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MEMORANDUM

TO : **The Assistant Secretary**
Policy, Planning and Foreign Assisted and Special Projects
and FMB Director, In Concurrent Capacity

The Directors
EMB, MGB, BMB, LMB, ERDB
Policy and Planning Service

All Regional Executive Directors

FROM : **The Undersecretary**
Policy, Planning and International Affairs

SUBJECT : **WEATHER FORECAST FOR SOUTHEAST ASIA IN
JULY TO SEPTEMBER 2021**

DATE : 09 July 2021

This refers to the email dated 05 July 2021 sent by Aida Hayati Mohd Hassan, Peatland Programme- Global Environment Centre (Malaysia), forwarding a Seasonal Forecast for the ASEAN Region for July to September 2021.

The forecast are mainly derived from information from the ASEAN Specialised Meteorological Centre (ASMC) and APEC Climate Center (APCC). Similar weather forecast and outlook is also available on ASEAN Specialised Meteorological Centre website: (<http://asmc.asean.org/home/>). Other relevant links are listed in the attached papers. This information is useful for reference in undertaking necessary precaution actions and preventive measures for fire risk.

For your information and reference.


ATTY. JONAS R. LEONES

MEMO NO. 2021 - 517

Let's Go Green!!!



msjic 7/9
OUEIEA Secretariat <oueiea.denr@gmail.com>

Weather forecast for Southeast Asia in July-September 2021

Aida Hayati Mohd Hassan <aidahayati@gec.org.my>

Mon, Jul 5, 2021 at 7:24 PM

Reply-To: aidahayati@gec.org.my

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Dear partners,

We would like to share with you a Seasonal Forecast for the ASEAN Region for July - September 2021.

The forecast are mainly derived from information from the ASEAN Specialised Meteorological Centre (ASMC) and APEC Climate Center (APCC).

Similar weather forecast and outlook is also available on ASEAN Specialised Meteorological Centre website: (<http://asmc.asean.org/home/>).

Other relevant links are listed in the attached papers too.

We hope this information is useful for reference in undertaking necessary precaution actions and preventive measures for fire risk.

Thank you.

Best regards;

Aida Hayati

Aida Hayati Mohd Hassan

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 **weather_forecast_july_to_september_2021.pdf**
1365K

SEASONAL WEATHER AND FIRE RISK FORECAST FOR ASEAN REGION JULY – SEPTEMBER 2021

The ASEAN Specialised Meteorological Centre (ASMC¹) suggests El Niño-Southern Oscillation (ENSO) neutral conditions are forecast to continue for the next three months. The Indian Ocean Dipole (IOD) is close to the negative state and models are forecasting a negative IOD for the July to September 2021 period. A negative IOD tends to bring above-average rainfall for the southern ASEAN region for this time of the year.

The APEC Climate Centre (APCC²) ENSO Alert System suggests "INACTIVE" for July to December 2021. During May 2021, negative sea surface temperature anomalies were observed over the equatorial Pacific. APCC ENSO outlook suggests ENSO neutral conditions with a decreasing chance from 76% to 58% during the next 6 months. Highly probable above normal temperatures are predicted for much of the globe. Enhanced probability for above normal precipitation is predicted for Indonesia for July to December 2021.

