TIME OF ISSUE: 1330 HOURS IST
DATED: 03.12.2023

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)
DIRECTOR GENERAL, DOORDARSHAN (23385843)
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, ODISHA (FAX NO. 0674-2536660)
CHIEF SECRETARY, WEST BENGAL (FAX NO. 033-22144328)
CHIEF SECRETARY, ANDHRA PRADESH (FAX NO. 0863-2441029, 08645-246600)
CHIEF SECRETARY, TAMIL NADU (FAX NO. 044-25672304)
CHIEF SECRETARY, PUDUCHERRY (FAX NO. 0413-2334145)
ADMINISTRATOR, ANDAMAN & NICOBAR ISLANDS (FAX NO. 03192- 232656)

Sub: Cyclonic Storm “MICHAUNG” (pronounced as MIGJAUM) over Southwest Bay of Bengal (Cyclone Warning for Andhra Pradesh and adjoining North Tamil Nadu-Puducherry Coasts: Orange Message)

The Cyclonic Storm “MICHAUNG” (pronounced as MIGJAUM) over Southwest Bay of Bengal moved north-westwards with a speed of 9 kmph during past 06 hours and lay centered at 1130 hours IST of today, the 3rd December, 2023 over the same region near Latitude 11.8°N and Longitude 82.2°E, about 260 km east-southeast of Puducherry, 250 km southeast of Chennai, 380 km south-southeast of Nellore, 490 km south-southeast of Bapatla and 500 km south-southeast of Machilipatnam.

It is likely to continue to move north-westwards, intensify further and reach Westcentral Bay Of Bengal off south Andhra Pradesh and adjoining north Tamilnadu coasts by 4th December forenoon. Thereafter, it would move nearly northwards almost parallel and close to south Andhra Pradesh coast and cross South Andhra Pradesh coast between Nellore and Machilipatnam during forenoon of 5th December as a Severe Cyclonic Storm with a maximum sustained wind speed of 90-100 kmph gusting to 110 kmph.
Track and Intensity Forecasts:

<table>
<thead>
<tr>
<th>Date/Time (IST)</th>
<th>Position (Lat. °N/long. °E)</th>
<th>Maximum sustained surface wind speed (Kmph)</th>
<th>Category of cyclonic disturbance</th>
</tr>
</thead>
<tbody>
<tr>
<td>03.12.23/1130</td>
<td>11.8/82.2</td>
<td>65-75 kmph gusting to 85 kmph</td>
<td>Cyclonic Storm</td>
</tr>
<tr>
<td>03.12.23/1730</td>
<td>12.2/81.9</td>
<td>70-80 kmph gusting to 90 kmph</td>
<td>Cyclonic Storm</td>
</tr>
<tr>
<td>04.12.23/0530</td>
<td>12.6/81.5</td>
<td>75-85 kmph gusting to 95 kmph</td>
<td>Cyclonic Storm</td>
</tr>
<tr>
<td>04.12.23/1130</td>
<td>13.2/81.0</td>
<td>80-90 kmph gusting to 100 kmph</td>
<td>Cyclonic Storm</td>
</tr>
<tr>
<td>04.12.23/2330</td>
<td>13.8/80.6</td>
<td>85-95 kmph gusting to 105 kmph</td>
<td>Severe Cyclonic Storm</td>
</tr>
<tr>
<td>04.12.23/3530</td>
<td>14.8/80.3</td>
<td>90-100 kmph gusting to 110 kmph</td>
<td>Severe Cyclonic Storm</td>
</tr>
<tr>
<td>05.12.23/1130</td>
<td>16.0/80.5</td>
<td>80-90 kmph gusting to 100 kmph</td>
<td>Cyclonic Storm</td>
</tr>
<tr>
<td>05.12.23/2330</td>
<td>16.8/81.3</td>
<td>55-65 kmph gusting to 75 kmph</td>
<td>Deep Depression</td>
</tr>
<tr>
<td>06.12.23/1130</td>
<td>17.6/82.2</td>
<td>40-50 kmph gusting to 60 kmph</td>
<td>Depression</td>
</tr>
<tr>
<td>06.12.23/2330</td>
<td>18.4/83.4</td>
<td>25-35 kmph gusting to 45 kmph</td>
<td>Well Low Pressure Area</td>
</tr>
</tbody>
</table>

