

# **CHAPTER – I**

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## **CHAPTER – I**

### **STATEMENT OF THE PROBLEM**

#### **1.1 INTRODUCTION:**

Since the emergence of Civilization, flood is the most frequent natural hazard, which damaging and destroying human and property. In old days, people were generally did not comprehend the impact of flood process which is naturally and periodically occurred on the earth surface. The causal attitude towards this natural hazard was very intricate because of dearth of knowledge. Today, inspite of technological development floods are causing miserable effect on population and property. In India, floods are responsible every year for the loss of crops, land, property infrastructure and life. In India, floods of different intensity are being experienced during every monsoon season. There are some frequent flood zones in Indian sub continent. The need of flood control is therefore a demand of an hour. It is of utmost importance to analyse and identify the problem of flood hazards which are incorporating studies of causes and effects of floods, flood control and management adopting some geographical surveys, field works and analysis.

Floods are commonly associated with a stream or river. A stream floods when its discharge is greater than the capacity of the river channel. Excess water flows over the river banks and submerges the adjacent land that is usually dry. When it happens, the channel and the flood plain together allow passage of water. Magnitude and frequency of flood varies primarily on the precipitation conditions in the catchment area. Most of the river valley are subjected to varying degrees of flood incidences, either creating minor damages or devastating havoc at such times. Such calamities of flood pose a serious problem to the whole environmental set up of a region, bringing about some phenomenal changes in the physical environment, accelerating erosion, transpotational and depositional activities of the river with the consequent effects on soils. The devastating effects on soils. The devastating effects of flood can be seen on vegetation, agriculture, industry, settlement sometimes causing loss of human also.

The flood is an usually high stage in river which the river overflow its banks and inundates the adjoining areas. Floods are very complex natural events. Floods are perhaps the most destructive. Floods is natural hazard which changes the socio-cultural identity and landscapes of any region. Floods are social disasters which effect the poor more than rich. The trend is quite

significant. In spite of a government flood policy and several flood control schemes, flood damages clearly appears to be increasing. The larger number of population being subjected to distress is increasing in flood prone areas.

Floods are natural phenomenon that occur in all rivers systems. Some floods are seasonal, for example, those associated with monsoon rains some times flash floods also occur.

## **1.2 FLOODS IN INDIA:**

Floods are one of the major natural hazards which effect a large number of countries. India is so vast and physically diverse that it has experienced more floods than any other parts of the world (Thakur. B, 2003, pp. 1-2). India is second most flood affected country after Bangladesh in the world. The most flood prone basins in India are those of Ganga in its middle and lower courses, the Bramhaputra in Assam and deltas of the Mahanadi, the Godavari the Krishna and the Kaveri. About one eight of Indias land area in flood prone. Mostly floods in the India occur during monsoons. In India the problem of flood and challenges to the environemtal setting is of Gangatic magnitude because (i) typical seasonal rainfall and (ii) erratic nature of tropical cyclones and rain storms.

The center for Science and Environmental (1991) indicates “India accounted for one fifth of the global death due to the flood from the 1960s to 1980s over 30 million people were displaced annually. Annual flood damage increased nearly 40 times from an average of Rs. 60 Crore a year during the 1950s to an incredible sum of Rs. 2307 crore a year during the 1980s. The flood affected areas shot up from an average of 6.4 million hectares a year in the 1950s to 9 million hectares a year in the 1980s. Flood relief expenditure more than doubled from Rs. 230 crore in 1980s – 81s to Rs. 567 crore in 1985 – 86 with U.P., Bihar Orissa figuring regularly in the list as major beneficiaries. Another significant trend is that the locus has shifted away from the Gangetic belt to Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Maharashtra and Rajasthan. Still another trend is that in the last 50 years floods changed in character from relatively harmless inundations to highly damaging disaster (Roy, 2000, pp. 147).

India faces flood problems every year in one or the other parts and about 12.5 percent of its geographical area comes under flood water. About 77.5 lakh hectores land is affected by flood and the nation has to bear a loss of its crops on 35 laks hectores every year (Gupta and Sharma, 1998, pp.1).

The year 2005 was the worst ever flood year in the history of North eastern part of the Kolhapur district included Shirol and Hatkanangale taluka when the study region received 77.73 per cent. More than average rainfall. The excess of water created flood situation along the neighbouring areas of the river Krishna and its tributaries viz. Warna, Panchganaga and Dudhganaga. About 1,00,152 persons were affected by the flood and 62 villages were badly damaged alongwith the loss of 20 human. Therefore, in the light of these facts flood situation has been studied by selecting Shirol and Hatkanangale taluka in Kolhapur of Maharashtra State from the view point of Geographical perspective.