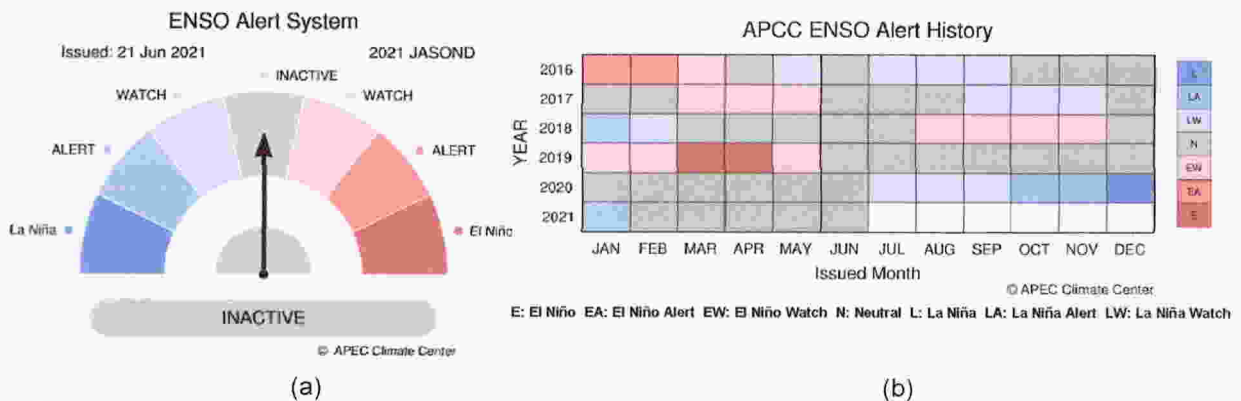
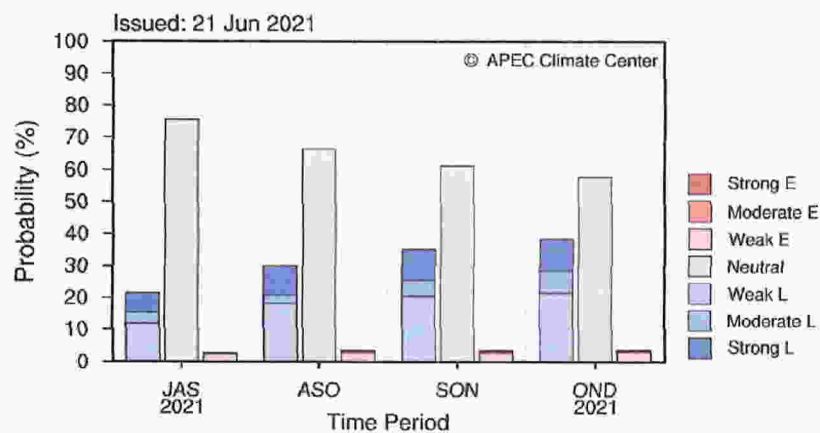


Figure 1: (a) ENSO Alert status for July – December 2021; and (b) history of monthly ENSO Alert from 2016 – 2021

Probabilistic ENSO Forecast for 2021 JASOND



* ENSO Intensity based on 3M Mean Niño3.4 SST Anomaly (Category Boundaries: +/-1.5, 1.0, 0.5°C)

Figure 2: Predicted monthly mean Niño3.4 index for July – December 2021

¹ Information from ASEAN Specialised Meteorological Centre (<http://asmc.asean.org/home/>)

² Information from APEC Climate Center (<https://www.apcc21.org/math.do?lang=en>)

Southwest Monsoon conditions are expected to continue in July 2021 as the prevailing low-level winds over the ASEAN region strengthen and blow from the southeast or southwest, with the passage of the monsoon rain band further north of the equator in the second half of the month. The Southwest Monsoon season is the traditional dry season for the southern ASEAN sub-region, which typically brings extended periods of dry conditions over the sub-region. For the northern ASEAN sub-region, the Southwest Monsoon is the traditional wet season.

For the July to September 2021 period, models predict an increased chance of above-normal rainfall for most of the equatorial ASEAN region from 8°N to 10°S. Warmer-than-usual temperature is expected for most of the ASEAN region except for Borneo and southern Sumatra where near- to above-normal temperature is predicted.

The dry season for the southern ASEAN sub-region is expected to extend from July to October 2021. During these months, isolated to scattered hotspots are likely to develop during dry periods and widespread hotspots can be expected during extended dry periods which may lead to an increased risk of transboundary haze occurrence. Nonetheless, due to predicted above-normal rainfall for the southern ASEAN sub-region in July-September 2021, a recurrence of a similar 2015 (El Niño year) or a 2019 (positive IOD year) severe haze event is unlikely to happen. Shower activities are expected to persist for the northern ASEAN sub-region during this period, and help to subdue hotspot and smoke haze activities.

APCC Fire and Haze Early Warning System Report

APCC has developed a Fire and Haze Early Warning System (FHEWS) specifically for Kalimantan, Indonesia. This system shows how seasonal forecasts can be used to predict drought conditions that triggering forest fires.

APCC FHEWS provides forecast to indicate probability of forest fires and precipitation in Kalimantan for **August, September and October (ASO)**, when the region has the highest risk for forest fires. The forecast utilising targeted 3-month precipitation value from April to June to predict probability of forest fire in ASO. The forecast focuses on 4 regions in Kalimantan, namely West (*Barat*), Central (*Tengah*), South (*Selatan*) and East (*Timur*) (Figure 3).

