

# Post Disaster Evaluation of Latur Earthquake

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**Abstract-** This paper describe the post-disaster evaluation of latur earthquake which occurred in 1993 in Maharashtra, India. This paper gives the post evaluation of the total damage like life loss and capital loss. Rehabilitation, relief and rescue work and housing and infrastructure for affected people. Our government take some steps towards it and start district disaster management program and training and awareness program. Also develop disaster management information system.

**Index Terms-** Earthquake, Post Disaster, Government Initiative

## 1. INTRODUCTION

The Latur, India earthquake was the most destructive earthquake in 1993. It occurred on September 30, 1993. The main reason for its mortality was the fact that it occurred at 3:45 AM, while the entire area was indoors and asleep. The earthquake struck in Southeastern India, in the state of Maharashtra. The two districts which were decimated by the earthquake were the districts of Osmanabad and Latur. The coordinates of the earthquake's epicenter were **N18.07** and **E76.62**, this was very close to Latur, and consequently, it suffered the most damage. The earthquake measured 6.45 on the Richter scale.

- 52 villages raised to ground, 27,000 houses all amenities and infrastructure damaged.
- 30,000 houses collapsed 2, 11,000 houses in 13 districts suffered damages of varying degree.
- 3,670 people died in Latur District.
- 446 were seriously injured making them handicapped.
- 37 Villages were totally collapsed.
- 728 villages suffered damages of varying degree.
- Nearly 1, 27,000 families were affected.

## 2. AIM AND OBJECTIVE

### 2.1. Aim

Aim of this paper is to evaluate the post disaster work in latur earthquake and analyze loses of life and capital. Which kind of rehabilitation work and rescue work done by government and other NGOs also evaluation of government initiative in mitigation planning.

### 2.2. Objective

- ❖ To analyze the loses and rehabilitation work
- ❖ To analyze the post disaster government initiative in mitigation process.

## 3. LOSSES AND REHABILITATION WORK

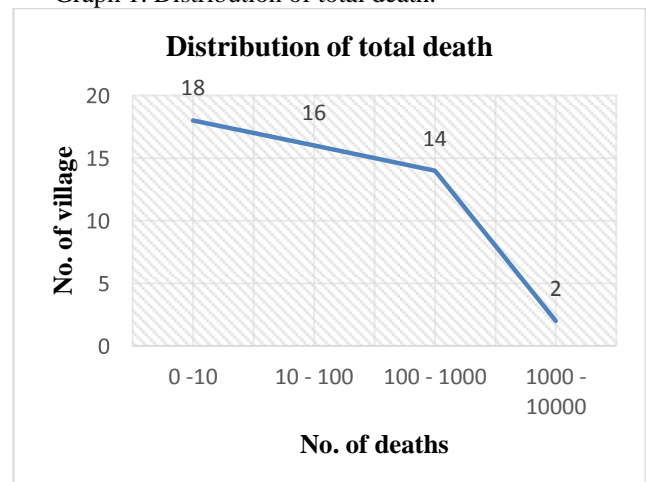
### 3.1. All over loses

- 7,928 people killed.
- 16,000 people injured.
- 15,854 livestock killed.

Table 1. Intensity wise death rate.

Intensity wise distribution		
Intensity	No. of villages	Death rate range(per 10,000)
VII	17	3-340
VIII	19	15-2022
IX	14	855-3280

Graph 1. Distribution of total death.



### **3.2. Rescue and Relief**

Many persons were rescued alive by the Armed Forces. Dead bodies trapped under the debris were taken out and disposed on war footing. First Aid and Medical Aid was provided in time and on a vast scale with the help of Health Machinery & Social Organizations.

### **3.3. The Rehabilitation**

Donor agencies and social organizations carried out extensive rescue and relief operations. The Govt and social organizations contributed their best to bring the life to normal. First aid, food, water, clothing, medical aid were timely provided. The Govt. had taken up a very ambitious programs for the rehabilitation of all the affected persons with the help of financial institutions like World Bank, Asian Development Bank, Donor Agencies, and Central Govt. etc. The same has been completed and the rehabilitation work has been completed to the satisfaction of the people. The programs included various aspects of development also.

