



**India Meteorological Department
Earth System Science Organisation
(Ministry of Earth Sciences)**

BULLETIN NO. : 18 (ARB/02/2020)

TIME OF ISSUE: 1430 HOURS IST

DATED: 02.06.2020

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

TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS (FAX.NO. 23092398/23093750)

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 (23421101, 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, KERALA (FAX NO. 0471-2327176)

ADMINISTRATOR, LAKSHADWEEP ISLANDS (FAX NO. 0413-262184)

ADMINISTRATOR, UNION TERRITORY OF DAMAN & DIU (0260-2230775)

ADMINISTRATOR, UNION TERRITORY OF DADRA NAGAR HAVELI (0260-2230775)

CHIEF SECRETARY, KARNATAKA (FAX NO. 080-22258913)

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

CHIEF SECRETARY, MAHARASHTRA (FAX NO. 022- 22028594)

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

CHIEF SECRETARY, DAMAN & DIU (FAX NO. 0260-2230775)

CHIEF SECRETARY, DADRA & NAGAR HAVELI (FAX NO. 0260-2645466)

Sub: Cyclonic Storm 'NISARGA' over Eastcentral Arabian Sea: Cyclone Warning for north Maharashtra - south Gujarat coasts: Orange message

The Deep Depression over Eastcentral Arabian Sea moved northwards with a speed of 11 kmph during past 06 hours, intensified into **Cyclonic Storm 'NISARGA'** and lay centred at 1130 hours IST of today, the 02nd June, 2020 over Eastcentral Arabian Sea near latitude 15.6°N and longitude 71.2°E, about 280 km west-northwest of Panjim (Goa), 430 km south-southwest of Mumbai (Maharashtra) and 640 km south-southwest of Surat (Gujarat).

It is very likely to intensify into a Severe Cyclonic Storm during next 12 hours. It is very likely to move nearly northwards during next few hours, recurve north-northeastwards thereafter and cross north Maharashtra and adjoining south Gujarat coast between Harihareshwar and Daman, **close to Alibag (Raigad District, Maharashtra) during the afternoon of 03rd June as a Severe Cyclonic Storm with a maximum sustained wind speed of 100-110 kmph gusting to 120 kmph.**

Forecast track and intensity are given in the following table:

| Date/Time(IST) | Position (Lat. °N/ long. °E) | Maximum surface wind sustained speed (Kmph) | Category of cyclonic disturbance |
|----------------|------------------------------------|--|----------------------------------|
| 02.06.20/1130 | 15.6/71.2 | 60-70 gusting to 80 | Cyclonic Storm |
| 02.06.20/1730 | 16.3/71.3 | 80-90 gusting to 100 | Cyclonic Storm |
| 02.06.20/2330 | 17.0/71.5 | 90-100 gusting to 110 | Severe Cyclonic Storm |
| 03.06.20/0530 | 17.7/72.0 | 100-110 gusting to 120 | Severe Cyclonic Storm |
| 03.06.20/1130 | 18.5/72.7 | 100-110 gusting to 120 | Severe Cyclonic Storm |
| 03.06.20/2330 | 19.9/73.9 | 70-80 gusting to 90 | Cyclonic Storm |
| 04.06.20/1130 | 21.3/75.2 | 50-60 gusting to 70 | Deep Depression |

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.

Warnings:

(i) Rainfall:

- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places very likely over Konkan & Goa during next 24 hours. Light to moderate rainfall at most places with isolated heavy falls very likely over Coastal Karnataka, Madhya Maharashtra and Marathwada during next 24 hours.
- Light to moderate rainfall at most places with heavy to very heavy falls at a few places and **extremely heavy falls (≥ 20 cm in 24 hours)** at isolated places very likely over north Konkan (Mumbai, Palgar, Thane, Raigad districts) and north Madhya Maharashtra on 3rd June.
- Light to moderate rainfall at most places with heavy to very heavy falls at isolated places over south Konkan (Ratnagiri & Sindhudurg districts) & Goa and south Gujarat region (Valsad, Navsari, Dang, Daman, Dadra & Nagar Haveli and Surat districts) on 3rd June.
- Light to moderate rainfall at most places with heavy falls at isolated places over west Madhya Pradesh on 03rd June.