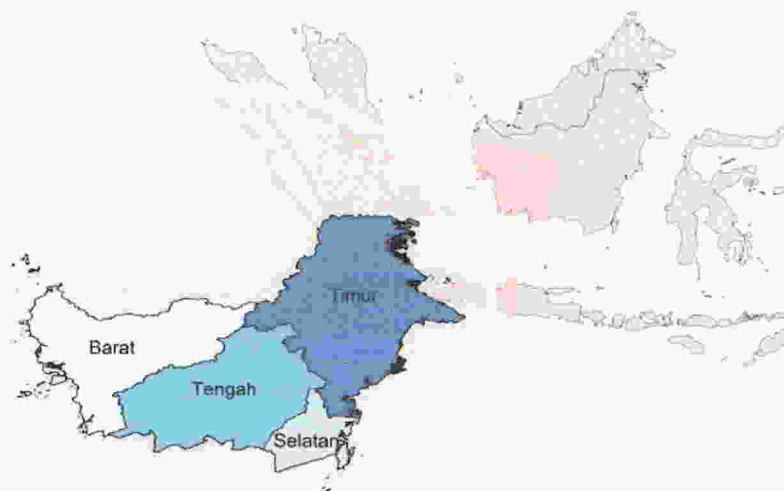


Figure 3: Forecast in Kalimantan divided into 4 regions.

The forecast is translated into four forest fire risk ratings based on the relationship between the precipitation amount and CO₂ emissions for each region. Four forest fire ratings used in the forecast are Low, Moderate, High and Extreme.

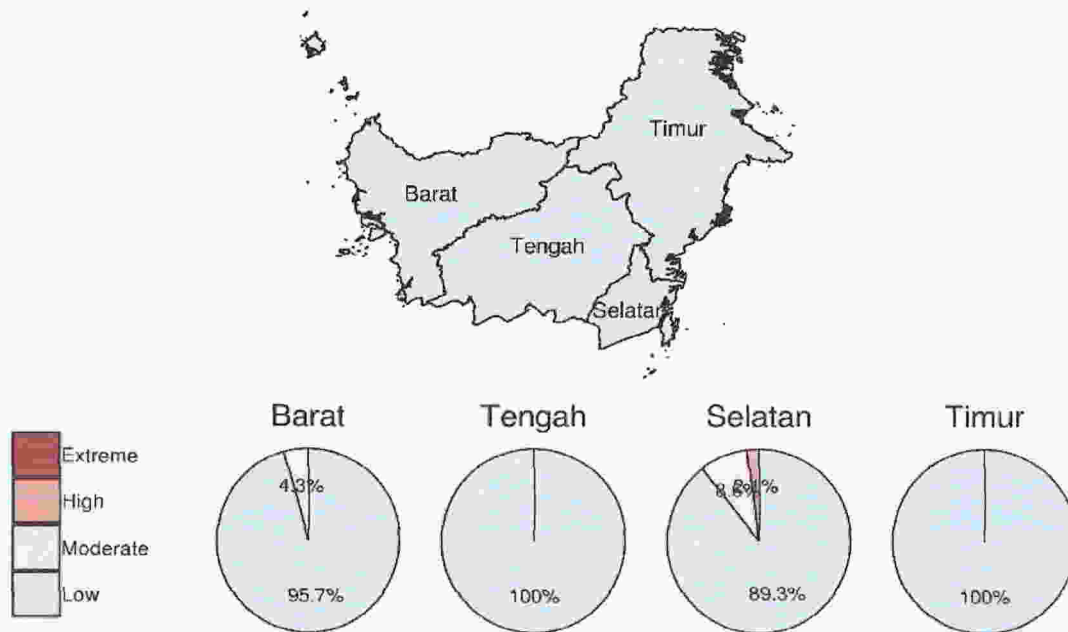


Figure 4: Probability of forest fires in Kalimantan regions for ASO, issued in June 2021 (Source: APCC)

Figure 4 shows the probability of forest fires on the four regions in Kalimantan, Indonesia for ASO. The forest fire forecast map displays the corresponding colour for the risk rating with the highest probability among the four categories for each region. Generally, there is a **low probability** of forest fire to occur in ASO. However, there are slight risk of fire to occur in West (*Barat*) and South (*Selatan*) Kalimantan regions.



Figure 5: Monthly history of probabilistic forest fire forecast in Kalimantan for ASO 2021

Figure 5 shows the monthly history of the ASO probabilistic forest fire forecast issued in April-June 2021. Each cell of the table displays the risk colour and probability value of the risk based on precipitation.

