International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 07 Issue: 05 | May 2020 www.irjet.net p-ISSN: 2395-0072

Village Disaster Management of Rising Tides in Navasari Coastal Area

Arzoo J. Patel [1], Himanshu J. Padhya [2], Zarana H. Gandhi[3]

[1]Student, [2] Associate Professor, [3]Ad-hoc Assistant Professor
Master of Town and Country Planning,
Sarvajanik College of Engineering and Technology, Surat, Gujarat, India

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Abstract - *Disaster management deals with both, natural and manmade disasters. All the aspects of disaster management deal with the processes used to protect the population, environment and consequences of disaster. Navsari coastal area is exposed to various natural factors. The vulnerability of the area is increased during high tides. The impact of tidal flooding is predicted to be even more severe. Disaster prevention and mitigation as well as disaster preparedness should be monitored by the government to mitigate or minimize the emergence of disaster. The main objective of this study to identify vulnerable aspect and to mitigate the consequences of hazards thorough understanding of the vulnerability of the study area. Planning is required, not only for responding to the impacts of disaster, but also to maintain continuity while managing the crisis, and to guide recovery and reconstruction effectively. Dealing with disaster for the risk mitigation of study area by introducing village disaster management plan for the most effected village of the Navsari coastal area.*

Key Words: **Disaster, Disaster Management, Rising Tides, Coastal Area, Disaster Management Plan.**

1.INTRODUCTION

India has been traditionally vulnerable to natural disasters because of its unique geo-climatic conditions. Floods, droughts, cyclones, earthquakes, and landslides have been a frequent phenomenon. Natural disasters of an original scale are shifting more frequent each year. Sufferers of these disasters get difficulty in obtaining short-term recovery using disaster resources. Natural hazards have resulted in financial and psychological damage to society. past couple of years, the Government of India has an approach to disaster management. Disaster management involves an important place in this country's policy framework. Village Disaster Management Plan is a document prepared by the village community based on their hazard, vulnerability, risk, resource, and capacity analysis, containing village profile supported by maps, emergency response and disaster risk reduction plans, listing out activities and responsibility of the Village Disaster Management Committee (VDMC), Task Force Members and the community at normal circumstances, before, during and after a disaster in order to save lives, livelihood, and property and combining it into the long-drawn sustainable village developmental plan. the emergency response plan is so well-practiced, and planned, that they reduce the vulnerability. Community participation in disaster risk reduction is one of the key aspects in reducing vulnerabilities. it has been decided to prepare village Disaster management plans by involving the respective communities of the village. The plan will address the preparedness, response, and mitigation strategies developed by the community with well-defined roles and responsibilities. In rural communities of the coastal area, tidal floods are one of the most potentially destructive natural hazards to impact rural livelihoods. This makes it necessary to mitigate their negative impacts through rural households.

Navasari is prone to many natural and manmade disasters. This disaster leads losses of human and infrastructure. Navsari is located along the coastal area of The Arabian Sea and the Purna River creates its delta. Rising tides in Arabian sea adversely affected community. the vulnerability of the area is increased during high tides. The impact of tidal flooding is predicted to be even more severe. Disaster prevention and mitigation as well as disaster preparedness should be monitored by the government to mitigate or minimize the emergence of disaster. this study to identify vulnerable aspect and to mitigate the consequences of hazards thorough understanding of the vulnerability of the study area. Planning is required, not only for responding to the impacts of disaster, but also to maintain continuity while managing the crisis, and to guide recovery and reconstruction effectively. Dealing with disaster for the risk mitigation of study area by introducing village disaster management plan for the most effected village of the Navsari coastal area.

1.1 Aim of the study

To prepare village disaster management plan for most vulnerable area of Navsari coastal area.

1.2 Objective of study

- To identify vulnerable aspects and propose for corrective measures by planning
- To propose village disaster management plan

1.3 Scope of work

- Physical boundary of the study area is restricted
- impact of rising tides on costal area will be considered in this work.

2. literature review

Village Disaster Management Plan is a document prepared by the village community based on their hazard, vulnerability, risk, resource, and capacity analysis, containing village profile supported by maps, emergency response and disaster risk reduction plans, listing out activities and responsibility of the Village Disaster Management Committee (VDMC), Task Force Members and the community at normal circumstances, before, during and after a disaster in order to save lives, livelihood, and property and combining it into the long-drawn sustainable village developmental plan. the emergency response plan is so well-practiced, and planned, that they reduce the vulnerability. Community participation in disaster risk reduction is one of the key aspects in reducing vulnerabilities. it has been decided to prepare village Disaster management plans by involving the respective communities of the village. The plan will address the preparedness, response, and mitigation strategies developed by the community with well-defined roles and responsibilities. In rural communities of the coastal area, tidal floods are one of the most potentially destructive natural hazards to impact rural livelihoods. This makes it necessary to mitigate their negative impacts through rural households.