(ii) Wind warning

- Squally wind, speed reaching 60-70 kmph gusting to 80 kmph, is prevailing over Eastcentral Arabian Sea. It will gradually increase becoming Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, over eastcentral Arabian Sea off south Maharashtra & Goa coasts from today evening and further becoming 100-110 kmph gusting to 120 kmph over eastcentral Arabian Sea along & off Maharashtra (Raigad, Mumbai, Palghar, Thane) coast from 03rd June morning. Gale wind, speed reaching 80-90 kmph gusting to 100 kmph, likely along & off Valsad, Navsari districts of Gujarat, Daman and along & off northeast Arabian Sea, Ratnagiri, Sindhudurg districts of Maharashtra and 70-80 kmph gusting to 90 kmph along & off Surat & Bharuch districts of south Gujarat, Dadra & Nagar Haveli from 03rd June noon.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely to prevail over northeast Arabian Sea along & off remaining districts of south Gujarat coast on 03rd June.
- Squally wind, speed reaching 50-60 kmph gusting to 70 kmph is likely prevail over eastcentral Arabian Sea along and off Karnataka-Goa coasts during next 24 hours.

(iii) Sea condition

The Sea condition is rough to very rough over Eastcentral Arabian Sea. It would become very rough to High over eastcentral Arabian Sea from today afternoon. It will become High to very High over Eastcentral Arabian Sea along & off Maharashtra & Goa coasts from today Evening till tomorrow, the 3rd June evening. The Sea condition is very likely to be very rough to High over northeast Arabian Sea along & off south Gujarat coast on 03rd June.

(iv) Storm Surge Warning:

Storm surge of about 1-2 meters height above astronomical tide is very likely to inundate low lying areas of Mumbai, Thane and Raigad districts and 0.5-1 meter height above the astronomical tide likely to inundate low lying areas of Ratnagiri district during the time of landfall.

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.

(v) Fishermen Warning

Fishermen are advised not to venture into Eastcentral and Northeast Arabian Sea and along & off Karnataka-Goa-Maharashtra-south Gujarat coasts till 03rd June.

(vi) Damage Expected:

- Major damage to thatched houses/ huts. Roof tops may blow off. 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. Damage to banana and papaya trees. 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.
- Mobilise evacuation from low lying areas.
- Judicious regulation of rail and road traffic.
- People in affected areas to remain indoors.
- Movement in motor boats and small ships unsafe.

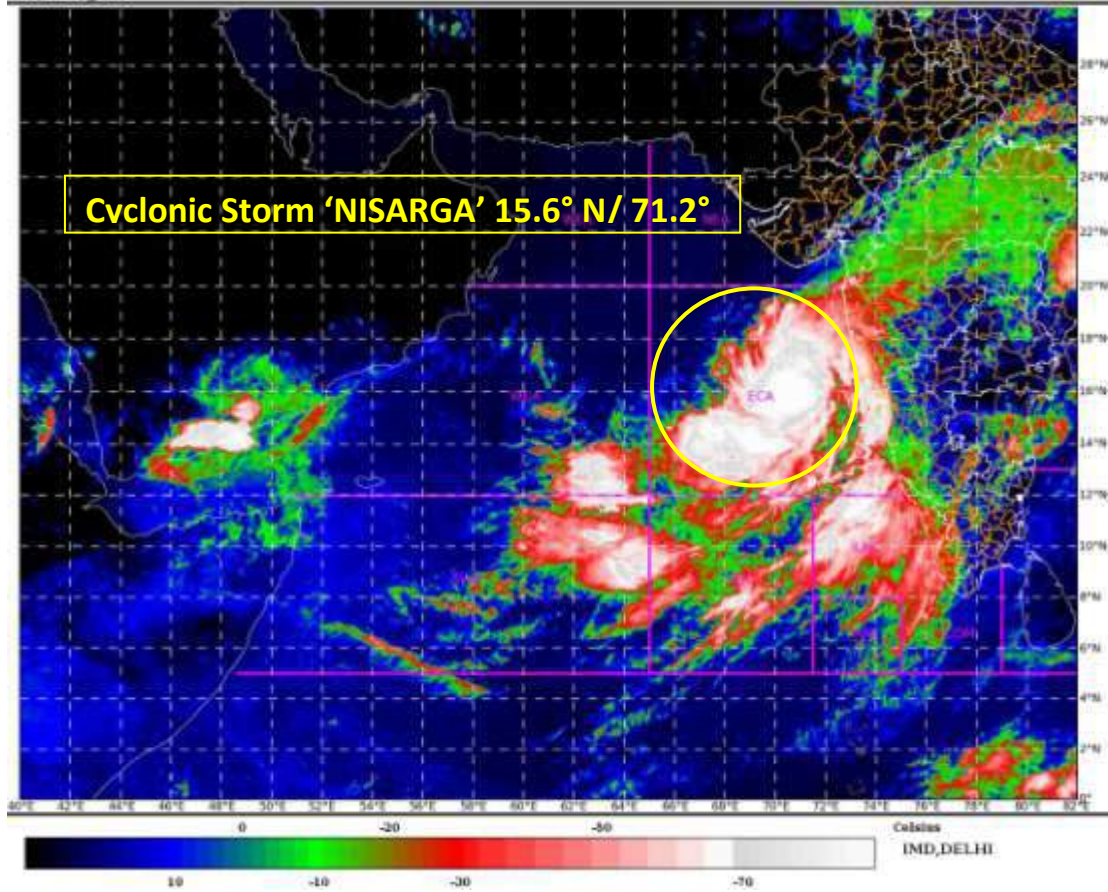
The next bulletin will be issued at 1730 hrs IST of today, the 02nd June, 2020.

