

DISASTER MANAGEMENT OF FLOOD AND ITS RETAINING TECHNIQUES

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Abstract: - Floods are the maximum common and destructive of all forms of natural screw ups and yearly affect the lives of tens of millions all around the world. Towards this history, improved climate variability and climate trade anticipated to increase the frequency and depth of floods. There are growing demands for channel to mitigate severe rural flooding by way of impacting a huge channelling capability for extra storm runoff. This examine aims to evaluate the flooding mitigation effect of a deep channel gadget proposed on the old downtown of Kolhapur, India. With the aid of supplying a sufficient channel of a specific type of size, we will reduce the flood force at the downstream aspect for minimizing the terrible impacts of floods, regularly making the distinction between life and dying.

Key words- Flood, River, Channel, Diversion, Rainfall

INTRODUCTION

Rainfall extreme's purpose flooding. Accelerated floor run-off, and precipitation higher than the capability of outgoing discharge motive the water degree to upward thrust, leading to submergence of areas, particles flows/landslides, water-borne health disasters, and posing threats to sustainable development. Floods effect the surroundings and society by destroying habitats, affecting lives, destructive infrastructure, and so on. Almost 40 million hector vicinity in India is flood-susceptible and every 12 months almost eight million hector of land is affected by floods. Apart from those, floods for the duration of the Rabi and Kharif seasons affect the meals security of the nation. Because of the warming weather, multiplied frequency of rainfall extremes is stated in India. Similarly, in recent a long time, the warming fashion over the Indian Ocean has doubtlessly more desirable moisture deliver leading to rainfall extremes within the channeling begins by way of constructing to do this pre-fabricated sections of metal and urban tube are floated into position and strategically sunk into the ditch.

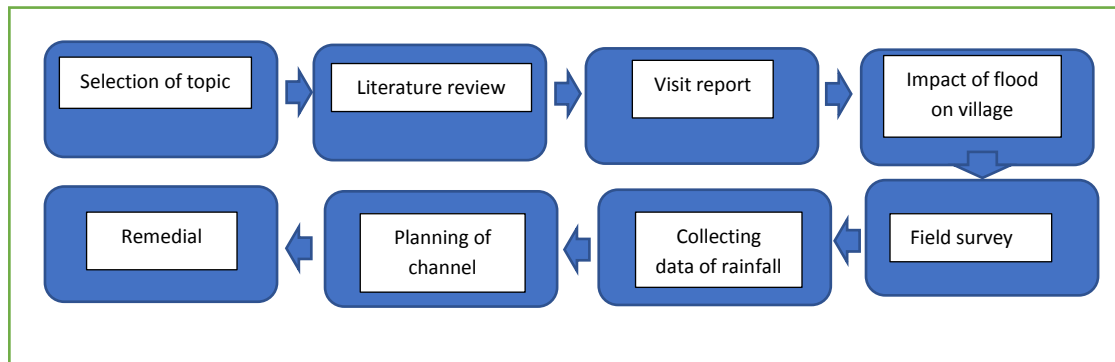
Limitation existing system

- Direct contact with water necessitates a cautious water-proofing design across the joints.
- The segmental approach calls for cautious layout of the connections, in which longitudinal outcomes and forces ought to be transferred across.
- Environmental effect of the embankment channel.

OBJECTIVES

- To study the flood management system.
- To prevent lack of existence and assets from flooding.
- By diverting an excess water during high flood condition from river by designing the diversion channel.
- To find out the solution for minimizing flood at location.
- To find out quantity of water discharged from river to channel

METHODOLOGY



Selection of topics

Herbal screw ups are a main motive of human mortality, purpose harm to personal and public assets, deterioration of human fitness and environmental degradation. Natural catastrophe impact and catastrophe depth are comparable across developed and developing nations, but developed nations have higher catastrophe control and superior disaster warning systems to save you the put up and pre disaster effect as compared to developing international locations.

Visit Expert

For getting more clarity and also to understand the path of our project we visited an expert of in this field. Firstly, we visited to location with Prof. K.S. Patil, Prof. in the department & also visited Prof. S. R. Suryawanshi, department of civil engineering, Imperial College of engineering and research.

Impact of flood on the village

For selection of village, firstly we visited a number of villages also we visit their corresponding authorities for the collection of basic data likewise total area, an agricultural area, residential area, a village after that we collecting the data of Flood impact & also observed that condition of that village after flood.

- Narsoba wadi
- Panchganga
- Krishna river
- Bubnal
- Ganeshwadi

Assessment of flood impact

We collect data from government servant Mr. Mahendra Patil sir about number of houses fully obstructed, number of houses averagely obstructed, cow sheds impacted by flood, destroyed cowsheds, number of dead animals affected agricultural area and residential area. And also we visited that impacted area for understanding the actual damage.