Village disaster management plan contains list of activities which a village agrees to follow to prevent damage of disaster. The plan tries for operative management of human and resources to overcome disaster. It also identifies which actions should be taken by the persons in the community to prevent hazards from becoming disasters. Every village have different inhabitants, geography and resources and it's varied with community. Village disaster management plan changed from village to village.

The village disaster management plan is a document which states the past hazard profile of village and the current vulnerability status and the source of how to prepare for future. The plan is preparedness tools which can be used during disaster by the community to have a vision of the location of available local resources in the village.

2.1 Need of VDMP:

- Its summaries the process through how village should manage the Disaster.
- It used to monitor resources in the aftermath of a disaster.
- It helps to communication with the administrative officials with contact details of important administrative officials.
- It defines the roles and responsibilities of administrators and teams during disaster.
- It can help to avoid errors or identify unseen opportunities.

2.2 Features of VDMP:

- Have definite objective
- state an organized arrangement of activities in a reasonable and clear manner

- Allot definite tasks and responsibilities
- determine which actual performance can be measured and revised
- all activities, tasks and responsibilities Sum-ups to archive objective.

The water rises to its highest level, reaching **high tide**, the highest tides of the year may be known as the king tide. High tide causes the inconvenience in coastal area. Which called high tide flooding. a high-tide flooding event occurs when local sea level temporarily rises above an identified threshold height for flooding, in the absence of storm surge or riverine flooding. The heights of locally identified flooding thresholds are related to impacts such as standing water on low-lying roads or seawater entering stormwater systems.

When coastal storms coincide with high tides, the depth and extent of coastal flooding can increase dramatically. Even relatively weak winds blowing toward land during high-tide events can push huge volumes of water inland. Rainfall can also add a substantial volume of water to high-tide floods. **high tide flooding**, is becoming chronic and disruptive to coastal communities.

A series of high waves of extremely long wavelength and period usually generated by a violent, impulsive undersea disturbance or activity near the coast or in the ocean. When a sudden displacement of a large volume of water occurs, or if the sea floor is suddenly raised or dropped by an earthquake, big tsunami can be formed Tides originate in the oceans and progress toward the coastlines where they appear as the regular rise and fall of the sea surface. When the highest part, or crest of the wave reaches a particular location, high tide occurs. The difference in height between the high tide and the low tide is called the tidal range.

