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(Ministry of Earth Sciences)**

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FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23093750)

CONTROL ROOM NDMA (FAX.NO. 26701729)

CABINET SECRETARIAT (FAX.NO.23012284, 23018638)

PS TO HON'BLE MINISTER FOR S & T AND EARTH SCIENCES (FAX NO.23316745)

SECRETARY, MOES, (FAX NO. 24629777)

H.Q. (INTEGRATED DEFENCE STAFF AND CDS) (FAX NO. 23005137/23005147)

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DIRECTOR GENERAL, AIR (23421105, 23421219)

PIB MOES (FAX NO. 23389042)

UNI (FAX NO. 23355841)

D.G. NATIONAL DISASTER RESPONSE FORCE (NDRF) (FAX NO. 26105912, 2436 3260)

DIRECTOR, PUNCTUALITY, INDIAN RAILWAYS (FAX NO. 23388503)

CHIEF SECRETARY, GOVT. OF MAHARASHTRA (FAX NO. 022 22028594)

CHIEF SECRETARY, GUJARAT (FAX NO.079-23250305)

CHIEF SECRETARY, DAMAN, DIU, NAGAR HAVELI (FAX NO.0260-2642702)

CHIEF SECRETARY, GOA (FAX NO. 0832-2415201)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22256360)

CHIEF SECRETARY, KERALA (FAX NO. 0471-2327176)

CHIEF SECRETARY, LAKSHADWEEP ISLANDS (FAX NO. 04896-262184)

CHIEF SECRETARY, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)

CHIEF SECRETARY, GOVT. OF ODISHA (FAX NO. 0674 -2536660)

CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645-246600)

CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)

CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2337575, 2334145)

CHIEF SECRETARY, TELANGANA (FAX NO. 040-23453700)

Sub: (1) Depression over southwest and adjoining southeast Bay of Bengal—(Cyclone Alert for Tamilnadu and Puducherry coasts- Yellow Message)

(2) Cyclonic Storm "GATI" weakened into Deep Depression over Somalia

(1) Depression over southwest and adjoining southeast Bay of Bengal—(Cyclone Alert for Tamilnadu and Puducherry coasts-Yellow Message)

The Depression over southwest and adjoining southeast Bay of Bengal moved west-northwestwards with a speed of 11 kmph during past 06 hours and lay centred at 1130 hrs IST of 23rd November, 2020 over the same region near latitude 9.6°N and longitude 84.0°E, about 520 km east-southeast of Puducherry and 560 km southeast of Chennai. It is very likely to intensify into a cyclonic storm during next 24 hours. It is very likely to move northwestwards and cross Tamil Nadu and Puducherry coasts between Karaikal and Mamallapuram around 25th November 2020 afternoon as a severe cyclonic storm with a wind speed of 100-110 kmph gusting to 120 kmph.

Spatial rainfall distribution: Isolated: ≤25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given below:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
23.11.20/1130	9.6/84.0	45-55 gusting to 65	Depression
23.11.20/2330	10.1/82.8	55-65 gusting to 75	Deep Depression
24.11.20/1130	10.5/81.9	70-80 gusting to 90	Cyclonic Storm
24.11.20/2330	10.9/81.1	90-100 gusting to 110	Severe Cyclonic Storm
25.11.20/1130	11.6/80.3	110-120 gusting to 135	Severe Cyclonic Storm
25.11.20/2330	12.5/79.2	70-80 gusting to 90	Cyclonic Storm
26.11.20/1130	13.5/78.3	30-40 gusting to 50	Depression

Warnings:

(i) Heavy Rainfall Warning

Fairly widespread to widespread rainfall/thunderstorm activity very likely over Tamilnadu, Puducherry & Karaikal during 24th to 26th November and over south Coastal Andhra Pradesh, Rayalaseema during 25th to 26th and Telangana during 26th to 27th November, 2020. Isolated extremely heavy rainfall activity also very likely over Tamilnadu & Puducherry (**Pudukottai, Thanjavur, Tiruvarur, Karaikal, Nagapattinam, Cuddalore, Ariyalur & Perabalu** districts during 24th and **Kadalur, Kallakurchi, Puducherry, Villupuram, Tiruvannamalai, Chengalpattu to Ariyalur, Perambalur and Karaikal** districts during 25th) and over south Coastal Andhra Pradesh & Rayalaseema (**Nellore and Chittoor districts**) on 25th & 26th and over Telangana on 26th November, 2020.