Total No. of Houses, Cowsheds, and Animals

Year	No. of Houses	No of Cowsheds	No of Animals
2005	632	320	689
2019	1090	552	652
2021	1145	530	956

Assessment of flood impact

Years	Fully obstructed houses	Averagely obstructed	Impacted Cowsheds	Destroyed Cowsheds	No. of Dead animals	Impacted area
2005	42	32	290	13	03	425
2019	46	26	385	20	02	325
2021	72	51	340	26	16	210

Field Survey

An area survey is described as the gathering and amassing of statistics at the nearby degree with the aid of undertaking primary surveys. The primary surveys also are known as area surveys. Those are an important element of geographic inquiry and are executed through observation, interviews, sketching, measurement, and so on. A topographical survey, also called a land survey or topographical land survey additionally called contours. Topographical land survey measures and identifies the precise area and specifications of natural and human-made capabilities within an area of land. We accumulate the map from Gram panchayat workplace. For carrying out similarly work we divided that map into 19 parts. Also, we take the market fee of the village which is a risky stage, and the warning degree that value is determined by means of the public work branch (PWD). With the assist of this cost, we calculated the actual topography of the village also we calculated. Corresponding excessive flood degree of that factor.

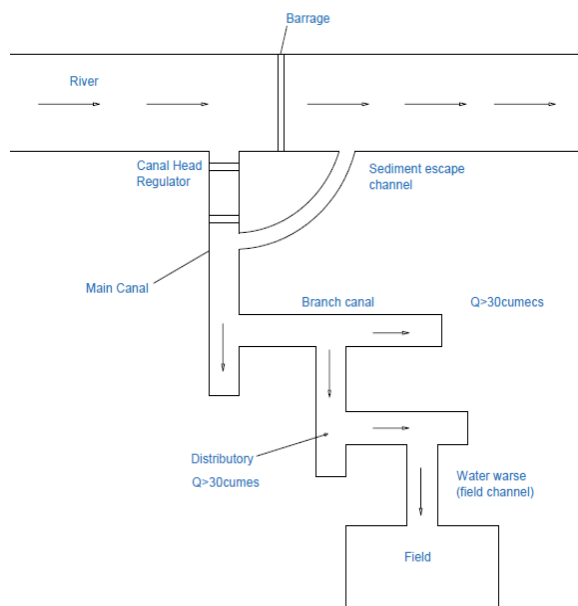


Fig. Layout Of Canal System

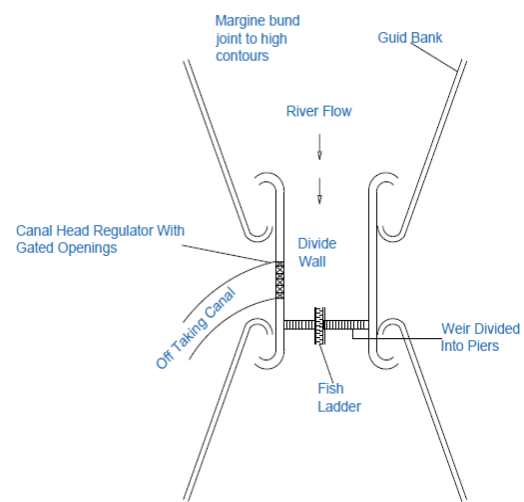


Fig. Layout Of Diversion Head Work

Reason of flood

Heavy precipitation: Precipitation of around 15 cm or more in a solitary day might be past the conveying limit of the stream and this causes the spilling of the waterway over regular banks.

Rise in river bed: Because of huge slopes, the Himalayan waterways convey a lot of sediment and sand which are at last stored in the catchment region, and on the stream bed. Siltation diminishes the conveying limit of the stream.