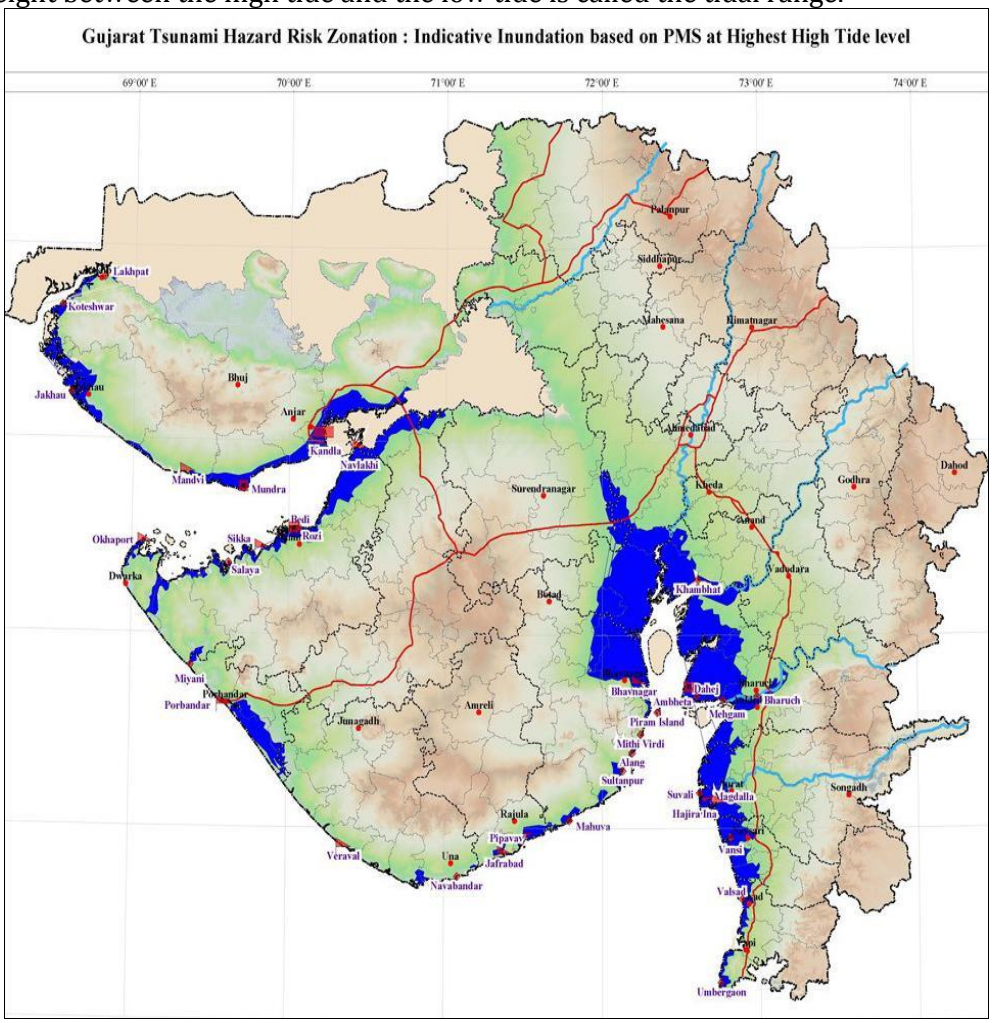

Figure 1 Navsari in tsunami hazard risk zone

Navsari is highly vulnerable to multiple hydro-met hazards such as river floods, creek floods, and storm surges and other hazards like industrial hazards, fires, and earthquake. Risk exists in Navsari since reclaimed land in the sea can cause high tidal effects. Due to major industrial activities, fire incidents have also been noticed in the city in history. the vulnerability of the area is increased during high tides. The impact of tidal flooding is predicted to be even more severe. Disaster prevention and mitigation as well as disaster preparedness should be monitored by the government to mitigate or minimize the emergence of disaster.

3. study area

Navsari is a city located on the western part of India in the state of Gujarat state. Navsari is one of the oldest cities of southern Gujarat. It is linked by Ahmadabad – Mumbai broad-gauge railway line and the national highway no. 8 which is passes nearly from the town. Navsari is situated between 20◦ 55' North latitude and 72◦ 55' east longitude. Mumbai is about 260 km to the south and the city of Surat is about 30 km to the North of the town. The Arabian Sea is about 7 km to the west, where the Purna River creates delta, which is west of the city and empties into the Gulf of Khambhat. Navsari is also the Twin City of Surat, and only 30 km south of Surat. In 2016, Navsari ranked as the 16th biggest city of Gujarat state of India by population in 2011.