(Sunitha Devi. S)
Scientist-E, RSMC, New Delhi

Copy to: ACWC Chennai/ ACWC Mumbai/ MC Goa/ MC Bengaluru/ CWC Ahmedabad/ Thiruvananthapuram.

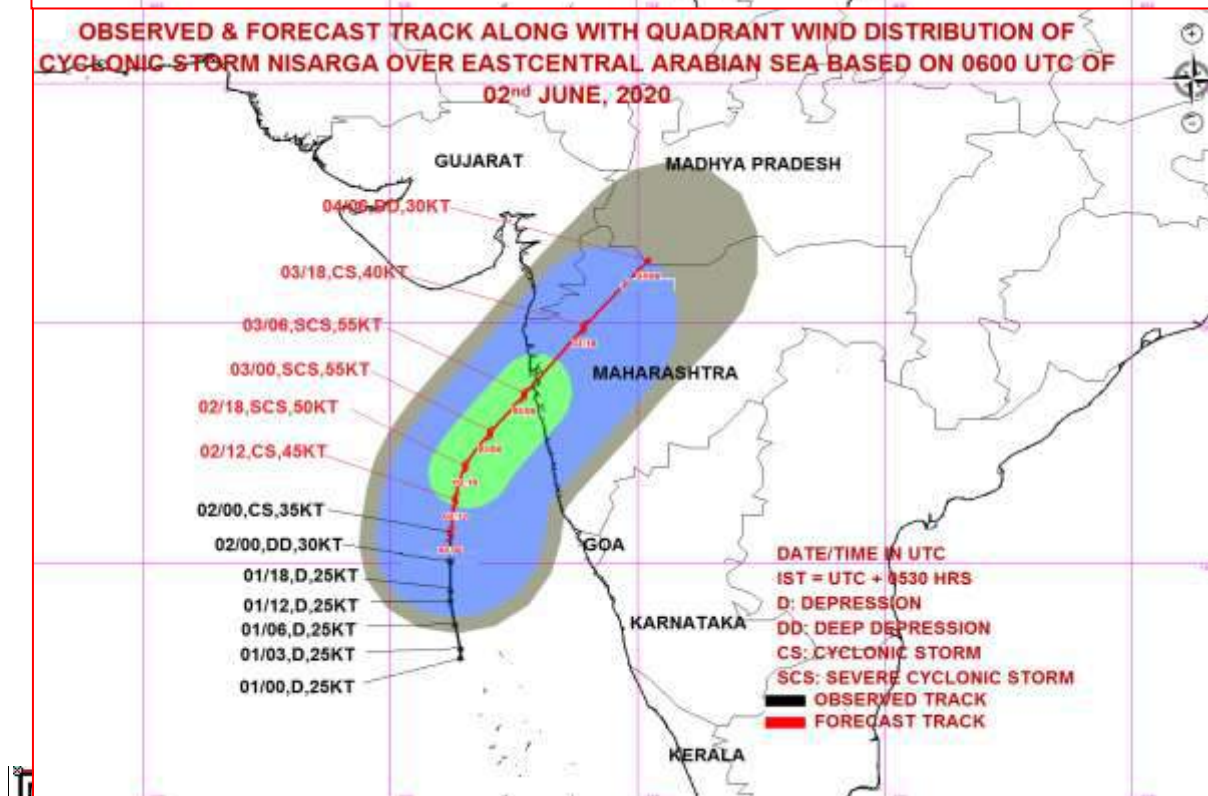
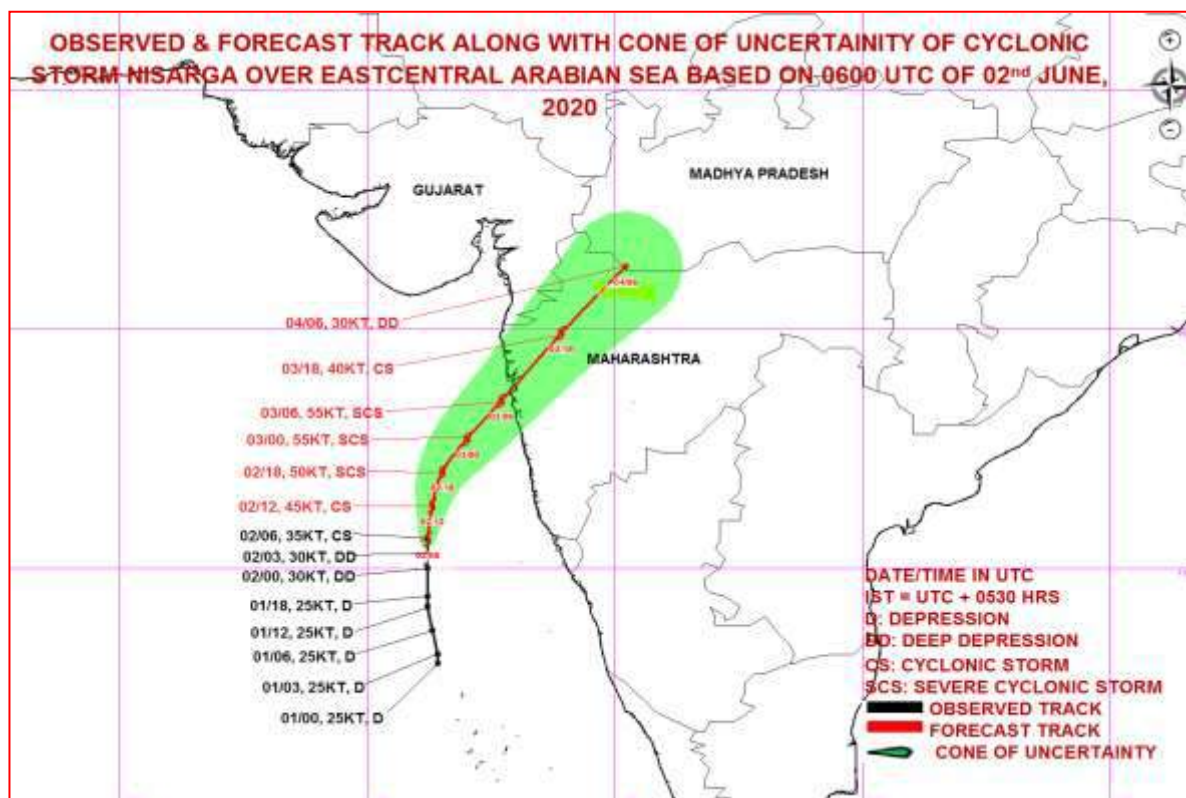
SAT : INSAT-3D IMG
IMG_TIR1_TEMP 10.8 um
ARABIAN_SEA

