

CHAPTER VIII

CONCLUSION

Post - flood works at Nandambakkam canal



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8.1 Lessons learnt

GoTN was quick to learn from the floods of 2015 and acted swiftly based on the lessons learnt as discussed below:

- After the floods, Revenue Department, WRD, GCC, and TNSCB jointly conducted a special drive and evicted 4,531 out of the total of 23,840 slum families living along the margins of Adyar and Cooum Rivers.
- WRD swung into action to widen, deepen and strengthen the banks of Adyar River at vulnerable points inside CMA (**Exhibit 8.1**).

Exhibit 8.1 - Post flood works in Adyar River



(Source: Photo provided by WRD)

- GCC realised the importance of SWDs and in 2016-17 took up works to construct 292 km of SWD by earmarking ₹ 463 crore for SWDs in 2016-17 budget. The expenditure on SWD increased from ₹ 170.36 crore in 2015-16 to ₹ 441.50 crore in 2016-17, an increase of 159 *per cent*.
- After the floods, Government notified (October 2016) the 2009 amendment to the Registration Act, 1908, to comply with the orders of the Hon'ble Madras High Court, imposing ban on registration of residential plots in unapproved lay outs.
- The draft Disaster Management Plan for the State, which was prepared way back in 2010 was finally approved by GoTN in October 2016.

8.2 Lessons not learnt

While swift actions taken based on the lessons learnt were on the positive side, several long term failures in heeding to expert advices, earlier audit findings, PAC recommendations etc., have been pointed out in the previous paragraphs. Few instances of serious failures in acting on the lessons learnt from past disasters are highlighted below:

- In the aftermath the floods in 1976, GoTN constituted (1979) Nucleus Cell in CMDA to suggest flood mitigation measures. The Nucleus Cell's major recommendation to create additional reservoirs to store flood water was not implemented, as commented in **Paragraph 3.1.1**.
- In 2007, after the floods of 2005, GoTN enacted the TN Protection of Tanks and Eviction of Encroachment Act, 2007, to protect the tanks under the control of WRD. The issue of encroachments on tanks was brought out in the C&AG's Audit Report in 2005-06 and again in 2012-13. PAC also directed (June 2014) the GoTN to undertake effective action on restoration of storage capacity of the tanks. Despite all these, WRD was not serious in evicting tank bed encroachments and the percentage of tanks encroached kept growing from 40 *per cent* in 2005-06 to 43 *per cent* in 2012-13 and further increased to 69 *per cent* in 2016 as commented in **Paragraph 4.1**.

- After the floods of 2005, Government engaged Anna University to study the floods and make recommendations for preventions. Major recommendations of Anna University on design of SWDs, real-time flood forecast system, desiltation of tanks in CMA were not acted upon as commented in **Paragraphs 5.2.2, 5.8.5 and 5.9.1.**
- The issue of inadequate staffing of DEOCs was pointed out in C&AG's Audit Report (2011-12). GoTN had not strengthened the DEOCs to effectively manage rescue and relief activities after disaster in an organised manner, as commented in **Paragraph 6.3.**

8.3 Conclusion

The flood of 2015 were caused by heavy rains coupled with multiple failures on the part of various Government agencies. Non-structural measures to prevent floods such as Flood Plain Zone Act, State Water Policy, Frequency-based Flood Inundation Maps, Emergency Action Plan for dams and Basin-wise Comprehensive Master Plans were not in place. CMDA failed to check large scale constructions along waterways, which choked waterways and altered land uses in the metropolitan area. CMDA's action in allowing conversion of agricultural land without Government's approval and the unauthorised conversion of water bodies, non-urban and O&R land for various other purposes, resulted in drastic changes in land use and thereby contributed to the floods.

Three rivers and several *nullahs* criss-crossed the city's length and breadth. But, siltation, unplanned constructions and encroachments impacted their flood carrying capacities. Projects to restore and increase the storage capacities of the tanks and reservoirs suffered setbacks due to faulty planning and lack of co-ordination between various Government agencies. Failure in implementing projects recommended by various experts/committees to create additional storage capacity in the upstream of Chembarambakkam Tank caused severe flooding in Adyar. Unmindful of the damage it caused to natural water bodies, local bodies and Government agencies had themselves encroached upon them for developing public infrastructure. Encroachment on

tank beds and river margins remained unchecked in the absence of an effective system to prevent and evict encroachments. Even with an Act providing legal authority to WRD to prevent encroachment in tanks, the percentage of tanks under encroachments kept increasing year after year.

Encroachments, a menace in the path of flood mitigation works, had not been effectively handled by the Government. Allowing *patta* lands in the foreshore area of the tanks and inability to acquire lands for flood protection walls indicate the helplessness of GoTN in ensuring safety to its people against disaster.

Improvements to macro drains did not fructify due to encroachments and for want of clearance from other agencies. No system existed for real-time flood forecast for releasing of surplus water with due regard to the water carrying capacity of waterways. SWDs were not scientifically designed and lacked seamless connectivity to trunk mains/rivers. Lapses in implementing Underground Sewage Schemes by local bodies led to continued outflow of sewage into SWD and consequent clogging of drains.

The State of Tamil Nadu, which is prone to frequent cyclonic effects and other disasters, failed to put in place the institutional mechanism envisaged in Disaster Management Act, 2005, to manage disasters. The TN State Disaster Management Agency did not play its envisaged role, as it neither had the contemplated financial autonomy nor had dedicated staff. The apex body for disaster management under the chairmanship of the Chief Minister never met to evolve policies. Disaster Management Plan was not prepared on time to institutionalise and coordinate rescue and relief operations during the floods of 2015. Relief activities were marred by delayed extension of relief, excess/short payment of cash doles and blocking up of funds due to wrong estimation of requirement of relief materials. SDRF funds were utilised on ineligible works and spending excess over the norms.

The monitoring committee of CMDA and WRD did not hold meetings as envisaged to discuss issues which have direct relation with prevention of flooding.

All factors put together indicate that it was a man-made disaster. Unless the GoTN takes full charge of mitigating the contributing factors leading to December 2015 floods, another disaster cannot be ruled out.



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