

STUDY & REVIEW ON FLOOD ANALYSIS/MAPPING TECHNIQUES

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Abstract : The paper is about to find out the flood analysis did by the various researcher in various areas, techniques that they have implemented and result that they have got. From this research paper I going to implement the best techniques in the Nashik study area Godavari river bank overflow .this paper gives the final technique of implementation, By reviews of the researchers , this paper covers parameters that lead to the occurrence of flood, GIS methods, study area analysis, Gangapur dam discharge study.

IndexTerms - Arc-GIS, HEC-RAS, Google earth, LANDSAT, USGS.

1. INTRODUCTION

The global network of supply Flash flooding on one side of the world is affecting the world's economy. The present global supply chain has reduced the cost of market, reducing the production system. However, for the weak and complex supply chain, there is a more neat or combined risk-exposure, the financial term used to break the risk from the node in the financial network, which then interferes with the full risk. The financial market, this risk concept concept applies to chains.

A more efficient production and transportation system requires more capital and if more cost is effective, the whole system can be disturbed and destroyed in the event of a natural disaster. The Economist said that mortality reduces due to natural calamities; Their financial costs continue to go dramatically, these prices include impacts related to the site and the impact of supply chain. However, these are not systematic reports or explosions.

1.2 Significance of the Study:

Recent studies on tremendous movement of river Godavari will help to assess and evaluate the past phenomena and current customs and to predict future predictions. Management, planning and administration of flood water resources and flood affected geographic effectiveness and future flooding will also be useful. Apart from this, it will help other researchers who will be interested in working in advance on the same subject.

This study helps us to get an idea about the rescue techniques and flood management. Similarly, we can identify the causes and effects of Godavari river water. We can find the best solution to solve such flood problems and will be beneficial to the local people who have flooded Nashik..

1.3 Flooding is a major concern for many reasons:

- Four season weather cycle which includes typhoons.
- Frequency of earthquakes which can trigger tsunamis.
Change in rainfall patterns are due to climate change total precipitation is decreasing, but the amount falling at any one time is increasing.
- Rising sea level is an issue for such low-lying land.
- Increasing temperatures.
- Increased frequency of droughts.
- Water table is decreasing and causing land subsidence.

- Water use is expected to increase.

1.4 Objectives

- To calculate the runoff by the rainfall data collection
- To calculate the maximum discharge of the water through river bank.
- Estimate the excess water flow through the river bank of Godavari River.
Design the discharge of water from underground reservoir

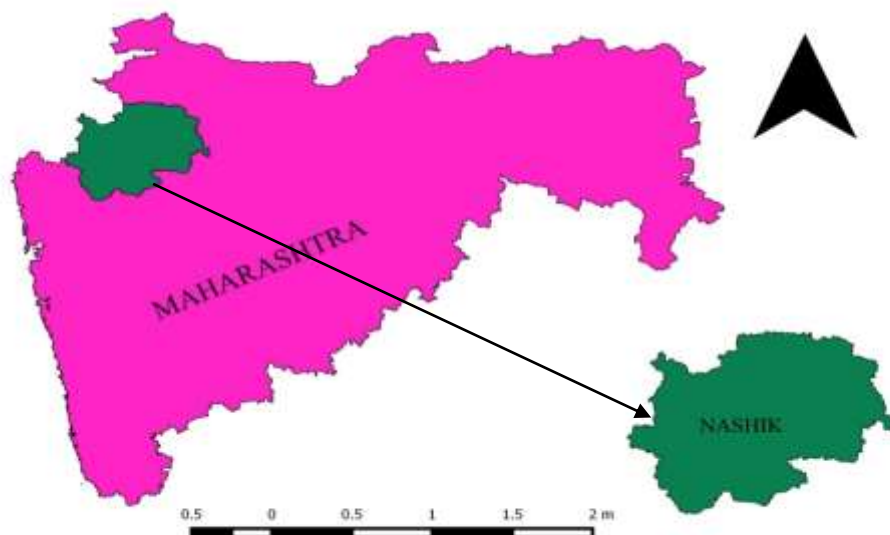


Fig.1 : Study area of research work

Selection of study area : Study area: Nashik, Maharashtra, India

Latitude and longitude: 19.9975° N, 73.7898° E

River: Godavari River

Nashik's environment compares to Pune and Bangalore. The climate is pleasant all year round. The city has recorded a seasonal winter temperature of 2 degree Celsius. The warmest month is 43 degrees Celsius. The average rainfall is approximately 882 mm ,Which is most during the June-September period, the evenings are cool in the summer because it is surrounded by the mountainous region. Due to rapid industrialization and increase in population, the average temperature is increasing every year. Nasik gets water through wells, lakes, rivers and percolation tanks. Dada, Gangapur, Chandrapur, Mukkan, Ozarkhed and Waghad have been constructed by constructing the mills across rivers. Collectively, the Bengal and Nandurmadhameshwar dams have been constructed across the river Godavari.

