



REVIEW ARTICLE

A STUDY ON THE TAMIL NADU STATE DISASTER MANAGEMENT POLICY DURING CHENNAI FLOODS, 2015

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ARTICLE INFO ABSTRACT

Article History:

Received 19th October, 2017
Received in revised form
03rd November, 2017
Accepted 17th December, 2017
Published online 19th January, 2018

Key words:

Chennai Floods 2015.

Chennai floods 2015 show the vulnerabilities that arise from the neglect of urban planning. The sights have taken residents of the city to devastating times when boats plied on the roads. It may have evoked memories of the river's channels-and other water bodies. Ironically, Chennai has lost most – if not all of the water bodies of old. Media reports quoting the National Institute of Disaster management pointed out that Chennai had about 650 water bodies, including lakes, ponds and storage tanks till about two decades ago; today it has less than 30. In the recent floods, the city paid a heavy price for the loss. Mudichur in Chennai and the surrounding areas of Kanchipuram district of Tamil Nadu was badly hit during Chennai Floods, 2015. Many areas like GST Road, CTO colony were badly affected. It was mainly due to uncontrolled developments of concrete spaces, shrinking of marshland, improper housing, subsequent embankment breaches and water overflowing from the Chembambakkam lake which flooded Mudichur main road. The present research study was undertaken to find out the policies which were formulated and implemented by the State Disaster Management during Chennai Floods, 2015 and its impact.

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Citation: Dr. Madhana Rekha, B.2018. "A study on the Tamil Nadu state disaster management policy during chennai floods, 2015", *International Journal of Current Research*, 10, (01), 64205-64209.

INTRODUCTION

Globally, there has been a considerable concern over the drastic increase in natural disasters. Human death toll and loss of property have been mounting high. Despite, substantial advancement in scientific mitigation progress, the loss of life and property due to disasters has not decreased. The United Nations General Assembly had declared 1990-2000 as the International Decade of Natural Disaster Reduction with the objective to reduce loss of lives and property. It may be impossible to avoid disasters, but it isn't impossible to plan ahead of time so as to minimize the impact that any given disaster might have on you or your family's health, safety and property. There are steps you can take ahead of time, including, purchasing the proper types of insurance, preparing a disaster kit and supplies, making a disaster plan and rehearsing it with your family, and staying informed so that you can do your best to get out of the way of predictable dangerous occurrences, that can help you, your family, and your property stay as safe as possible. Developing countries suffer the greatest costs when disaster hits. More than 95 percent of all deaths and losses caused by natural hazards are 20 times greater in the developing countries than in

industrialized countries. Diverse factors, natural and human induced, adverse geo-climatic conditions, topographic feature, environmental degradation, population growth, urbanization, industrialization, unscientific development practices etc. play a huge role in accelerating the intensity and frequency of disasters resulting in huge economic losses and human casualties. These, coupled with the impact of climate change and climate variability, are accentuating disaster impacts and underscore the criticality of promoting disaster-resilience and risk reduction practices. Out of 35 States and Union Territories in India, 27 are prone to different disasters. Tamil Nadu is prone to multi hazards, higher than other States and is frequented by hazards of various nature and different intensities. The vulnerability of the coastal community became exceedingly evident when Tsunami struck the southern coast of India on 26th December, 2004. Besides Tsunami, the coastal communities face disasters like cyclone and floods periodically. Communities in other hazard prone plains and hilly regions of the State face threats from Landslides, Earthquakes and Floods. Urban flooding is also becoming a growing concern in the State. Chennai floods 2015 show the vulnerabilities that arise from the neglect of urban planning. The sights have taken residents of the city to devastating times when boats plied on the roads. It may have evoked memories of the river's channels-and other water bodies. Ironically, Chennai has lost most – if not all –of the water bodies of old.

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Media reports quoting the National Institute of Disaster management pointed out that Chennai had about 650 water bodies, including lakes, ponds and storage tanks till about two decades ago; today it has less than 30. In the recent floods, the city paid a heavy price for the loss.

