

## Dealing with Floods

### What is the issue?

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Recent floods in Assam and parts of north-east call for a shift from relief measures to building resilience in flood-prone areas.

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### Why is the north-east vulnerable?

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- Flooding is natural in the north-eastern region of India due to its **geographical features**.

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- Rivers in the Northeast, mostly originating in the Eastern Himalayas, experience a sharp **fall in gradient** as they reach Assam's floodplains.

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- The sudden fall in **altitude** causes a large volume of water to gush to the floodplains.

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- The rivers here carry large amounts of **sediments** which get deposited on the floodplains.

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- This results in further **reduction** in the **storage capacity** of the river channels and in turn inundation of the adjoining floodplains.

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- Anthropogenic activities like , **developmental interventions** in the Eastern Himalayas and the resultant **deforestation** further push the sediment load.

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### What is the shortfall in the approach?

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- At present the approach is inclined to the post disaster stage which lacks protective, precautionary measures.

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- Flood protection measures have so far included constructing embankments, dredging rivers and bank strengthening.

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- These are cost-intensive options and moreover the focus is more on construction and less on maintenance.

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- The scope of storage dams in states such as the Arunachal Pradesh is also limited, given the region's geology and the ecology.

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## **What is needed?**

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- The need is a shift of focus from flood protection to **flood governance**.

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- This requires an understanding that floods are partly natural and partly anthropogenic which could be prevented.

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- Measures to build on the **resilience of the flood affected communities** are of prime importance.

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- **Social** - Issues to be addressed include water and sanitation, outbreaks of diseases such as diarrhoea, access to veterinary services to prevent cattle mortality, etc.

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- Elevated toilets, eco-sanitation units and elevated dugwells or tubewells will reduce the public health challenges in the flood-prone areas.

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- Access to schools during the flood months can be ensured with enough number of boats.

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- **Livelihood** - People in these areas practice subsistence agriculture.

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- Inundation of land for an extended period in the monsoons and limited irrigation coverage further constrains intensification of agriculture in the dry months.

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- Providing access to cheaper sources of irrigation, research on short duration boro paddy, and innovative agriculture techniques like floating vegetable gardens can help increase productivity.

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- Scientific fish farming on the water bodies and the inundated land can ensure that inundation is put to optimal use.  
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- **Planning** - Strategic **environment assessment** of development activities needs to be undertaken in the Brahmaputra basin.  
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- Strengthening planning authorities like the Brahmaputra Board and flood control departments by staffing them with scientists is essential.  
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- Community-based advance **flood warning systems** can reduce the after effects.  
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- Reducing vulnerability, increasing access to services, and maximising productivity through optimal use of available resources can work together to reduce the impact of flood tragedies.  
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**Source: The Indian Express**

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