

A Case Study on Flood Hazard Potential in the Jaffna District of Sri Lanka

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The frequent occurrences of natural hazards has been a major challenge to Sri Lanka. Their effects are felt in the Jaffna district too. For the post war development initiatives in the Jaffna district the assessment of flood hazard potential is vital. There are two types of potentials to flood hazards in Jaffna district such as seasonal and spatial.

The main objective of this paper is to find the most vulnerable areas and seasons to flood hazard from the experience in the Jaffna district. Data was collected from various primary and secondary sources for this study. Monthly rainfall data was collected from the Department of Meteorology, Colombo for the period from 1960-2011 to study the district flood scenario. The data related to recent flood impacts was collected from the District Disaster Management Unit, Kachcheri, Jaffna and other primary data was collected from 120 informants in the flood affected coastal zone by using stratified random sampling methods.

There are significant spatial and seasonal variations observed in the pattern of rainfall in Jaffna. The variability of flood hazard impact is determined by patterns of rainfall and elevation of a place. The analysis revealed that the 26% of the low lying areas in the district has been experiencing severe flooding during the year 2010 and 2011. Though the average district rain fall is 1230mm (1950-2011), about 90% of rainfall generally receives during the period of second *Inter Monsoon Season (SIM)* and *North East Monsoon (NEM)* Seasons, particularly the peak rainfall was noticed during the 48th standard week. Daily rainfall data analysis also revealed that the three consecutive days of rainfall was exceeded as 450 mm. Generally the areas around the Jaffna and Thondaimanaru lagoons, catchment areas of *Valukkaiyaru*, Mirusuvil and low-lying area's elevation is less than one meter from the mean sea level where the regions are more vulnerable to flood. These flood prone areas could be carefully managed when the development initiatives are taking place.

Key words: *Flood hazard, Seasonal Rainfall, Vulnerable Region*