Climate Change Adaptation for International Transport: Preparing for the Future

16 to 17 April 2019

Adaptation: key issues and experiences, recent initiatives and developments – Airports and Aviation

Presentation by

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UNCTAD Ad Hoc Expert Meeting on Climate Change Adaptation for International Transport: Preparing for the Future

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16-17 April 2019, Geneva

ATM Today
Air Transport – Air Navigation - Europe

ICAO: The contracting States recognise that every State has complete and exclusive sovereignty over the airspace above its territory.

EUROCONTROL
- 41 Member States, typically each with its own ANSP
- Approximately 64 Area Control Centres (ACC)
- Over 700 sectors when at full capacity
- Approx. 17,000 Air Traffic Controllers
- 14.2 million flight hours controlled
EUROCONTROL’s work on climate adaptation

Right here, right now?
Climate Change: is it happening now?

Well we can’t associate it with specific events…

Weather impact in Europe is increasing
Aviation is used to disrupt weather – but if it’s going to get worse?

(a) RCP 2.6
Change in average surface temperature (1986–2005 to 2081–2100)

(b) RCP 8.5
Change in average precipitation (1986–2005 to 2081–2100)

Risk Allocation – Insurance and Contracts

Rising insurance protection gap to natural disasters 1970-2014

Risk Assessment – Financial Impact

Global Losses due to natural catastrophes between 1970-2017

Sources: SwissRe
Potential climate impacts for aviation

**Precipitation change**
- Disruptions to operations (e.g. airfield flooding, ground subsidence)
- Reduction in airport throughput
- Interruption of transport access (passengers and staff)
- Loss of local utilities provision (e.g. power)
- Inadequate drainage system capacity
- Inundation of underground infrastructure (e.g. electrical)

**Sea-level rise**
- Loss of airport capacity
- Loss of airport infrastructure

**Temperature change**
- Changes in noise impact due to changes in aircraft performance
- Heat damage to airport surface (e.g. runway, taxiway)
- Increased heating and cooling requirements

**Wind changes**
- Convective weather disruptions to operations
- Local wind patterns: potential disruption to operations and changes to distribution of noise impact
- Crosswinds: reduction in capacity

**Extreme events**
- Disruptions to operations
- Disruption to ground transport access
- Disruption to supply of utilities

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**Systematic Response – Resilience**

**Indirect impacts at airports not directly affected:** flights that cannot land in destination airport: capacity/ equipment / size of (larger) aircraft / prioritization of flights / surplus of donations

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 Sources: GRF

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Recovery curve with/without Business Continuity Planning
ICAO work on Climate Adaptation

Resolution A39-2: Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change

(a) identify the potential impacts of climate change on international aviation operations and related infrastructure and identify adaptation measures to address the potential climate change impacts, in cooperation with other relevant international organizations and the industry; and
If you’ve seen one airport…

Different organisations: different challenges, different solutions…

EUROCONTROL Challenges of Growth 2018 - Adaptation survey

- Follow up to 2013 survey: what do we think now and what climate adaptation action are we taking?
- 90 responses
So are we ready?

Conclusions

- Awareness is growing and more aviation sector organisations are taking action
- We can do more, and more quickly
- Learn from other sectors, but -
- Aviation is a hugely diverse sector: no-one size fits all
- Individual solutions for individual organisations, but –
- We all need to take action