Sub-Divisions	23 Nov 2020*	24 Nov 2020*	25 Nov 2020*	26 Nov 2020*	27 Nov 2020*
Coastal Andhra Pradesh	Rainfall at a few places	Rainfall at a few places with heavy rainfall at isolated places	Rainfall at most places with isolated heavy to very heavy with extremely heavy falls	Rainfall at most places with isolated heavy to very heavy with extremely heavy falls	Rainfall at many places with isolated heavy falls
Tamilnadu, Puducherry & Karaikal	Rainfall at many places with heavy rainfall at isolated places	Rainfall at most places with heavy to very heavy rainfall with extremely heavy falls at isolated places	Rainfall at most places with heavy to very heavy rainfall at a few places and extremely heavy falls at isolated places	Rainfall at many places with heavy rainfall at isolated places over north Tamilnadu	Rainfall at many places with heavy rainfall at isolated places
South Interior Karnataka	Rainfall at isolated places	Rainfall at a few places	Rainfall at many places with heavy rainfall at isolated places	Rainfall at many places with heavy rainfall at isolated places	Rainfall at many places
Rayalaseema	Rainfall at a few places	Rainfall at many places with isolated heavy falls	Rainfall at most places with heavy to very heavy rainfall with extremely heavy falls at isolated places	Rainfall at most places with heavy to very heavy rainfall with extremely heavy falls at isolated places	Rainfall at many places with heavy rainfall at isolated places
Telangana	Rainfall at isolated places	Rainfall at isolated places	Rainfall at a few places with isolated heavy falls	Rainfall at most places with heavy to very heavy rainfall with extremely heavy falls at isolated places	Rainfall at many places
South Chattisgarh and South Odisha				Rainfall at many places with isolated heavy falls	

Spatial rainfall distribution: Isolated: ≤25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

(ii) Wind warning

Squally weather with wind speed of 45-55 kmph gusting to 65 kmph likely over Southwest & adjoining west-central & southeast Bay of Bengal and along & off Tamil Nadu and south Andhra Pradesh coasts on 23rd November. It would increase gradually becoming 65-75 kmph gusting to 85 kmph over the southwest and adjoining westcentral Bay of Bengal and 55-65 kmph gusting to 75 kmph along and off Tamil Nadu and adjoining South Andhra Pradesh coast and over Gulf of Mannar from 24th November morning. It would further increase becoming 100-110 kmph gusting to 120 kmph over the southwest Bay of Bengal along and off coastal districts of north Tamil Nadu and Puducherry (**Nagapattinam, Karaikal, Myladuthurai, Cuddalore, Puducherry, Villupuram & Chengalpattu districts**), 65-75 kmph gusting to 85 kmph very likely over adjoining westcentral Bay along and off South Andhra Pradesh (Nellore & Prakasham districts), Gulf of Mannar and along and off districts of south coastal districts of Tamil Nadu from 25th November morning for subsequent 12 hrs.

(iii) Sea condition

Sea condition is rough to very rough over Southwest & adjoining west-central & southeast Bay of Bengal and along & off Tamil Nadu & Puducherry and south Andhra Pradesh coasts and over Gulf of Mannar. It would gradually become High over the southwest and adjoining west-central Bay of Bengal and along & off Tamil Nadu, Puducherry coast and very rough along and off south Andhra Pradesh coast and also over Gulf of Mannar on 24th. The sea condition would be very high over the southwest and adjoining west-central Bay of Bengal and along & off north Tamil Nadu, Puducherry coasts and high along and off south Tamil Nadu & south Andhra Pradesh coasts and also over Gulf of Mannar on 25th November, 2020.

(iv) Strom Surge Warning

Tidal wave of about 1m height above the astronomical tide is very likely to inundate the low lying areas near the place of landfall.

