



The Seventeenth Session of the Forum on Regional Climate Monitoring, Assessment and Prediction for Asia (FOCRAII)

(Online session during 7 May 2021)

Consensus Statement on the Seasonal Climate Outlook over South Asia for the 2021 Southwest Monsoon Season (June – September)

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INDIA METEOROLOGICAL DEPARTMENT**

Outline

ENSO IOD forecast

**Southwest Monsoon Season Rainfall forecast
over Indian Region**

**SASCOF consensus Outlook for 2021 JJAS
season Rainfall and Temperature for South Asia**



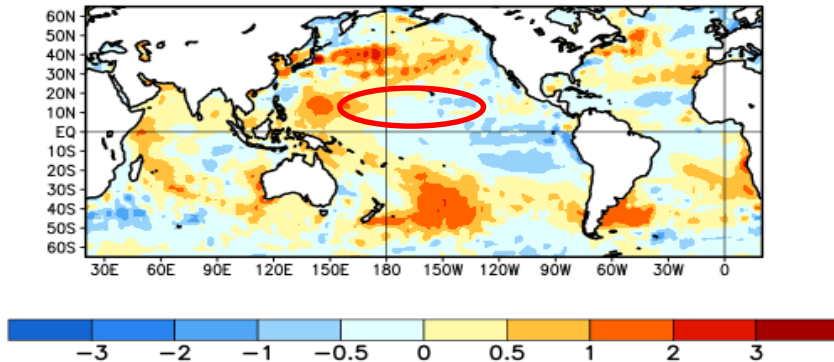
7-May-21

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Latest Global SST Departures (°C) and ENSO Conditions over Pacific

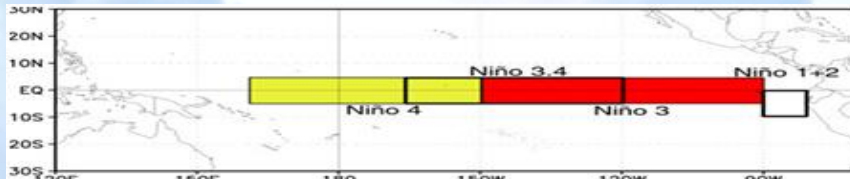
Average SST Anomalies
4 APR 2021 – 1 MAY 2021



The latest weekly SST departures are:

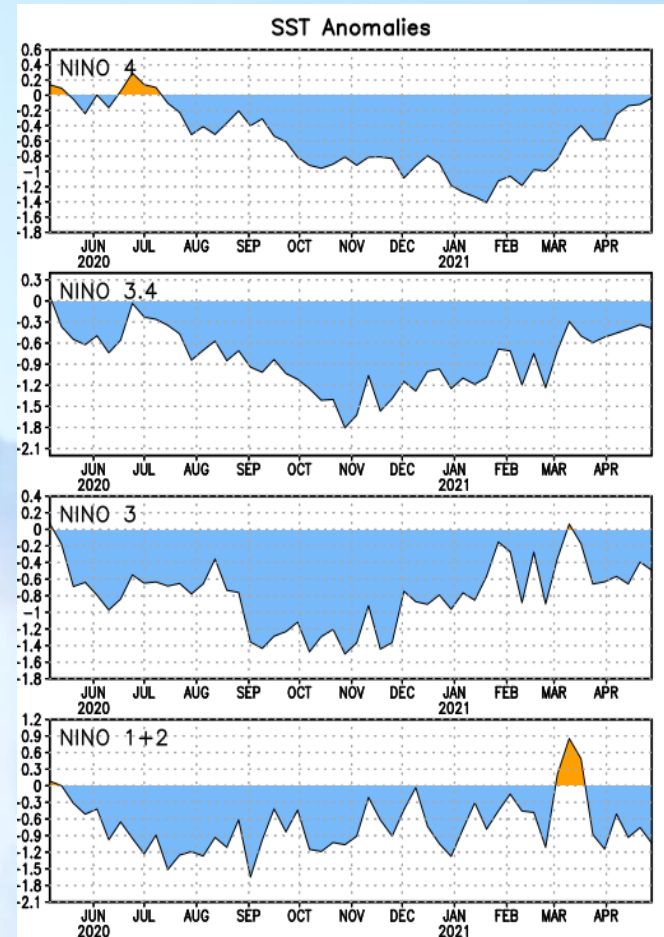
Niño 4	-0.0°C
Niño 3.4	-0.4°C
Niño 3	-0.5°C
Niño 1+2	-1.0°C

