REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL WEATHER OUTLOOK

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 21.11.2024

TROPICAL WEATHER OUTLOOK FOR THE NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR THE NEXT 168 HOURS ISSUED AT 0700 UTC OF 21.11.2024 BASED ON 0300 UTC OF 21.11.2024.

BAY OF BENGAL:

Sub: Likely formation of low pressure area over southeast Bay of Bengal around 23rd November

Latest observations indicate that an upper air cyclonic circulation has formed over Equatorial Indian Ocean off Sumatra coast and adjoining South Andaman Sea in lower tropospheric level at 0300 UTC of today, the 21st November, 2024. Under its influence, a low pressure area is likely to form over southeast Bay of Bengal around 23rd November. Thereafter, it is likely to move west-northwestwards and intensify into a depression over central parts of south Bay of Bengal during subsequent 2 days.

Scattered to broken low and medium clouds with embedded intense to very intense convection lay over south Bay of Bengal & south Andaman Sea. Scattered low and medium clouds with embedded moderate to intense convection lay over north Andaman Sea.

***PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS:**

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	LOW	MOD	HIGH	-	-

*NOTE: EVERY 24HR FORECAST IS VALID UPTO 0300 UTC (0830 IST) OF NEXT DAY
- indicates genesis has already occured

ARABIAN SEA:

Yesterday's cyclonic circulation over southeast Arabian sea off Kerala coast at 0.9 km above mean sea level persisted over the same region has become less marked at 0300 UTC of today, the 21st November, 2024.

Scattered low and medium clouds with embedded intense to very intense convection lay over southeast Arabian Sea, Comorin & Lakshadweep Island and Maldives area. Scattered low and medium clouds with embedded moderate to intense convection lay over southwest Arabian Sea and isolated weak to moderate convection lay over central Arabian Sea.

***PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS:**

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

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Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100% This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins

Environmental features:

Sea surface temperature is more than 28^0C over entire Bay of Bengal (BoB). Topical cyclone heat potential is more than 100 KJ/cm^2 over Andaman Sea upto northeast BoB and westwards over entire south BoB & adjoining EIO. It is less 40-60 KJ/cm^2 over southwest & adjoining eastcentral BoB and along & off Sri Lanka/Tamil Nadu/ Andhra Pradesh coasts. Madden Julian Oscillation (MJO) is in phase 3 with amplitude more than 1 and would move across phases 3 & 4 during next 10 days with amplitude remaining more than 1. CFS-NCICS model forecast indicates likely emergence of Equatorial Rossby Waves over South Andaman Sea from 21st onwards. Strong westerly wind anomaly over south BoB and easterly wind anomaly to it's north over South & adjoining central BoB is indicated during 25th - 30th November. During this period other waves including MJO, low frequency background waves, ERW are also likely over south BoB. A Zone of positive cyclonic vorticity at 850 hpa level is around 50-60x10^{-5} s^{-1} over Equatorial Indian Ocean off Sumatra coast and adjoining South Andaman Sea. The low level convergence is around 20 x10^{-5} s^{-1} over south Andaman Sea. Upper level divergence is around 20x10^{-5} s^{-1} over south Andaman Sea. The wind shear is moderate over south Andaman Sea and low to moderate over southwest & adjoining southeast & eastcentral BoB. Shear tendency is increasing over south Andaman Sea. Upper tropospheric ridge is near 10^oN. The environmental features are likely to contribute positively to cyclogenesis over south BoB.

Discussion of major models:

IMD GFS: is indicating cyclonic circulation (Cycir) over Equatorial Indian Ocean (EIO) off Sumatra coast & adjoining South Andaman Sea by 0000 UTC of 21st, low pressure area (LPA) over southeast BoB & adjoining south Andaman Sea around 22nd with nearly west-northwestwards movement and intensification into depression over southeast BoB around 23/0000 UTC, moving in same direction and further intensifying into a deep depression over southeast BoB around 24/0000, cyclonic storm over southeast & adjoining southwest BoB on 25/0000. It is moving northwestwards and lay over southwest BoB as a CS around 26/0000. It will then move towards Tamil Nadu coast while weakening and cross the coast as a Deep Depression around 27/0000.

NCEP GFS: is indicating Cycir over Equatorial Indian Ocean (EIO) off Sumatra coast & adjoining South Andaman Sea by 0000 UTC of 21st, LPA over southeast BoB & adjoining south Andaman Sea around 23rd/0000 with west-northwestwards movement and intensification into depression over southeast BoB around 24th/0000 UTC. Moving in the same direction, it intensifies into SCS over southeast & adjoining southwest BoB around 25th. Continuing to move in the same direction with the same intensity it lay over southwest BoB as a SCS around 27/0000. It will then move towards Tamil Nadu coast and cross the coast as a DD/CS around 28/0000.

ECMWF: is indicating LPA over Equatorial Indian Ocean (EIO) off Sumatra coast & adjoining South Andaman Sea around 22/0000, nearly northwestwards movement & intensification into depression over southeast BoB around 24/0000. It will then move west-northwestwards and lay close to the Sri Lanka coast as a depression around 25/0000. Continuing to move in the same direction and cross the Tamil Nadu coast as a Depression around 26/1900.

