ICAO

ENVIRONMENT

Climate Adaptation Synthesis

Sea Level Rise

Factsheet

2018

Aviation and Sea Level Rise

Global average sea level is rising, and will progressively increase over time. Impacts will vary by location with some areas more at risk than others depending on a number of factors, including geography. Sea level rise can increase flooding, both in frequency and in area flooded, contribute to greater coastal land erosion, increase the height of sea level extremes, such as storm surges, and, in some areas, cause permanent sea water inundation.

Potential Effects

- Inundation of low-lying coastal aviation infrastructure such as aviation navigation and communication equipment, airport assets, the airfield, and ground transportation.
- Inundated ground transport may prevent airport access for sector employees, passengers and freight.
- Amplification of water issues at coastal airports including storm surge, reduced effectiveness of drainage systems, and more frequent and damaging flooding.
- Extreme sea levels can be temporarily compounded by storm surges.
- Small Island Developing States (SIDS) are particularly vulnerable to the impacts of sea level rise. Impacts from sea level rise on aviation infrastructure and operations in SIDS may have greater security and economic implications than for non-island countries due to a heavier reliance on aviation for connectivity and tourism development.

Adaptation and Resilience Measures

- In areas where impacts from sea level rise are already being experienced or are expected in the near to mid-term, it is essential to identify specific vulnerabilities and time frames, implement adaptation measures and improve operational resilience.
- Potential adaptation and resilience measures include installing sea defenses and other protective measures for vulnerable areas. This can include elevating or relocating vulnerable infrastructure, building or re-enforcing sea defenses, retaining or introducing natural barriers, allowing a safe amount of inundation, and developing new secondary airports that will not face impacts from sea level rise.
- Planning of new airports in coastal regions should take sea level rise projections into account.
- Sea level rise projections and vulnerabilities should be assessed at the local level.

Sources and Additional Information:

2018 ICAO CAEP WG2 Task O7.0 Climate Adaptation Synthesis Analysis