

A RISK-BASED APPROACH FOR THE SUSTAINABLE CATCHMENT MANAGEMENT IN BADULU OYA UPPER WATERSHED

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The World Health Organization (WHO) has identified, inadequate access to safe drinking water and sanitation as a leading cause of disease and death around the world. Though Sri Lankan population has a relatively good access to improved water supply and sanitation, health problems caused due to unsafe potable water have been increased over time in Sri Lanka as well. Illnesses and deaths from unsafe potable water can be prevented through simple, inexpensive measures. The WHO guidelines for drinking-water quality, aim to protect public health through the adoption of a Water Safety Plan. Catchment protection is a foremost fact in water management and safety plans since human activities in the catchment area can lead to water pollution and negatively impact public health. Proper watershed management could decrease the spreading of water borne diseases which saves money for medication and forms a healthy community. This study was conducted to assess the catchment area of Badulu oya which is the main water source in Badulla District. Watershed boundary, land / land cover use map, elevation model and the slope distribution of the catchment area were developed by using ArcGIS 10.1 software. Risk analysis was done by using weighted overlay in ArcGIS. Meteorological data were utilized for the risk analysis and results highlighted that the slope stability, unsafe sanitation and hygiene practices adopted by the people and improper waste disposal are the main issues in the watershed. Soil erosion is a serious concern since it deteriorates the quality of stream water by increasing turbidity. Moreover, Sediment attached pollutants also can be transported to the water. Awareness creation, adoption of soil conservation measures and strict implementation of laws and regulations are recommended to sustainable management of the watershed.