ISSN - 2348-2397
APPROVED UGC CARE

SHODH SARITA

SHODH SARITA
Vol. 7, Issue 26, April-June, 2020
Page Nos. 48-52

AN INTERNATIONAL BILINGUAL PEER REVIEWED REFEREED RESEARCH JOURNAL

DROUGHT MANAGEMENT : A CASE STUDY OF LATUR DROUGHT 2016

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ABSTRACT

In past, Latur region was known for the 1993 Killari earthquake; still this region is experiencing minor tremors after regular intervals. But in recent times it is known for frequent drought conditions and water scarcity. Drought 2016 has changed regional disaster management priorities, geographic and socio-economic conditions and forced policy makers to think differently which will be having long term impact on regional environment. The speciality of this drought was water scarcity. Due to three consecutive monsoon failures almost all surface and underground water sources were dried, thus making acute water shortage in both urban and rural area. The severity was more in urban area especially in Latur city. First time in the history of Maharashtra and second time in India water was supplied through railway wagons. The district administration did micro level planning and worked on all phases of disaster management cycle effectively. This case discusses about different measures taken by the Latur district administration for the 2016 drought.

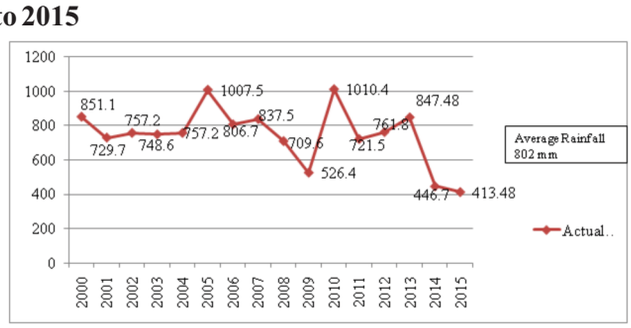
Keywords : Drought, disaster management, railway wagon water supply

1. INTRODUCTION

Droughts are complex and multifaceted phenomena but still least understood of all-natural hazards, affecting more people than any other hazard.Drought impacts are long lasting, at times lingering for many years. It occurs with varying frequency in all regions of the globe i.e. high as well as in low rainfall areas; in all types of economic systems, socialist and capitalist; and in developed and less developed countries alike. Droughts differ from one another in three essential characteristics: intensity, duration, and spatial coverage. Like other environmental phenomena, it cannot be understood solely through scientific investigation. Instead, it is constituted through the interactions between science, nature, and society. It is a climatic event that cannot be prevented, but interventions and preparedness to drought can help to: (i) be better prepared to cope with drought; (ii) develop more resilient ecosystems (iii) improve resilience to recover from drought; and (iv) mitigate the impacts of droughts.

Recurring drought is a major challenge in the drought prone area of Maharashtra State where agriculture is the main source of income. Latur is one of the drought prone districts of Maharashtra state. Topographically, it neither falls in Godawari Basin nor in Krishna river basin. Its rivers such as Manjra, Terna, Manyar originated from rain shadow area of the Western Ghat (Sanhadri Mountain renege).

Graph Number 1: Rainfall in Latur region from 2000 to 2015



(Source: www.latur.gov.in)

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The district receives water from two major and eight medium irrigation projects. In 2016 almost all reservoirs were dry. It resulted in water scarcity for the entire district; the severity was more for Latur city. Due to less rainfall and surface water scarcity, the ground water level of the entire district decreased drastically during drought period. The district's ground water level decreased on an average by 3.29 meters. It was highest for Ahemadpur (4.49 meters) and Jalkot taluka (4.42 meters), and lowest for Devani (2.52 meters) and Ausa taliuka (2.78 meters). In the month of April / May almost all surface and underground water sources were dried thus forcing the district administration to take the unusual step of water supply by railway wagon.

2. OBJECTIVES :

- To study Latur region's Drought and its characteristics
- To discuss drought management practices conducted by Latur District Administration

3. METHODOLOGY :

The Case study method was adopted for conducting this drought management study. The study was restricted to drought measures taken by Latur district only for the year 2016. Exploratory research design was used for the research. It was based on both primary as well as secondary data. Primary data was collected from officers of District administration Latur, through interview method. Secondary data was collected from newspapers, government reports.