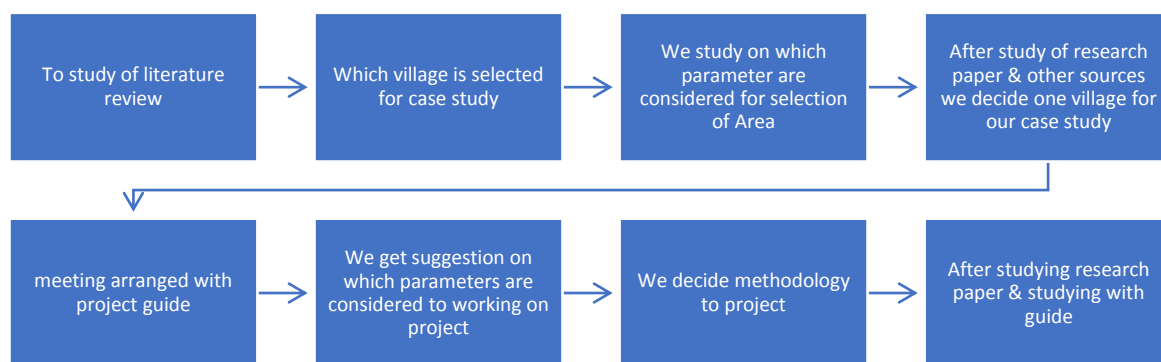
Planning of channel

Area: Location of the channel from Bubnal to channel approximate distance channel will be 10 to 11 km channel is a less rainfall area where the irrigation and drinking purpose are incomplete.

channel site: From the downstream side of the dam from a distance of 1km . The first channel will be placed and after every 500 meters, other three channels will be provided for diversion of the water to the west side. And connect and the particular point around in 3km.

Size and shape of the channel: The channel has a trapezoidal shape so that we can easily divert the water with the slope on the west of the approximate dimension. The channel will be in ground level.

Control: We will control it by manual as well as an automatic system. the doors are provided at the opening of the channel.



LITERATURE REVIEW

- 1. Integrated Flood Management Tools Series No.19, prepared by World Meteorological Organization,** Local Flood Warning Systems (LFWS) can be divided into two basic categories based on how gauge data is collected, that is, either manually or automatically. In both cases the goal is to distinguish precipitation occasions that surpass limits so there is adequate lead time and earlier arrangement to limit the impacts of the following flood. Determining the most effective type of FWS for a community is a complicated problem. The type of system used will depend on the familiarity of the community with the technological options and its comfort in using them.
- 2. Toward Probabilistic Prediction of Flash Flood Human Impacts (online research paper) , published by Galatea Terti,1, Isabelle Ruin , Jonathan J. Gourley.** This article centres around calculated and systemic turns of events permitting the combination of physical and social elements prompting model conjectures of situation explicit human misfortunes during a blaze flood. To arrive at this goal, an arbitrary backwoods classifier is applied to survey the probability of casualty event for a given situation as a component of agent markers. Here, vehicle-related situation is picked as the writing shows that most fatalities from streak flooding fall in this class. A database of flash flood events, with and without human losses from 2001 to 2011 in the United States, is supplemented with other variables describing the storm event, the spatial distribution of the sensitive characteristics of the exposed population, and built environment at the county level.
- 3. DISASTER MANAGEMENT AND PREPAREDNESS: A CASE STUDY OF UNIVERSITY OF JOS LIBRARY,** Nwokedi Grace the planet earth where man lives has experienced disaster of different kinds in the course of time. Disaster when it occurs, can affect buildings such as schools, hospitals, shopping malls, factories, hotels and worship centres. Disaster in most cases is unpredictable and the extent of damage equally unpredictable
- 4. flood inundation modelling: A review of methods, recent advances and uncertainty analysis published by,J. Teng , A.J. Jakeman b, B.F.W. Croke (Article · April 2017)** at:<https://www.researchgate.net/publication/316512624> This paper reviews state-of-the-art empirical, hydrodynamic and simple conceptual models for determining flood inundation. It explores their advantages and limitations, highlights the most recent advances and discusses future directions. It tends to how vulnerability is

broke down in this field with the different methodologies and distinguishes amazing open doors for taking care of it better. The point is to illuminate researchers new to the field, and help crisis reaction organizations, water assets administrators, insurance agency and other choice creators stay up with the latest with the most recent turns of events.

FUTURE SCOPE OF STUDY

Floods are said because the worst herbal catastrophe in phrases of wide variety and common annual monetary loss. The chance of riverine flooding has emerged as increasingly more acute in many areas; it is on the whole caused by summer time monsoon rainfall from June to September and every so often tidal disturbances, which results in greater disastrous conditions. In truth, almost one-eighth of the entire geographical place, which sums as much as 40 million hectares, is flood-inclined received 25 March 2020; obtained in revised shape five July 2020; regularly occurring 6 September 2020 human beings are affected annually via riverine floods, main to economic harm as excessive as 36,004.75 million INR (imperative Water fee, 2010). Different factors which include the ineffectiveness of right flood-danger management weather alternate, and unplanned socioeconomic development have brought to the growing destructiveness of floods.

CONCLUSION

- We cannot control flood totally but we can minimize the effect of flood by using designed diversion channel.
- Calculated the impact on crucial facilities and infrastructure from flood risk occasions inside the region.
- Hence, prevent the loss of lifestyles and assets from flooding.
- Evolved the plan to reduce the region of inundation on floodplains.

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