



## **Framework for a Methodology to Integrate Vulnerability to Develop Flood Risk Profiles for Ayagama and Elapatha, Sri Lanka.**

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Sri Lanka is vulnerable to a range of natural hazards, and as such, its population, infrastructure, buildings and (urban and agricultural) land are at risk of damage and/or destruction. Natural hazard risk assessment is crucial in enabling effective disaster risk reduction and increasing disaster resilience. As such, it is vital that there is a coherent method of evaluating these risks in order that policies can be evolved for risk mitigation and for the benefit of other stakeholders. Heretofore, the problem with creating such a methodology has been manifold; amongst its biggest stumbling blocks were the differences in spatial scales involved, the variable parameters, the many influencing factors, the gaps in data required, and the conceptual problem of designing a model which could adequately address all these issues.

This paper outlines a methodology which could assess the flood risk at Divisional Secretary (DS) Divisions of Ayagama and Elapatha in Ratnapura District of Sri Lanka. The selection of these two DS divisions was based on knowledge of frequency and historical floods and landslides in the area. However, in this study the landslide risk was not evaluated and instead concentrated on the pluvial flood risk of the area from the Kalu Ganga basin.

By applying the proposed methodology for the selected study area, flood risk profile that considers vulnerability of residential property was successfully formulated. This risk profile identified the severity of hazard as well as the severity of vulnerability. The scope and procedures to integrate other vulnerability parameters such as population and agriculture within the study area were also evaluated.

This methodology has the advantage of being designed to take into account a wide range of mutually influencing factors in the form of an interactive map, which can identify the location, relative severity, and extent of risks, for individual or for multiple natural hazards. It is also a significant advantage that this methodology is able to utilise high resolution local data and translate it into a risk analysis at sub national level.