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## Flood Water Analysis In Krishna River: A Case Study Of Satara District (Maharashtra)

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**Dr. Amol M. Pawar**

Assistant Professor, Dept. of Geography, Sangola College Sangola. Dist-Solapur  
Maharashtra

**Corresponding Author- Dr. Amol M. Pawar**

Email id: [amolpawar.gis@gmail.com](mailto:amolpawar.gis@gmail.com)

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### Abstract

Floods are among the most disturbing natural hazards in the India. In the present research paper an attempt has been made to flood water analysis and its management by Krishna river Satara district of Maharashtra as case study. Present research approach is utilized as a long term flood water analysis in the study region. This integrated plan to changes in the study region of natural hazards intensity, nature complex, land use land cover pattern, region variation, achieved high quality to extent, water imbalances, environmental crises and its future prediction. These help in planning and development of sustainable land for use and control the flood water for the Satara district.

**Keywords:** Flood control, relief, water analysis, disaster management.

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### 1. Introduction

Flood control relief management program involves the process of rescue, relief, evacuation, habitation, mitigation response and recovery pattern which is combination of investigation, measuring, design, techniques, planning, decision making and action. These synchronized efforts to features being vital way to make sure disasters are flood in control relief. Information about the region related to flood water. Collected information basis to make the integrated flood relief management programme, in Satara district. 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 Satara district. Floods 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.

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

### 2. Study Area

Satara is situated in the south western part of the state and western limit of the Deccan table land. The geographically extends between 17°50'00" to 18°10'00" N latitude and 73°33'00" to 74°54'00" E longitude respectively. The area covers of the district are 10480 sq.km. The district is bounded by Pune district on the north, Solapur district on the east, Sangli district on the south and Ratnagiri district of Konkan region on the west. The district is well connected to (NH4) national highway number four (Mumbai-Bangalore highway) and is a popular pilgrim destination for tourists. (Fig. 01).

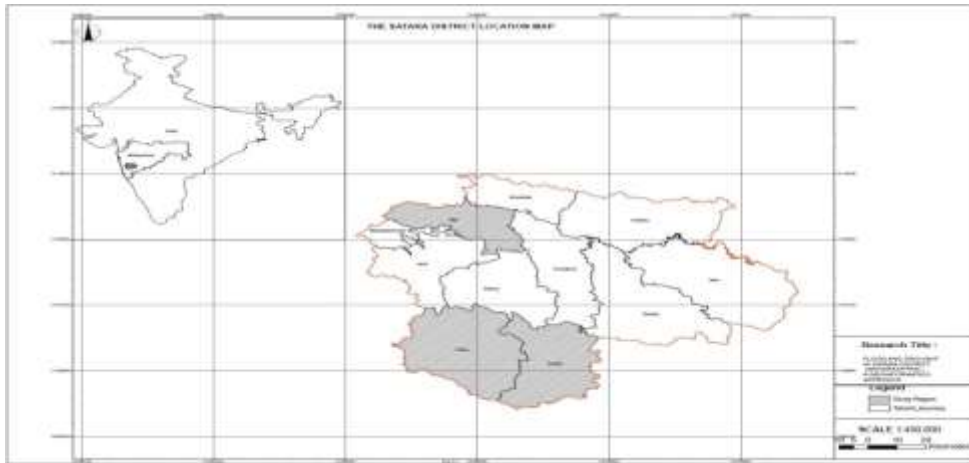


Fig. 01

### 3. Objectives

1. To suggest spectral characteristics of managements for flood water.
2. Geo-Statistics analysis in tehsil wise rainfall regions in study region.
3. To study of flood situation in 2005-06.

### 4. Used Methodology

The methodology of data collection and data basing required for flood hazard analysis and rainfall statistical analysis. Rainfall from 11 meteorological stations (tehsils) and stream flow data at 2 gauging stations (rivers) were used from Satara district. Daily rainfall data of 13 rainfall gauging stations for the same period were obtained from the Indian Meteorology Department. Rainfall of 110 years (1901 to 2012) period for the Satara district was obtained from the Meteorological

Department at Pune. Field investigation micro scale case study from flood data 2005-06 and drought data 2004-05.

