

Importance of Infrastructure Planning

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BACKGROUND

In Chennai, Tamil Nadu, India, November 2015 recorded heavy rainfall. During the first and second week of December 2015 there was continuous rainfall making everything out of gear at Chennai. Morning onwards there was continuous rain after a very hot summer season. The rain was nonstop and falling heavily. Intense rain continued for some days. Rain equivalent to a month got caught in a day's rainfall. Whole of Chennai got flooded. Water, water everywhere in a water-starved city. All streets and drains got flooded and it also entered houses and flats without discriminating the rich and the poor. People started commuting through makeshift boats. It goes without saying that the flood caused lot of personal as well as common losses. Good Samaritans started doing relief work in terms of food, medicine, clothes etc. but they faced some political pressure there also.

WHY SUCH A SUDDEN INCREASE IN WATER?

The strong El Nino caused very heavy depression over Bay of Bengal and caused heavy rainfall. Records show that roughly every 10 years Chennai experiences this type of heavy rainfall. Table 1(www.Tamilnaduweatherman.blogspot.in) shows the highest daily rainfall for the given years. So, Chennai had already experienced heavy rainfall. But this time water raised chest deep everywhere due to the unplanned infrastructure boom. Development is necessary but not without caring the environment. Cooum River, Adayar River, and Buckingham canal serve as the main rain water drains for the

city. City has got number of tanks as well. Chembarambakkam Lake at Kundrathur used for drinking water supply has reached its full capacity and its shutters were opened which caused flooding in some areas. The soil stratum of Chennai is hard with less pores which causes very low infiltration. Even for a small rain, water logging occurs. Next is, recently lot of buildings have been constructed and hence the area is made still impervious which makes all rain water to gush out like a stream. This made it difficult to distinguish between a road and a stream. It makes us to rethink about the infrastructure planning at Chennai and construction approval processes.

There is no data available for scientific study of water logging like sewer lines and appurtenances, water supply lines and same as the case for other services like electric cables, etc. Terrain slope also plays a very important role for the drainage of rain water.

Now almost all waterbodies are encroached with big buildings and naturally water would not be able to be held in the waterbodies and it flows to the places wherever possible.

Since during the long spell of summer, the drains will be dry and people have a tendency to throw waste including plastics into it which hinder the free movement of rain water as it rains suddenly.

The capacities of all available water bodies are reduced and silted up which will reduce their water holding capacity.

Table 1. Highest Daily Rainfall Recorded in Chennai.

Sl. no	Year	Highest daily rainfall (mm)
1	1969	280
2	1976	450
3	1985	250 (2 days)
4	1996	350
5	2005	420
6	2015	424

WHAT ARE THE WAYS AHEAD?

- Infrastructure planning is to be done carefully.
- Construction approval process must be made strict.
- Available water bodies are to be cleaned and improved their storage capacity before start of monsoon.
- Alternative ways of discharging water from Chembarambakam Lake is to be arrived at.
- Stringent measures to be taken for littering public drains.
- Ward wise supervision should be done before start of monsoon.
- Waste separation like biodegradable and non-biodegradable at source are to be made strict everywhere and specific days are to be fixed for collecting homewise.
- Underground drain work is to be completed as fast as can be.
- All data of sewer and appurtenances, other data like elevation, latitude/longitude of places, dynamic maps of mini-/micro-watersheds, etc. should be available with PWD and shared with students and researchers or published online.
- Rainwater harvesting structures are to be built other than roof top harvesting.