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**"Unlike Cyclones, cloudburst and Flash Floods Are Difficult To Predict Which Makes Mitigation Impossible". Discussing The Current Methods of Cloudburst And Flash Floods Prediction in India Bring Out The Issues Associated With Them. (250 Words / 15 M) (GS-3 Disaster Management )**

**Approach:**

1. Introduction – define cloudburst & associated flash floods.
2. Mention the current methods of such disaster prediction.
3. Mention the issues associated.
4. Mention the measures taken.
5. Conclusion

A rainfall of **10 cm or more** in **an hour** over a roughly **10 km X 10-km area** is considered a cloudburst. Hence, 5 cm of rainfall in a half-hour period over the same area would also be categorised as a cloudburst. Cloudburst is a localised but intense rainfall activity. Similarly an intense rainfall can translate into flash floods.

**Current methods of cloudburst and flash floods prediction in India:**

- Currently the India Meteorological Department forecasts rainfall events well in advance. Warnings for heavy to very heavy rainfall events are routinely forecast four to five days in advance.
- Possibility of extremely heavy rainfall, which could result in cloudburst kind of situations, are forecast six to 12 hours in advance.
- Also we have modern and sophisticated early warning systems for flood prediction.

**Issues associated with cloudburst and flash floods prediction:**

IMD does not predict the quantum of rainfall, as currently, weather scientists do not have the capability to predict exactly how much rain is likely to fall at any given place.

Forecasts are for a relatively large geographical area, usually a region, a state, a meteorological sub-division, or at best a district, thus specific cloudburst events cannot be forecast.

Lack of impact-based flash flood forecasts make cities vulnerable to large-scale destruction.

**Measures taken:**

- A 2021 NITI Aayog report recommended a "focus on scientific research in development of a model-based system to forecast flash floods (sic) with sufficient lead time".
- The IMD, in collaboration with the US National Weather Service, has developed a Flash



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Flood Guidance System (FFGS) for the South Asian region from October 2020.

- Various non-structural measures also been taken for flood management include the real-time flood forecasting, flood plain zoning, Dam break ood simulation, flood hazard and flood risk mapping, etc.
- Such measures provide the information and input for planning the flood management program to regulate the developmental activities on the flood plain and to prepare evacuation plans during the emergency period of the flood.

Though technology upgradation is there but increased frequency of extreme weather events has made prediction difficult. At the same time, the monsoon is a much more complex process to understand along with added anomalies due to changing climate conditions that make it difficult to predict cloudburst and flash floods. Climate mitigation along with increased research is the way out.

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