This APCC Fire and Haze Early Warning System is only available from April to July each year. This report can be assessed in <https://www.apcc21.org/ser/sea.do?lang=en>

Other information on weather conditions, hotspot, haze and fire danger rating can be found on the following links:

ASEAN Haze Action Online (<http://haze.asean.org/>)

Hotspot and haze information at ASEAN Specialised Meteorological Centre (<http://asmc.asean.org/home/>)

Information on Fire Danger Rating System (FDRS) at Malaysian Meteorological Department (<http://www.met.gov.my/iklim/fdrs/afdrs?lang=en>)

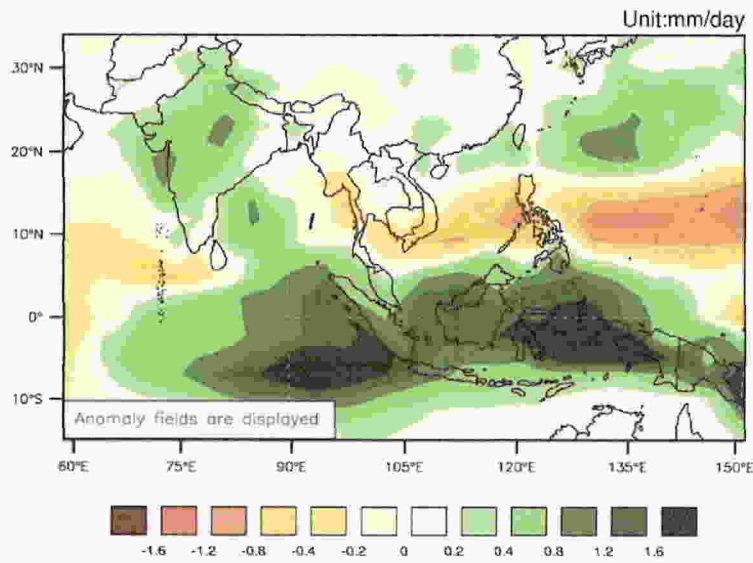
Information by Badan Meteorologi, Klimatologi dan Geofisika of Indonesia on FDRS (<https://www.bmkg.go.id/cuaca/kebakaran-hutan.bmkg>)

Hotspot information (adjustable confidence levels for hotspots) by Lembaga Penerbangan dan Antariksa Nasional (LAPAN) of Indonesia (<http://lowres-catalog.lapan.go.id/monitoring/>)

Information on FDRS for Northern Southeast Asia by Department of National Parks, Wildlife and Plant Conservation of Thailand (<http://www2.dnp.go.th/qjs/FDRS/FDRS.php>)

Subscription to ASEAN Fire Alert Tool (<https://www.aseanfirealert.org/>) to manage land parcels of which information on FDRS and hotspot will be delivered daily to smartphone of subscribers.