(v) Fishermen Warning

Fishermen are advised not to venture into Southwest & adjoining west-central & southeast Bay of Bengal, Gulf of Mannar and along & off Tamil Nadu, Puducherry and south Andhra Pradesh coasts during 23-25th November. Also the fishermen out at Sea are advised to return to the coast and avoid the above sea area.

(vi) Damage expected over and Action suggested:

- Major damage to thatched houses/ huts with possibility of roof tops being blown off and Unattached metal sheets may fly.
- Damage to power and communication lines.
- Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- Breaking of tree branches, uprooting of large avenue trees. Severe damage to banana and papaya trees, horticulture and crops & orchards. Large dead limbs blown from trees.
- Major damage to coastal crops.
- Damage to embankments/ salt pans.

(vii) Fishermen Warning & Action Suggested:

- Total suspension of fishing operations.
- Coastal hutment dwellers to be moved to safer places. People in affected areas to remain indoors. Movement in motor boats unsafe.

2. Cyclonic Storm “GATI” weakened into a Deep Depression

The cyclonic storm “GATI” over north Somalia moved nearly westwards with a speed of about 15 kmph during past 06 hours, weakened into a Deep Depression and lay centered at 1130 hrs IST of 23rd November 2020 over the same region near Latitude 10.7°N and Longitude 49.2°E, 220 km west-southwest of Ras Binnah (Somalia). It is very likely to move nearly westwards and weaken gradually into a depression during next 06 hours and into a well marked low pressure area during subsequent 06 hours.

Spatial rainfall distribution: Isolated: ≤25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.

Forecast track and intensity are given below:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
23.11.20/1130	10.7/49.2	55-65 Gusting TO 75	Deep Depression
23.11.20/1730	10.6/48.5	40-50 Gusting TO 60	Depression
23.11.20/2330	10.7/47.6	20-30 Gusting TO 40	Low Pressure Area

(i) Wind warning

Gale wind speed reaching 55-65 kmph gusting to 75 kmph is prevailing over Gulf of Eden along and off Somalia coast and 50-60 kmph gusting to 70 kmph prevails over southwest Arabian Sea along and off north Somalia coast during next 06 hours. It will gradually decrease and becoming 40-50 kmph gusting to 60 kmph over the above areas during subsequent 06 hours.

(ii) Sea condition

Sea condition will be rough to very rough over Gulf of Eden along and off north Somalia coast and over southwest Arabian Sea during next 12 hours and improve thereafter.

