

# PROTECTING FLOODPLAINS IS THE NEED OF THE HOUR

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A map of the reduction in Yamuna floodplains boundaries in Delhi. Photo: “Constriction of the Yamuna river floodplains within Delhi region since 19th century: a serious concern” by International Journal of Research in Engineering and Technology

Humanity is struggling with a shortage of water as well as an excess. As the World Health Organization stated, “Floods are increasing in frequency and intensity, and the frequency and intensity of extreme precipitation is expected to continue to increase due to climate change.” Last year, devastating floods in Pakistan claimed 1,700 lives and affected 33 million people. The [2013 floods in Uttarakhand](#), the [2014 floods in the Kashmir Valley](#), the [2015 floods in Chennai](#), and the [2017 floods in Gujarat](#) all caused loss of lives and livelihoods and massive damage to infrastructure. This year too, we saw the devastating effects of rain-induced floods and landslides in several districts of Himachal Pradesh. The Yamuna water level crossed the 208.5 metre mark, breaking a 45-year-old record. All these disasters point to the severity of the situation and the urgent need to tackle it.

As per the Geological Survey of India, over 40 million hectares, which is nearly 12% of the total land area of India, is prone to floods. The severity and frequency of floods has especially affected our cities, where there is little effort made in maintaining natural topography. Cities expand fast and mostly in a haphazard manner, which makes them vulnerable to disasters. Flooding affects the economy too — Indian cities are projected to contribute to 75% of the GDP by 2030. India primarily relies on the Disaster Management Act, 2005, and the rules made in pursuance of the Act, to deal with flood management. But this law is meant to deal with multi-hazard risks and is not specifically focused on flood risk management. As per the Act, disasters cannot be predicted. This is not entirely correct, especially with respect to the frequency and intensity of floods.

Disaster risks across the world are found to be situated within environmental and natural resource governance. There is a shift in the strategy of flood control in countries such as Germany, the U.K., and the Netherlands to flood risk management as opposed to flood protection. While the protection strategy includes technical measures such as the laying of dikes, temporary flood defence walls, and polders, the key elements of the management strategy are retention of water and restoration of floodplains. In India, there are large-scale encroachments on floodplains. These increase the frequency of floods and the damage caused by them. A 2018 report of the Comptroller and Auditor General of India attributed

encroachments in the floodplains of the rivers of Tamil Nadu and the failure to act on them as the prime reason for the Chennai floods of 2015. The auditor called the deluge a 'man-made disaster'.

Illegal construction work in floodplains reduces the capacity of rivers to contain a high level of water within their banks. This is especially the case during heavy rainfall when water flows down from upper catchment areas. Thus, the tendency to occupy floodplains results in flooding. Uttarakhand has been neglecting eco-sensitive floodplains by allowing the construction of guest houses and hotels on the river front to promote tourism and boost its economy. In the wake of the massive floods in 2013, the National Green Tribunal virtually barred construction of buildings 200 m along the banks of the Ganga, in a 2015 directive. But attempts were made to bypass this. It is also unclear whether environmental impact assessments are done properly in the State. The Uttaranchal River Valley (Development and Management) Act, 2005, is meant to regulate mining and construction in the river valley. But reports indicate that there is rampant mining and construction activity with little regard for the environment.

Floods do not merely show the fury of nature; they are also often brought about by climate change-induced rainfall. This especially impacts mountainous regions such as the Himalayas.

Laws in India which are meant to protect the environment are not implemented. While there are central policy measures to protect floodplains, they are mostly non-binding on States. No State in India has been able to prevent encroachment on floodplains.

There are many experiences around the world which point to the potential benefits of protecting and preserving ecosystems such as wetlands, forests, lakes, and coastal areas in reducing physical exposure to natural hazards such as floods, landslides or avalanches by serving as buffers. In 1996, Germany made a fundamental change to its Federal Water Act in the aftermath of a massive flood. The law provides for protecting original retention capacity while reconstructing bodies of water. Therefore, flood plain restoration and water retention of water bodies are considered to be pillars against flooding.

Climate change adaptation is a cross-sectoral issue. It involves laws relating to land use, preservation of water bodies, coastal regulations, and environmental impact assessment. Thus it is complex; a multitude of laws need to be integrated into a coherent framework. The purpose will not be served if, for instance, a law to tackle climate change is passed by Parliament while changes to land use and the preservation of water bodies are not made.

However, achieving this requires strong political will. Populist leaders tend to refrain from implementing "green" policies. This must change if we want to save lives and livelihoods and safeguard infrastructure.

***Anwar Sadat is a Senior Assistant Professor in International Law, specialising in environmental law, at the Indian Society of International Law, New Delhi***

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