

Measuring Flood Risk concerning with the Flood Protection Embankment in Big Flooding Events of Dhaka Metropolitan Zone

Authors : Marju Ben Sayed, Shigeko Haruyama

Abstract : Among all kinds of natural disaster, the flood is a common feature in rapidly urbanizing Dhaka city. In this research, assessment of flood risk of Dhaka metropolitan area has been investigated by using an integrated approach of GIS, remote sensing and socio-economic data. The purpose of the study is to measure the flooding risk concerning with the flood protection embankment in big flooding events (1988, 1998 and 2004) and urbanization of Dhaka metropolitan zone. In this research, we considered the Dhaka city into two parts; East Dhaka (outside the flood protection embankment) and West Dhaka (inside the flood protection embankment). Using statistical data, we explored the socio-economic status of the study area population by comparing the density of population, land price and income level. We have drawn the cross section profile of the flood protection embankment into three different points for realizing the flooding risk in the study area, especially in the big flooding year (1988, 1998 and 2004). According to the physical condition of the study area, the land use/land cover map has been classified into five classes. Comparing with each land cover unit, historical weather station data and the socio-economic data, the flooding risk has been evaluated. Moreover, we compared between DEM data and each land cover units to find out the relationship with flood. It is expected that, this study could contribute to effective flood forecasting, relief and emergency management for a future flood event in Dhaka city.

Keywords : land use, land cover change, socio-economic, Dhaka city, GIS, flood

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