



**Question 6 of
the Agenda:**

Other Matters

EL NIÑO EVENT AND ITS POTENTIAL IMPACT ON AVIATION

(Prepared by the Secretariat)

ABSTRACT

This briefing note presents the secretariat's concern about the evolution of the El Niño weather phenomenon and its potential impacts and risks for international civil aviation in the ICAO South American Region

References:

- World Meteorological Organization (WMO) website: [Intensification of a strong El Niño event | World Meteorological Organization](#)
- Sitio web de la National Oceanic and Atmospheric Administration (NOAA): [Climate Prediction Center: ENSO Diagnostic Discussion](#)

1. Background

1.1 The climatological phenomenon called "El Niño" (El Niño Southern Oscillation – ENSO) is characterized by the warming of the tropical surface waters of the Pacific Ocean.

1.2 El Niño is one of the most closely monitored climate events. But forecasts alone do not prevent the dangers; that can only be done by individuals and organizations.

1.3 The World Meteorological Organization and other international climate monitoring agencies have warned of the development of a warm phase of El Niño from the end of 2025.

1.4 El Niño continues to intensify steadily and is expected to have a decisive influence on global climate patterns during the period from August to October 2026.

1.5 An analysis of El Niño episodes, in other times, with the intensity currently predicted, has generated extreme weather events that have affected aviation, in its regularity, operational safety and efficiency.

2. Analysis

2.1 El Niño is the warm phase of the climate phenomenon known as ENSO (El Niño-Southern Oscillation). It occurs when the surface waters of the central and eastern equatorial Pacific Ocean warm

more than normal, altering wind, rainfall, and temperature patterns in much of the world. It usually occurs every 2 to 7 years and can last for several months.

2.2 In South America, El Niño is usually associated mainly with heavy rains and floods on the coast of Chile, Peru, Ecuador, as well as in the central and Atlantic parts of Argentina, the south and southeast of Brazil, Bolivia, and Paraguay. In addition, it generates climatic alterations that can cause both floods and droughts depending on the region. Its impact can be significant in all fields of the economy and on the population, especially during strong events, from which aviation does not escape.

2.3 The 1997-1998 El Niño event, one of the most intense on record, demonstrated that this phenomenon can produce considerable impacts on aviation, generating floods, severe storms, Mesoscale Convective Complexes (MCCs) associated with severe turbulence, hail, etc. in countries on the Pacific and Atlantic coasts, as well as prolonged droughts, forest fires with reduced visibility due to smoke in central and northern regions of South America. These effects can affect several States simultaneously and have direct repercussions on the safety, capacity, efficiency and continuity of air operations.

2.4 The official ENSO outlook, following analysis by WMO, NOAA, and other international climate monitoring agencies, synthesizing multiple climate analysis models, indicates that El Niño will continue to strengthen through the end of the year. During the October-December 2026 season, there is a 69% chance of a historic event that would exceed the intensity of previous El Niño events in the record dating back to 1950.

2.5 With an event of this magnitude, the odds of experiencing impacts consistent with El Niño are greater, but not guaranteed.

2.6 In summary, El Niño is strengthening, with a greater than 90% probability of a very strong event during the Northern Hemisphere fall and winter 2026-27 (Southern Hemisphere spring-summer).

2.7 The aviation community in ICAO's South American region must take the El Niño 97-98 reference, and the operational lessons remain fully valid.

2.8 Early preparation and inter-institutional coordination are fundamental tools to strengthen the resilience of the civil aviation system to large-scale climatic phenomena and minimize their potential impacts on operational safety and continuity of services, so the recommendations to initiate revisions of contingency plans associated with severe weather phenomena are valid and of urgent action.

2.9 In addition, it is imperative to maintain close coordination with aeronautical meteorological service providers in order to monitor the evolution of meteorological conditions and strengthen surveillance and early warning mechanisms.

3. **Conclusions**

3.1 The strengthening of El Niño during 2026 represents a significant risk to South American aviation, due to the high probability of the occurrence of extreme weather events such as heavy rainfall, floods, severe storms, turbulence associated with convective systems, hail, forest fires and reduced visibility, which can affect operational safety, capacity and continuity of air navigation services.

3.2 The experience of the 1997-1998 El Niño event constitutes a valid reference for the current management of aeronautical risk, since it demonstrated that events of great intensity can generate

simultaneous impacts in several States of the region, requiring a coordinated response between aeronautical authorities, air navigation service providers, airports and aeronautical meteorological services.

3.3 It is a priority to adopt immediate preventive measures, including the review and updating of contingency plans for severe weather events, the strengthening of surveillance and early warning mechanisms, and close inter-institutional coordination and with aeronautical meteorological services, in order to increase the resilience of the civil aviation system and mitigate the possible effects of an El Niño event of exceptional magnitude.

END