

Review Article

Chennai Flood revealed the importance of Natural Resources Conservation and Disaster Management

ABSTRACT

Chennai the capital city of Tamil Nadu and the southernmost state of India recently got hit by cyclone Michaung and the impact caused by the cyclone results in heavy rainfall. Due to global warming, the impacts of climate change have negative effects on the environment. Though Cyclones and heavy rainfall are natural disaster but the heavy floods that affects the regular life of the Chennai people was due to inefficient disaster management. People in Chennai faced severe damage to their properties and also challenges for their survival almost experienced a manmade disaster. Another main factor is that natural water bodies like rivers, lakes, ponds are in tremendous pressure due to illegal encroachments and needs effective measures for its rejuvenation. This paper emphasizes about the importance of natural resources and disaster management that will lead to sustainable development.

Keywords: Michaung, Global Warming, Sustainable, Disaster, Encroachment, Rejuvenation

1. INTRODUCTION

India is endowed with traditional water bodies found in different parts of the country and play an important role in maintaining and restoring the ecological balance. They act as sources of drinking water, recharge groundwater, control floods, support biodiversity, and provide livelihood opportunities to a large number of people. United Nations and Niti Ayog reported that the demand for water will reach twice the available supply, and 40 per cent of India's population will not have access to clean drinking water by 2030. This was due increasing negligence and lack of conservation of water bodies. Further, water bodies are being polluted by untreated effluents and sewage that are continuously being dumped into them. Across the country, 86 water bodies are critically polluted, having a chemical oxygen demand or COD concentration of more than 250 mg/l, which is the discharge standard for a polluting source such as sewage treatment plants and industrial effluent treatment plants. In urban India, the number of water bodies is declining rapidly. For example, in the 1960s Bangalore had 262 lakes. **Now, only 10 hold water.** Similarly, in 2001, 137 lakes were listed in Ahmedabad. However, by 2012, 65 were already destroyed and built upon. Hyderabad is another example. In the last 12 years, it has lost 3,245 hectares of its wetlands. Although there are sufficient polices and acts for protection and restoration of water bodies, they remain insufficient and ineffective. [1]. The wetland

ecosystem changed a lot in watershed due to the effects of urbanization in Chennai city and its inexorable development causes 60% loss of water bodies. Urban wetlands can minimize flood damage by storing floodwaters, and protecting shorelines from erosion by absorbing storm surges. This present study enumerates the importance conservation of natural resources and disaster management is the prime social responsibility.

Rapid Urbanization and Encroachment of Natural Resources

The construction and development activities due to urbanization like excavation, filling, draining, and so forth, are the major destructive methods resulting in a significant loss of wetland spatial extent. Chennai's increased population density due to rapid urbanization increases vulnerability to disasters. It also makes very difficult to evacuate and provide timely assistance to all people those got affected in disaster. Generally in an overpopulated environment, the numbers of people might be more than the available essential materials for survival such as transport, water, shelter, food or social amenities. Because of the vote bank politics, in Tamilnadu political parties whoever is ruling party, whenever speaking about encroachments in Chennai, they will talk about clearing slums and also wanted to relocate them in worse, far-flung places.[2]

Extreme care should be taken to protect the entire watershed areas such as (i) upper catchment area, where rain water collects, (ii) the water body itself and (iii) the drainage system which carries excess water out to the sea. The government should take actions in building resilient cities and towns with proper infrastructure and facilities to withstand disasters. Additional measures should be taken to reduce population density in disaster-prone areas.

Environment Experts pointed that most of the private educational institutions in and around Chennai as well as various government owned structures within the city that are actually encroachments, many built upon water bodies themselves. The second runway of Chennai airport, Koyembedu bus terminus, the entire corridor, ring roads flanking the city and the Adyar Eco Park are some examples cited by them and also the state government has ignored existing rules and given permission for private developers to build in catchments areas of water bodies and along the rivers. The Chennai Metropolitan Development Authority (CMDA) which is responsible for planning and development of Chennai Metropolitan Area must strictly follow relevant environmental laws and there should not be any violation of law thus eradicating corruption.

