GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
INDIA METEOROLOGICAL DEPARTMENT

IMD Meteorological Monograph:
Northeast Monsoon of South Asia

No: MoES/IMD/Synoptic Met/02(2022)/27

Northeast Monsoon of South Asia

M. Rajeevan, M. Mohapatra, C. K. Unnikrishnan,
B. Geetha, S. Balachandran, O. P. Sreejith,
P. Mukhopadhyay, D. R. Pattanaik, P. Guhathakurta,
P. Kumar, K. N. Kumar, J. Bhate, P. Rohini,
M. Sharma, R. Ashrit, A. Mitra and K. Sagar

2022

India Meteorological Department
Ministry of Earth Sciences
Government of India

Northeast Monsoon of South Asia

M. Rajeevan[1], M. Mohapatra[2], C. K. Unnikrishnan[3], B. Geetha[4], S. Balachandran[4], O. P. Sreejith[5], P. Mukhopadhyay[6], D. R. Pattanaik[2], Pulak Guhathakurta[5], Pankaj Kumar[9] , K. Niranjan Kumar[7], Jyoti Bhate[8], P. Rohini[5], Monica Sharma[2], Raghu Ashrit[7], Ashim Mitra[2], Karuna Sagar[10]

1. Ministry of Earth Sciences, NCESS, Thiruvananthapuram
2. India Meteorological Department, New Delhi
3. National Centre for Earth Science Studies, Trivandrum
4. India Meteorological Department, Chennai
5. Indian Institute of Tropical Meteorology, Pune
6. India Meteorological Department, Pune
7. National Centre for Medium Range Weather Forecasting, Noida
8. National Atmospheric Research Laboratory, Tirupati
9. Indian Institute of Science Education and Research (IISER), Bhopal
10. India Meteorological Department, Amravati

Rajeevan et al., 2022, Northeast Monsoon of South Asia, Meteorological Monograph, MoES/IMD/Synoptic Met/02(2022)/27, 1-216

Disclaimer and Limitations

IMD is not responsible for any errors and omissions. The geographical boundaries shown in the publication do not necessarily correspond to the political boundaries.

Published in India

By

India Meteorological Department, Ministry of Earth Sciences,
Lodi Road, New Delhi – 110 003 (India)
Phone: 91-11-43824298
Email: mausampublication@gmail.com

Executive Summary

1	Document title	Northeast Monsoon of South Asia
2	Document type	Meteorological Monograph
3	Issue No.	MoES/IMD/Synoptic Met/02(2022)/27
4	Issue date	09.12.2022
5	Security Classification	Unclassified
6	Control Status	Unclassified
7	No. of Pages	224
8	No. of Figures	140
9	No. of reference	135
10	Annexure	Nil
11	Distribution	Unrestricted
12	Language	English
13	Editors /Authors	M Rajeevan, M. Mohapatra, C. K. Unnikrishnan, B. Geetha, S. Balachandran, O. P. Sreejith, P. Mukhopadhyay, D. R. Pattanaik, Pulak Guhathakurta, Pankaj Kumar , K. Niranjan Kumar, Jyoti Bhate, P. Rohini, Monica Sharma, Raghu Ashrit, Ashim Mitra and Karuna Sagar
14	Originating Division/Group	Dr. M. Rajeevan, Distinguished Scientist, Ministry of Earth Sciences
15	Reviewing and Approving Authority	Director General of Meteorology, India Meteorological Department
16	End users	Operational Forecaster, Modeler, Researcher, Government, Academics etc.
17	Abstract	Understanding on diurnal, intra-seasonal, seasonal variability, monsoon onset, synoptic weather systems and capability of making more accurate forecasts using the state-of-the-art dynamical models during the NE monsoon season have improved substantially in recent years. The present monograph has incorporated more recent research results from studies using long term and updated climate data sets which would be very useful for forecasters as reference material and also students, young researchers venturing into NE monsoon research. The details of synoptic systems affecting south peninsula and Sri Lanka and forecasting aspects of these weather systems are also discussed. A brief summary of the verification of forecasts of NE monsoon rainfall over India using two different weather prediction systems is included as reference material for forecasters.
18	Key Words	Southwest Monsoon, Indian Ocean Dipole, Multi-model Ensemble, Forecast Verification, Heavy rainfall, Monsoon and Agriculture