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## Our Understanding of the Dynamics of Risks of Disasters is Still Far from Comprehensive

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*(This editorial appears in the Hindustan Times, for 25-08-2018, and it explains how the problem of floods in India is taking a turn for the worse, and also the reasons why we are unable to tackle the same.)*

The floods in Kerala has brought out the threat of non-recurring and sudden flooding into the open. The devastation to human life and property, to environment and infrastructure, has been massive. Besides the usual, there are certain other perspectives and issues surrounding the problem of flooding that needs to be known and addressed.

The first part of the editorial identifies three changing trends with regards to flood in India:

- Though floods are the ‘most common and recurrent natural disaster’ in India, its frequency and intensity of occurrence have increased in the recent years. Floods are now occurring regularly in states where it used to occur once every ten years or more.
- Earlier, floods in India were restricted to areas like the Brahmaputra-Barak Valley, the Indo-Gangetic plains and the deltaic regions of Odisha, Andhra Pradesh and Kerala - which are riverine areas. Now, floods are occurring in small river valleys and even in hills, plateaus, and deserts.
- The phenomenon of urban floods is also increasing. Earlier, flooding was restricted to urban areas found on coasts or river banks, whereas now, even inland cities such as Bangalore and Jaipur get flooded.

### Factors Responsible for this State-of-Affairs

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- **Change in rainfall pattern**
  - The distribution pattern of rainfall is changing even though the average seasonal rainfall has not changed much. (This Wikimedia map gives a fair idea of rainfall distribution in India)
  - This change in rainfall distribution is causing local climates to alter unpredictably between dry and rainy days, and in creating ‘intense downpours’ within short periods of time (even in areas that traditionally do not receive intense rainfall).

- **Failure of flood protection networks, and of dams and drainage systems**
  - Most of the dams and other such water-controlling infrastructure in India had been designed and constructed keeping in view the older climate patterns, including the older rainfall and flooding patterns. This climate data is obviously outdated.
  - Moreover, the resilience of such infrastructure has been compromised due to poor maintenance. Even the newly built infrastructure more than often do not meet global standards of resilience. The profit-driven, short-sighted infrastructure development policy has also led to decline in disaster (especially of the flood) preventing ecosystems found in nature like forests, small tributaries, marshlands, lakes etc. This phenomenon also affects groundwater recharge and degrades the general environment.
- **The disaster management system in India is not working**
  - Even though the Disaster Management Act 2005 and the National Policy on Disaster Management 2009 prescribe 'integrating disaster risk reduction (i.e. mitigation) in the process of development across all sectors and at all levels', such a thing is yet to happen. The understanding of the dynamics of risks of disasters is far from comprehensive.
  - For example, the multi-hazard early warning systems (EWS) does not work for floods. Even though rainfall can be predicted very accurately, there is no early warning system yet, for evacuating people from areas that are about to be flooded. This warning system works for cyclones only.
  - The focus of disaster management in India is still about these three things: response, relief, and rehabilitation. It avoids the globally accepted additional parameters of disaster management like risk assessment, risk prevention and mitigation, and disaster preparedness.

## Way Forward

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- We need to shift our focus from disaster response to disaster prevention. Mitigation is always preferable to relief and with proper mitigation, there is a lesser need for relief.
- We must also set up the national, state and district level mitigation funds as mandated by law, instead of spending most of the money (more than 90% of the disaster management funds with States) on relief.