



International Civil Aviation Organization

Ninth Meeting of the Aerodromes Operations and
Planning Sub-Group (AOP/SG/9)

Bangkok, Thailand, 30 June to 4 July 2025

Agenda Item 7 Airport Environmental Initiatives

CLIMATE ADAPTATION GUIDANCE AND TOOLS FOR AIRPORTS

(Presented by Airports Council International)

SUMMARY

This paper presents the *Study on Climate Adaptation Approach for APAC & MID Airports* a high-level initiative aimed at strengthening airports climate resilience across Asia-Pacific and the Middle East. In response to increasing extreme weather events, the initiative addresses the urgent need for airports to assess climate risks and apply effective adaptation measures. It develops standardised guidance, tools, and best practices for climate risk assessment, enabling airport operators to identify, evaluate, respond to climate risks. This paper invites States to acknowledge and support airports to enhance their efforts to efficiently and effectively adapt to climate change and strengthen climate resilience.

1. INTRODUCTION

1.1 Extreme weather events, such as floods, heatwaves, and tropical cyclones, have already caused flight delays, infrastructure failures, and economic damages. Additionally, power shortages triggered by heatwaves may disrupt airport operations and air traffic control systems. These increasing events highlight the need to strengthen climate resilience of airports to ensure operational reliability.

1.2 The Intergovernmental Panel on Climate Change (IPCC) has urged governments to prioritize adaptation to mitigate severe climate change effects. The IPCC Sixth Assessment Report emphasized that “Accelerated implementation of adaptation actions would reduce projected losses and damages for humans and ecosystems”. (IPCC, 2021).

1.3 At COP28, UN Climate Change Conference in Dubai, States agreed on targets for the Global Goal on Adaptation and its framework which lays out overarching (but not yet quantified) global targets which will help guide countries in developing and implementing adaptation plans including Impact, vulnerability, and risk assessment. By 2030, all Parties (including companies) are expected to conduct assessments of climate hazards, climate change impacts and exposure to risks and vulnerabilities and to use the outcomes to inform their national adaptation plans, policy instruments, and planning processes and/or strategies. Airports must act.

1.4 ACI Asia-Pacific & Middle East (ACI APAC & MID) has long recognized the strategic importance of climate adaptation. In 2022, the region office published the "[Tendering Guides for Climate Resilience Planning for Asia-Pacific and Middle East Airports](#)", which aimed to build on airport operators' understanding of the climate risk assessment.

1.5 ACI APAC & MID's 2023 Environmental Survey and a 2024 follow-up poll showed strong demand for technical guidance and tools, with over 60% of airports seeking support to assess and improve their climate resilience, in response to these findings of members' needs, ACI APAC & MID, with the Board endorsement, launched an 18-month regional study in January 2025 *The Study on Climate Change Adaptation Approach for APAC & MID Airports*. This initiative marks a key step in enhancing airport resilience, by introducing a step-by-step approach and providing practical tools for climate adaptation and long-term operational continuity.

1.6 This paper aims to present the progress and expected outcomes of the ongoing climate adaptation approach study. It also invites ICAO member states, airport operators, and other stakeholders to align with this effort by sharing best practices, participating in pilot testing, or adopting the tools developed. Strengthening airport climate resilience is not only urgent, it is a shared responsibility across the aviation ecosystem.

2. DISCUSSION

Study on Climate Adaptation Approach for APAC & MID Airports

2.1 To enhance airport resilience and address the increasing need for responding to extreme weather events, ACI APAC & MID has launched a 3-phases, 18-month initiative. The initiative is designed to provide guidelines and tools to help airports identify and respond to the risks associated with climate change.

- Phase 1: Development of Overarching Process, Climate Risk Assessment Toolkits, Adaptation Actions, Guidance Documents and Stakeholder Engagement Plan.
- Phase 2: Implementation of Toolkits and Guidance Documents

2a) Climate Risk Maturity Check Tool: Identify airport's readiness to identify and existing climate risk management capacity.

2b) Climate Change Risk Assessments: Evaluate climate risks, and identify risk treatments and adaptation actions.

- Phase 3: Development of a monitoring dashboard to provide ongoing insights, track progress and generate comprehensive reports containing both quantitative and qualitative analysis.

2.2 To facilitate the study's outcome, an extensive stakeholder engagement plan was arranged for participating airport users, including webinars, workshops, training sessions, and a virtual helpdesk to support users throughout the process. As part of this plan, the first workshop (User Needs Session) and Introductory Webinar was held in April 2025, over 40 airport operators participated with positive outcomes.

2.3 As a key stakeholder group, a Task Force was established for the Study to discuss research findings, gather deeper feedback and collaborate in developing solutions for the Study. The Task Force was formed from airports committed to the initiative and consists of six airports representing the sub-regions:

- Bahrain International Airport, Darwin International Airport, Dubai International Airport, Hong Kong International Airport, Narita International Airport, Singapore Changi Airport.

2.4 Also, ACI APAC & MID has invited member airports to join this initiative as the initial user of the upcoming Climate Maturity Check Tool and key contributors for the Study. As of June 2025, 59 airport operators representing 223 airports from 27 countries/regions have confirmed their commitment, reflecting strong interest in the initiative from Asia (26), the Pacific (20), and the Middle East (13).

2.5 In the last phase of the initiative, ACI APAC & MID plans to offer complimentary the finalized tools and accompanying guidance to regional member airports. By adopting these tools, member airports will be empowered to assess their climate maturity and prioritized risks, identify adaptation measures, and develop effective adaptation strategies. In particular, the development of progress monitoring dashboards will provide a comprehensive tracking system, delivering periodic updates on climate resilience efforts. Lastly, aggregate data from various users will provide valuable insights to guide future resilience planning and decision-making as more airports adopt the tools.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Note the needs of climate resilience at airports and their ecosystem; and
- b) Urge States to encourage their airports to actively support and engage with the *Study on Climate Adaptation Approach for APAC & MID Airports* including the use of complimentary Climate Maturity Check Tool and Climate Risk Assessment Tool to strengthen aviation preparedness and long-term resilience.

— END —