Data source
CPC, USA



Equatorial SSTs were mostly below average from the west-central to the east-central Pacific Ocean

Recent evolution of NINO SSTs



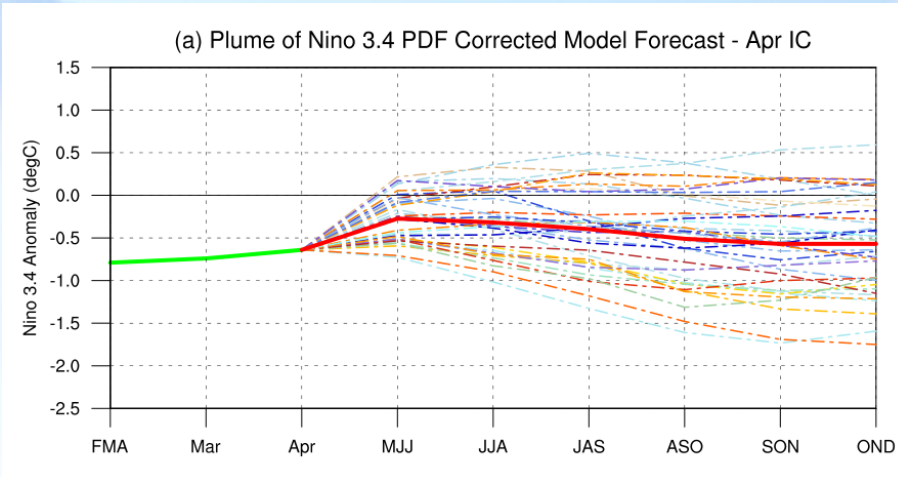
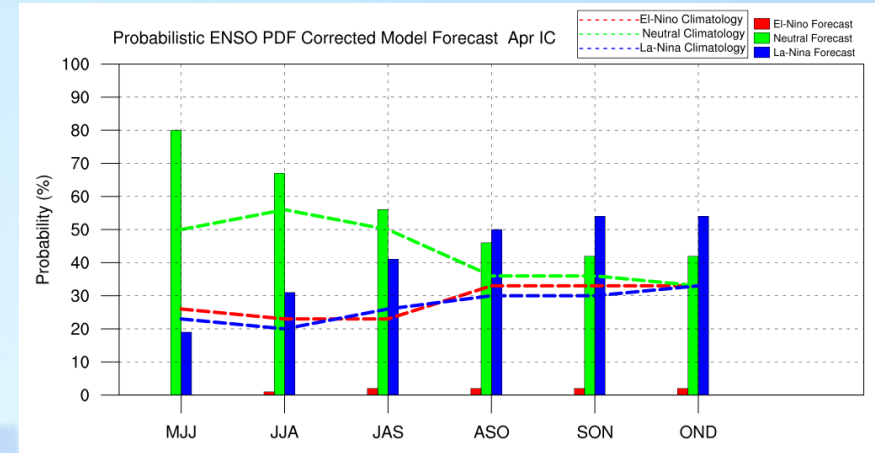
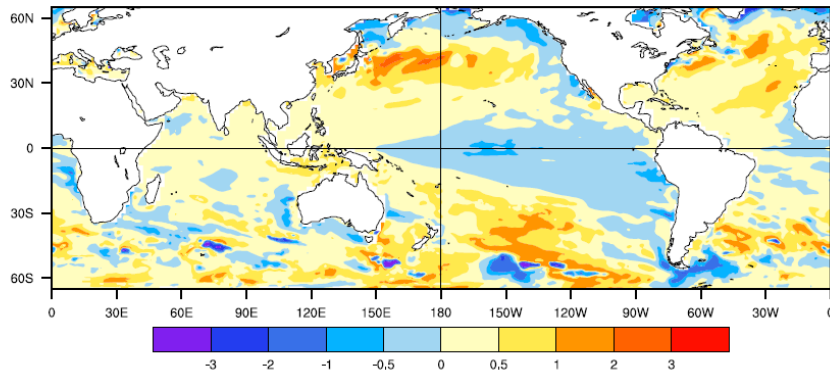
Data source
CPC, USA



