Climate Change • UNFCCC COP/CMP 	<p>International Renewable Energy Agency (IRENA)</p> <ul style="list-style-type: none"> • Renewable Energies • Aviation Biofuels

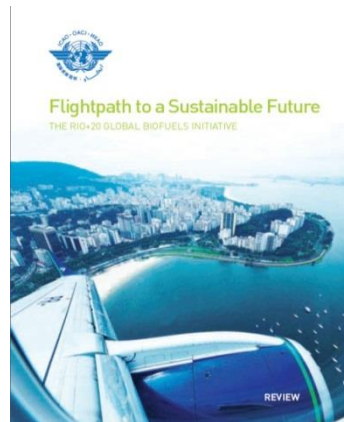
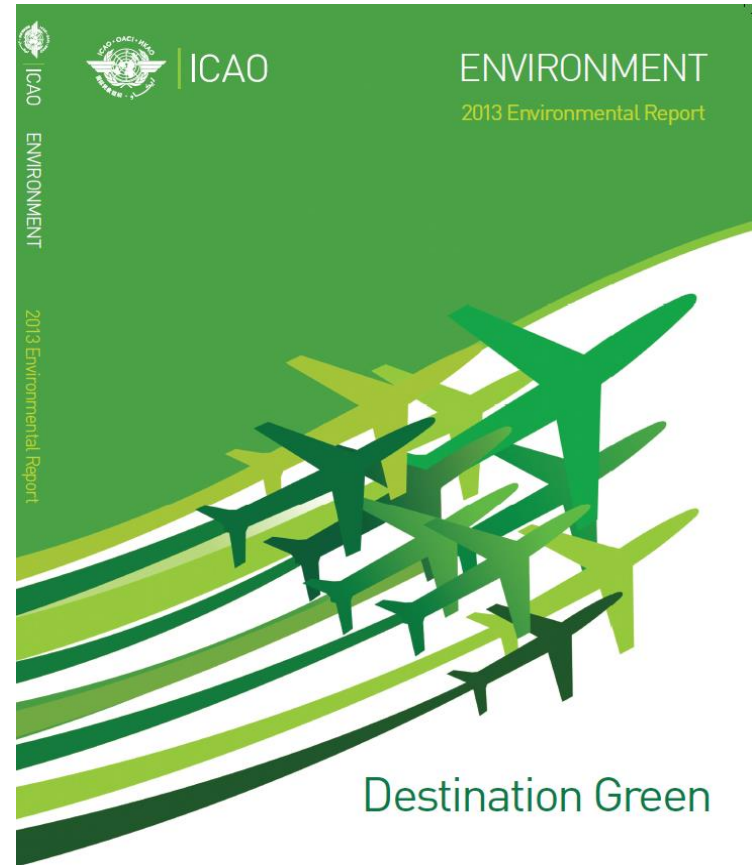
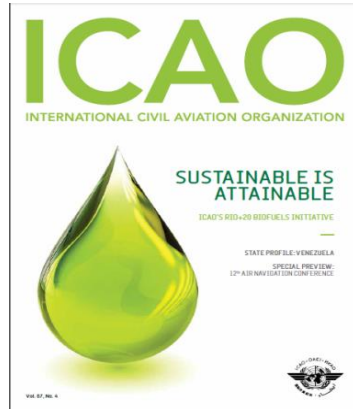
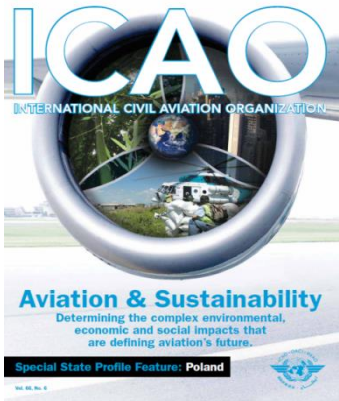


- **ICAO Work priorities are:**
 - State action plans and assistance
 - Sustainable alternative fuels for aviation
 - Market-based Measures (MBMs)
 - Global aspirational goals
 - CO₂ Standard expected to be developed by 2016; and
 - work in cooperation with other UN bodies in particular in support to the UNFCCC process
- **Climate change will remain the main challenge on the ICAO environmental activities in the upcoming years.**





Additional information



For more information on our activities, please visit ICAO' website: <http://www.icao.int/env>