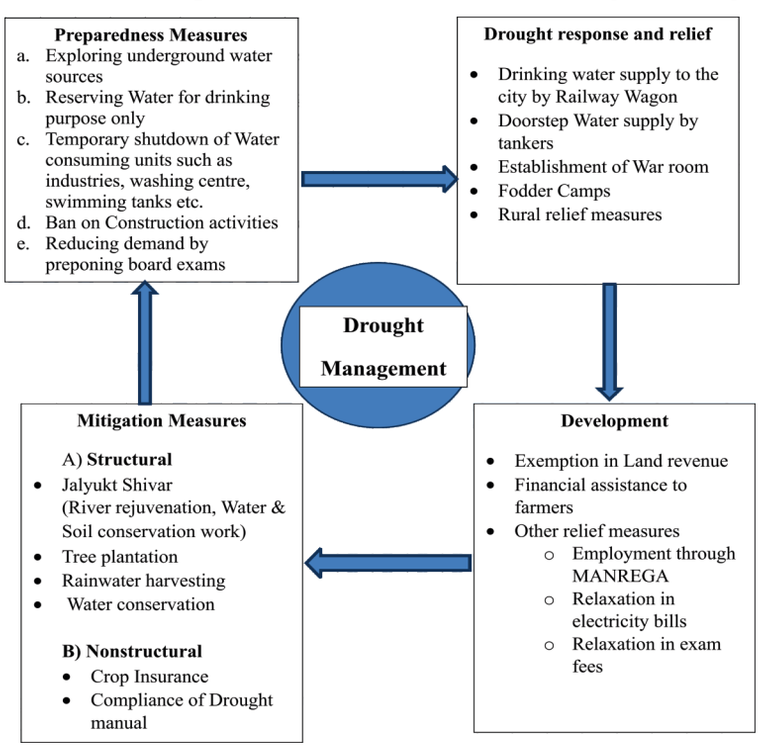
4. FINDINGS AND DISCUSSION :

The year 2016 drought experienced most severe drought in last three decades. The district administration worked effectively on both immediate short term relief measures and also on long term developmental measures. The major challenge was supplying water to the cities and villages, giving support to live stocks, providing employment, relief to farmers and coordinating different stake holders.

A) Drought Mitigation measures :

Mitigation is defined as activities that reduce the degree of long-term risk to human life and property. Drought mitigation measures include a large number of actions, which can be grouped into three broad categories: supply-increase, demand reduction, and drought impact minimisation. All these measures were taken for minimizing the risk by undertaking both structural and non structural mitigation measures.

Figure Number 1 : Conceptual Framework for Latur Drought Management 2016



I) Structural mitigation measures :

a) Jalyukt Shivar

River rejuvenation

There was not a single drop of water in July 2016 in Manjara river in May-June 2016, but in year 2017 District Disaster Management Department, Latur conducted flood training in the Nagjari Barrage of Manjra River and ride the boat in river basin. This could be happened only due to the revival of the Manjara River.

Water and Soil conservation work

In the district, more than 67 lacs MCM of silt was removed from nearly 150 dams/tanks. Nalhas and rivers of more than 200km length were de-silted under the mission with 100% public contribution/participation. Cost of this people's participation work is more than 100 corers as per Government rate. Apart from these more than 200 percolation tanks were repaired, around 500 Cement Nallah Bandh were constructed from Government expenses along with Compartment banding and Deep CCT work.

b) Plantation

Latur District was having less than 0.6 percent of area covered under forest before 2015. In order to increase forest area, the district Collector has handed over more than 5,000 hectares of idle land to Forest Department. Plantation of different species was done by forest department on this land which has increased the forest area of the district to 2 percent.

c) Rain water Harvesting

Around 4,200 households and 1,300 small entrepreneurs installed rain water harvesting structure. The Collector of Latur randomly visited households of all wards for motivating people for rainwater harvesting. These households were given appreciation certificates and relaxation in property tax for doing rainwater harvesting. Total 4,200 households did rainwater harvesting in three months of duration.

ii) Non-Structural Mitigation measures

a) Crop Insurance : Latur district farmers received relief amount more speedily during drought period. Total 85,000 farmers received 2,109 lacs recovery from crop insurance for Kharip season. Around 1 lac Rabbi cultivating farmers received 5,175 rupees through crop insurance.

b) Compliance of Drought Manual : The district administration had strictly followed guidelines for droughts framed by NDMA and Drought Management Manual of agriculture department.

c) Water Rationing : Water quotas have been fixed for towns and villages and it was ensured that no village or town lifts water more than their specified quota. Quota of each village/town was fixed on the basis of per capita requirements.