**Warnings:**

(i) Rainfall Warning (graphics enclosed):
- **North Coastal Tamil Nadu & Puducherry:** Light to moderate rainfall at most places with heavy to very heavy rainfall at a few places with isolated extremely heavy falls is very likely on 3rd & 4th and isolated heavy rainfall on 5th December and decrease thereafter.
- **Coastal Andhra Pradesh:** Light to moderate rainfall at most places with heavy to very heavy rainfall at a few places with extremely heavy falls at isolated places over south coastal Andhra Pradesh on 3rd and heavy to very heavy rainfall at a few places with extremely heavy falls at isolated places over coastal Andhra Pradesh & Yanam on 4th & 5th December. Isolated heavy rainfall is likely over north coastal Andhra Pradesh on 6th December.
- **Rayalaseema:** Light to moderate rainfall at many places with isolated heavy to extremely heavy falls is very likely on 3rd & 4th and isolated heavy rainfall on 5th December and decrease thereafter.
- **Telangana:** Light to moderate rainfall at few places with **isolated heavy rainfall** is very likely on 4th & 5th with **isolated very heavy rainfall** over the same region on 5th December.
- **Odisha:** Light to moderate rainfall at most places with **isolated heavy rainfall** is likely over south Coastal and adjoining south Interior Odisha during 4th & 6th with **isolated very heavy rainfall** over the same region on 5th December.

(ii) Wind warning:
- **Southwest Bay of Bengal along & off north Tamil Nadu-Puducherry Coasts:** Gale wind speed reaching 60-70 kmph gusting to 80 kmph is prevailing over Southwest Bay of Bengal. It is likely to gradually increase becoming **70-80 kmph gusting to 90 kmph** from 3rd December evening for subsequent 12 hours. It will gradually decrease thereafter.
- **Westcentral Bay of Bengal and along & off south Andhra Pradesh Coast:** Squally wind speed reaching 50-60 kmph gusting to 70 kmph is prevailing over westcentral Bay of Bengal. It is likely to gradually increase becoming Gale Wind speed reaching **70-80 kmph gusting to 90 kmph** from 3rd evening; **80-90 kmph gusting to 100 kmph** from 4th morning and **90-100 kmph gusting to 110 kmph** from 4th evening to 5th December noon. It would gradually decrease thereafter.
- **Along & off north Andhra Pradesh Coast:** Squally wind speed reaching 45-55 kmph gusting to 65 kmph likely from 4th December evening, likely to gradually increase becoming **55-65 kmph gusting to 75 kmph** from 5th December morning for subsequent 24 hours. It would gradually decrease thereafter.
- **Along & off Odisha Coast:**
Squally wind speed reaching 35-45 kmph gusting to 55 kmph likely from 4th December evening, likely to gradually increase becoming 40-50 kmph gusting to 60 kmph from 5th December evening for subsequent 12 hours. It would gradually decrease thereafter.

(iii) Sea Condition:
- Southwest Bay of Bengal and along & off north Tamil Nadu-Puducherry Coasts: 
  Very Rough to high sea condition is prevailing and likely to continue till 4th December morning and likely to become rough to very rough thereafter till 5th December morning. It is likely to improve thereafter gradually.
- Westcentral Bay of Bengal and along & off south Andhra Pradesh Coast: 
  Rough to Very Rough sea condition is prevailing over the region. It is likely to become very rough to high from 3rd December evening till 4th December and become high to very high phenomenal seas from 4th evening to 5th December noon. It is likely to improve thereafter gradually becoming high to very rough from 5th evening and very rough to rough from 6th morning for next 12 hours.
- Along & off North Andhra Pradesh Coast: 
  Rough to Very Rough to sea condition is likely from 4th December, very rough to high on 5th and very rough to rough on 6th December.
- Along & off Odisha Coast: 
  Rough to Very Rough to sea condition is likely from 4th December evening till 6th December morning.

