



Environmental Impact of Godavari Flood in August 2016: A Case study of Kopargaon Town (Maharashtra)

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ABSTRACT

Flood hazard in recent period causes a genuine problem like environmental, ecological, geomorphic and economic field. It is become more severe in riverine plains especially developing countries where population pressure on land, water and resources increased enormously. On 4th August 2016, heavy rainfall in catchment area of river Godavari and discharge of 140,000 quecess water from Gangapur Dam causes huge flood in Godavari .In recent few decades Godavari river is experiencing record break floods which causes Loss of life, loss of property, crops, loss habitat, epidemics and pollution in surrounding area. This paper has attempted to study environmental impact of flood in Kopargaon Town.

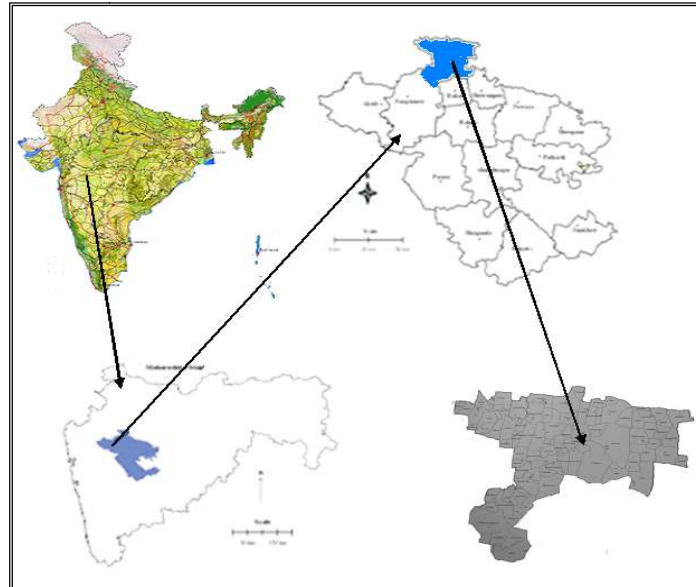
KEY WORDS: *Flood, Heavy rainfall, Cloudburst, Quecess, Riverine plain, Riverine Island, Discharge*

INTRODUCTION

Godavari is largest river of peninsular India and second largest river next to Ganga with total length of 1465 kilometers. It has catchment of 3,12,812 sq.k.m. of which 23.8 percent is in Maharashtra. It is religious importance and holiness named her *Vrinda Ganga* or *Dakshin ganga*. Flood is a state of high water level along river channel or on the coast that leads to inundation of land which normally submerged. Generally flood is a natural hazard which occurs in response to heavy rainfall and it becomes a disaster when it inflicts heavy loss to life and property.¹ floods are therefore in such areas recognized as one of the devastating natural calamity. These riverine plains are densely populated, even though they threatened of flood hazards and many catastrophic problems.² These plains are bestowed by several resources hence they occupied by human being since from invention of agriculture. Here in this paper a initial attempt has been made to study nature of flood problems in the flood prone areas of Kopargaon town.

STUDY AREA:

Kopergaon is a town and a municipal council which is located in Ahmednagar district of the state of Maharashtra. Kopergaon is located 18 km from the holy town of Shirdi. Kopergaon is situated at 19.88°N 74.48°E. It has an average elevation of 493 meters (1617 feet) and lies at the banks of the Godavari River, here are around 79 villages in Kopergaon tehsil of Ahmednagar district.



OBJECTIVE:

Present paper attempts to examine causes of flood and identify the effects of flood in relation with environmental, geomorphic, social and economic sphere of Kopergaon town.

DATABASE AND METHODOLOGY:

Data and information for this study come partly from Field work and partly from secondary sources, Like as District Commissioners Office, Water Resource Department, Socioeconomic Abstract of Ahmednagar District, Regional Irrigation office Kopergaon etc. Besides these all personal observations and experiences in field work of river before and after flood were considered.

