WORLD METEOROLOGICAL ORGANIZATION

REGIONAL CLIMATE CENTRE PUNE

The WMO Regional Climate Centre Pune (RCC Pune), coordinated by the India Meteorological Department (IMD), provides South Asia with climate products.

Linkage with WMO Regional Climate Outlook Fora

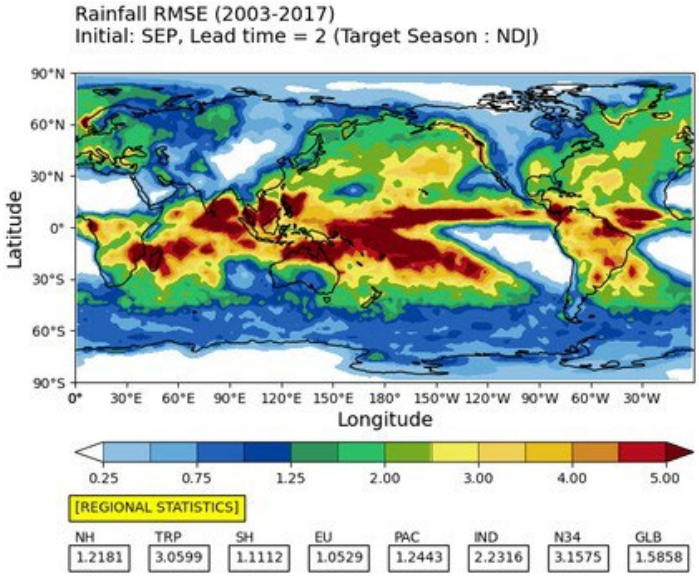
RCC Pune coordinates and organizes the South Asia Climate Outlook Forum (SASCOF) and participates in the Forum on Regional Climate Monitoring, Assessment and Prediction for WMO Regional Association II (Asia, FOCRAII).

Mandatory functions

All WMO RCCs fulfill a set of mandatory functions related to seasonal prediction, climate monitoring, data services and training. Listed below are those performed by the RCC Pune.

Seasonal prediction – Every month, monthly and seasonal deterministic and probabilistic predictions of precipitation, temperature and sea-surface temperature (SSTs) are provided for the subcontinent of India South Asia and the globe. RCC-Pune also provides Niño–Southern Oscillation (ENSO) and Indian Ocean Dipole (IOD) bulletins, Seasonal Climate Outlook for South Asia, and ENSO indices.

RCC Pune also provides historical prediction verifications for the period 2003–2017 for the globe.



Verification of November-December-January rainfall predictions (initial conditions: September)

OVERVIEW

Domain of responsibility: South Asia

Language: English

Status:

- Demonstration phase initiated: April 2012
- Designation by WMO: May 2017

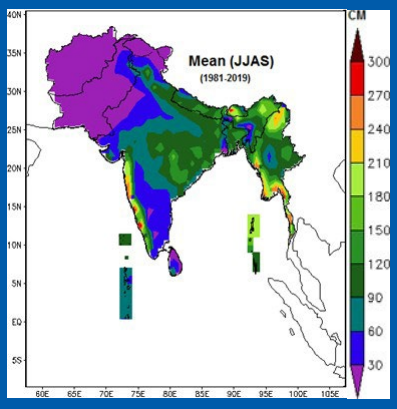
Climate features

South Asia experiences southwest monsoon rainfall from June to September. The monsoon is mainly affected by sea-surface temperatures in the Pacific and Indian Oceans and by winter and spring snow cover.

El Niño Southern Oscillation – El Niño events usually weaken the monsoon with below-average precipitation, while La Niña conditions tends to increase the monsoon rainfall.

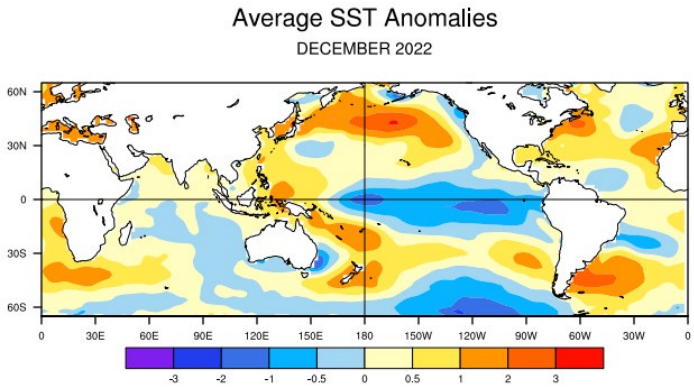
Indian Ocean Dipole – A positive IOD contributes to a stronger monsoon, while a negative IOD contributes to weaker one.

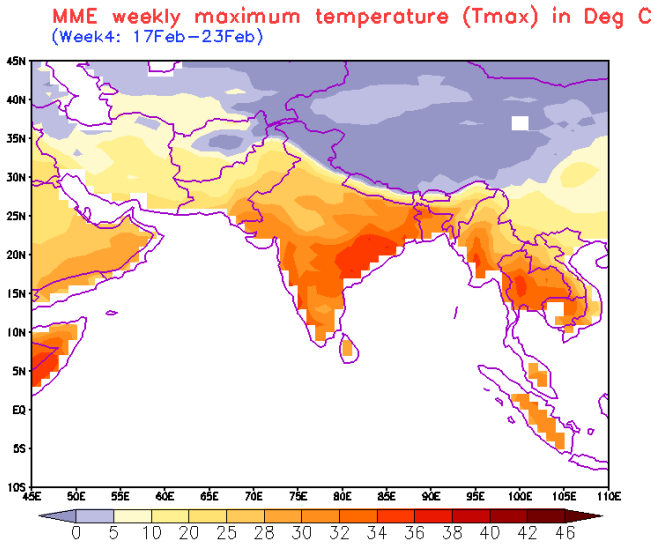
Winter and snow cover – In general, winter and spring snow cover extent has an inverse relationship with the subsequent Asian summer monsoon rainfall.



June to September climatological precipitation over South Asia (1981–2019)

Climate monitoring – Provides monthly maps of mean sea-level pressure, maximum and minimum temperatures, total rainfall, wind at 850 hectopascals (hPa), stream function at 850 hPa, velocity potential at 250 hPa, outgoing long-wave radiation and sea-surface temperature.





Data services – Gridded data products, such as rainfall and temperature datasets for the subcontinent of India rainfall data merged with satellite rainfall estimates for the South Asia region and regional analysis dataset of the Indian Monsoon Data Assimilation and Analysis (IMDAA) project, are available.

Training – Training on seasonal climate prediction and climate data management are provided during SASCOF sessions.

Recommended functions fulfilled

WMO RCCs are recommended to perform certain functions. Listed below are those performed by RCC Pune.

Climate prediction and climate projection – Week-1,-2,-3 and-4 predictions of rainfall, maximum and minimum temperature, and cyclogenesis probability are provided. Animations of predictions – to visualize the evolution of rainfall, winds and anomalies – are also available.

The website provides links to current activities related to climate change in South Asia, including the Indian Institute of Tropical Meteorology Earth System Model (IITM-ESM), which generates future global and regional climate projections

Success story

The IITM-ESM is the first climate model from India to participate in the experiments of the Coupled Modeling Intercomparison Project Phase 6 (CMIP-6).