(iv) Fishermen Warning (graphics attached):
Fishermen are advised not to venture into:
- Southwest Bay of Bengal and along & off North Tamil Nadu-Puducherry Coasts till 5th December.
- Westcentral Bay of Bengal and along & off Andhra Pradesh Coast till 6th December.
- Along & off Odisha coast from 4th December evening till 6th December.

(v) Storm Surge (Graphics enclosed):
Storm surge of about 1-1.5 meter above astronomical tide likely to inundate south Coastal Andhra Pradesh districts at the time of landfall.

(vi) Damage Expected over coastal districts of South Andhra Pradesh (Nellore, Tirupati Prakasam, Bapatla, Guntur, Krishna and West Godavari) and adjoining coastal districts of North Tamil Nadu-Puducherry:
- Major damage to thatched houses/huts. Roof tops may blow off. Unattached metal sheets may fly.
- Possibilities of damage to vulnerable structure.
- Breaking of tree branches, uprooting of large avenue trees. Major damage to banana and papaya trees. Large dead limbs blown from trees.
- Minor damage to power and communication lines due to breaking of branches and uprooting of trees.
- Major damage to Kutcha and minor damage to Pucca roads due to heavy rain.
- Damage to paddy crops, horticultural crops and orchards.
- Sea water inundation in low lying areas after erosion of Kutcha embankments
- Inundation of low lying areas in coastal districts due to heavy rainfall and flash flood
- Localized Flooding of roads and closure of underpasses mainly in urban areas of the above region.
- Occasional reduction in visibility due to heavy rainfall.
- Disruption of traffic due to water logging and squally winds
- Localized Landslides/Mudslides
- It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC)

(vi) Action Suggested for coastal districts of South Andhra Pradesh and adjoining coastal districts of North Tamil Nadu-Puducherry:
- Total suspension of fishing operations.
- Surface transport and shipping operations need to be regulated
- Onshore & Offshore operation need to be regulated as per guidelines
- Coastal hutment dwellers to be in safer places.
- People in affected areas to remain indoors.
- Avoid going to areas that face the water logging problems often.
- Avoid staying in vulnerable structure.

The system is under continuous surveillance and the next message will be issued at 1730 hours IST of today, the 03rd December, 2023.

(S.P. SINGH)
Scientist C, Cyclone Warning, New Delhi

Copy to: ACWC Chennai/ ACWC Kolkata/ CWC Bhubaneswar/ CWC Vishakhapatnam/ MC Amravati
CYCLONIC STORM MICHANG
11.8°N/82.2°E
OBSERVED AND FORECAST TRACK ALONG WITH CONE OF UNCERTAINTY IN ASSOCIATION WITH CYCLONIC STORM "MICHANG" OVER SOUTHWEST BAY OF BENGAL BASED ON 0600 UTC (1130 IST) OF 03RD DECEMBER 2023.
OBSERVED & FORECAST TRACK, MAXIMUM SUSTAINED WIND AND QUADRANT WIND IN ASSOCIATION WITH CYCLONIC STORM "MICHANG" OVER SOUTHWEST BAY OF BENGAL BASED ON 0600 UTC (1130 IST) OF 03RD DECEMBER 2023.

