



*International Civil Aviation Organization*

ICAO

**Thirteenth Meeting of the Air Traffic Management Sub-Group (ATM/SG/13) of APANPIRG**

Singapore, 25 – 29 August 2025

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**Agenda Item 6: ATM Coordination (Meetings, Route Development, Contingency Planning)**

**ENHANCING COLLABORATIVE CONTINGENCY PLANNING – LESSONS FROM LEWOTOBI VOLCANO ERUPTION RESPONSE IN INDONESIA**

(Presented by Indonesia)

**SUMMARY**

This paper presents Indonesia's recent experience in managing the impacts of the Lewotobi Volcano eruption through a collaborative approach involving the Directorate General of Civil Aviation (DGCA), AirNav Indonesia, the Meteorology, Climatology and Geophysics Agency (BMKG), the Geological Agency/Center for Volcanology and Geological Hazard Mitigation (PVMBG), and the Darwin Volcanic Ash Advisory Centre (VAAC Darwin). It highlights key lessons learned and invites Asia/Pacific States to strengthen cross-border collaboration in developing joint contingency plans to prepare for and respond to volcanic ash events and other disaster-related disruptions.

**1. INTRODUCTION**

1.1 The Asia/Pacific region hosts a significant number of active volcanoes, and volcanic eruptions continue to pose a serious threat to aviation safety and operational continuity. The eruption of the Lewotobi Volcano in East Nusa Tenggara, Indonesia, in early 2025, significantly impacted air traffic operations, including flight diversions, cancellations, and airspace rerouting.

1.2 The effective response to this event was made possible through close inter-agency collaboration, early warning dissemination, and coordinated operational decision-making, involving national and international stakeholders.

1.3 This paper aims to share Indonesia's recent experience, highlight the importance of cross-agency coordination, and encourage all Asia/Pacific States to strengthen collaborative contingency planning

**2. DISCUSSION**

Overview of the Lewotobi Eruption and Aviation Impact

2.1 On 7 July and 1 August 2025, Lewotobi Volcano erupted, producing volcanic ash plumes reaching 19,584 m above MSL (FL642), affecting the flight paths to/from Labuan Bajo (WATO), Maumere (WATC), Wunopito (WATW), Ruteng (WATG), Bajawa (WATB), Ende (WATE) and surrounding routes.

- 2.2 Immediate operational impacts included:
- a) issuance of multiple SIGMETs and Volcanic Ash Advisories (VAA) by VAAC Darwin;
  - b) temporary closure of affected airports; and
  - c) airspace rerouting to ensure safety of flight operations

Multi-Agency Collaborative Action

- 2.3 The coordinated response was achieved through:
- a) BMKG providing continuous meteorological updates and SIGMET issuance;
  - b) PVMBG delivering real-time volcano activity status and eruption forecasts;
  - c) DGCA issuing safety directives, coordinating NOTAMs, and liaising with ICAO Asia/Pacific Regional Office;
  - d) AirNav Indonesia implementing dynamic airspace management and rerouting plans; and
  - e) VAAC Darwin issuing timely volcanic ash advisories to all ATS units and airlines.

- 2.4 Daily virtual coordination meetings were conducted among all agencies to ensure shared situational awareness and timely decision-making.

Lessons Learned

- 2.5 Key factors contributing to the effective response included:
- a) early detection and warning enabled by real-time monitoring by PVMBG and BMKG;
  - b) rapid dissemination of advisories to all aviation stakeholders;
  - c) integrated operational decision-making based on Collaborative Decision Making (CDM) principles; and
  - d) pre-existing contingency arrangements for airspace rerouting and airport closure procedures.

The Need for Enhanced Regional Collaboration

- 2.6 While national-level coordination was effective, cross-border operational impacts require strengthened regional collaboration. Volcanic ash does not respect national boundaries, and uncoordinated responses can result in fragmented operational decisions.

- 2.7 ICAO APAC's framework for contingency planning offers a strong foundation for States to develop joint volcanic ash contingency plans, supported by data sharing, harmonized NOTAM issuance, and consistent operational procedures.

### **3. ACTION BY THE MEETING**

- 3.1 The meeting is invited to:
- a) note the information contained in this paper;
  - b) note Indonesia's experience and lessons learned from the Lewotobi Volcano eruption response;

- c) encourage Asia/Pacific States to strengthen inter-agency and cross-border collaboration for volcanic ash contingency planning;
- d) promote the integration of Collaborative Decision Making (CDM) principles into volcanic ash contingency plans across the region; and
- e) discuss any relevant matters as appropriate.

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