Lack of Disaster Mitigation Measures

A major challenge in disaster management in India is the lack of preparedness and awareness among people and authorities. Many people do not know what to do during an emergency or disaster, and authorities are often not adequately trained to handle disasters. This lack of preparedness often leads to confusion and delays in providing assistance to those affected. To address this challenge, there is a need to raise awareness about disasters and how to respond to them. Authorities should invest in disaster preparedness

training programs, including drills and simulations, to prepare people and authorities for potential disasters. [3]

Public awareness is a key factor in effective disaster and conflict risk reduction. It has been proved that countries where the communities are aware and participate in DRR activities the losses due to disaster events are low. Developing countries like India where the resources are limited communities can play very important role in DRR. [4] Participation of communities is important pillars and support to handle the catastrophes by providing help and relief to the victims. Therefore, it is important to build capacities of people by creating awareness and imparting them skill and training for relief and rescue operations to manage the disasters. These skill improvement and trainings will improve the preparedness level of population to face disasters. [5][6]

Role of Chennai Municipality Corporation

Poor Governance and Lack of Town Planning by Chennai Municipality Corporation make chennai vulnerable to disasters. Moreover people from rest of tamilnadu moving towards chennai city in search of livelihood increases everyyear. Chennai Corporation was under pressure in water supply, drainage, solid waste management, transport and also unable to deliver normal services. [7] Flooding in cities such as Mumbai, Ahmedabad, Hyderabad, Kolkata, Bengaluru and Chennai are on the rise every year.[8] In the past few decades, Chennai experienced severe flood in 2015 and most of the people got suffered and some died. Based upon the lessons learnt from the past Chennai Municipality Corporation should have taken necessary disaster preventive measures. But this was not done and the same conditions prevailed as in 2015 without any improvement in the administration of the Corporation. In order to overcome the problem, state government should give more autonomous in the functioning of municipalities so that they will deliver good service.[9]

Lack of Disaster Rescue Operations

People who were **worstly** trapped in the Chennai flood never get any help from the government side. Contamination of water due to stagnancy of water throughout the streets and houses became a major problem. Basic essential commodities like milk, bread, medicines were not available and it was accessible at rate higher than the normal price. These situations were not properly handled by authorities.

The Severity of Cyclone Michaung was an expected one because it was already cautioned by meteorological department about its impact. Though lessons have been learnt from past Chennai flood in the year 2015, disaster preparedness as well as preventive measures was not given importance. Generally more number of volunteers, emergency shelters, rescue teams, NGO units will be formed and involved in rescue operations during floods [10].This was the most important step to be followed during disaster occurrence but this routine procedure was not implemented in advance.

Conclusion

Impact of global warming results in climate change and frequent occurrence of disasters like Cyclones, heavy rainfall, earthquake, floods and drought conditions in future are unavoidable. Earthquakes, floods, hurricanes, volcanic eruptions and landslides all these are natural phenomena that have occurred throughout the history of humankind. However, rapid population growth, environmental pollution and degradation, and increased poverty, have all contributed to turning these natural phenomena into disasters that cause enormous losses in human lives, infrastructure, and material belongings. Economic losses caused by natural disasters have tripled in the past 30 years that cause the death of a million people and leave several millions more homeless. Working together continually as a community can help to reduce the impact of disasters.

A community that loses waterbodies may need to invest more in drinking water treatment and storm water management. An interdisciplinary decision-making system is a needed to eradicate the adverse impact of urbanization to water bodies and it should be primary concern for policy makers to mitigate risks from flash floods in major cities like Chennai etc. People should value the importance of water bodies by neglecting illegal encroachments and conservation of existing ecosystem is always a better solution than investing in flood control infrastructure.

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