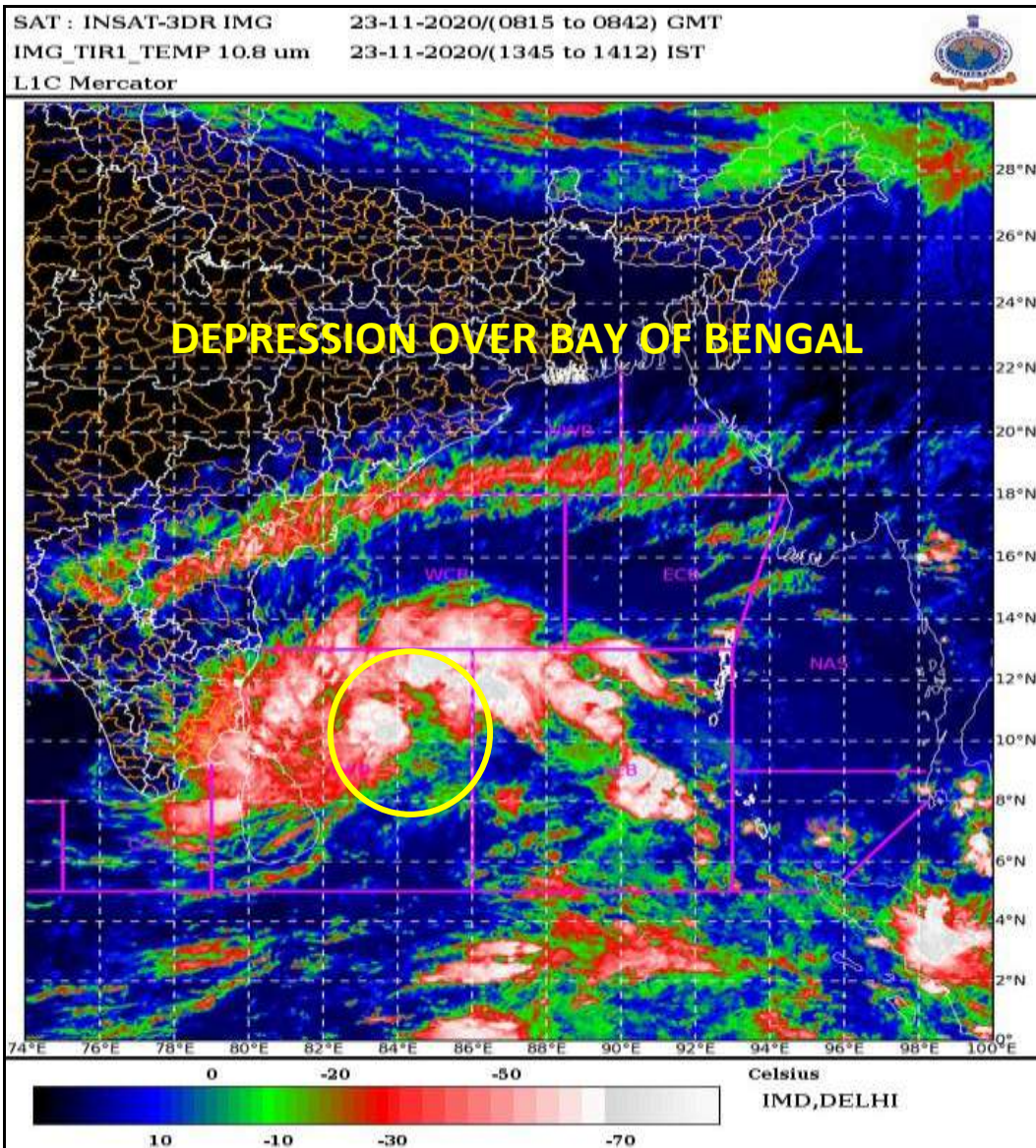
(iii) Fishermen Warning

Fishermen are advised not to venture into Gulf of Eden and southwest Arabian Sea along and off