02-06-2020(0730 to 0757) GMT
02-06-2020(1300 to 1327) IST



Legend: ECA- east-Central Arabian Sea

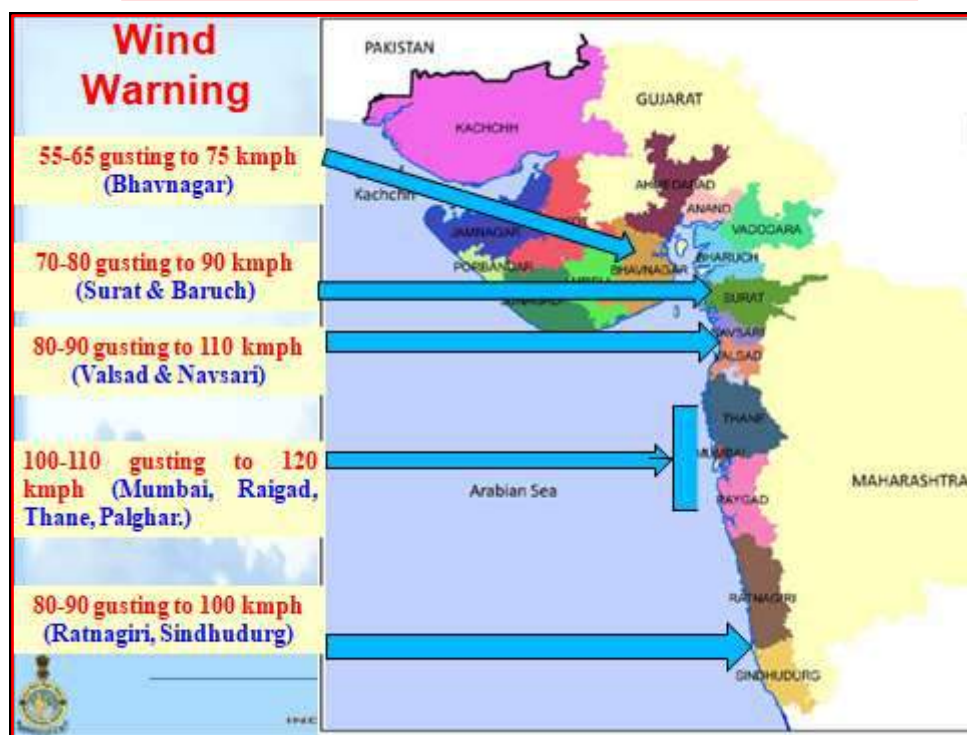
Spatial rainfall distribution: Isolated: <25%, A few: 26-50%, Many: 51-75%, Most: 76-100%
Rainfall amount (mm): Heavy rain: 64.5 – 115.5, Very heavy rain: 115.6 – 204.4, Extremely heavy rain: 204.5 or more.



