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Q15

Account for the huge flooding of million cities in India including the smart ones like Hyderabad and Pune. Suggest lasting remedial measures.

UPSC Civil Services Mains 2020 · GS I · 15 marks · Indian Heritage and Culture

Indian culture will cover the salient aspects of Art Forms, literature and Architecture from ancient to modern times.

Core demand of the question

- Account for the huge flooding of million cities in India including the smart ones like Hyderabad and Pune. Suggest lasting remedial measures
- Keep a 15-mark length

Revision summary

Cities flood because lakes, nallahs, and soils were sealed and encroached.

Hyderabad 2020 and Pune show Smart projects without sponge hydrology.

Design storms are outdated for a warmer, cloudburst climate.

Lasting fixes are legal floodplains, bigger drains, permeable streets, and waste control.

Dashboards do not replace tanks.

Introduction

Indian million-plus cities flood because rain now hits a sealed basin that used to be a lake-and-nallah sponge. **Hyderabad 2020** and repeated **Pune** floods show that a Smart City dashboard does not raise a riverbed or unclog a drain.

Body**Why the water has nowhere to go**

- Lakes and tanks - Musi floodplains and lesser cheruvus in Hyderabad, Mula-Mutha corridors in Pune - were built over for layout plots and IT parks.
- Storm drains are sized for an older rainfall intensity; cloudbursts and a warmer atmosphere now exceed that design.
- Hard paving kills infiltration; every parking lot is a tributary.
- Solid waste and construction debris choke nallahs; the flood is often a blocked drain, not only a big river.
- Upstream dams and hard embankments can worsen peak timing when gates open into a city that has no floodplain left.

Smart is not sponge

- Hyderabad's 2020 Musi-nallah disaster and Pune's riverfront-plus-rain events hit cities with cameras, GIS, and Smart Mission projects. Sensors without lake restoration are cosmetics.

- **Chennai 2015, Bengaluru layout floods, and Mumbai's Mithi are the same family:** million-city hydrology ignored in master plans.

Lasting remedies

- Legal lake and floodplain buffers, demolition of obvious encroachment, and a public drain cadastre - not seasonal desilting theatre.
- **Sponge design:** permeable streets, rooftop rain, recharge wells, and restored tanks as in a serious Water-Sensitive Urban Design code.
- Stop building in riverbeds; revise development control rules and make the disaster management plan bind the municipal corporation, not only NDMA PDFs.
- Waste segregation and nallah trash racks; treat solid waste as flood infrastructure.
- Upstream watershed, early warning, and insurance last; the first fix is to give rain a legal path to the river.
- **Finance:** **AMRUT 2.0**, Smart City funds, and State disaster windows should buy culverts and tanks, not only LED poles.

Flow diagram

Lake nallah encroachment -> Urban flood
Paving waste -> Urban flood
Cloudburst -> Urban flood
Sponge restoration -> Lasting remedy
Floodplain law -> Lasting remedy

Conclusion

Million cities flood because they paved the sponge and pinched the Musi and Mula-Mutha. **Hyderabad 2020** and Pune prove Smart branding is not hydrology. Lasting remedy is floodplain law, drain capacity, and sponge streets - enforced every dry season, not only after the next cloudburst.

Facts & figures

Hyderabad 2020

October cloudburst floods on the Musi system after years of tank and drain loss.

Pune floods

Mula-Mutha overflow and city nallah failure in a fast-urbanising Smart Mission city.

Chennai 2015

Earlier million-city warning that wetlands and the Chembarambakkam system were overloaded.

AMRUT 2.0

Urban water mission that can fund drains and reuse if cities prioritise them.

Sponge city

Design idea: hold, soak, and slowly release rain instead of racing it to a choked culvert.

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