



History And Relief Of Drought: A Case Study Of Manganga River In Solapur District (Maharashtra)

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Introduction

The most happenings connected to agriculture, forest, vegetation, human culture, wild life and local as well as national economies. Floods and droughts are highly dangerous and serious disasters all of the natural calamities in the Solapur district. Droughts are the most important weather related disasters which are mostly occurred by natural as well as human actions. There have been effects on the several tehsils, large areas and have an impact on village food production, food security, life expectancy for populations and economic performance of large area. Also affects parallel disciplines like hydrology, tourism, transport and hydroelectricity power generation etc.

A model has to be useful to local authorities in building drought protection. To protect the environment and infrastructure evaluate damage from serious events. The constructions fulfill method to get the conclusion.

Present study mostly relies on collected spatial and non-spatial data from different sources. Collected data uses different types of techniques in drought analysis is scientific real time outline. This research runs for data processing and its arrangement through the various computer softwares and different methodological techniques. Study awareness of rescue, relief, mitigation, drought management.

Study Area

Geographically Solapur is located between 17.10 to 18.32 degrees north latitude and 74.42 to 76.15 degrees east longitude. The district is situated on the south east fringe of Maharashtra State and lies entirely in the Bhīma and Seena basins. Whole of the district is drain either by Bhīma River or its tributaries. Present research study region is comes under rain shadow area. Rainfall is uncertain and scanty. The monsoon period is second fortnight of June to end of September bringing rainfalls from south-west monsoon. The district covers geographical area of 14844.6 sq. kms. Which is 4.82% of the total area of Maharashtra State Out of the total area of the district 338.8 sq. kms (2.28%) is urban area whereas remaining 14505.8 sq. kms. (97.72%) is rural area. Area wise Karmala taluka is biggest covering an area of 1609.7 sq. kms and North Solapur is smallest covering an area of 736..3 sq. kms.

The climate here is considered to be a local steppe climate. During the year there is little rainfall. This location is classified as

BSh by Köppen and O Geiger. In Solapur, the average annual temperature is 27.1 C. About 713 mm of precipitation falls annually. The driest month is January, with 1 mm of rain. Most of the precipitation here falls in September, averaging 194 mm. May is the warmest month of the year. The temperature in May averages 32.9 o C. December is the coldest month, with temperatures averaging 22.4 O c.(climate data.org) Solapur district now has 13 towns, 11 tahsils and 1154 villages.

For administrative purposes the district is divided into 3 sub-divisions of Solapur, Pandharpur and Madha. The population of the district is 4,317,756. Sex ratio of the district is 938 (number of females per 1000 males) is well above the state average 929. The literacy rate of district is 77.0 percent, which well below the state literacy rate 82.3 percent. The economy of the district is mainly depended on Agriculture 63.0 percent of the total workers are engaged in primary sector. Solapur is one of the urbanized districts in the state having about

one third of the population in urban areas, it is 32.40 percent.

Objectives

1. To suggest spectral characteristics of managements for drought.
2. To study of relief and rescue in drought situation in 2004-05 and 2012-2013.
3. To understand the geographical parameters of the study area.
4. To assess temperature and rainfall conditions seen in the past.
5. To Identify local geographic causes responsible for changes or fluctuations in these trends.

Used Methodology

The methodology of data collection and data basing required for drought hazard analysis and rainfall statistical analysis. Rainfall from 11 meteorological stations (tehsils) and stream flow data at 2 gauging stations (rivers) were used from Solapur district. Daily rainfall data of 13 rainfall gauging stations for the same period were obtained from the Indian Meteorology Department. Field investigation micro scale case study from drought data 2004-05 and drought data 2012-13.

- Pre-processing of data (Geo-statistical techniques)
- Defining area of Interest
- Reconnaissance Survey including cross-check
- Networking Analysis
- Map compositions
- Site investigation scale and Site suitability for habitation
- Suggest to the disaster management

Relief And Rehabilitation

In droughts of year 2004-2005 Solapur district local Government communities immediately provided for basic relief and rehabilitation work for drought disasters without waiting for help / instructions from external sources. Drought affected habitation provided pets temporary shelters in 12 relief camps established from Government with assistance to NGOs. Relief camps provided following facility to affected population.

- Affected people provided pets shelters.
- Standard local healthy food items with extra provided energy.
- Purified drinking water, cloths, other necessities of life etc.
- Distributed food grains and kerosene oil.
- Organize space to house evacuee families.

- Register the evacuees and provided them identification slips or cards and back side to provide emergency contact, telephone numbers and relief guideline.
- Providing the latest warning information about temperature and its warning.
- Provided training for efforts that should be taken to minimize stress.

Results And Conclusions

Drought Management

The climatic complex in the Solapur district has very critical nature has observed drought and flood situation simultaneously in eastern and western sides of district. Diversion of the excess flood water to drought prone region is one of the best ways of drought control. With the help of RS and GIS modeling Krishna river flood water to diverse the Manganga, dry rivers by gravity method it will reduce the recurring cost.

In the Krishna river basin the scheme like Tembhu is present. But they are not good condition utilized, so there is need to new optimum use of irrigation scheme to solve the drought problem of study region.

Drought is slow onset there is not necessitate to show immediate response like flood. Drought is long time phenomenon which addressed basic problems of continues unavailability of water. The following drought management tips are help of the drought relief in the study region.

Other Drought Management Techniques

Dryness or seasonable river of Manganga which are covered drought prone area almost all villages in Sangola, Mangalweda, pandharpur tehsils. To use the following tips to relief the drought situation in study areas.

- Rainwaters harvesting.
- Maximum develop of large capacity water storage tanks in river catchment areas.
- Awareness promoting crops rotation among farmers.
- Most important of watershed management program applied in the Manganga basin.
- Maximum use the alternative cropping pattern.
- Mixed as well as multiple crops farming.
- A total areas afforestation and reforestation.
- Diversification of livelihoods towards non farming area.

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