Research Paper

STUDY ON POST-MONSOON IN TAMIL NADU

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INTRODUCTION

The south-west monsoon has to withdraw fully to create enabling conditions for the onset of the monsoon in reverse (or north-east monsoon). The ongoing disturbed weather activity over the Mumbai latitude would only prolong the sway of westerlies over large parts of the peninsula. The westerlies would have to ultimately yield place for monsoon easterlies. This can take time, and is not expected to happen until the disturbed weather activity migrates to the Chennai latitude. The spinning up of a fresh ‘low’ over East-central Bay of Bengal on Tuesday may have only compounded matters. Normal date of onset is October 20 (Wednesday) but ongoing

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cyclonic disturbances in the Arabian Sea and
the Bay of Bengal are seen fending off
monsoon easterlies from establishing over the
southeast Coast. Onset of the north-east
monsoon over Tamil Nadu and the rest of the
peninsula could be delayed by as much as a
week, according to experts.

ONSET CONDITIONS
According to IMD specifications,
commencement of north-east monsoon
assumes withdrawal of southwest monsoon up
to 15° latitude, onset of persistent surface
easterlies over Tamil Nadu coast to required
depth, fairly widespread rainfall over coastal
Tamil Nadu, South Coastal Andhra Pradesh
and adjoining areas. These conditions are
likely to be met as the week progresses, with
surface easterlies notching up cruising speed
by Friday. Rainfall would also have become
more widespread over the peninsula by then.

WEATHER WARNING
A weather warning valid for Monday said that
isolated heavy rainfall would occur over Coastal
Andhra Pradesh and South Coastal Orissa.
The causative upper air cyclonic circulation
over West-central Bay of Bengal and adjoining
Coastal Andhra Pradesh has been persisting
over the past couple of days. This system could
be the fulcrum around which the seasonal
transition of weather would come about over
Peninsular India with westerlies getting
increasingly replaced by north easterlies to
monsoon easterlies. Additionally, the IMD has
picked the crucial “shear zone” formation along
the 15° latitude, which defines the playground
for northeast monsoon weather systems. The
shear line is a line or narrow zone across which
there is an abrupt change in the horizontal wind
component; a line of maximum horizontal wind
shear.

CONVETIVE CLOUDS
Scattered rain or thundershowers have been
forecast for Rayalaseema, remaining parts of
Orissa, Konkan and Goa. Satellite cloud
imagery on Monday revealed the presence of
convective clouds over parts of Coastal
Andhra Pradesh and West-central Bay of
Bengal. International Research Institute (IRI) for
Climate and Society at Columbia University
has indicated wetter than average weather for
Rayalaseema, parts of Telangana, North and
South Interior Karnataka and parts of North and
Interior Tamil Nadu during the six days ending
Friday. Other international models signalled to
the setting up of a strong “pulse” entering the
Bay of Bengal from upstream South China Sea
later in the week. They also indicated that, onset
of northeast monsoon during the week may not
have the back-up of a wet phase of the periodic
Madden-Julian Oscillation (MJO) wave as
forecast earlier. The onset, if at all, would
happen on the monsoon’s own inherent
strength and dynamics. The MJO wave is now
forecast to settle over Equatorial Indian Ocean
and adjoining peninsular seas around
November 7. Transiting the upper levels of the
atmosphere, the wave has been known to set
up monsoon onsets, low-pressure areas,
depressions and even cyclones. Given this, the
northeast monsoon could likely see a pick up
after November 7, according to as per various
MJO models surveyed. The wave, which has
implications for ground weather, is seen
particularly strong during November 12 and 16.
Two days into its onset, the north-east monsoon
has been steadily consolidating its presence along the country’s south-east coast. The seasonal weather system has been riding piggyback on an upper level cyclonic circulation, which has since moved southward along the Tamil Nadu coast to a perch over South-west Bay of Bengal.