B) Drought Preparedness Measures :

a. Exploring underground water sources: By considering the water crises, the district administration had spent Rs. 438.90 Lakh for acquiring 1,141 wells/boar wells for drinking purpose.

b. All surface water resources were reserved for drinking purpose only and Government officials were appointed for effective monitoring purpose.

c. All water consuming units such as industries, washing centres, swimming pools were temporarily shut down.

d. All new construction activities were temporarily banned by stopping new construction licences

e. In order to reduce the burden of water supply after April, the annual exams of non-board level and higher education programmes were preponed from April to February.

f. Awareness programs :

Different awareness programmes were conducted during drought period.

I) Awareness program for farmers**:** District administration implemented awareness programmes for farmers on different aspects as follows :

- Changing cropping pattern: Community resilience is best achieved when mitigation strategies are integrated with land use and comprehensive planning. Separate awareness programmes were conducted at micro level for educating and motivating farmers for changing cropping pattern.
- Ground water usage: District Collector of Latur personally sent letters to 9,000 farmers regarding ground water literacy.

- Baliraja Sabalikaran Abhiyan: The program was implemented to reduce farmer's suicide. Only 17 farmers committed suicide in the district which is very less number compared to almost 2,550 farmers' suicide cases in entire Maharashtra state.

ii) Awareness program for Citizens: District collector wrote 15,600 Demi Official (D.O.) letters along with IEC material to the households, hotels, apartments, government buildings, schools, colleges, industries to appeal them for water harvesting conservation. Series of workshops were also carried out at different level.

iii) Water assessment

The water assessment was carried out by considering factors such as requirement of water, available water in sources, and water left for direct beneficiary's supplies.

C) Drought Response and Relief

a) Water Supply by Railway Wagon

As all surface water reservoirs were dried, the water supply by railway wagon was the only feasible solution for providing immediate short-term relief to citizens of Latur.

b) Fodder Camps :

As per demand five fodder camps were approved out of which three camps were actually established at different places of the Latur district where 1,592 livestock were registered.

c) Establishment of war room :

A war room was established at district head quarter for quick decision making, coordination, monitoring and for public assistance. The transparent redressal mechanism was implemented by maintaining complaint log book. Feedback of every token was recorded in prescribed space of complaint log book. All tanker filling points were monitored from war room by CCTV cameras for 24 hours. IT specialists of war room tracked all tankers by using GPS.

d) Rural Relief measures :

Executive Engineer, Rural Water Supply Scheme was the district level nodal officer for coordinating emergency operations with respect to delivering water and sanitation services.

D) Development :

- Exemption in Land revenue: The collection of land revenue and repayment of all cooperative crop loans were immediately stopped.
- Financial assistance to farmers: Considering the severity of drought, 3,65,750 small and marginal farmers were provided with financial assistance of Rs. 2.84 million for Kharip season.
- Other relief measures: The relaxation in electricity bills was given to 1,13,205 drought affected farmers of Latur district. The exam fees of students of junior college and University level students was exempted in the region. It was ensured that employment was provided to the most affected areas through MGNREGA.

1. PROBLEMS FACED AND ACTIONS TAKEN TO SOLVE THESE PROBLEMS

a. Limited water availability - All the sources of water were dried, each drop of available water was utilized by adopting innovative approaches such as rationing of water, presumption survey, water assessment and prospecting.

b. Channelizing relief work of NGOs – Latur collector constituted committee for single contact point at district headquarter to guide, channelize their reliefs, and to maintain their database.

c. Continuous and frequent complaints of people– The War room for scarcity was established at Collector office, Latur to address the issues of peoples

d. Unavailability of trained manpower's – The District administration hired services of other government departments and gave customized trainings for different work.

e. Disputes in distribution of water by tankers –Three Deputy Collector cadres Officers, Guardian officers and Ward officers were appointed for all 35 wards for monitoring purpose. Water cards provided to households for fair water distribution and GPS enabled tankers were used which helped to track location.

f. Limited time for arrangements for unloading of railway water - Though it was first experience the work was completed in a short period of 48 hours.

2. CONCLUSION

The outcomes of the innovative tools and ideas implemented during drought situation are :

1. Latur received 25.95 corer litres of water by railway and each drop of this water was supplied to every households of Latur by tankers in equitable and fair manner.
2. By use of technology the water distribution systems became very transparent.
3. Relief work of NGOs/CSOs were precisely channelized which avoided overlapping of relief work.
4. The war room was given access to a toll-free number, landline and what's App in order to reach out to maximum number of affected people.
5. Rainwater harvesting campaign created good awareness among citizens
6. The systematic study of water assessment, prospecting, presumptions helped in utilization of available water up to monsoon period and prevented illegal lifting of water by farmers and villagers.
7. As per instruction of Honourable Chief Secretary of Government of Maharashtra, the Standard Operating Procedures (SOPs) were prepared which will help in future.

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