

Development of a Mobilized Crowdsourcing Platform to Enable Participatory Risk Sensitive Urban Development.



According to United Nations Development Program (2021) nearly 84% of the fastest growing urban areas are facing extreme climate and disaster risks especially in Asia and Africa. In Sri Lanka, it is ranked 63 (out of 171 countries) on the World Risk Index and 56 (out of 191 countries) by the risk assessment platform of countries that are exposed to disaster risks [3]. According to the hazard profile of Sri Lanka, over 50% of the highly populated cities are located in disaster prone areas. Sri Lanka is a developing country, facing highly challenging situations with governance deficits, and resource constraints.

Therefore, risk sensitive urban development approaches have been a crucial concern in developing cities, where it integrates disaster risk reduction and adapting the climate smart measures into development planning across all sectors of development that help to protect development outcomes and investment made towards achieving development goals [3]. Disaster-vulnerable communities need active engagement in risk management to prepare, respond, and recover from disasters, utilizing their understanding on the risks and vulnerabilities they face and access to local resources and knowledge [2]. Therefore, participation of vulnerable communities within the decision-making process in risk sensitive urban environment is important. However, vulnerable communities are often marginalized in the decision-making process [1]. In the Sri Lankan context, community participation has

been a least vital consideration in urban planning, not only in disaster risk reduction. Most importantly the existing attempts are lacking with the public participation where the awareness, trust, and interest of people towards the process has been marginalized.

What is Disaster Recorder?

Accordingly, the study focuses on developing a mobilized crowdsourcing platform to facilitate participatory risk-sensitive urban development in

Sri Lanka, specifically addressing flood disasters, which account for over 44% of recorded disaster incidences in the country. The mobile application currently in development stage; named "Disaster Recorder", which aims to function as a mobile crowdsourcing platform for reporting real-time disaster information, while developers will be able to analyze the level of risk in the user's current location through a linked web application. Below are some photographs of the research team, conducting mobile workshops in Kelaniya-Kaduwela areas to mobilize the mobile application

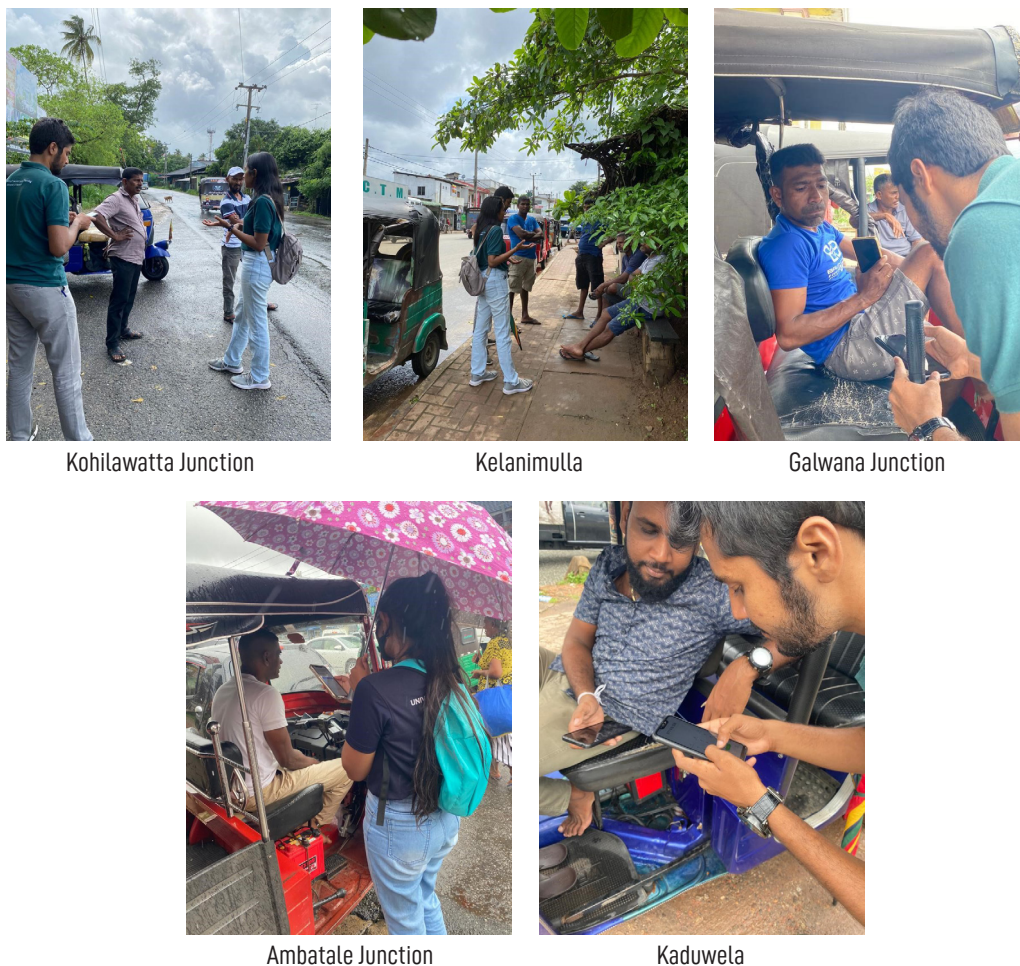


Figure 1

and gather feedback from the general people throughout the development phase.

Individuals can contribute voluntarily to report disaster incidents, this data includes the incident's location, images/videos, etc. It follows an analysis

using the Google Earth Engine, and the vulnerability levels in a specific location are presented to the user. At the same time, if anyone is at risk, he/she can provide the current location and mobile number to request help from the appropriate authorities. The platform aims to collect real-time

disaster data through crowdsourcing and engage disaster-prone communities in disaster management by providing them with early warning and preventive measures.

Special Features and Findings from the Development Stage

Disaster Recorder has successfully integrated several unique characteristics during its initial ground verification phase. The platform provides capabilities for collecting data in real-time, enabling the capture of occurrences with precise location data and multimedia inputs, which is not present in most existing systems. Specifically, it includes the involvement of the community, which is currently lacking in the existing techniques in Sri Lanka that involve communities at risk of disasters. It seamlessly connects with Google Earth Engine to enhance the precision and usability of data by providing a transparent representation of vulnerability levels to the user. The application incorporates an emergency aid function that allows users to get assistance by sharing their precise location and contact details. During the development phase, mobile workshops conducted in the Kelaniya-Kaduwela Areas showed a significant level of involvement and strong interest in the platform. Feedback also indicated that the program was easy to use for individuals with limited technical skills, while data collecting highlighted the importance of local knowledge in identifying places at risk and planning for mitigation. The findings indicate that the use of Disaster Recorder can greatly enhance disaster management practices in Sri Lanka by encouraging increased community involvement and utilizing technology to improve risk assessment and response.

References:

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