A fundamental principle of hydrology says that whenever there is heavy rain, or a cyclone, natural water bodies and inter-linked drainage systems hold back some water, use that to replenish ground water and release excess water into larger water bodies-oceans and big rivers. Chennai's planners and its real estate boom ignored this axiom. Chennai's master plan 2026 does deliver some lectures to the city's lost water bodies. But it shows little appreciation of their role as natural drainage. Why just Chennai, most urban master plans betray such ignorance. In city after, water bodies have to make way for real estate. So it's not surprising that most recent urban floods have become case studies of the perils of ignoring water courses. Mostly in Chennai these river and lakes have been encroached upon for constructing buildings and roads. Most Indian states do have disaster management programmes- including those for urban centres. But they are heavy on relief and rehabilitation. Disaster management is yet to find a place amongst the essentials of urban administration. It is also witnessed by the corruption that plagues all other public works in the country. Media report says that in the past five years, Chennai has spent more than Rs10, 000 crore on building storm water drains. But opposition parties in Tamil Nadu have argued that these multi crore storm water projects failed to deliver during the recent calamity. The aftermath of the unprecedented rains in Tamil Nadu exposes the government's lack of preparedness and inadequate disaster management plan. When Chennai was sinking, the government machinery was absent for all practical purposes. It was the civil society and volunteers groups, cutting across caste, creed and religion, which came to people's rescue, scripting extraordinary stories of everyday courage, sacrifice and resilience.

Even the social media played a major role in rescuing individuals who were caught up in the floods by promptly sharing information to the rescuers. As the water entered inside every single home, about 15-20 people died during the Chennai floods at Mudichur. After the severe spells of the city large parts of the state, Chennai and areas surrounding subways, hospitals, roads got flooded and entire localities were submerged in the water.

The study proves that the state government did not provide effective measures for the people during flood and the state government did not take any initial steps to avoid flooding.

Environmental considerations and developmental efforts, need to go hand in hand for ensuring sustainability. Restoration of ecological balance in the regions and raising coastal shelter belt plantations need to be incorporated wherever necessary in Disaster Management plans. Eco Systems of forests, islands, coastal areas, rivers, agricultural urban environment and industrial environment are also to be considered for restoration of ecological balances and sustainable development. Zonal regulation must ensure the preservation of natural habitats.

Aim and Objectives of the Study

The main aim of the research was to identify the effectiveness of the formulation and implementation of policies by the State Disaster Management.

- To study the causes for Chennai Flood, 2015 and its impact.
- To assess the precautionary steps taken by the Tamil Nadu State Disaster Management.
- To analyse the effectiveness of the formulation and implementation of policies by the State Disaster Management.
- To trace the drawbacks in the policies which led to the over flooding in the residential areas in Mudichur, Kanchipuram District.
- To provide suggestions and conclusions of the study.

Scope of the Study

The term "Disaster Management" encompasses the complete realm of disaster related activities. Traditionally people tend to think of disaster management only in terms of the post-disaster actions taken by the relief and reconstruction by officials. But, disaster management covers a much broader scope, and many modern disaster managers may find themselves far more involved in pre-disaster activities than in post-disaster response. This is because many persons who work in the development field, or who plan routine economic, urban, regional or agricultural development projects, have disaster management responsibilities. The study highlights the drawbacks in the policies which led to the over flooding in the residential area in Mudichur, Kancheepuram district in Tamil Nadu.

Limitations of the Study

- The study was mainly concentrated on the effectiveness of the formulation and implementation of policies by the State Disaster Management.
- The responses given by the respondents are considered as the primary source of the study.
- The study was undertaken during 18th December 2016 to 8th January 2017.
- All the affected areas could not be covered for the study due to paucity of time.
- All the respondents did not co-operate and give their views.
- The study was limited to a sample size of fifty numbers.

Research Design

The research design adopted for the study was descriptive research, also known as statistical research. It describes the data and characteristics about the population or phenomenon being studied. Descriptive research answers the questions who, what, where, when and how. Although the data description is factual, accurate and systematic, the research cannot describe what caused a situation. Thus, descriptive research cannot be used to create a causal relationship, where one variable affects another. In other words, descriptive research can be said to have a low requirement for internal validity.

Sampling Design

A simple random sampling was used for the study.

Sample Size

Number of the sampling units selected from the population is called the size of the sample. A Sample of 50 was taken for the study from the population.

Sampling Procedure

The procedure adopted in the present study is probability sampling, which is also known as chance sampling. Under this sampling design, every item of the frame has an equal chance of inclusion in the sample.