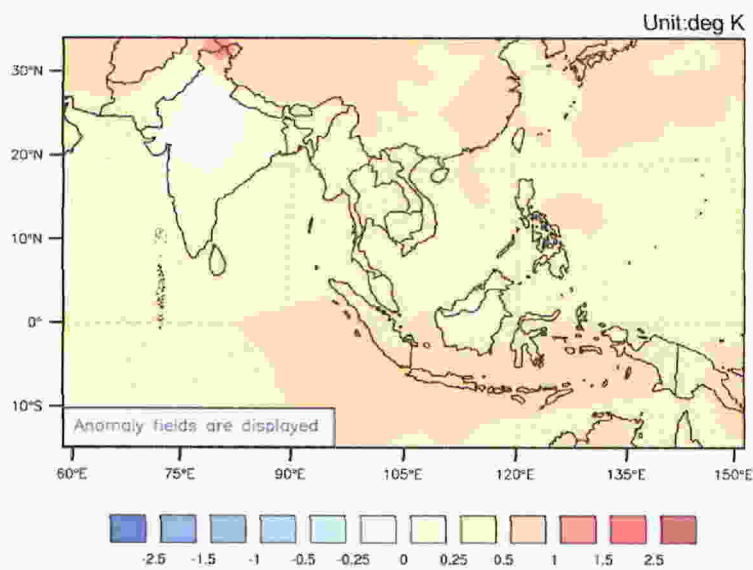
Precipitation for July-September 2021



Issued: 21 Jun 2021

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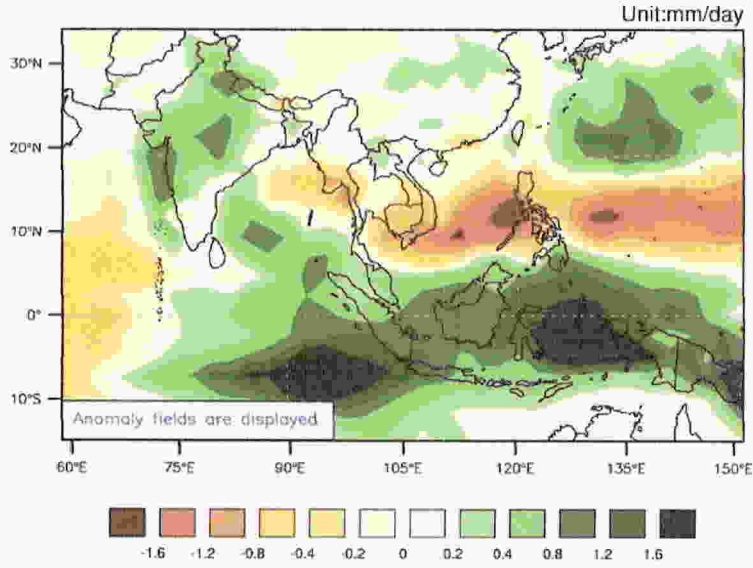
Temperature at 2m for July-September 2021



Issued: 21 Jun 2021

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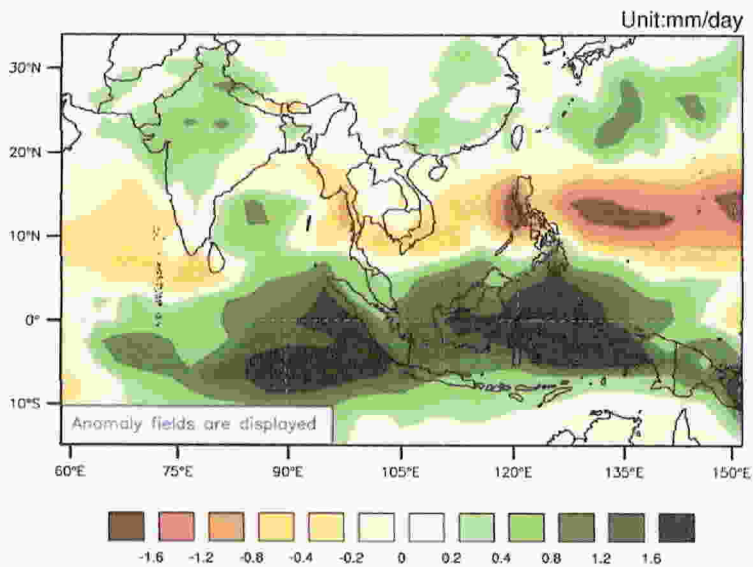
Precipitation for JUL 2021



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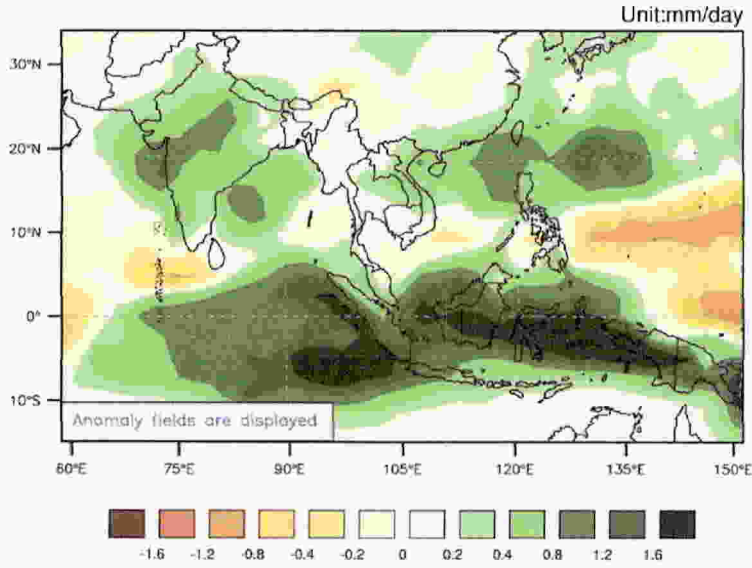
Precipitation for AUG 2021



