

Learning a Variety of Return Periods in Digital Altitude based Flood Risk and Liability

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Abstract

Background/Objectives: As the world is advancing to its peaks the issue of flood in various regions, which leads to a very dangerous problem in the field of crop cultivation. Farmers cannot compare the characteristics of crop and the property the soil due to rain for the cultivation. The issue of cultivation of crop arises according to the rainfall in the area. **Methods/Statistical Analysis:** In that case there is a need for effective analysis and suggestion is needed. Thereby it provides the spirit of encouragement and more profit in cultivation. This journal portrays the flood hazard mapping, crops and settlement vulnerability assessment in a low laying reverie flood prone area for different flood magnitudes. This system is used for analyzing the best crop that can be used by farmers, which need to be cultivated easily in given prone areas. The analysis of frequency has been carried out to determine the level of water for the years of different return periods flood. By using this system, it is able to develop a system to find the flooded region, and also the cultivation system which is adapted to the region based on the monsoon for the month in that year. **Findings:** Vulnerability functions of risk elements and flood hazard maps are analyzed based on the detail which is stored data in the database like region/state/Location, Month, Rainfall, Crop cultivation, based on the dataset user can find the flood areas and crop cultivation recommended in the location based on monsoon. **Application/Improvements:** This flood hazard vulnerability map can be used for selecting the type of crops and area of cultivation during the monsoon period on the basis of magnitudes of inundation of different flood zones.

Keywords: Flooding, Map Reducing, Rainfall Analysis, Vulnerability

1. Introduction

Tamil Nadu is extremely vulnerable to flooding because of its geographical setting. It is a state with big water bodies, including some coastal regions. Flooding is a disaster event and the 80% of the rainfall occurs during monsoon. It is a low-laying detail and plane area and especially the district Thanjavur 'Rice bowl of Tamil Nadu'. The monsoon is very important in this area. So the suitable for the climate and the agriculture activities are well developed in this area. Here the admin and users are provided with, a user ID and password. Admin have different user id and password and user have different login. User can view their suggestions about crop cultivation, but they cannot update it or cannot make changes in the results. Whereas admin can add details and can make changes them. Analysis part consists of all details about the suggestion of

crop cultivation like region, month, best crop, agri doctor, soil type, climate condition, previous crop, disease symptoms and herbicides. Suggestion of crop cultivation can be decided by climate wise and soil wise. Apart from these disease symptoms can be obtained by this for respective crops. This study assessed the flood hazard vulnerability of crops and settlement for different flood magnitude by integrating LANDSAT and SRTM digital elevation data using geological sectors like in Remote Sensing (RS) and Geographical Information System (GIS). This project is developed in JSP for website purpose and we would be using JAVA as front end and SQL server as back end.

In the present there is a need to focus on rainfall. Due to intense rainfall during monsoon, the area is flooded by overflowing rivers caused by heavy rainfall. There are many locations in a region which very often experiences devastating flood during the monsoon that causes a big loss to

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people and so there is no any alert system to know about the flood and there is no informative solution for cultivate the crop in a particular land. So it leads to the flood and all the crops are destroyed by the flood so this leads to the people in that location a bad economical problem. Existing system requires the most amount of attention and some alert which indeed saves a large amount of money. Sometimes the lack of knowledge can be tedious, which lead to the various problems. The alert system is not available for the people. Asking all the details of land for all year is difficult. In that case the automatic work can be performed and the information can be obtained.

In^{1,2} explain the density and weather prediction of the crop cultivation process and the monsoon period on the magnitude in flood zones.

In³ explain the spatial co location of the vulnerability flood zone of nearest neighbor pattern analysis.

The concept in explains the revolution in micro messaging with special attention to Twitter and its various related features like tweets, followers etc. respectively⁴.

2.1 Limitations of Existing System

- There is no automatic system to detect the flooding in the area.
- There is no alert system.