### 5. Rescue And Evacuation

Heavy to very heavy monsoon rain and large scale wind for 6 days have maltreated the south western tehsils namely Wai, Mahabaleshwar, Jaoli, Patan and Satara. Due to release of 80,000 cusec excess water from Koyna Dam into the Koyna river to connected Krishna river, those rivers has come in spate flooding affected various villages and surrounding area for Patan and Karad tehsils, nearly 20,000 people have been nastiest affected in study region. Koyna and Krishna river edge 18,000 people have been shifted for safer place in Satara district (Fig. 02).

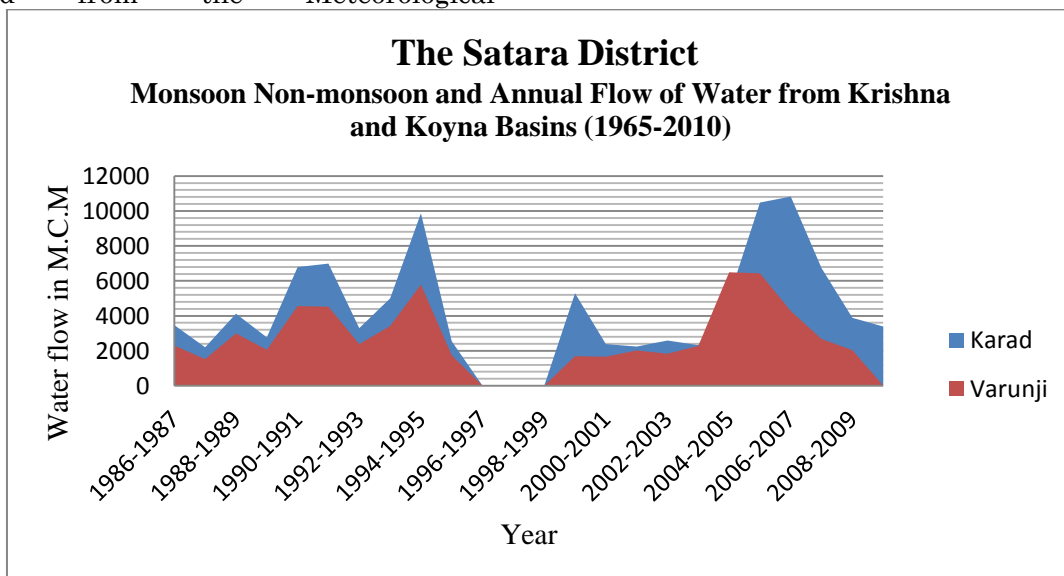


Fig. 02

In a rescue and evacuation operation in the Satara district being carried out by FFTP (Face-to-Face Training Programme) trained army aviation pilots (Army

operations), Comprehensive Diving Teams (Navy operation) and IAF Nodal officers (Air operations). Build and strengthen the capacity of Government in study region total

fifty Panchayati Raj Institution (PRIs) with Gram Panchayat Disaster Management Plan (GPDMP) or Village Disaster Management Plan (VDMP), three Block Disaster Management Committee (BDMC), seven Incident Response Team (IRT) Incident commander (different level), Satara district level of Urban Local Body (ULB), District Disaster Management Authority (DDMD), Disaster Management (DMT), Emergency Medical Response (EMR), Emergency Operations Centre (EOC), Psycho-Social Support and Mental Health Services (PSSMHS), Public Works Department (PWD), Relief Camp (RC) etc., one State Emergency Operations Centre (SEOC), four Civil Military Operations (CMO) camp, five number of Naval boats and one helicopters IAF etc. To other representatives are Non-Governmental Organizations (NGOs), Community Based Organization (CBO), National Disaster Management Authority (NDMA), National Cadet Corps (NCC), Nehru Yuva Kendra Sangathan (NYKS), National Service Scheme (NSS) and National Yuva Cooperative (NYC) etc.

In the study areas evacuation, search and rescue operations through Government and other representative's do help flood disaster prevention, preparedness, mitigation, response and recovery.

## 6. Results And Conclusions

Flood is the natural phenomenon. It is not possible to totally remove too practically and economically but can be controlled. Hence, the followings are suggested to flood disaster management of district.

Since climatic phenomenon of Satara district has very complex physically observed drought and flood simultaneously in eastern and western sides of district. It has become necessary to provide more water for various sources for the agriculture and drinking requirements of these vast drought prone areas. Immediate relief to more assured way of diversion of excess flood water from flood affecting region (west side of district). In monsoon season continuous supply flood water to relief the drought situation in the Manganga and Yerara dry rivers which are covered Khandala, Phaltan, Man, Khatav and eastern part of Koregaon and Karad tehsils.

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