HTT005-04        :202        :5   25   15:00-15:15

# Flood Disaster Risk Management in Ratnapura, Sri Lanka based on GIS and Remote Sensing Techniques

Pradeep Surantha Dassanayake[1]*
Pradeep Surantha Dassanayake[1]*

[1]SIS, University of Tsukuba
[1]SIS, University of Tsukuba

Introduction

Sri Lanka is prone to natural disasters commonly caused by floods, cyclones, landslides, droughts and coastal erosion for generations with increasing losses to life and property in the past few decades. Floods are more of a common occurrence in Sri Lanka than the other natural disasters. Flood has been one of the most costly disasters in terms of both property damage and human casualties in Sri Lanka.

As other less developed countries, Sri Lanka is in the initial stage of the adoption of geo-information for in disaster management although new world trends to Web GIS, real time warning system, satellite earth observation for rapid damage assessment, data standard and highly advanced Technologies that could be used for disaster management activities.

Motivation

For a number of reasons the most frequent choice should be protection from the flooding by means of physical control of the river, but there is also a need for a broader and comprehensive program for managing flood hazard in the study area. Flood protection has been helpful and must be continued. Side by side other preventive tools like effective planning for the growth of the city, creation of a computerized GIS database for the flood prone areas and a detail flood risk assessment mapping and zonation are required to minimize the harmful effects of flood hazard. Therefore, an attempt has been made to apply modern techniques like Geographical Information System and Remote Sensing for the assessment of flood hazard. The presence of risk assessment mapping will help the concerned authorities to formulate their development strategies according to the available risk to the area. Of course, the GIS and Remote sensing techniques can contribute to evaluate the environment and to minimize the risk of disaster.

Methodology

1. Evaluate the physical environment using remote sensing and GIS techniques (Terrain analysis, hydrological drainage analysis and other analysis).

2. Evaluate the social environment through the field work (interview the people, to know how they use their land, to know the governmental treatment like land use regulation or master plan).

3. Overlay the physical evaluation and social evaluation.

4. Design the optimal land use plan based on the both environmental analysis.

5. Share the optimal land use plan with people.

       : Geographical Information System, Remote Sensing, Flood risk assessment, Vulnerability, Hazard mapping
Keywords: Geographical Information System, Remote Sensing, Flood risk assessment, Vulnerability, Hazard mapping