north Somalia coast during next 12 hours.

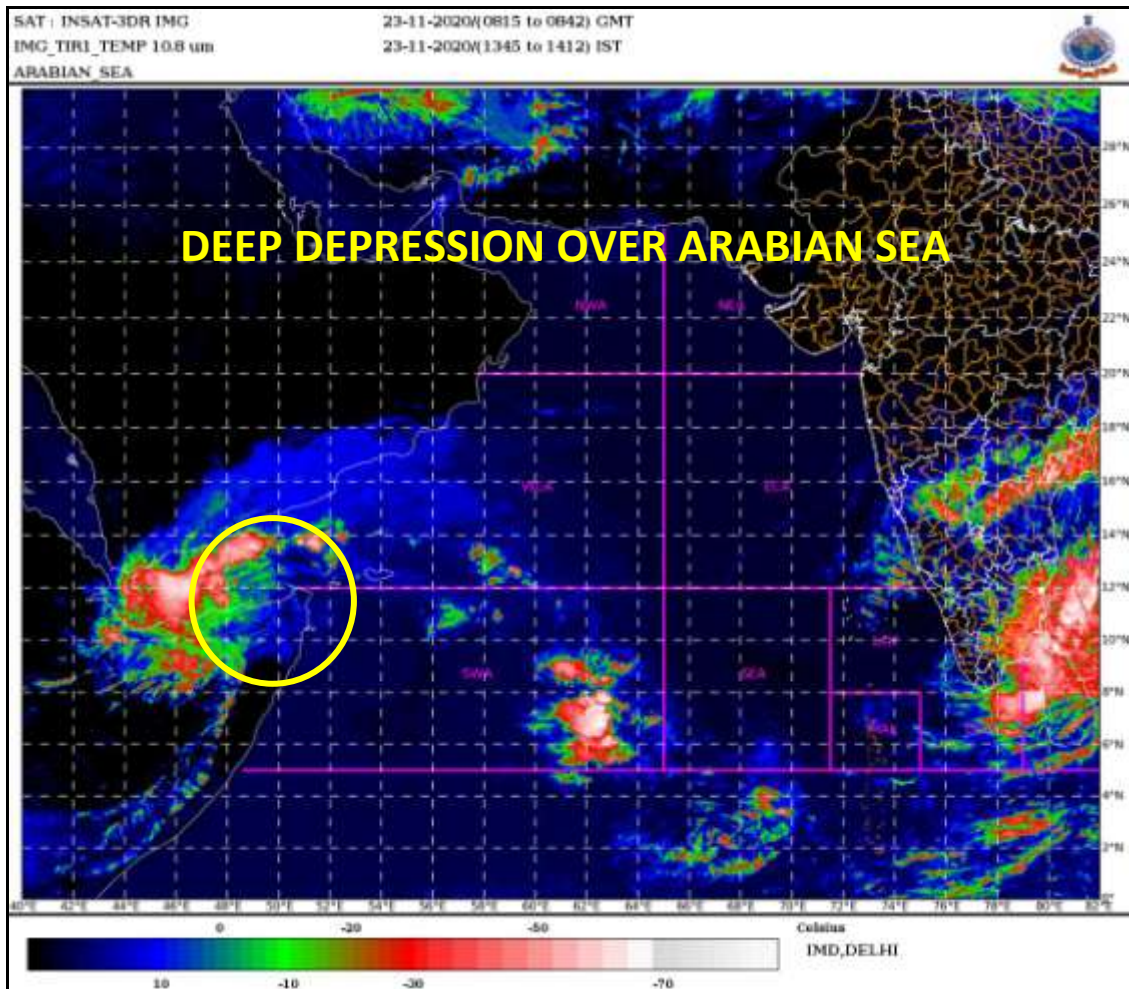
The next bulletin will be issued at 2030 hrs IST of 23rd November, 2020.