## **4. GOVERNMENTS INITIATIVE IN MITIGATION PROCESS**

There was not a rehabilitation policy before this earthquake in the Maharashtra, so after this earthquake the govt. has formulated detailed rehabilitation policy within 6 months and a huge program of Rehabilitation of damaged villages was taken up with the help of World Bank and Donor Agencies. For selecting the new sites for villages they were use remote sensing technique with the help of whatever they have information about it. Government take some major steps towards housing like Those villages where the damage is more than 70 % but the soil strata below is hard BC soil is less than 2 mt. deep were found to be fit for reconstruction on the same site. The residents there were provided Rs. 62000/- grant for reconstruction by himself and the technical assistance was provided by the Govt. also a vast program for repairs and strengthening of houses which suffered varying degrees of damages was taken up in 749 village. Those residents who owned agricultural land admeasuring 7 hectares and above have been provided a plot of 5000 sq.ft. Area and constructed house on that plot with 750 sq.ft. Carpet area in the new village. Those residents who owned land between 1 hectare to 7 hectare have been provided plot of 2500 sq.ft. Size and constructed house on that plot with 400 sq. ft. carpet area and residents who owned land less

than 1 hectare or are landless have been provided plot of 1575 sq.ft size and constructed house on that plot with 250 sq.ft. Carpet area. Government done some work in economic, social and forestry rehabilitation like 299 beneficiaries have been provided cattle for the cattle lost in earthquake. 1,26,132 agricultural implements have been provided to the farmers who lost agricultural implements in the earthquake. The earthquake widows and ex-servicemen, destitute children have been provided house of 250 sq.ft carpet area even if they are not entitled for the same.

The donor agency 'Red Cross' have constructed 3 Rural Hospitals of 27 beds each, 2 PHC's and 11 health sub-centers in the earthquake affected area .With a view to maintain the balance of environment afforestation work has been taken up on a large scale comprising of road side plantation, courtyard plantation and block plantation. Block plantation in 39.95 hectares area has been done and 1, 72,818 seedlings have been planted. In road side plantation program 27065 seedlings have been planted. 27000 seedlings have been distributed to the beneficiaries for courtyard.

### **4.1. Disaster Management Initiative**

The Government of Maharashtra supported the development of a comprehensive disaster management program that included the development of response plans at the state and district levels, the identification of risks and vulnerability for each district and the state and the identification strategies at the state, district, and village levels. The Government of Maharashtra is now continuing with a mitigation implementation program which will bring vulnerability assessment and mitigation planning to the village level. The need for the disaster management initiative was recognized in the initial working papers of the World Bank project team [World Bank, 1993] The principal purpose to engage in disaster management is to reduce vulnerability of the population and the built environment before disasters occur; to minimize life and property loss, enhance population's resilience by providing development opportunities, and to ensure environmental viability for future generations.

### **4.2. Disaster Management Information system (DMIS)**

A database of all the vital information in the district has been compiled and kept in the computer. With the help of software developed by the MRSAC taluka and district maps showing required vital information on the map can be made available with several

permutations and combinations by superimposing available vital data. This Information System helps the Administration in forecasting the probable disasters situations and also taking decisions regarding response activities of the administration. The system is also useful in taking important policy decisions for in the implementation of development programs.

#### **4.3. Advanced Communication Technology**

A well-equipped District Control Room has been setup in the Collectorate having V-SAT- Network so as to establish direct contact with the State Capital, Divisional Head Quarter and other District Head Quarters. There is 'Videoconferencing' facility provided in the D.C.R. along with SAT phones for important Heads of Depts. and E-Mail facility within the V-SAT Network.

#### **Conclusion**

Post evaluation of earthquake is very useful to estimate the expected number of casualties in a given region. It gives direction in other same disaster event for rehabilitation, rescue and relief work for better way. Also useful to reassess the policy of disaster and disaster management program like training program or awareness program. Somehow it useful for making change in earthquake resistance building code by reference of post evaluation of house damage and give best way to government for adopting the new technology

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