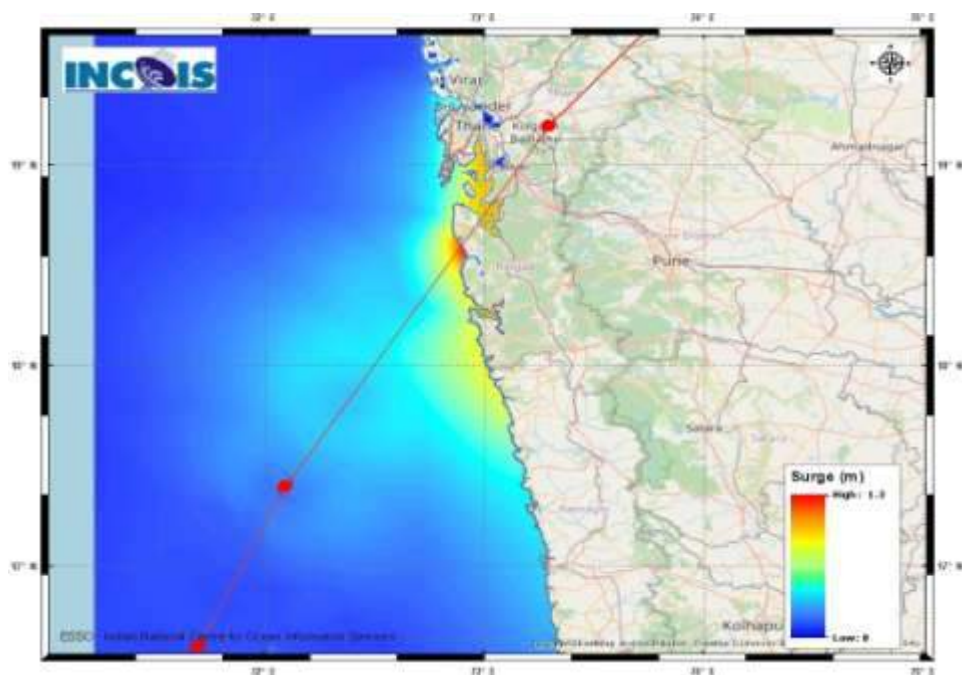
| MSW(knot)/kmph) | Impact | Action |
|-----------------|------------------------|--|
| 28-33 /(52-61) | Very rough seas. | Total suspension of fishing operations |
| 34-40/(62-74) | High to very high seas | Total suspension of fishing operations |
| 41-63/(75-117) | Very High seas | Total suspension of fishing operations |

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.

District Level Wind Warning



Storm surge Warning



| MANDAL/TALUK | DISTRICT | STATE / UNION TERRITORY | NEAREST PLACE OF HABITATION | * STORM SURGE (m) | * EXPECTED INUNDATION EXTENT (km) |
|--------------|----------------|-------------------------|-----------------------------|-------------------|-----------------------------------|
| ALIBAG | RAIGAD | MAHARASHTRA | ALIBAG | 0.5-1.3 | Upto 1.9 |
| DAPOLI | RATNAGIRI | MAHARASHTRA | DAPOLI | 0.6-0.8 | Upto 0.1 |
| PEN | RAIGAD | MAHARASHTRA | PEN | 0.8-1.0 | Upto 1.4 |
| THANE | GREATER MUMBAI | MAHARASHTRA | THANE | 0.8-1.0 | Upto 0.2 |
| VASAI | THANE | MAHARASHTRA | VASAI | 0.5-0.7 | Upto 1.1 |

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.