

## **Addressing System and Geocoding Challenges in Sri Lanka: A Case Study of Dengue Incidence Mapping in Kandy Municipal Council Area**

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The address system is a fundamental unit for development initiatives and service delivery. A systematic address system is essential for effective geocoding in Geographic Information System (GIS) which leads to better decision-making. The current address system of Sri Lanka has created many challenges for geocoding which is the process of converting addresses into geographic coordinate systems. This study discusses the challenges related to the present address system of Sri Lanka through an experimental study conducted through three scenarios. The dataset encompassed a record of 280 reported dengue cases within the administrative area of the Kandy municipal council. As the first scenario, unstructured addresses of dengue cases were plotted using the available tools of the QGIS software package. In the second scenario, the study arranged the available addresses in a logical order and processed the geocoding query using the same software package. In the third scenario, the researcher used focus group discussions to identify the locations of dengue cases. The identification of the correct location using these three scenarios was not feasible in a geocoding process of GIS. This situation was led by the unstructured addressing system of the country. The study proposes that it is necessary to develop a unique code to identify the exact point of an address in Sri Lanka, without relying on traditional address methods. The new addressing system can be facilitated by the available data collected for the Bimsavia land deed system.

**Keywords:** Address System, Dengue, Geocoding, GIS, Sri Lanka

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