(R.K. Jenamani)
Scientist-F, RSMC, New Delhi

Copy to: ACWC Kolkata/Chennai/CWC Bhubaneswar/CWC Visakhapatnam/CWC Thiruvananthapuram



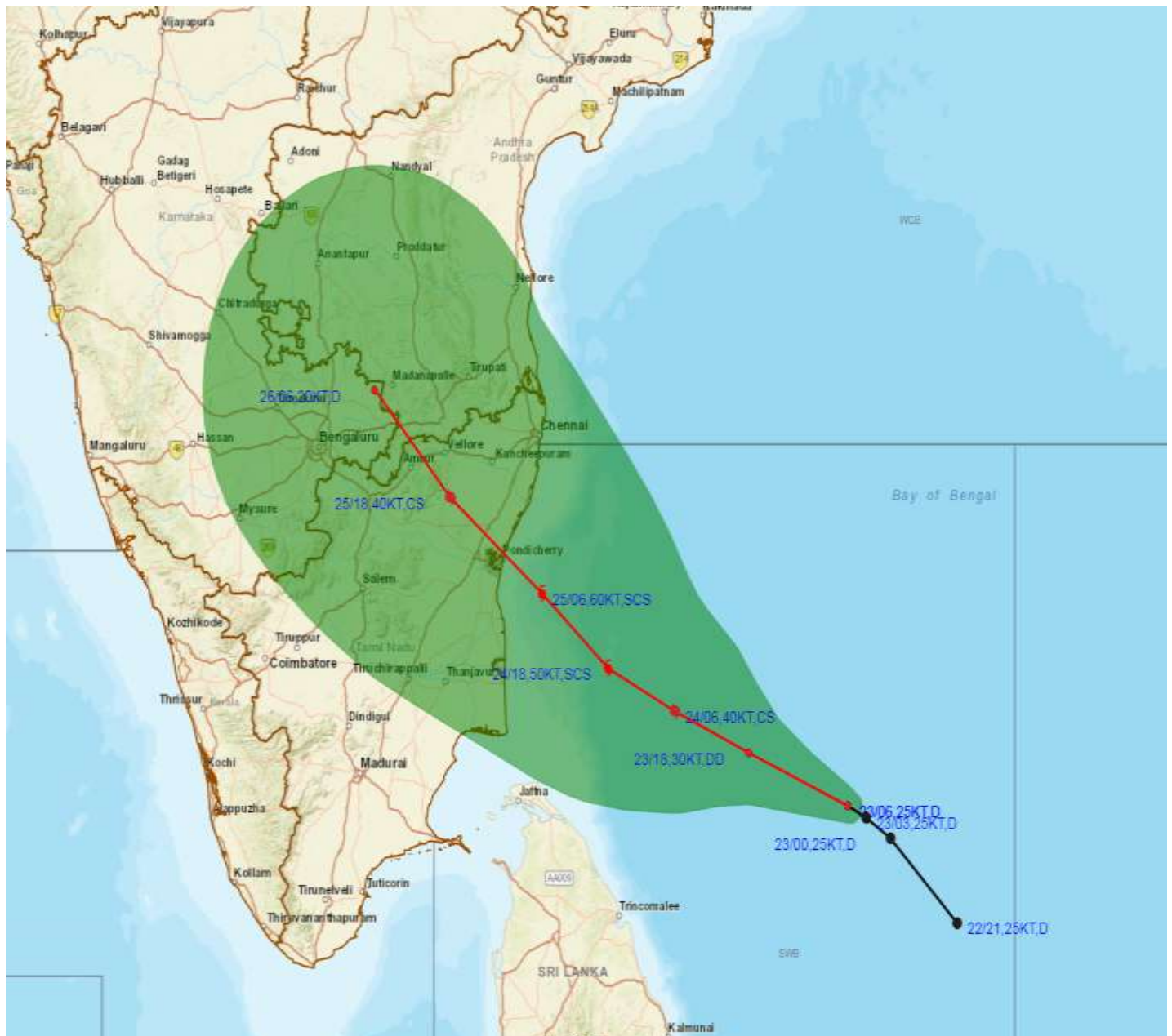
Spatial rainfall distribution: Isolated: $\leq 25\%$, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



