

Storm Water Management Crucial for Smart Cities

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Every year India faces the menace of storm water in almost every part of it. The recent flash floods in Hyderabad and Pune are the latest examples of how devastating rain water could be. Floods have been a perennial problem for many parts of India like Bihar, Madhya Pradesh and Assam. Every year these floods cause enormous loss of life and property. There are several natural and manmade factors responsible for these floods and need specific measures for their control. However, we will keep the scope of this article to stormwater management in larger and smarter cities.

Why stormwater is such a problem?

India receives heavy rainfall in within a span of 30 to 45 days of the rainy season every year. This enormous rain often wreaks havoc in the cities. Not only does it flood the cities, it also causes damage to people and property. Besides causing all this damage, stormwater also washes away chemicals and pollutants to the water bodies thus causing pollution and destroying aquatic flora and fauna. In past few decades of economic growth, the Indian cities grew rapidly but mostly unplanned. Most cities have turned into concrete jungles without proper drainage and sanitation systems. Even in the cities where drainage systems exist, they are incapable of handling the huge amounts of water at the peak of the rainy season. Moreover, in most of the cities the drainage systems are clogged with garbage, especially the polythene. In the recent past India has seen situations like Mumbai in 2005, Chennai in 2017, Hyderabad in 2020, however a proper lesson is yet to be learnt.

Smart cities and storm water management

The most important factor that makes a city smart is planning and information gathering & sharing. Smart cities gather climatic information of the region and plan their drainage and sanitation systems accordingly. Smart cities plan for green infrastructure such as parks, reserved forests, lakes and ponds to ensure the seepage of the rain water into the land. Grass and other vegetation slow down the rush of the stormwater allowing it to gradually seep into the land and reducing its destructive power. Ponds and lakes act as the reservoirs for the storm water. Not only these measures help control the havoc from the rainwater, they also help replenish the groundwater level.

Additionally, smart cities use information technology for weather forecasts to stay prepared for any unusual meteorological event such as heavy rains or cloud-burst resulting in flash floods. These preparations might include cleaning and de-clogging of the drainage systems and rainwater harvesting installations. In extreme cases, traffic rerouting and citizen advisory might be considered.

Citizen participation is another important aspect of the smart cities. No smart city can be successful without the involvement of its citizen. Smart cities have rainwater harvesting systems installed at various places like societies, colonies and markets. These cities have rainwater harvesting systems installed in almost all the public buildings. Administration ensures proper usage and regular maintenance of these installations. Rainwater harvesting systems are a common sight in public buildings in smart cities like Varanasi, Indore, Kanpur etc.

Smart cities also encourage their residents to install rainwater harvesting systems in their homes to manage stormwater at local level. The government provides subsidies to encourage these systems at homes. At some smart cities, residents are obliged by law to have rain water harvesting at their residences. On one hand, these systems help reduce the problems created by storm water, they also help store water and to be prepared for the periods of dry climate. It might be noteworthy here that most Indian cities face both the problems, scarcity of water and flooding due to the stormwater within a span of few months. Smart planning can help solve both of these problems in one go.

The way forward

Smart cities have been leading the way in solving several urban problems of the country. Storm water is no different. By proper planning and weather forecasting, smart cities are years if not decades ahead of other cities in terms of rainwater management. Being smart does not mean spending millions of dollars in creating new infrastructure. Smartness lies in proper planning, information sharing and making the best use of existing resources to deal with any situation. Gathering timely knowledge and disseminating it in proper format has been the key to the success of smart cities in stormwater management. However, as mentioned previously, any city is as smart as its citizens. Citizens need to participate in any endeavour taken by their cities to make it successful. In case of storm water management, citizens can start by preventing their garbage, especially plastics, from going into the drainage systems. Installing and using rainwater harvesting systems can be the next steps to success. By this, we can also increase the water table and eradicate the flood problems.

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