ENSO Forecast: April 2021

MMCFS Forecast: April IC

MMCFS SST Anomaly Forecast for JJAS : Apr 2021 IC
JJAS 2021

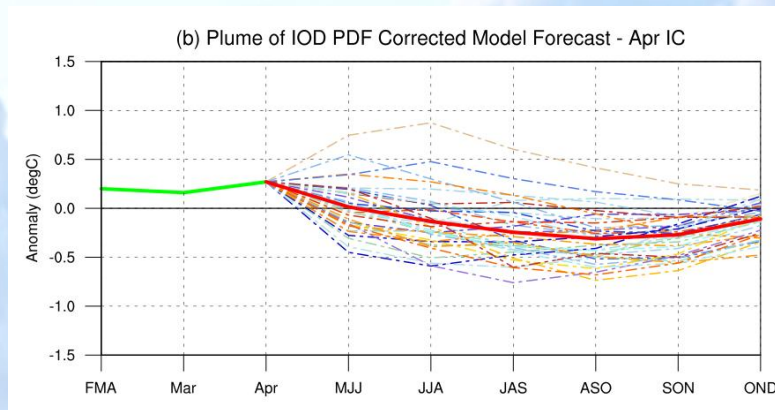
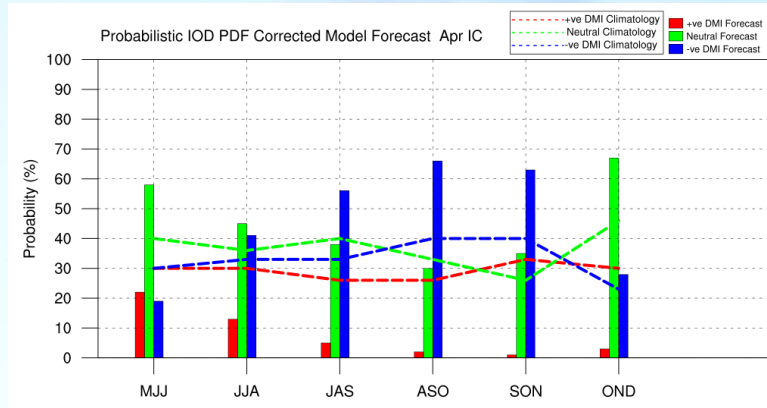


Cool Neutral ENSO conditions are observed over Pacific Ocean and the latest MMCFS forecast indicates Neutral ENSO condition are likely during Monsoon season



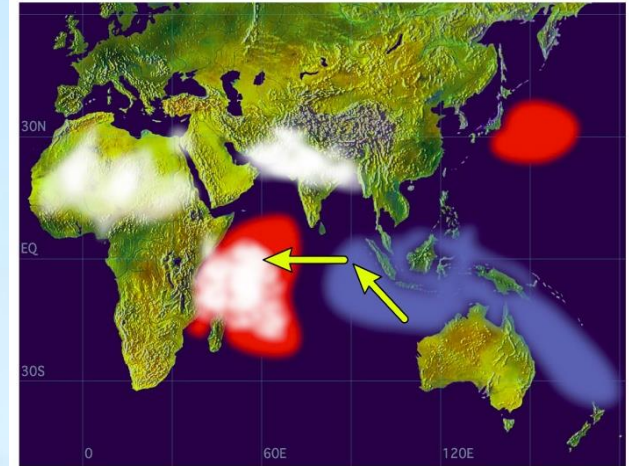
Indian Ocean Dipole: 2021

MMCFS Forecast: April IC

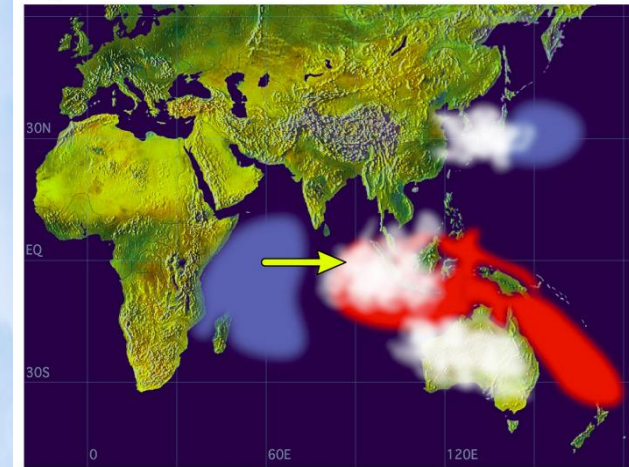


Neutral IOD conditions are observed over Indian Ocean and the latest MMCFS forecast indicates Negative IOD condition are likely to develop during Monsoon season