RESULT AND DISCUSSION:

CAUSES OF FLOOD

Floods are caused by one or more complex meteorological, physical factors, some floods are human induced. Meteorological factors like heavy rainfall, cyclones and cloudburst, physical factors such as large catchment area and inadequate drainage, human factors like

deforestation, siltation, faulty agricultural practice, bursting of dam and encroachment in river channel are responsible for large inundation.

In case of Godavari flood on 3rd August 2016 heavy rainfall in the catchment area of is the causes according to the report of irrigation office Nasik, daily rainfall for Nasik district was recorded 634.1mm. The tehsils in catchment area received rainfall respectively Trambakeshwar (89.0mm), Egatpuri(76.0mm), Nasik (81.3mm), Dindori (53.0mm), Peth (53.0), Niphad (47.0mm). Due to heavy rainfall in Nasik District and potential risk of flood situation huge water discharged from Nandur Madhameshwar and Gangapur Dam. The cumulative water discharge was 2,50,000 queses which has created huge flood.

CONSEQUENCES OF FLOOD

It is observed that in coming year frequency, intensity and magnitude of floods in India becoming larger. The worst impact of floods was observed in loss of life and property. Floods responsible for huge death toll among cattle, damage of crops, collapsing in communication, interruption of transport system and disruption of essential services. Table no.01 shows the damage in India

Table No.01: Annual Average Flood Damage (Based on Data From 1953 to 2001)

| Sr. No. | Damage Head | Magnitude of Damage |
|---------|------------------------|----------------------------|
| 1 | Human life lost | 10504 Number |
| 2 | Population Affected | 32.03 Million |
| 3 | Land Area Affected | 7.56 Million Hectare |
| 4 | Livestock lost | 96713 Number |
| 5 | Crop Damaged | 460.07 Crore |
| 6 | House Damaged | 11683Numbers /136.61Crores |
| 7 | Public Utility Damaged | 377.24 Crore |

Source: Manual on Disaster Management in India

In case of Kopargaon town many effects in area of financial, ecological and health related were observed pre and post flood survey. After flood many small farmers and small scale industries were affected by flood. Brick kiln owner has lost their raw and finished product due to flood. The Farmland on the bank of river was worstly affected crops like soya bean, Sugar cane were washed out. People near riverside have lost their houses more than 2000 people were shifted from flood affected area to S.G. School near Gandhinagar for temporary habitat. Several homes were destroyed, notably in slum areas. Murshatpur and

Dauch nearby villages were surrounded by flood water. Many people from those villages were shifted to secure place by administration and security forces. In river bed many bushes and thorny trees were uprooted and washed out. Due to flood many pollutant material like plastic bags were stick to thorny vegetation and scenario of river become more deteriorate. Flood resulted in to traffic jam ranging from few minutes to couple of hours. Many buildings, bridges and roads were weakened or partially damaged. Khandaknala Bridge were inundated so all traffic of Kopargaon were turns from Gokulnagari Bridge. Traffick dislocation and interruption were observed durion this day. Many Shopkeepers and merchants lost their goods and godawns because of excessive flood water.



After flood, some drowned area of Kopargaon like Bet, Mohnirajnagar, Gorobanagar, Gandhinagar and low laying areas of town were become marshy. The Godavari river flooded over its bank from both side and deposited black mud on the neighboring low land area. This marshy land becomes more conducive for the vector growth. It resulted in to sudden growth of epidemic like Dengue fever, Chikungunya and viral fever which is locally known as *Gochid tap*. More than 4 patients of dengue were died in Kopargaon in same period.

CONCLUSION:

Kopargaon town is indeed a natural hazard zone in case of flood it is proved by 1986 and 2006 flood. On 3rd August 2016 the flood of Kopargaon town was much intecified and more devastating in nature. The extetensive damage was observed in case of human, ecological, economic background. To reduce such impact of flood hazard appropriate measures are essential. Post hazard management should be taken seriously because there is no single death recorded due to flood but 4 deaths are owing to post flood hazards.



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