<table>
<thead>
<tr>
<th>DATE/TIME IN UTC</th>
<th>MSW (knot/kmph)</th>
<th>Impact</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>IST=UTC + 0530</td>
<td>28-33 (52-61)</td>
<td>Very rough seas</td>
<td>Total suspension of fishing operations</td>
</tr>
<tr>
<td></td>
<td>34-49 (62-91)</td>
<td>High to very high seas</td>
<td>Total suspension of fishing operations</td>
</tr>
<tr>
<td></td>
<td>50-63 (92-117)</td>
<td>Very high seas</td>
<td>Total suspension of fishing operations</td>
</tr>
<tr>
<td></td>
<td>≥ 64 (≥118)</td>
<td>Phenomenal</td>
<td>Total suspension of fishing operations</td>
</tr>
</tbody>
</table>

IMPACT OVER THE SEA

LESS THAN 34 KT

34-47 KT

≥ 48 KT

OBSERVED TRACK

FORECAST TRACK

CONES 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)
Fishermen warning graphics

Day 1: 03.12.2023/11:30 AM to 04.12.2023/05:30AM
Day 2: 04.12.2023/05:30AM to 05.12.2023/05:30AM
Day 3: 05.12.2023/05:30AM to 06.12.2023/05:30AM
Day 4: 06.12.2023/05:30AM to 07.12.2023/05:30AM
Day 5: 07.12.2023/05:30AM to 08.12.2023/05:30AM

Legend:
- Squally Weather with wind speed 40-45 kmph gusting to 55 kmph
- Squally wind speed with wind speed 45-55 kmph gusting to 65 kmph
- Squally wind speed with wind speed 50-60 kmph gusting to 70 kmph
- CS with gale wind speed 60-90 kmph gusting to 110 kmph
- SCS with gale wind speed 90-110 kmph gusting to 120 kmph

NO WARNING

Fishermen are advised not to venture into the marked areas.
STORM SURGE HEIGHT INFORMATION:
* The below listed surge heights are over and above astronomical tide.

<table>
<thead>
<tr>
<th>MANDAL/TALUK</th>
<th>DISTRICT</th>
<th>STATE/UNION TERRITORY</th>
<th>NEARESTPLACE OF HABITATION</th>
<th>STORM SURGE (m)</th>
<th>EXPECTED INUNDATION EXTENT (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avanigadda</td>
<td>Krishna</td>
<td>Andhra Pradesh</td>
<td>Ramakrishnapuram</td>
<td>0.2-0.7</td>
<td>Upto 0.16</td>
</tr>
<tr>
<td>Machilipatnam</td>
<td>Krishna</td>
<td>Andhra Pradesh</td>
<td>Penukonda</td>
<td>0.3-0.7</td>
<td>Upto 0.17</td>
</tr>
<tr>
<td>Ponner</td>
<td>Thiruvallur</td>
<td>Tamil Nadu</td>
<td>Ramanath</td>
<td>0.2-0.6</td>
<td>Upto 0.15</td>
</tr>
<tr>
<td>Repalle</td>
<td>Guntur</td>
<td>Andhra Pradesh</td>
<td>Repalle</td>
<td>0.3-0.5</td>
<td>Upto 0.25</td>
</tr>
</tbody>
</table>
24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 04-12-2023:

Moderate Flash flood risk likely in next 24 hours over Southern part of Coastal Andhra Pradesh and Yanam and adjoining area of South-East part of Rayalaseema and Northern part Tamil Nadu & Puducherry.
Hazard Map with Cyclonic Storm MICHAUNG over Southwest Bay of Bengal

Wind speed
Andhra Pradesh

Flood Depth
Andhra Pradesh

Wind speed
Tamilnadu

Flood Depth
Tamilnadu

LEGEND

- State Boundary
- District Boundary
- Tehsil Boundary
- Village Boundary

- Wind Speed (Less than 31 Km/h)
- Wind Speed (31 - 49 Km/h)
- Wind Speed (49 - 61 Km/h)
- Wind Speed (61 - 88 Km/h)
- Wind Speed (88 - 117 Km/h)
- Wind Speed (117 - 166 Km/h)
- Wind Speed (166 - 221 Km/h)
- Wind Speed (Greater than 221 Km/h)

WIND SPEED