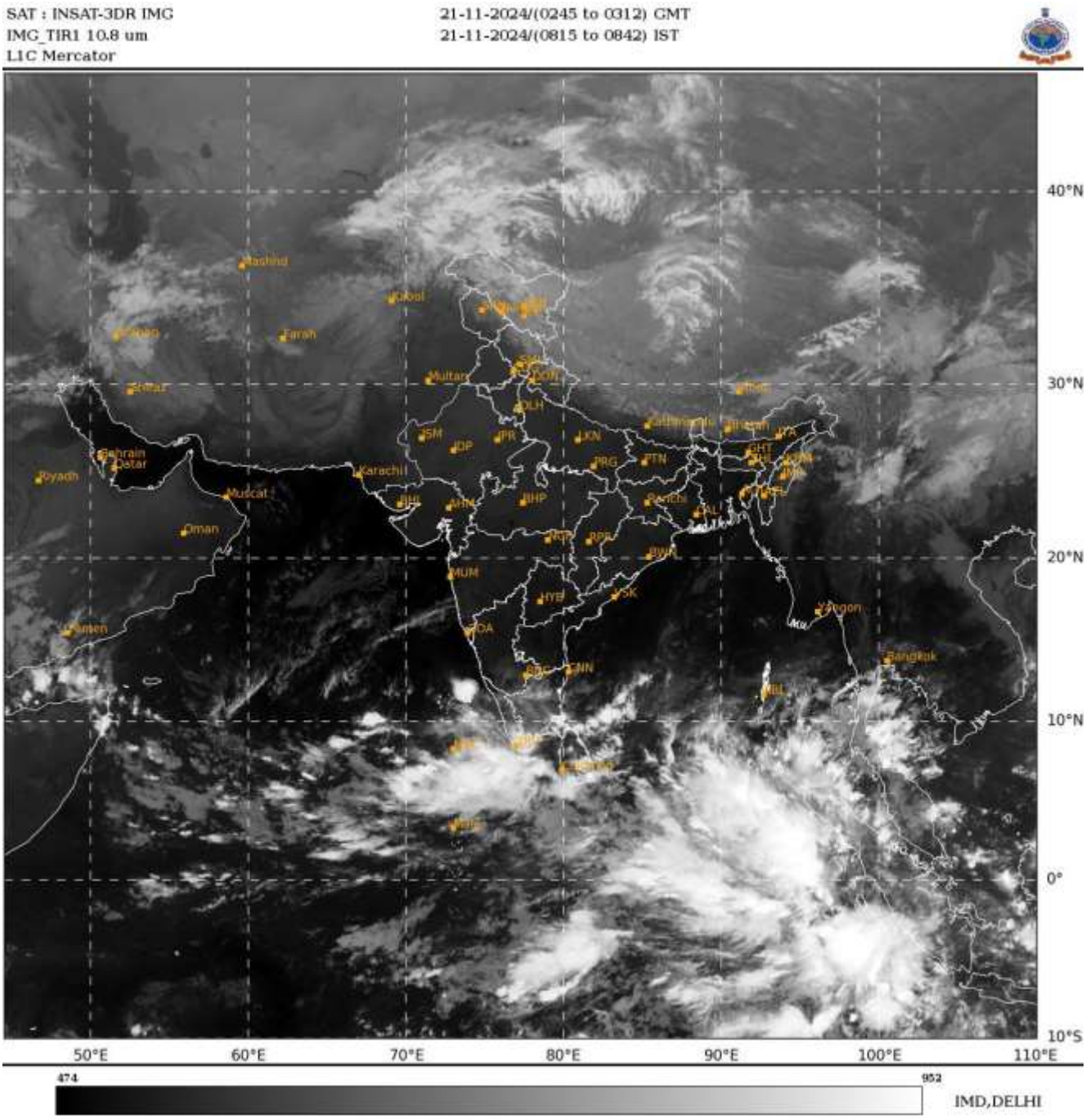
Thus, guidance from various models indicate formation of cyclonic circulation over South Andaman Sea around 21st, LPA over southeast BoB around 23rd, and depression over southwest BoB around 24th. There is large divergence among various models wrt peak intensification of system. GFS group of models are indicating higher intensification, ECMWF upto depression/deep depression stage and NCUM upto low pressure area stage. However,

there is good consensus among various models that the system would weaken before crossing coast Tamil Nadu coast. Most of the models are indicating west-northwestwards to northwestwards movement towards Sri Lanka – South Tamil Nadu coasts. Only NCEP GFS is indicating initial west-northwestwards movement followed by north-northwestwards movement and crossing over Andhra Pradesh coast.

Hence it is inferred that **an upper air cyclonic circulation has formed over Equatorial Indian Ocean off Sumatra coast and adjoining South Andaman Sea in lower tropospheric level at 0830 hours IST of today, the 21st November, 2024. Under its influence a low pressure area is likely to form over southeast Bay of Bengal around 23rd November. Thereafter, it is likely to move west-northwestwards and intensify into a depression over central parts of south Bay of Bengal during subsequent 2 days.**

Intense Observation Phase may be declared for Andaman Islands during 20th-23rd, East coast of Sri Lanka during 24th-26th, Tamil Nadu & Andhra Pradesh coasts during 24th-27th November.

A continuous watch is being maintained for further intensification and movement of system towards Tamil Nadu - Sri Lanka coasts.



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