

BRIEFING NOTE: DEPRESSIONS AND CYCLONES

Cox's Bazar is at risk of cyclones forming out of depressions in the large Bay of Bengal between April and June, and September and December. Cyclonic storms form when large masses of air begin rotating at high speed around a low-pressure area. The Bay of Bengal stretches from the Bangladesh coast in the North to the latitude of southern Sri Lanka in the south, and from the Indian coast in the west to Myanmar and the Andaman and Nicobar Islands.

Cyclones are large systems affecting weather conditions well beyond its center before, during and after landfall. Even if a cyclone does not make landfall close to Cox's Bazar or even within Bangladesh, the Rohingya response area of operation may still experience hazardous weather.

Hazards associated with depressions and cyclones include:

- Strong winds – between 62 and 200 km/hour in the cyclone itself;
- Heavy rainfall - with potential to trigger landslides and flash floods;
- Storm surge – mounds of seawater driven towards the shore due to winds, wave and pressure.

It can be difficult to predict the development and path of a cyclone with a high level of certainty until it comes near to the coast. The strength and path of a cyclone is affected by atmospheric conditions, and have been known to turn in unexpected directions. Meteorologists run models that project how the cyclone can develop, including possible paths, intensity of wind, rain and storm surge, and when those hazards will affect human settlements. Those models are then compared to see if they tend towards the same projected development or if there are a lot of possible directions the cyclone can move and develop. Because of the chaotic nature of the earth's atmosphere, certainty is difficult to achieve.

Because of the difficulty in predicting the strength, timing and path of a cyclone, cyclone warnings and advisories mainly come in stages and can change quickly. Meteorological departments issue advisories when they are confident that the information is reliable and actionable. Narrative bulletins from meteorological departments are issued on a running basis and will be dated and numbered. Visual cyclone path projections from meteorological departments are updated on a running basis and will usually show a "cone of uncertainty" around the projected path.

Where can I find validated information about a depression or cyclone in the Bay of Bengal?

The World Meteorological Organization relies on six tropical cyclone Regional Specialized Meteorological Centres (RSMCs) and six Tropical Cyclone Warning Centres worldwide for monitoring, provision of advisories and naming of cyclones. These are often the first institutions to start issuing validated information.

The whole Bay of Bengal falls within the catchment area of the Indian Meteorological Department's (IMD) RSMC for the North Indian Ocean, which monitors and issues advisories for all depressions and cyclones in the Bay of Bengal regardless of location. Information from the RSMC is published at:

- Main website: <http://rsmcnewdelhi.imd.gov.in/index.php?lang=en>
 - Bulletin: <http://rsmcnewdelhi.imd.gov.in/images/bulletin/indian.pdf>
 - Observed and forecast track: <http://rsmcnewdelhi.imd.gov.in/images/bulletin/ftrack.png>
- Twitter: <https://twitter.com/Indiametdept>

The experience from Cyclone Fani is that the twitter account linked above will update most frequently.

The **Bangladesh Meteorological Department monitors conditions in Bay of Bengal and will begin issuing advisories once observations and projections indicate that Bangladesh is at risk of impact.** BMD will not begin issuing information until there is confidence that weather conditions in Bangladesh and the northern Bay of Bengal are or will be affected by the cyclonic storm. Information from BMD is published at:

- Main website: <http://bmd.gov.bd/#>
 - Special Weather Bulletin: <http://bmd.gov.bd/p/Special-Weather-Bulletin/>
 - Observed track: <http://bmd.gov.bd/p/Observed-Track/>

The ISCG Secretariat and the UN Resident Coordinator's Office receive the BMD weather forecasts and bulletins directly via e-mail.

If and when I hear news of a depression – what do I do?

1. Check and keep watching validated sources. If and when you hear news of a depression or cyclone threatening the area, check validated sources of forecast information such as the India or Bangladesh Meteorological Departments. If a depression is far south of Bangladesh, the IMD may begin issuing advisories earlier than BMD. Identify who within your organization is assigned to keep checking these sources regularly.
2. Review your organizational readiness to respond to extreme weather. A depression in the Bay of Bengal will in the majority of cases result in wind or rainfall in Cox's Bazar at the least, or cyclone landfall at worst. In either case, the formation of a depression is an opportunity to review internal readiness: where are staff and do they know their roles, what are the state of stocks, and is your key communications equipment in place and ready for use?
3. Implement preparedness actions advised by ISCG and the sectors. ISCG will cascade validated weather information through sectors and Heads of Sib-Offices as and when it becomes available. ISCG and sectors have pre-identified actions to be taken to ensure preparedness for response, and may add this to cascaded weather information. Make sure that staff are ready to respond to quick changes in the situation and take action as agreed within your organization and sector.

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