Positive Dipole Mode



Negative Dipole Mode



South West Monsoon Rainfall forecast for Indian Region



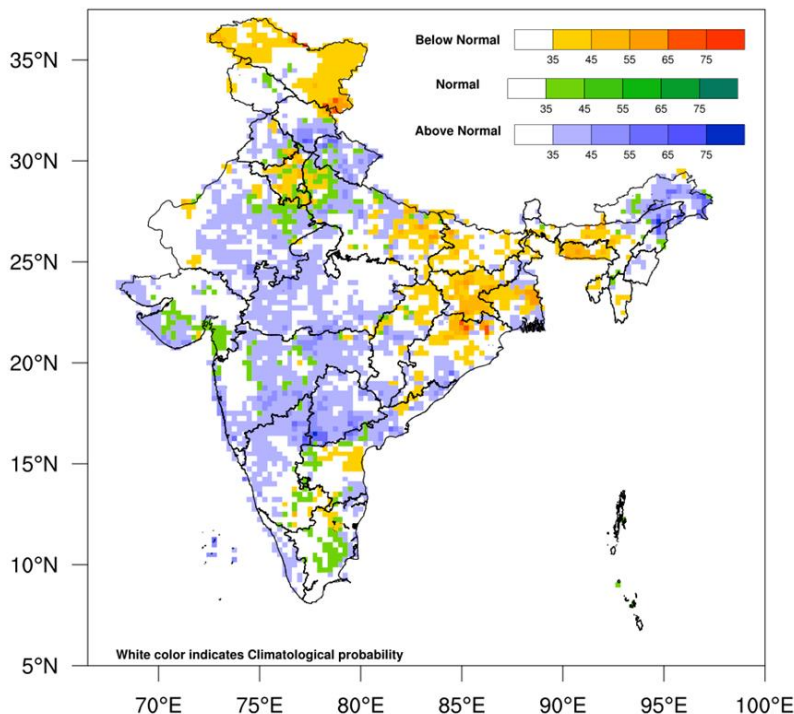
Forecast for the 2021 South-west Monsoon Rainfall

- a) Southwest monsoon seasonal (June to September) rainfall over the country as a whole is most likely to be normal (96 to 104 % of Long Period Average (LPA)).
- b) Quantitatively, the monsoon seasonal (June to September) rainfall is likely to be 98% of the Long Period Average (LPA) with a model error of $\pm 5\%$. The LPA of the season rainfall over the country as a whole for the period 1961-2010 is 88 cm.
- c) Neutral ENSO conditions are prevailing over the Pacific Ocean and Neutral Indian Ocean Dipole (IOD) conditions are prevailing over the Indian Ocean. The latest global model forecast indicates neutral ENSO conditions are likely to continue over the equatorial Pacific and negative IOD conditions are likely to develop over the Indian Ocean during the ensuing monsoon season.



Probability forecast of tercile categories for the seasonal rainfall over India: 2021 SW monsoon season

Tercile probability rainfall forecast for 2021 southwest monsoon season



The forecast suggests either normal or above normal probability is likely over most parts of the country.

The figure illustrates the most likely categories as well as their probabilities. The white shaded areas represent climatological probabilities. The probabilities were derived using the MME forecast prepared from a group of coupled climate models having good skill over the Indian monsoon region. (*Tercile categories have equal climatological probabilities, of 33.33% each).