3. Proposed System

The proposed system fulfills the drawbacks and limitations of the existing system. It provides a better result analysis environment which is totally computerized. This system helps to find out the flooded region, and also the cultivation system which is adapted to the region based on the monsoon. Vulnerability functions of risk elements and flood hazard maps are analyzed based on the stored data in the database like region/state/Location, Month and Rainfall. The flood hazard vulnerability map can be used for selecting the type of crops and area of cultivation during the monsoon period on the basis of magnitudes of inundation of different flood zones.

3.1 Features of Proposed System

- To know the status of the location for cultivation.
- To can get a pre intimation of flood attack.
- Fully automated system.

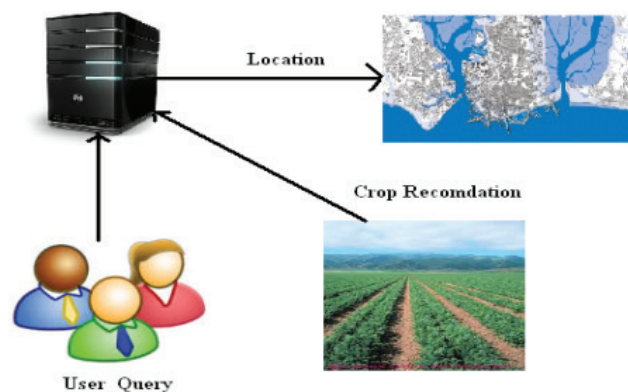


Figure 1. Architecture diagram for map reducing and crop cultivation.

4. Modules of Proposed System

- User.
- Server.
- Rainfall Detection.
- Crop Cultivation.
- Alert.

4.1 User

In this module User application is created by which the User is allowed to access the data from the Server. User creates an account and login into their account to access the application. Based on the User's request, the Server will respond to the User. All the User details will be stored in the Database of the Server. In this Project, we design the User Interface, Frame to Communicate with the Server through Network Coding using the programming Languages like Java.

4.2 Server

The Server monitors the entire User's information in their database and verify them if required. Also the Server stores the entire User's information in their database. The server has to establish the connection to communicate with the users. The server will update the each user's activity in the database. The server will authenticate each user before they access the application. So that the server will prevent the unauthorized user from accessing the application.