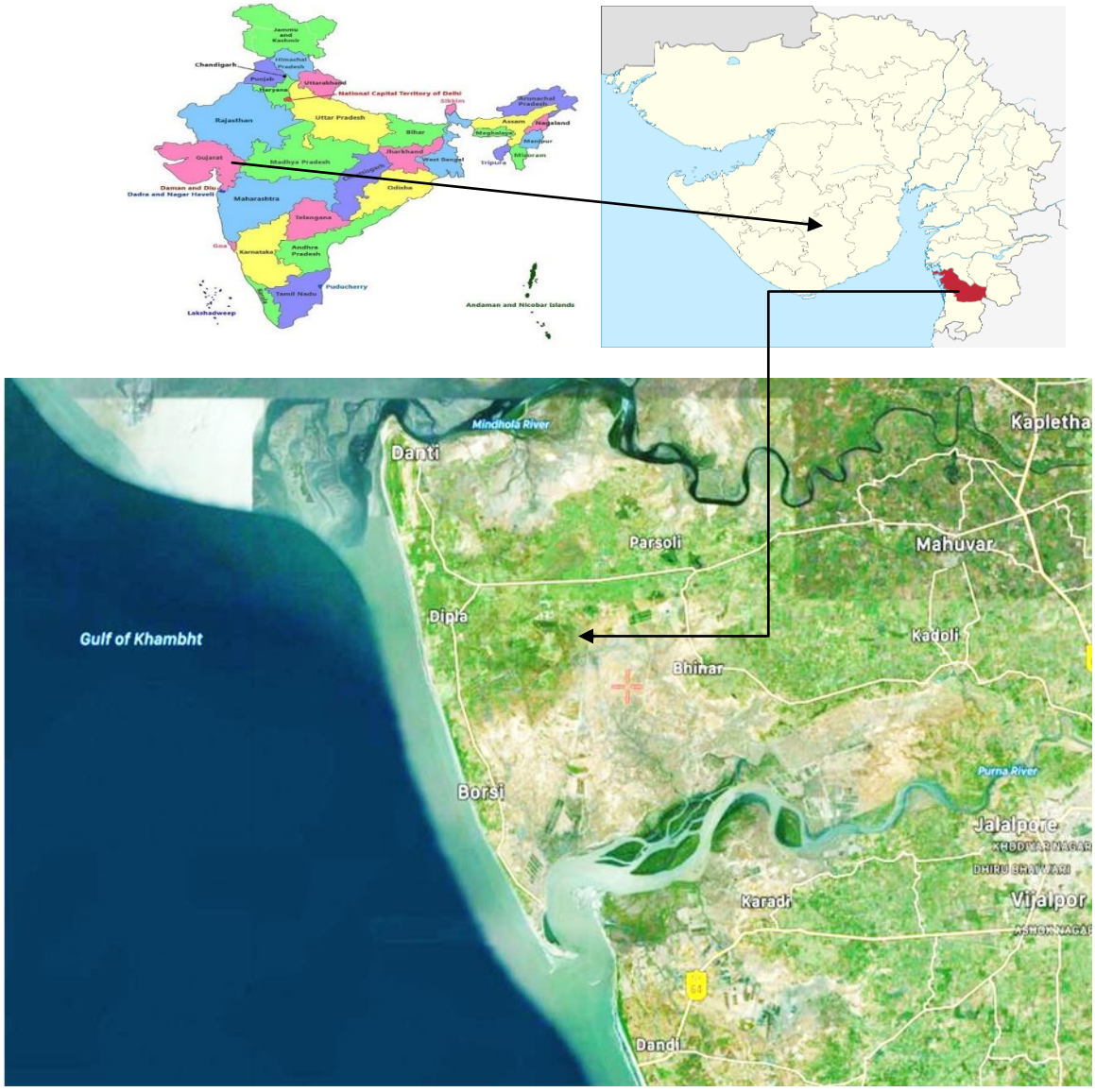

Figure 2 study area location

The geographical area of district is 2196 sq.k.m. The population of district is 13,30,711. Apart from Navsari (city) taluka, there are six more talukas. Total Gram Panchayats of district are 368. The district has 5 talukas of which Navsari, Gandevi, and Chikhli are major talukas. The district abounds in sugarcane fields, chikoo plantations, and mango trees. Navsari is known for its floriculture activities and sugar business. The focus sectors of the district are Agro & food processing industries, textiles, drugs & pharmaceuticals, mineral related industries, and marine based industries. Famous historical place Dandi and Vansda National Park are located in Navsari. Navsari district is divided into 6 talukas**.** Jalalpore is a city and a Municipality in Navsari district. Danti, Ubhrat, Dipla, Vansi, Borsi village are underneath Jalalpore taluka. Borsi is a large village located in Jalalpore Taluka, literacy rate is higher and sex ratio of these villages are higher than Gujarat state average of 919.This Study area is surrounded by the thee face of water body which are Arabian Sea, river Purna and Mindhola creek. which cause the vulnerable situations for the community during high tides. Rising tides in Arabian sea adversely affected community of this coastal area. the vulnerability of the area is increased during high tides. The impact of tidal flooding is predicted to be even more severe.

Table 1Demographic Profile of Study Area

village	Total population	Male	Female	household	Sex Ratio	literacy
Danti	2,699	1,395	1,304	655	935	93.36 %
Ubhrat	1,753	897	856	422	954	94.23 %
Dipla	2,112	1,088	1,024	512	941	94.75 %
Vansi	562	280	282	152	1007	89.51 %
Borsi	3,433	1,790	1,643	737	918	94.53

4. Future Scope of Work

For better planning and implementation of disaster strategies it is necessary to plan it for micro level. Village boundary as well as the surrounding area of the village. For this it is necessary to collect the data about weather pattern and past history of emergencies of the area. This can help in the better planning and functioning of the village before, during and after the emergencies.

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