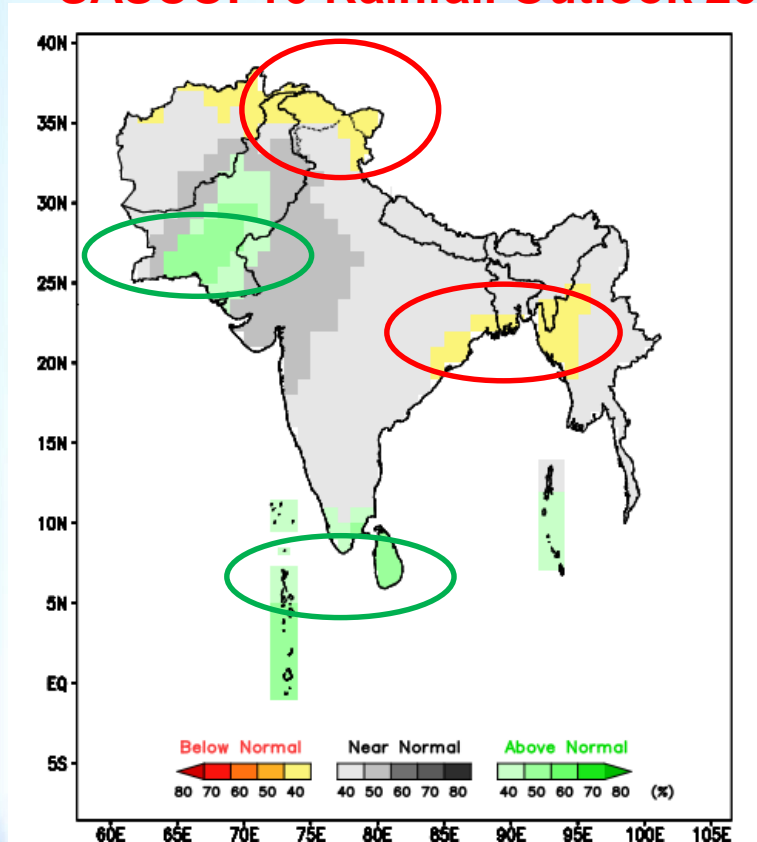


Consensus forecast (SASCOF-19)

