



**WORKING PAPER**

**ASSEMBLY — 40TH SESSION**

**EXECUTIVE COMMITTEE**

**Agenda Item 26: Other high-level policy issues to be considered by the Executive Committee**

**GET AIRPORT READY FOR DISASTER**

(Presented by Indonesia)

**EXECUTIVE SUMMARY**

Indonesia is a hazard prone country. In article 194 Indonesian Aviation Law number 1/2009, states that one of the role of an airport is to assist in case of disasters. In the Indonesian national master plan, the Directorate General of Civil Aviation (DGCA) has 74 airports which are suitable for the use of aircrafts type Fokker 27 or Hercules C-130 or similar, to assist in case of disasters. To support operational in managing incoming relief aids and evacuation, DGCA also has identified hub-airports for disasters.

This paper discusses the need to have guidance relating to airport readiness and preparedness for disaster in order to improve the ability to evacuate and manage incoming relief aid as efficiently as possible.

**Action:** The Assembly is invited to:

- a) request the Council review existing Standards and Recommended Practices (SARPs) related to Aerodromes; and
- b) identify and develop ICAO provisions to support airport operational procedures in disaster management.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objectives on Safety and Air navigation capacity and efficiency
<i>Financial implications:</i>	The activities referred to in this paper will be undertaken subject to the resources available in the 2020-2022 budget and/or the availability of extra-budgetary resources.
<i>References:</i>	Annex 14 – Aerodromes, Annex 11– Air Traffic Services Other relevant ICAO Annexes Doc 9981 – PANS Aerodrome

## 1. INTRODUCTION

1.1 Indonesia is populated with over 240 million people living across a far stretched archipelago. Many of them are vulnerable to natural and man-made disasters. Natural disasters are a common and frequent phenomena in Indonesia, causing loss of lives and destruction of properties and often irretrievable damage to the environment. The country is subject to a high-level of seismic activities due to its location at the intersection of three crustal plates namely Eurasia Plate, Ancient Australia-Indian continent, and Pacific Ocean Floor in the northeast. Much of these activities occur in the sea bringing in added risks of tsunamis or tidal waves. The country is subject to high-level seismic activities due to its location and to the environment. There are three major natural hazards in Indonesia:

1.2 **Earthquake:** Indonesia is located at the meeting points of three active plates, i.e. the Indo Australian plate to the south, the Euro Asian plate to the north and the Pacific plate in the east. The three plates are moving and thrusting into each other in such a way, that the Indo Australian plate thrusts under the Euro Asian plate. Moving northward the Indo Australian plate pushes into the Euro Asian plate that is moving southward and this creates a seismic line and a ring of active volcanoes along the Sumatra, Java, Bali and Nusa Tenggara Islands, turning North to the Mollucas and North Sulawesi, parallel with the subduction zones of the two plates.

1.3 Earthquake-prone areas in Indonesia are distributed close to subduction zones and areas nearby active faults. Areas that are close to the subduction zones include the western coasts of Sumatra, southern coasts of Java, southern coasts of Bali and Nusa Tenggara, the Mollucas Island, North Mollucas, the North and East coasts of Sulawesi and the North coasts of Papua. Meanwhile, areas in Indonesia that are situated near active fault lines include areas along Bukit Barisan in Sumatra, the Province of West Java, Central Java, the Special Region of Yogyakarta, East Java, Bali, West Nusa Tenggara, East Nusa Tenggara, Sulawesi Island, the Mollucas Islands and Papua Island. Some noticeable active faults in Indonesia include the Sumatra Fault, Cimandiri Fault, Lembang Fault, Baribis Fault, Opak Fault, Flores Back Arc Fault, Palu-Koro Fault, Sorong Fault, Ransiki Fault, active faults in Banten, Bali, Nusa Tenggara, the Mollucas Island and other active fault systems that have not been identified.

1.4 **Tsunami:** An earthquake that is generated by the interaction of the tectonic plates may cause deformation in the seabed that will further trigger huge sea waves and probably become a tsunami when it happens in the ocean. With many regions of the country situated in areas that may be affected by tectonic plate movement, Indonesia is prone to tsunami hazard.

1.5 **Volcanic Eruption:** Related to the major tectonic subduction zones outlined above, Indonesia has more than 500 volcanoes, among which 129 are active. The active volcanoes distributed in Sumatra Island, Java Island, Bali, Nusa Tenggara, North Sulawesi and the Mollucas Island constitutes 13 per cent of the world active volcano distribution. Indonesia has more than 500 volcanoes, 128 of which are active volcanoes occupying the zones of Sunda, Banda, Halmahera and Minahasa. No wonder the archipelago is known as being circumscribed by rings of fire.