Methods of Data Collection

The data was collected through primary and secondary sources. The primary data was in the form of "raw material" to which statistical methods are applied for the purpose of analysis and interpretations. The primary sources are discussion with public and data collected through questionnaires. The questionnaire consists of close ended questions. The secondary data was in the form of finished products as they have already been treated statistically in some form or other. The secondary data mainly consists of data and information collected from websites and also discussion with the public. Secondary data was also collected from journals, magazines and books.

Hypothesis

The government had adopted effective State disaster management policies during 2015 Chennai floods.

Area of Study

Mudichur lies between Perungalathur and Tambaram. Mudichur road just 4 kilometres, Mudichur is a suburb located in Chennai Metropolitan City in the Kanchipuram district of Tamil Nadu state, India. Mudichur comes under Tambaram Taluk and St Thomas Mount Panchayat Union from Tambaram.

Mudichur has a population totalling 15,438 with about 7748 men and 7690 women as per Population Census 2011. Population of children with age 0-6 is 1723 which makes up 11.16% of total population of village. Average Sex Ratio of Mudichur Panchayat is 993 which is lower than Tamil Nadu state average of 996. Child Sex Ratio for the Mudichur as per census is 969, higher than Tamil Nadu average of 943. There were thousands of people stranded on rooftops during the flood. The main reason for flood was the release of water from the Chembarambakkam lake. Water entered the houses of residents during the night time, so they had a lesser chance of escape. This heavy rainfall disrupted the normal life of the residents completely.

Role of Government during & after flood

The unexpected rain brought the government left stranded without any mechanisms at the time. The aftermath of the unexpected rains in Tamil Nadu exposes the government's lack of preparedness and inadequate disaster management plan. But it was the armed and unarmed forces who toiled hard to save many lives. Not to forget their grit and determination in rescuing lives. Their role played by fishermen and young volunteers were meticulous, rescuing the lives as per the severity. They rescued the people who were struck in places where the water flow was more than 20 ft. They clearly segregated the work with the support of the combination of various forces like National Disaster Response Forces, Military, Tamil Nadu Fire and Rescue Services etc.

Moreover it's the Indian Air force who played a pivotal role in rescuing the victims from dangerous situations. These men have helped in shifting the people who got struck in deep, flowing waters with the help of boats. Due to lack of preparedness these officials were given with less life boats and gadgets. It was the fishermen who gave boats to rescue the lives of people. Neither the Central nor the State government expected heavy rains so the ability to act quickly was slow. The steps taken by the District Collector after the flood was appreciable so that it may prevent the stagnation of water in these encroached areas in future. It was a commendable work done by their team. They removed all the houses which were built in the encroachments. It was done to send the water to lakes without stagnating in a place. It was done in areas like Madmabakkam, Irumbuliyur, Selaiyur etc. It was followed by the survey to verify the boundaries of water bodies and water courses. The state government took effort to clear the rain affected places from spreading communicable diseases. It was a great task accomplished by the state health department. The state government had given a flood relief amount of Rs.5000/- (Rupees five thousand only) to all the families which were affected by flood. They were successful in distributing the relief amount to people and the rescue operations carried out by the police forces were extraordinary. They provided accommodations to all in schools, colleges and community halls. They had also arranged special camps for giving government documents for people who had lost it during the flood.

Role of NGO's and Volunteers

Without these voluntary agencies and volunteers the Chennai flood would have been more worst affected. There are Non-governmental organizations who struggled day and night to bring the aftermath of flood slightly better and gradually back to normalcy. Right from providing food packets to health services their assistance was immaculate. Their services included providing first aid, blankets, rescue operations along with police forces, availing the flood relief amount to the people. Lots of work has been done in preventing the spread of epidemics and communicable diseases.

Losses accrued due to Flood

Nothing will be equal to the loss of lives and it could not be repaid. This disastrous flood took many lives. The Government is yet to tell the approximate list of people who have died due to flood. As per the people prediction it will be more than fifty in and around Mudichur. As far as the losses is concerned people had to run away for the lives leaving their valuables and belongings. All electronic gadgets, cars, bikes and houses were damaged by flood. The government could not repay what people have lost and the impact that the flood brought to their minds will remain forever. It affected the people both emotionally as well as physically.

Main Findings of the study

- Most of the respondents said that the State government was unsuccessful in handling the floods effectively.
- Majority of the respondents were unaware of the fact that the affected lands are unfit to build houses.
- Most of the respondents said that there should not be any permission given to the builders to build houses in the affected areas.