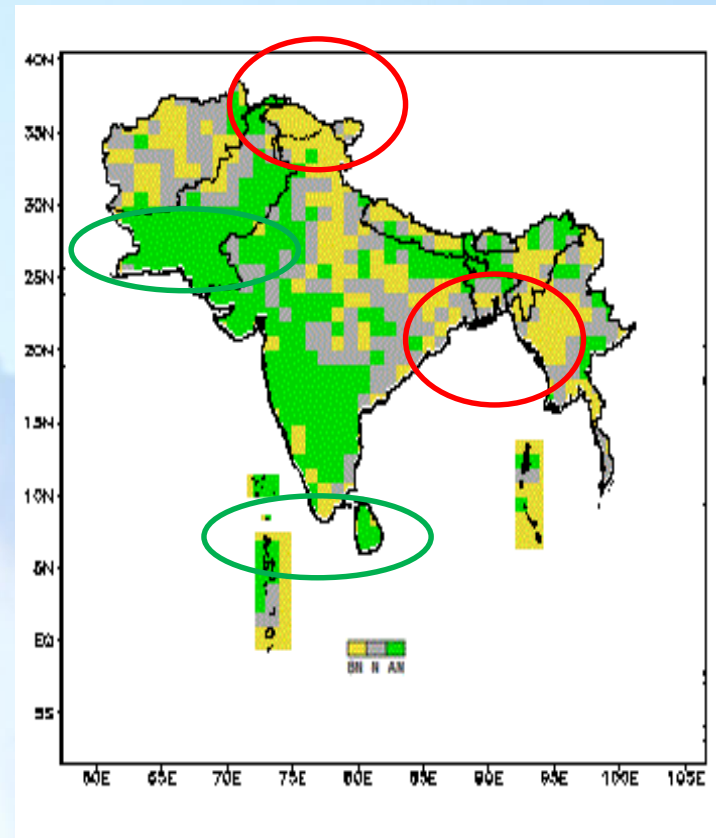


Verification SASCOF Outlook 2020

SASCOF16 Rainfall Outlook 2020



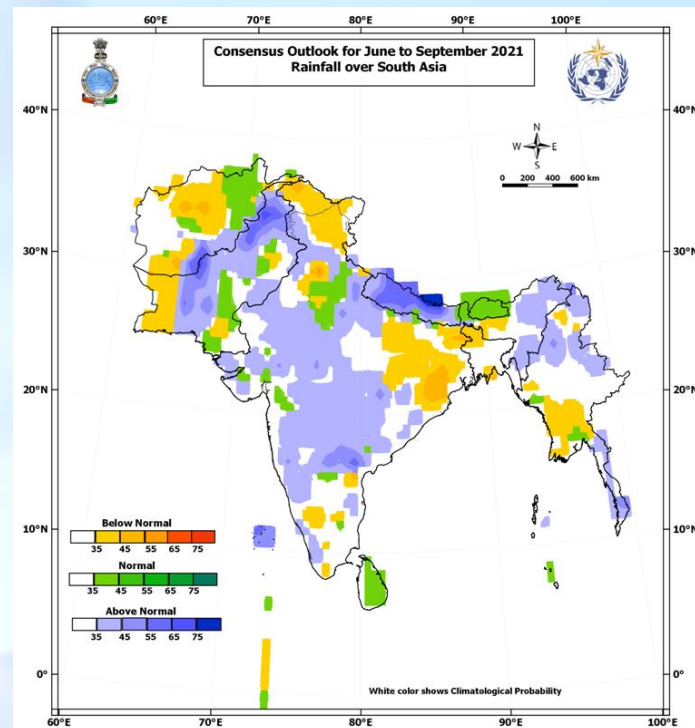
Observed Rainfall Category 2020



The below normal rainfall observed over some areas around north Bay of Bengal and northern most parts of South Asia also matched with the forecast. However, there were differences between the observed and forecasted rainfall patterns over the areas along foothills of Himalayas, some parts of north-western region and central part of the region where normal rainfall was forecasted.



Consensus outlook for Rainfall for the Southwest Monsoon Season (June to September) 2021



Normal to above normal rainfall is most likely during the 2021 southwest monsoon season (June – September) over most parts of South Asia. Geographically, above-normal rainfall is most likely over some areas of the North West, along the foothills of Himalayas and North East parts of the region, and many areas of central part of the region. However, the seasonal rainfall is most likely to be below normal over many areas over extreme northwest, north East and some areas over north-eastern parts of the region. The seasonal rainfall is most likely to be normal or of climatological probabilities over the remaining areas.

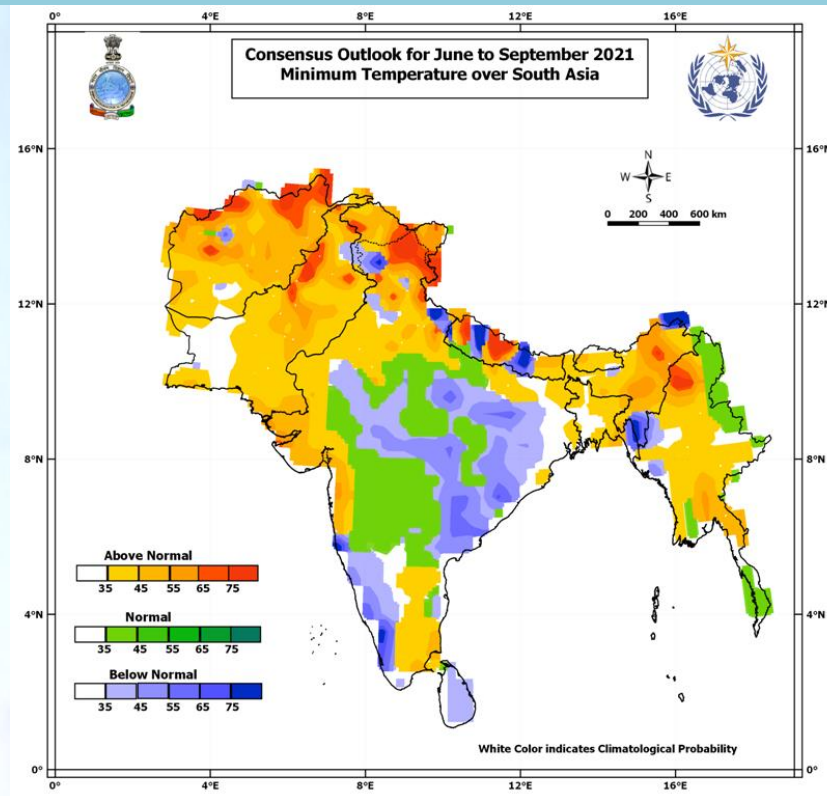


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Consensus outlook for Minimum Temperature for the Southwest Monsoon Season (June to September) 2021



During the season, minimum temperatures are likely to be above normal over most areas of west, northwest, north and north eastern parts of the South Asia. The minimum temperatures are most likely to be below normal over east-central and south western areas of the region. The seasonal minimum temperatures are likely to be normal or of climatological probabilities over remaining parts of the region.

