

Development of a disaster risk map using GIS for Panadura Urban Council area: A pre-requisite to the urban planning

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Abstract

Sri Lanka is vulnerable to natural & man-made disasters. The Disaster Management Center (DMC) of Sri Lanka is responsible for keeping records on these disasters, finding the most vulnerable areas for disasters and planning disaster mitigation for the country. Disaster risk map for city planning in Panadura Urban Council area is necessary in order to reduce vulnerability for disasters. Panadura Urban Council area is urbanizing rapidly, many roads including Galle road runs through the city, toilet facilities are not available in every places in Panadura Urban Council area & the drainage network of the town is also in a very unsatisfactory state & inadequate. Therefore Panadura is one of the areas which are vulnerable to disasters and there are no study has been conducted in this area regarding disasters and its impacts. Therefore Panadura Urban Council area was selected as the study area for the case study. The main objective of the study was development of a disaster risk map for Panadura Urban Council by using ArcGIS software. To achieve this main objective, there were five sub objectives for the study. First, primary data collection through the community base participatory programs on 7 disasters (tsunami, cyclones, floods, fires, road accidents, dengue fever, and filaria) from selected 5 GN divisions and development of disaster risk maps for those disasters in 05 GN divisions. Second collect secondary data for same disasters for those selected 05 GN divisions and develop disaster risk maps. Third was comparison of primary and secondary data using sum of the scores for all disasters. It was found that there are some changes in some disasters with the time due to development of activities of the area. Forth was to develop disaster risk maps using secondary data for all 19 GN divisions. Fifth was to develop final disaster risk map by accumulation all disasters for 19 GN divisions. According to the final disaster risk map of Panadura Urban Council area, as the highest disaster

risk areas, Walana & Nallooruwa were identified. It is important to use this disaster risk map for any future development of the area to minimize disasters of the area.

Keywords: Disaster, Hazard, Map, Panadura