



## Big data to Mitigate the Impact of Disasters

According to the report by the **UN's Asia-Pacific social agency**, technological innovations like **big data** can better predict **disasters** in the Asia-Pacific region and help to reduce its impact.

- The report stated that, since 1970, natural disasters in the Asia-Pacific region have killed **two million people i.e. 59% of the global death toll**.
- **Rising global temperatures and climate change** have increased the frequency and intensity of floods, cyclones and droughts in the region.
- Further, disasters also cause **more damage in Asia and the Pacific**, measured as a percentage of GDP, than the rest of the world, and this gap has been widening.
- In this context, technologies intervention caused by big data can help **identify and locate those most at risk, to warn people ahead of a disaster, and deliver targeted relief afterwards**.
- This data can come from a **range of sources**, including satellite imagery, drone videos, simulations, crowdsourcing, social media and global positioning systems.
- **Application of Big Data in [Disaster Risk Reduction](#)**:
  - There are four main phases of disaster management i.e. **prevention, preparedness, response and recovery**.
  - A Big Data-driven sensor network can help mitigate disaster in the following ways:
    - Flood and cyclone forecasting now rely on computer simulations, **[machine learning](#)** can help predict the location and severity of floods.
    - Sensor webs and the **[Internet of Things](#)** can enable efficient earthquake early-warning systems.
    - Remote sensing via satellites and drones provide quick assessments of damage and people affected so that disaster response can be prioritized.
    - Public data like **[India's digital ID system \(Aadhar\)](#)** can help deliver targeted benefits to millions of small and marginal farmers affected by drought.
  - Big data applications have led to substantial reductions in mortalities and economic losses due to typhoons in the north and east Asia.

### Big Data

- Big Data, broadly characterize data sets so large they cannot be stored and analysed by the traditional data storage and processing methods.
- It has three characteristics, referred to as the **three V's - Volume, Velocity and Variety**, that distinguish Big Data from other forms of data.
- The emergence of Big Data has primarily been, due to the decrease in the cost of sensory and mass digitization of systems and processes around the globe.

**[Source: THBL](#)**

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