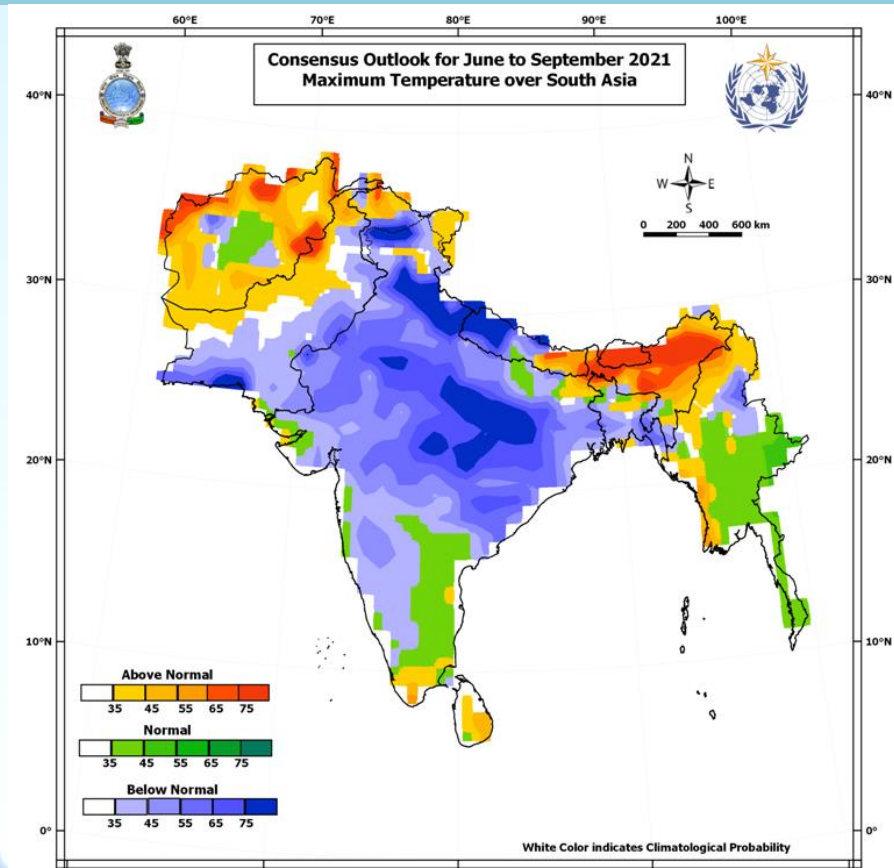


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Consensus outlook for Maximum Temperature for the Southwest Monsoon Season (June to September) 2021



During the Season the maximum temperatures are likely to be below normal over most of the central parts of South Asia. The maximum temperatures are likely to be above normal over northwest and northern areas of northeast of the region. Maximum temperatures are likely to normal or of climatological probabilities over remaining parts of the region



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Summary

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Summary

This This regional climate outlook for the 2021 southwest monsoon season over South Asia has been collaboratively developed by all nine National Meteorological and Hydrological Services (NMHSs) of South Asia with the support from international experts at the nineteenth session of the South Asian Climate Outlook Forum (SASCOF-19) conducted online. The process involved an expert assessment of the prevailing global climate conditions and forecasts from different climate models from around the world. **The moderate La Niña conditions that prevailed over the Pacific since July 2020 have weakened to borderline La Niña to ENSO neutral conditions in the month of April 2021. Based on the global climate model forecasts, there is strong consensus among experts that the ENSO neutral conditions are likely to prevail during the southwest monsoon season.** It is recognized that the global climate model predictions prior to and during the spring season generally have noticeable uncertainty due to spring barrier in the seasonal predictability. It is also recognized that other regional and global factors as well as the intra-seasonal features of the region can also affect the seasonal climate patterns over the region.

For more information and further updates on the southwest monsoon outlook on national scale, the respective National Meteorological and Hydrological Services (NMHSs) may be consulted.




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Consensus outlook for Rainfall for the Southwest Monsoon Season (June to September) 2021


<http://rcc.imdpune.gov.in/Products.html>




Regional Climate Centre (RA II Region)
India Meteorological Department, Pune




HomeClimate MonitoringClimate PredictionERF for South AsiaClimate of South AsiaRegional ProductsTrainingSASCOF-19




Seasonal Climate Outlook for South Asia




ENSO Bulletin




Climate Diagnostic Bulletin



Annual Climate Summary



Consensus Statement



Monsoon

2021

Monsoon Updated

Select

NE Monsoon


Select

Winter


Select

Enhance Consensus Outlook







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**Nineteenth Session of
South Asian Climate Outlook Forum (SASCOF-19) &
Climate Services Users Forum
Online Session, 26-28 April 2021**

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Thank you