1.6 In relation to regulations: Law Number 24 Year 2007 on Disaster Management, particularly Article 4 paragraph 3, stipulates that the goal of disaster management is to “ensure that the conduct of disaster management is planned, integrated, coordinated, and comprehensive”. Aviation Law Number 1 Year 2009 Article 194 on setting national master-plan for airport in Indonesia stipulates that airports should be built in the natural hazard prone area to assist if any disaster happens. In Decree Number 39 Year 2019 on National Master-Plan issued by the Minister of Transport, there is an illustration of an airport dedicated to support disaster preparedness and response and on site-airport or hub-airport.

1.7 The identified airports for disaster preparedness and response should be able to serve aircraft type Fokker 27 or Hercules C-130 or similar, the aircraft type for evacuation and distribution relief aids. The minimum requirement for runway length is 1200m for use by aircraft F-27 or Hercules C-130.

1.8 DGCA realizes that aviation is one of main support for disaster response. Therefore, DGCA has a program in place in case a disaster happens. The program covers airport infrastructure and facilities, capacity building for airport staff, and disaster manual procedure. Director General has issued Decree Number 96 Year 2019 on Generic Get Airport Ready for Disaster Manual and Decree Number 16 Year 2019 on Quick Response Team for Airport Operation on Disaster Condition.

## 2. DISCUSSION

2.1 **Airport Infrastructure.** As the airport ready for disaster, the airport should be suitable for use of aircraft type F27 or C130 Hercules or similar. Runway length is 1200 meters or above, apron should be wide enough for unloading/loading Fokker 27 for one or more aircraft. In Indonesia national master plan, DGCA has 74 airports ready for disaster. To support operations in regard to the management of incoming relief aids and evacuation, DGCA has also defined hub-airports for disaster. The critical criterion for hub-airports is that they should be reachable in one-hour flight duration from site-airport disaster, and also become site-airport disaster, if a disaster happens at its area. The hub-airport is a big airport that mostly serves the Indonesian archipelago and international flights. DGCA has identified 35 hub-airports.

2.2 Besides, runway must support the use of aircraft support disaster type, the facilities and equipment in the airport should be available as follows:

- a) portable runway lighting;
- b) portable generator set portable 75 Kva;
- c) telephone satellite;
- d) portable water processing; and
- e) forklift, and other necessary mobile equipment.

2.3 **Airport Capacity.** In Indonesia, the capacity to manage the airport needs to be strengthened during disaster relief operation and crisis. In general, the airports across Indonesia is under-equipped to handle the surge in activity and do not have disaster relief surge plans in place. Examples of weak areas to be improved are;

- a) lack of (or delay in securing) ground-handling equipment to off load goods from aircrafts effectively;
- b) lack of relevant warehousing plans at airport to store large quantities goods for short time periods; and
- c) lack of clarity in application of standing or emergency procedures for processing of relief goods and supplies.

2.4 During natural disaster incidents, the airports are frequently overwhelmed with the surge in relief aid cargo and the supports. To deliver the aid to the affected communities faster and efficiently, the airport operator should be well-prepared and able to maintain its operation and function. Consequently, it is important for airport operators to have the competency to undertake the surge capacity assessment during and post crisis. Traffic at the site-airport or hub-airport will increase due to:

- a) limited apron capacity;
- b) loading unloading goods from aircrafts take a long time because of lack of equipment;
- c) unscheduled aircrafts parked for a long period, usually official visit aircraft; and
- d) the increasing traffic at the airport could engender delay flight, crowd of passengers, and new/more requests for slot time.

2.5 **Human Resources:** To get ready and prepare a response for disaster, not only the infrastructure, but also the readiness of the people has to be considered. Although the responsibility of disaster management activities lies with the National Agency for Disaster Management (Badan Nasional Penanggulangan Bencana/BNPB), DGCA in cooperation with United Nations Development Programme (UNDP) Indonesia and BNPB conduct training as part of their effort to increase capacity of hub-airport to manage logistic, apron and relief cargo during the crisis and undertake surge assessment. After attending this training, the participants should be able to issue airport disaster response capacity documentation and recommendations for pilots, airport disaster relief surge plans for pilots and to conduct review at airports across Indonesia.

2.6 **Operational Procedure:** When crisis comes, everyone might be panicking and not know what they have to do. Procedures need to be in place at all times, and up-to-date. The operational procedure to handle surge capacity should consist of procedures for airside and landside. The airside procedure should cover the following areas:

- a) assessment on airport facility;
- b) outsourcing personnel from other airports, if needed;
- c) coordination with local government, local BNPB and other related agencies;
- d) open/add operational hours at airport in the vicinity as an alternate airport;
- e) apron capacity management; slot time tight arrangement, faster ground time, priority for evacuation and logistic aids aircraft, no remain overnight aircraft; and
- f) all the cargo aircraft should bring their own equipment and personnel for unloading.

2.7 The landside/terminal procedure covers the following areas:

- a) establishment of coordination center, including appointing qualified personnel;
- b) coordination with Customs, Immigration, Quarantine (CIQ); and
- c) adding capacity for terminal (temporary terminal), water supply, electricity, if needed.