Spatial rainfall distribution: Isolated: $\leq 25\%$, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF DEPRESSION OVER SOUTHWEST BAY OF BENGAL BASED ON 0600UTC OF 23rd Nov, 2020



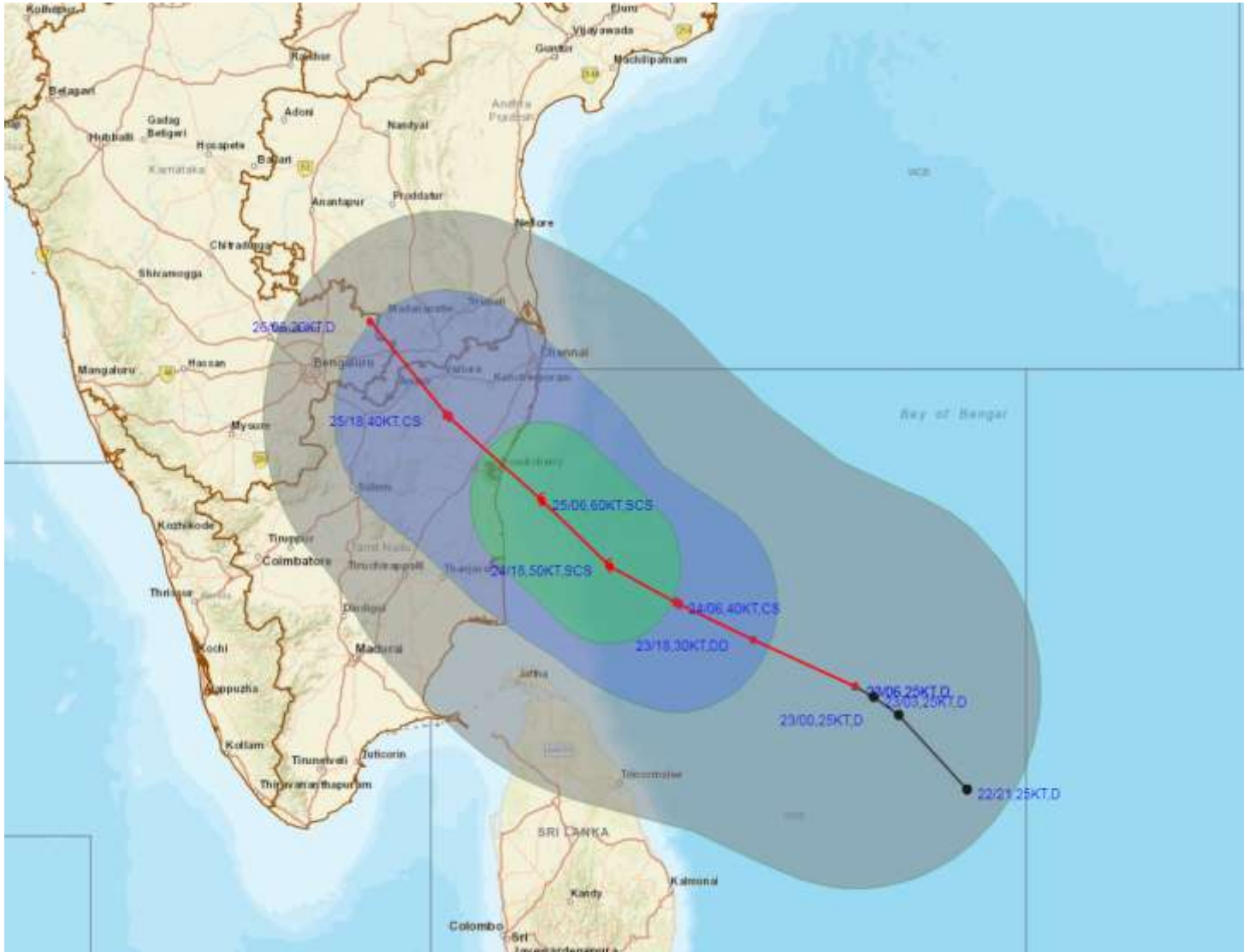
DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
 DD: DEEP DEPRESSION (28-33 KT)
 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
 SuCS: SUPER CYCLONIC STORM (\geq 120 KT)