RAIN ALERT
According to the UK Met Office weather model, the system was expected to cross land and the South Peninsula towards Coastal Karnataka over the next few days. A weather warning issued by India Meteorological Department (IMD) on Sunday said that isolated heavy to very heavy rainfall would occur over Coastal Andhra Pradesh during the next two days. It would be isolated heavy over Tamil Nadu, Interior Andhra Pradesh, South Coastal Orissa and Kerala during this period. The 24 hours ending Sunday morning said that widespread rainfall was reported from Coastal Orissa and Andhra Pradesh while it was fairly widespread over the rest of South Peninsular India.

‘LOW’ BREWING
The IMD said that the first full-fledged low-pressure area of the season may emerge over South Andaman Sea by Wednesday. This would be remnant of a tropical depression located across India’s territorial waters in the Gulf of Thailand on Sunday. It was headed in a west-northwest direction to move for its onward hop into the South Andaman Sea. A number of weather models surveyed—including Canadian Meteorological Centre, US National Centres for Environment Prediction/Global Forecast System and European Centre for medium-Range Weather Forecasts—indicated its generally west-northwest track and intensification into a likely depression.

DIFFERING VIEWS
The models differed in their outlook for its landfall, positing it along the Southeast Coast at any point from Central coastal Tamil Nadu to the Coastal Andhra Pradesh. The US Navy’s NGP proved the odd model out by suggesting that the system might track straight to the west, cross northern Sri Lanka and weaken but proceed to curl into extreme South Indian Peninsula. The International Research Institute (IRI) for Climate and Society at Columbia University said in its six-day outlook ending Thursday that very heavy recorded rainfall is likely over South Coastal Andhra Pradesh, Central Tamil Nadu coast and adjoining interior.

ABOVE NORMAL
The region around Chennai and South Coastal Andhra Pradesh may receive up to 60% above the normal rainfall during this six-day period, it said. ‘Wetter than normal conditions’ have been forecast for North Coastal and Interior Tamil Nadu. But the Climate Prediction Centre of the US National Weather Services indicated that monsoon north easterlies and easterlies over the Bay of Bengal would give way to a burst of westerlies turning south easterlies from Friday. This might rob the Tamil Nadu coast some of the rains, though they are expected to fall over Kerala as the south easterlies mop up moisture from the Bay and blow in as westerlies to north westerlies to complete the circulation in the larger trough.

CLOUD IMAGERY
On Sunday, satellite imagery showed convective clouds over parts of West-central,
Northeast and Southwest Bay, South Andaman Sea, Southeast Arabian Sea, Orissa, South Chhattisgarh, Andhra Pradesh, Kerala and Tamil Nadu. This is expected to trigger widespread rain or thundershowers over Coastal Andhra Pradesh. It would be fairly widespread over Tamil Nadu, Andhra Pradesh, Kerala, Coastal Orissa, South Chhattisgarh and Andaman and Nicobar Islands. Scattered rain or thundershowers would occur over South Karnataka and Lakshadweep on Monday and increase thereafter. Isolated rain or thundershowers would also occur over the Northeastern States on Monday and increase thereafter. An extended forecast until Friday said that fairly widespread rainfall activity would occur over Andhra Pradesh, Karnataka, Tamil Nadu, Kerala and Andaman and Nicobar Islands.

CONCLUSION

Depending on location, this period lasts from October to November, after the southwest monsoon has peaked. Less and less precipitation falls, and vegetation begins to dry out. In most parts of India, this period marks the transition from wet to dry seasonal conditions. Average daily maximum temperatures range between 28 and 34°C (82 and 93°F). The northeast monsoon, which begins in September, lasts through the post-monsoon seasons, and only ends in March, carries winds that have already lost their moisture while crossing central Asia and the vast rain shadow region lying north of the Himalayas.

REFERENCES

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2. Business Daily from THE HINDU group of publications, Monday, Nov 01, 2010