M. SEENIRAJAN
M. NATARAJAN
R. THANGARAJ
and
E. KAVITHA

Flood geoenvironmental disaster preventive measures in water sheds area of ambasamuthiram town by using gis and multicriteria technique

In this fast technically developing world it has been difficult to avoid disasters which are occurring periodically despite the scientific reasoning and technical supports. Recent events have fostered the selfish and irresponsible human activities for seasonal floods in India Ambasamuthiram Taluk, Tirunelveli District Tamilnadu. Flood is a natural disaster almost occurs in every part of the world. India has longest rivers passing from high population density area. During monsoon season, cyclone flood are usually happen in India. Many conditions can result in a flood: hurricanes, overtopped levees, outdated or clogged drainage systems and rapid accumulation of rainfall. The recent flood in Ambasamuthiram was unexpected and not triggered by the above factors.

Sometimes floods occur when the watershed size is considerably small which leads to the over flow of water inland. Temporarily used backwater effects in sewers and blocks in local drainage channels and creation of unsanitary conditions may cause flooding. Ambasamuthiram flood was basically claimed to occur due to improper drainage system and underlying strata which was found to be landfill over the ponds and lakes.

People Floods are the most common natural disasters; their frequency, magnitude and the cost of damage are on the rise all over the world. "Flooding is a general temporary condition of partial or complete inundation of normally dry areas from overflow of inland or tidal waters or from unusual and rapid accumulation or runoff" (Jeb and Aggarwal, 2008). According to European Commission (2007), a flood can be defined as "a natural phenomenon that results in the temporary submerging with water of a land that does not occur under normal conditions". They are the naturally occurring event and hence cannot be prevented and they can have serious consequences such as displacement of and damage to the environment (IFRC, 2001; Adeoye et al., 2009; Nmeribeh, 2011). Floods can also be caused by anthropogenic activities and human interventions in the natural processes such as increase in settlement areas, population growth and economic assets over low lying plains prone to flooding leading to alterations in the natural drainage and river basin patterns, deforestation and climate change (EC, 2007; Balabanova, 2008; Kwak, 2008; Kondoh, 2008; and Vassilev, 2010). Floods cause about one third of all deaths, one third of all injuries and one third of all damage from natural disasters (Askew, 1999). During a World Conference on Natural Disaster Reduction organized by the United Nations in Yokohama in May 1994, one of the 10 "principles" of the Yokohama Strategy is that "risk assessment is a required step for the adoption of adequate and successful disaster reduction policies and measures". The terms "floods", "flood hazard", and "flood risk" cover a broad range of phenomena. The terms such as "flood risk" and "flood losses" are essentially our interpretation of the negative economic losses and social consequences of natural events. Flood risk may increase due to human activity and may decrease by appropriate flood management and planning (Simonovic, 2009).

A morphometric analysis was carried out to describe the topography and drainage characteristics of Papanasam and Manimuthar watersheds. These watersheds are part of Western Ghats, which is an ecologically sensitive region. The drainage areas of Papanasam and Manimuthar watersheds are 163 and 211 km2 respectively and they show patterns of dendritic to sub-dendritic drainage. The slope of both watersheds varied from 0° to 59° and 0° to 55° respectively. Moreover, the slope variation is chiefly controlled by the local geology and erosion cycles. Each watershed was classified as a fifth-order drainage basin. The stream order of the basin was predominantly controlled by

Messrs. M. Seenirajan, Assosiate Professor, Excel Engineering College, Namakkal, M. Natarajan, Professor, Karpagam university, Coimbatore, R. Thangaraj, Professor, Nehru Institute of Technology, Coimbatore, E. Kavitha, Assistant Professor, Excel Engineering College,Namakkal. Email: seenirajan.m@gmail.com