● LESS THAN 34 KT
 ⌀ 34-47 KT
 ⌀ \geq 48 KT
 — OBSERVED TRACK
 — FORECAST TRACK
 ▲ CONE OF UNCERTAINTY

Spatial rainfall distribution: Isolated: \leq 25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
 Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEPRESSION OVER SOUTHWEST BAY OF BENGAL BASED ON 0600UTC OF 23rd Nov, 2020



DATE/TIME IN UTC
IST=UTC + 0530
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION (17-27 KT)
DD: DEEP DEPRESSION (28-33 KT)
CS: CYCLONIC STORM (34-47 KT)
SCS: SEVERE CYCLONIC STORM (48-63KT)
VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

● LESS THAN 34 KT
● 34.47 KT
● ≥ 48 KT
— OBSERVED TRACK
— FORECAST TRACK
▲ CONE OF UNCERTAINTY
AREA OF MAXIMUM SUSTAINED WIND SPEED:
28-33 KT (52-61 KMPH)
34.49 KT (62-91 KMPH)
50-63 KT (92-117 KMPH)
 ≥ 64 KT (≥ 118 KMPH)

IMPACT OVER THE SEA

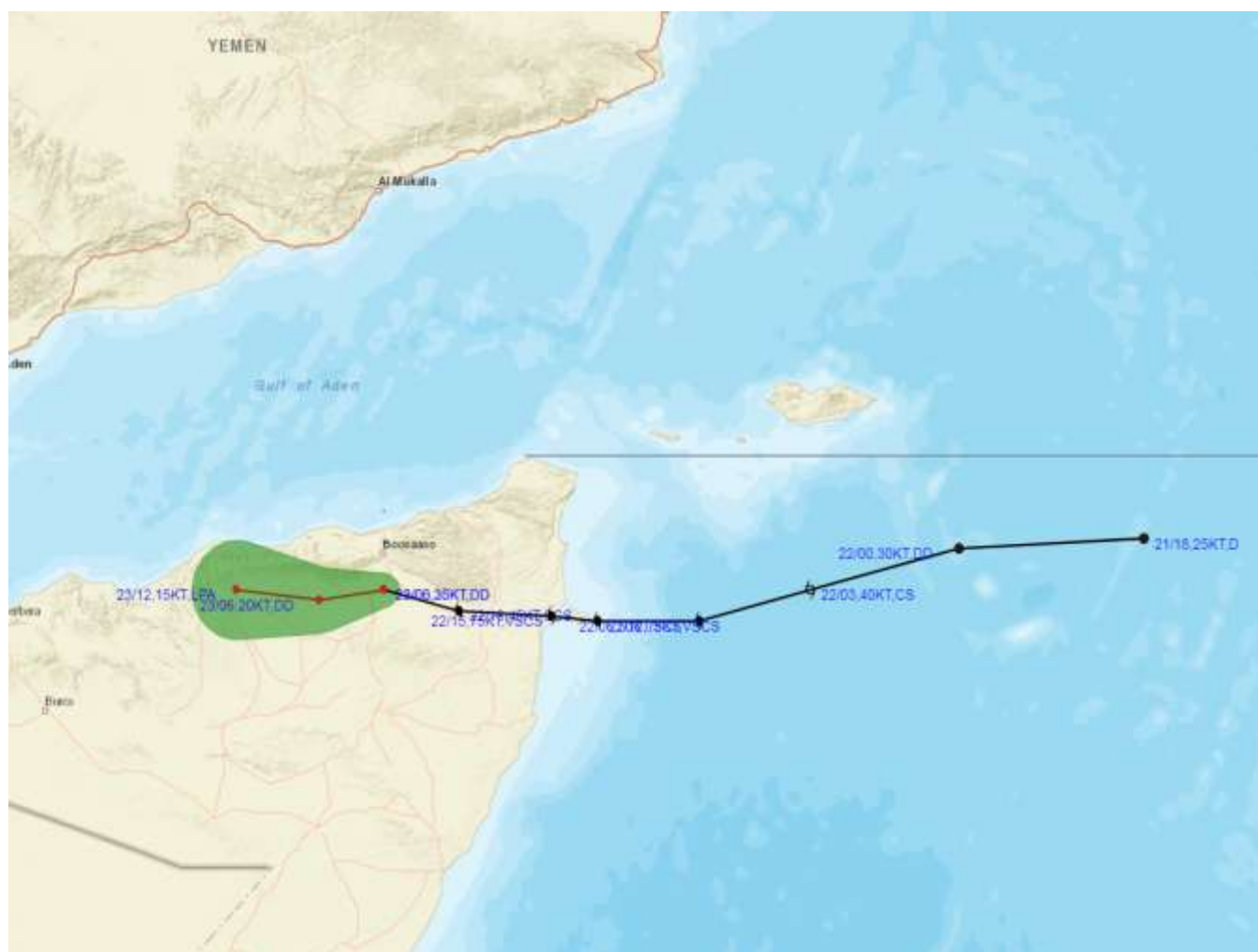
MSW (knot/kmph)	Impact	Action
28-33 (52-61)	Very rough seas	Total suspension of fishing operations
34-49 (62-91)	High to very high seas	Total suspension of fishing operations
50-63 (92-117)	Very high seas	Total suspension of fishing operations
≥ 64 (≥ 118)	Phenomenal	Total suspension of fishing operations

Spatial rainfall distribution: Isolated: $\leq 25\%$, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF DEEP DEPRESSION OVER SOMALIA BASED ON 0600 UTC OF 23rd Nov, 2020



DATE/TIME IN UTC

IST=UTC + 0530

L: LOW PRESSURE AREA

WML: WELL MARKED LOW PRESSURE AREA

D: DEPRESSION (17-27 KT)

DD: DEEP DEPRESSION (28-33 KT)

CS: CYCLONIC STORM (34-47 KT)

SCS: SEVERE CYCLONIC STORM (48-63KT)

VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)

ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)

SuCS: SUPER CYCLONIC STORM (≥20 KT)

● LESS THAN 34 KT

⚡ 34-47 KT

⚡ ≥ 48 KT

— OBSERVED TRACK

— FORECAST TRACK

▲ CONE OF UNCERTAINTY

Spatial rainfall distribution: Isolated: ≤25%, A few: 26-50%, Many: 51-75%, Most: 76-100%

Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.