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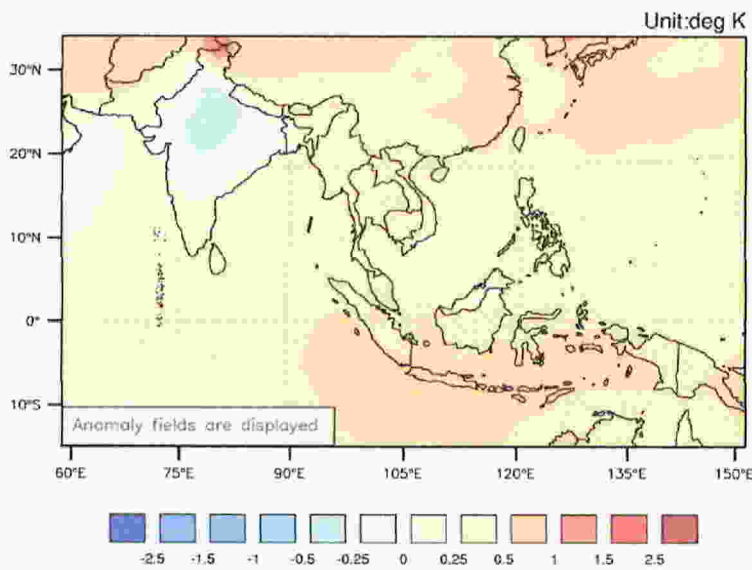
Precipitation for SEP 2021



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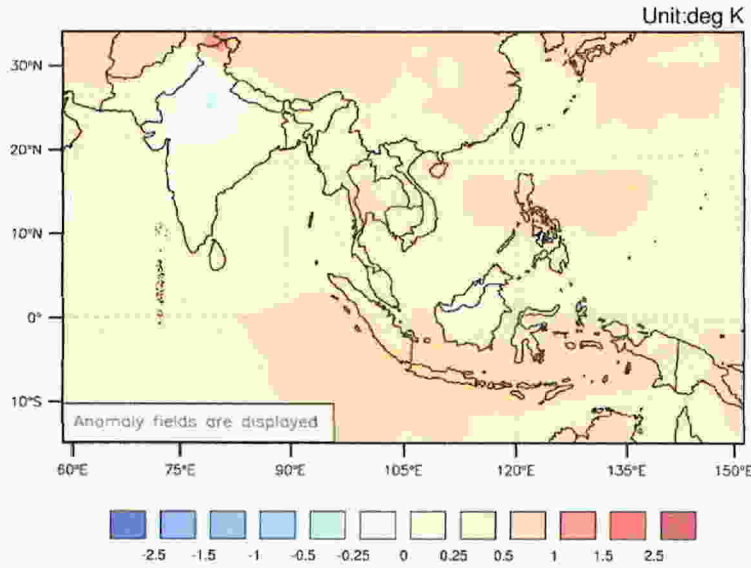
Temperature at 2m for JUL 2021



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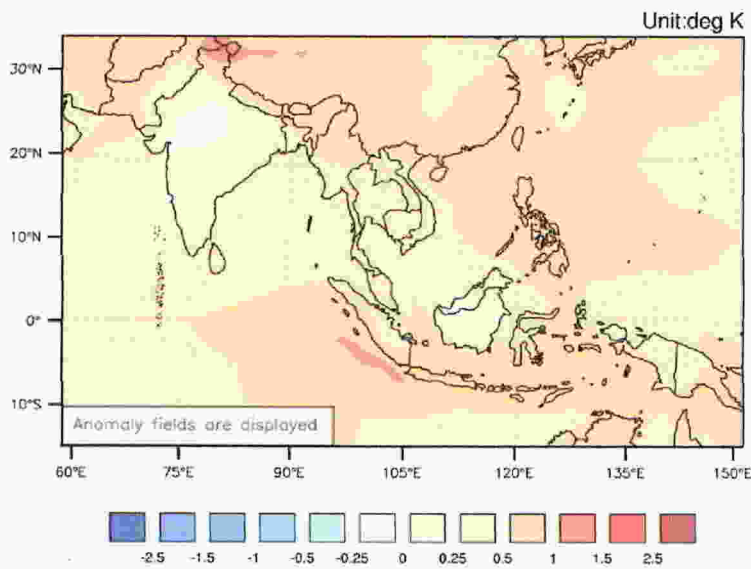
Temperature at 2m for AUG 2021



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Temperature at 2m for SEP 2021



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Aida Hayati Mohd Hassan <aidahayati@gec.org.my>

Mon, Jul 5, 2021 at 7:24 PM

Reply-To: aidahayati@gec.org.my

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