1.5 Review from Researcher

Dr. Deepak analyze ,N.Thakre, In this study , and mapping the flood line The Godavari River Nasik (Municipal Corporation Area), Maharashtra, India says that a flood is an overflow or an accumulation of a body of water, submerging the country if the discharge of a river is the usual way of edges inside the house without it spreading Problem: In recent years, there has been a sudden increase in rain during a certain time of the monsoon, which causes rivers in the Ganga River life, management failure.

Sunil Kute, Sayali Kakad, Vrushali Bhoje, Akshada Walunj, In this study , Godavari river modeling with hex-ras has been developed by the maintenance of many cities and villages. Some of them are built on the banks of the river. During the mon-

sooner period, when the dam is full of its maximum reservoirs (MRL) and reach the dam's dam, the maximum flow from the dam is left to avoid overflow. Due to this, one has to go under the water of the river and disaster can occur in river banks. To make available adequate measures for the flood victims, draft of flood victims needs to be prepared. With the advent of modern technology, the use of advanced flood modeling software helps us to get an idea of the flow of submerge. This article presents case studies while crossing the Godavari river using the HECRAS software

T. Ishigaki¹, T. Ozaki¹, T. Inoue¹, H. Shimada and K. Toda, In this study , Some rainwater in these floods enters underground sites and users are at risk of underground flooding. In this article, the density of rainwater was completed by the urban dehydration model 1D-2D (Information Works CS) and flood of land in a mega suburb was checked. Using calculated results, the extermination of underground land was also checked according to the safe exit criteria received by the previous exile test. The results are useful in creating a deportation plan from under-flooded terrain.

Shinde Subhash Ramkrishna, Chaudhari Pravin S. In this study, HD Exposure is analyzed by GIS device. As a part of GIS, land utilization data and flood maps are integrated into a landed map developed. The map showing flooding can be used to measure flood loss in different areas of the water flow sector. Old non-structural flood protection measures are evaluated based on flood damage. To protect life and property, a structural solution to flood management is proposed and evaluated. The proposed methods for the Godavari upper basin in the Nashik city of the Indian government have been developed.

Ramana Bai Varadharajan, Craig James Bailey In this study ,SMART will only use water around the important meeting point of the rivers contributing. It does not affect the flow of other rivers, but it has caused the flow of water. For example, the average yield of this river for 100 years will be to Kuala Lumpur. Even though SMART's development has been considered successful, a growing development in other parts of the city can not be harmful or completely protect the city's centers.

1.5.1 Interference from Review

From the literature we can see that, how GIS can be use to found out area which is surrounded by excess water .GIS is the most appropriate tool for hydrologic anakysis of watershed like calculation of slope,impervious area etc. Many of the researcher analysed flood by using HEC-RAS ,SMART tunnel was also used at the time of flood management.,SWMM for urban hydrology. Therefore according to literature review we decided to design tunnel for water distribution in flood region.

1.6 Methodology of Research work

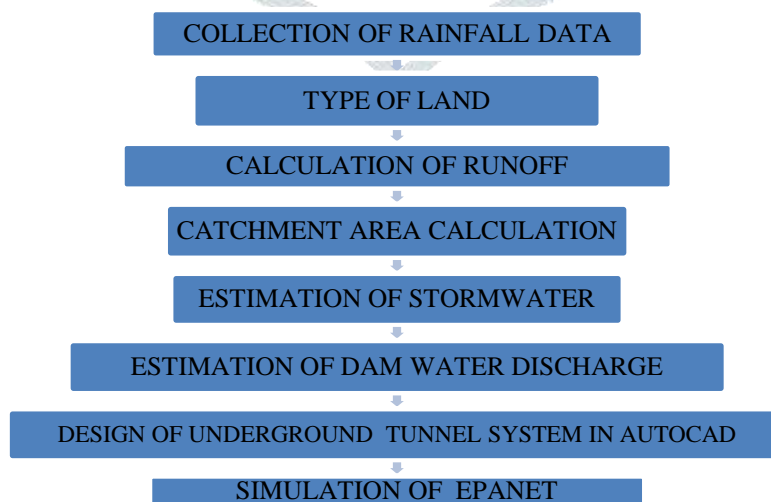


Figure 2 : Methodology of Research work

In this study ,we did work on flood controlling by using tunnel as per the study we followed following steps

1. We collected Rainfall data from globalweather.tamu.edu and took rainfall data from irrigation department Nasik

2. Found type of Land by using Arc-GIS using LULC map
3. We calculate Runoff by using CN-Curve method
4. We found catchment area by using Google earth
5. By referring point number 3 we got Storm water i.e Runoff
6. We considered water released from dam
7. For construction of flood we considered Tunnel from starting point to end point
8. We did simulation from EPANET Software and as per the simulation we got solution of problem.

1.7 CONCLUSION

From the above review of research paper can conclude that,

1. The basic reason behind flood cause depends on the geographical and environmental parameters of the condition.
2. The cause can be finding out by the google earth, gis, or hecras software.
3. The location I have selected for this project is Nashik area, Godavari river bank and located on the Gangapur dam discharge path, so, it may be the reason for the flood cause.
4. The techniques that every researcher has followed to find out the flood cause is by the remote sensing method which can be the best method when interlink with the actual geographical parameters

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