- Most of the respondents did not get any early warning signal before the flood.
- Most of the respondents said that the relief measures provided by the State government was not satisfactory.
- Majority of the respondents said that the government did not survey the impact after the floods.
- Most of the respondents suffered valuable material losses while some suffered loss of lives in their families.
- Majority of the respondents have got the flood relief amount of Rs 5000/- given by the state government but the amount of loss of property was incomparable.
- Majority of the respondents said they had to spend huge money for paying towards boats and risked their lives by wading through deep waters.
- Most of the respondents said that there was no immediate response and recovery action taken by the State government.
- Most of the respondents felt that removing the encroachments after the flood would be effective in future.
- Majority of the respondents were not satisfied with the service and policies provided by the State government.

Table 1. Any loss during flood

| S.No | Response | Respondents | Percentage |
|------|----------|-------------|------------|
| 1. | Yes | 50 | 100% |
| 2. | No | 0 | 0 |
| 3. | Total | 50 | 100% |

Table -1 clearly shows that 100% of the respondents suffered loss during the flood.

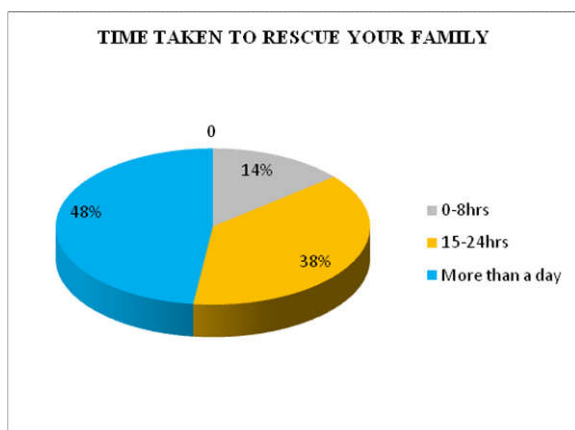


Chart 1. Time taken to rescue your family

From the chart 1, it is clear from the above table that 14% of the respondents claimed that the State Government took about 0 -8hrs to rescue them from their flooded homes, 38% of the respondents were rescued from 15-24hrs and 48% of the respondents were rescued after more than a day.

Conclusion

Chennai Floods 2015 proved that the Tamil Nadu State Disaster Management Policy suffered from the following drawbacks:

- Inadequate Early Warning System
- Lack of Pre-Disaster Preparedness

- Inadequate and Slow Relief
- Lack of Coordination
- Slow Rehabilitation and Reconstruction
- Inefficient Administrative Machinery
- Poor Management of Finance for Post Disaster Relief
- Symbolism rather than Relief
- No timely Instruction for Evacuation

Suggestions

- There should be proper drainage system which would be useful in discharging the water to the sea. Every place in Tamil Nadu has to have a properly designed drainage system. Compared to other states Tamil Nadu lags behind in effective designing and maintenance of drainage system. Because cities like Mumbai has learnt from its mistake and they started re-designing their drainage structure.
- Clearance of encroachments done by the Government was an excellent move but it was too late. Nevertheless it's a preventive measure taken by the government. The process should speed up in all the areas. Severe action must be taken against Government Officials who indulge in sanctioning Plan Approvals for building houses in prohibited encroached water bodies.
- It will be effective if the government builds bridges across the rivers, so that it makes life easier for the people to be secured during the time of floods in future.
- Activities like banning the construction of houses in lake areas should be encouraged and people should support it. Because it is not for short time satisfaction rather we should foresee what problem will occur in the mere future. There should be stringent rules imposed on real estate builders who build houses in these lake areas.
- Government should "Improve the flood warning systems", and give people more time to take action during flooding, potentially to save lives of the people and also to prevent more flooding in the future.
- To reduce the flood hazards, the structural measures should be taken upon on buildings like water retaining system by increasing infiltration and rooftop storing system. People should construct all new buildings one meter from the ground level to prevent flood damage and government also supplement with more innovative methods to lower the risk of future disasters.
- Government can introduce planting of trees strategically so that the wooded areas can slow down waters when rivers overflow. These areas are often destroyed to make room for agriculture and development.
- India being a diverse country with varied geographical features, is not only the homes for us the citizens but also a hub for many tourists from around the globe. Therefore, the responsibility lies within us to change our attitude towards nature and to be preventive enough to safeguard us from future calamities.

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