### **1.3 OBJECTIVES OF THE STUDY:**

The present study has addressed the July August 2005 floods of Kolhapur district particularly experienced by North Eastern part of the Kolhapur district incorporating Shirol and Hatkanangale taluka. The main objective of the present study is to delimit the flood affected areas and to analyse the post inundation Scenario in Shirol and Hatkanagale taluka of Kolhapur district of Maharashtra. Besides the following are the specific objectives of the present study:

1. To take a stock of post inundation predicament of down course of Panchaganga river.
2. To look into causes and effects of flood over adjoining region of Panchaganga river.
3. To take a review of land and soil degradation of the adjoining area along the Panchaganga river.
4. To assess the total crop area which was under the water.
5. To take a review of likely causes of flood.
6. To evaluate and suggest some remedial measures.

#### **1.4 DATA BASE AND SOURCES:**

Some primary data processed by geographical survey including field observation, measuring and mapping of land degradation, soil erosion area of crop under water. Primary data regarding flood situation in the study region occurred during 26<sup>th</sup> July to 13<sup>th</sup> August 2005 have been collected at the time of field work conducted in the study region. The secondary data and information's have been taken from the following main sources:

1. Reports of the collector office, Kolhaur.
2. Reports of the Tahsil Office, Shirol and Hatkanangale taluka
3. Reports of Public Work Department office Shirol and Hatkanangale.

4. Reports of Agricultural office Shirol and Hatkanangale Taluka.
5. Report of Natural Disaster Relief and Financial Grants in Shirol and Hatkanangale Taluka for 2003-04.
6. Official records of superintendent Engineer Irrigation circles of Kolhapur, Sangli and Satara District.
7. Socio economic review and District statistical abstracts of Kolhapur 2003 – 04.

Data and information concerning altitude, slope, physiography and drainage are derived from the survey of India's topographical maps of the Shirol and Hatkanangale taluka. Besides few information and data regarding the present work have been taken from the certain books government reports, news papers and research journals. A list of books, reports and research journals.

### **1.5 RESEARCH METHODOLOGY:**

Since the said study is based on primary data. The present study is taken only from the geographical point of view. As the study region consists of 50 villages. The study of flood situation is done at village and town level. The present study is mainly based on the floods occurred in the study region in the year 2005.



For the collection of primary data and secondary data intensive field work was conducted and data and information work was conducted and data and information were sought through the schedule and interview technique. Flood affected area, in the study region has been delimited with the help of observation of flood occurred during 26<sup>th</sup> July to 13<sup>th</sup> August 2005.

The effect of flood is many folds. But in the present study effect of flood on human life, dwelling houses, transport, area of crop under water, soil erosion, field observation. The effect of floods on livestock has been studied by flood affected villagewise with references to all livestock eg. buffalows, cows and bulls horses goats and sheep's etc.

The effect of flood on educational institutions has been studied with only references to Zilla Parishad primary and secondary schools in terms of damages of furniture's educational materials library books number of rooms and their damaging.

Role of played by the State Government in the relief and rescue works has been studied in terms of financial assistance and provision of basic needed materials and medical care/facilities. Apart from State Government role played by co-operative societies, cooperative sugar factories, banks, educational institutions and

individual persons in the relief and rescue works has also been studied.

## **1.6 REVIEW OF THE LITERATURE:**

Geographers have been much interested in the study of flood hazard. Outside India the work in this field has been done by Brammer (1990). However, in India very few persons particularly geographers have done their contribution in the field of flood hazards. Among them notable are Mangat (1994), Yadvinder Singh (2000), Sonule and Changale (1993), Betal (2002), Barrows (1984), Central water commission (1990), Rani (2001), Singh (1992), Sinha (1996 & 1998), Subramanayam (1988), Thakur (1974), Burman (1977) De and Sarkar (1992), Dhar and Other (1980), Goswami (1988), Jha (1985), Kale (1998), Kar (1990), Katiyar (1968), Katyal and Others (1992) and Kayastha (1983), Bora A.K. (2001), Lalit Bhakal, Bhaskar Dubey and Arun Kumar Sharma (2005), Ganesh A and Bindu, Priya O.K. (2001), Rana Sharma and Goswami (2001) however, none of the geographers has been studied the Shirol and Hatkanangale taluka in the field of flood hazard.

## 1.7 DESIGN / OUT LINE OF THE STUDY:

✓ The present study has been arranged into six chapters.

The first chapter deals with statement of the problem. This chapter is also devoted to conceptual background of the flood in India. This chapter further deals with the objectives of the present study, source of data, study region, research methodology, review of the literature and outline of the work.

The second chapter deals with the geographical setting geographical location area, physiography, drainage, climatic conditions, soils, study of lower course of Panchganga basin etc.

The third chapter related to Basin characteristics and some hydrological facts and figures in the study region.

The fourth chapter is concerned with comparison between pre and post flood scenario.

The fifth chapter makes the study of causes and effects of floods and scope of flood management.

The chapter six deals with the conclusion and recommendations with preventive and remedial measures. ✓

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