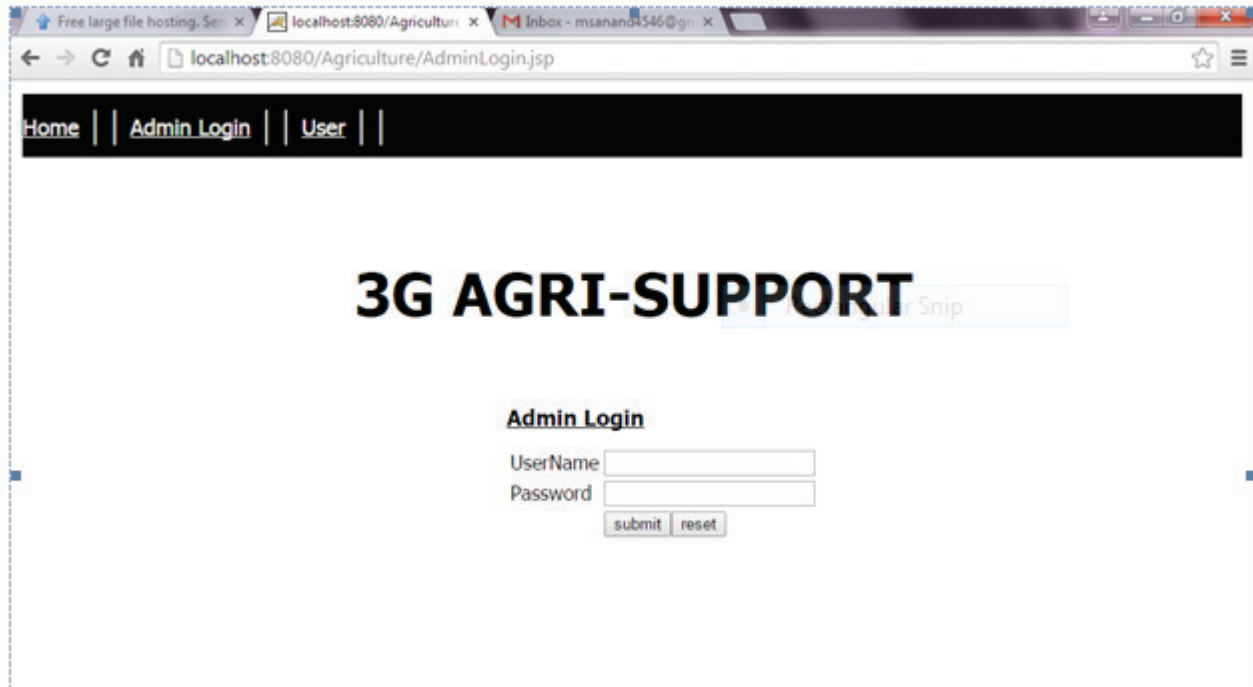


Figure 2. User login for vulnerability detection.

4.3 Rainfall Detection

Based on the user query, it goes and fetch with database and bring information about the user query so we can do this for rain fall detection and you can ably analyze the rainfall.

4.4 Crop Cultivation

Crop cultivation systems evolved under the influence of several factors: the social mode of production, natural conditions, and the development of agricultural techniques and agronomy. Their evolution has gone hand

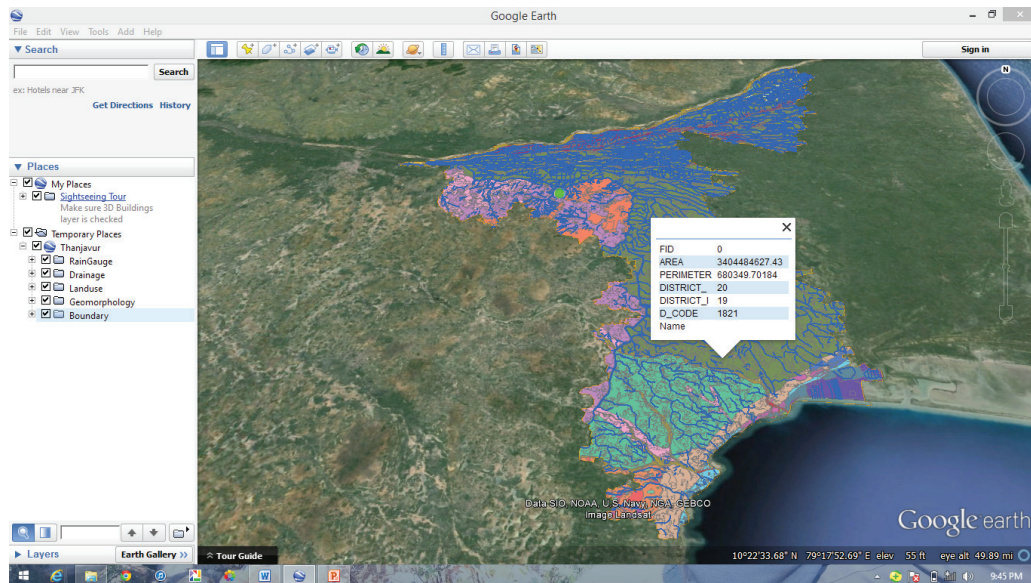


Figure 3. Crop cultivation model system.

in hand with the intensification of crop cultivation in general. Our technique is to find out automatically the suitable crop cultivation for that location and monsoon.

4.5 Alert

Once the flood detects it will be alerted the user so that they can easily rescue from the rain flood detection.

5. Conclusion

Flood hazard mapping and vulnerability assessment of different risk elements in a low lying area based on the land use map in conjunction with Digital Elevation Model (DEM) analysis in the GIS atmosphere can be effectively accomplished. The authorities responsible for flood protection are provided with automatic tool to manage disasters well in advance. In addition, land

use policy might be adopted on the basis of the study result.

6. References

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