

Identification of causative factors for urban flood in sub urban area of city of Colombo: a case study of the Weras ganga basin

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This research aims to find out the causative factors for urban flooding & the inter relationships. Land is related to creating human settlement & is a place which has the least inconvenience, dangers & sequence for human habitation & should be planned in such a manner that it is contribution to environmentally sustainable development & is requiring of a suitable approach to answer of the danger of human settlement problems. Flooding is one of the most common & frequent disasters in metropolitan areas located in the inter-tropical convergence zone where severe rainfall occurs. The most frequently occurring disasters in Sri Lanka are epidemics, animal attacks, flooding, fire, droughts, landslides & cyclones. Among that occurring time, people affected, families affected & damaged houses from urban flood is 125, 2,016, 4,491, 75 (1974-2007) in Sri Lanka. In the case of metropolitan Colombo, flooding is a frequent phenomenon. Colombo district take as third place as 249 times for flood (1974-2007) & Ds Divisions're Moratuwa, Kesbewa, Ratmalana as 17, 15, 15 times, while Kalutara & Ratnapura as 324, 253. In Colombo main storm water drainage systems in Kolonnawa area drains to kiththampahuwa Ela, Sri Jayawardhanapura Kotte area drains to Diyawanna Oya & Moratuwa, Ratmalana, Boralesgamuwa, Dehiwala, Mount lavinia & Kesbewa areas to WG. if those are blocked, then coastal flat areas are blocking & draining of storm water is within a less time period & come to the flat areas (Homagama, Maharagama, kesbewa, Dehiwala, Colombo) is taking a longer time period for draining than Hanwella, Padukka areas. If the drainage facilities of flat areas aren't functioning properly, storm water is stagnating for a longer time creating the problem of urban flooding. Selecting of case study area was depending on three Criterias as Flood Damage & Flood Prone Areas, Population & Population Density & Economic Conditions.

The identification of causes has been mainly done based on earlier survey records of flooding & Triangular method for research Methodology as Observations, Interviews & Questionnaire Survey & used both of qualitative & quantitative Research Approaches. when selecting the sample size, 52 locations, selected only 35 (right bank of WGB) done the questionnaire survey as three persons randomly for one location. sample size is 105. Stratified random Simple random sampling methods have been used.

The results revealed that according to questionnaire survey & interviewing of relevant agencies the major causes are the insufficiency of existing drainage system & lack of maintenance & the lack of adhering the guidelines for storm water drainage system by the people, intervention of political activities & also the failures of development proposals for the study area at a glance. So it is evident that there is not having a single cause, but combination of several causes & has to categorize the causes according to their levels of severity as Primary, Secondary & Tertiary & there's a lacking part in the process of low land development & within the process of organization of canal development & maintenance in the study area. land filling is not the main cause, but the failures & lacking part of the whole structure.

For farther area research it will be a beginning of such another research as ranking of reasons according to the priority of actions should be taken as Short term & long term, major problems & minor problems. It wasn't analyzed the correlation among causes & also will be useful for the implementation of immediate actions projects for taking of mitigatory measures for the inundation. Therefore the solutions also must be emerged within those causes, will be a wholistic approach by considering all the causes.

Key words: Urban flooding, Weras Ganga Basin, Weras Ganga, CMR: Colombo Metropolitan Region, Storm water drainage

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