

## Land Use Change and Its Impact on Urban Flooding: A Case Study on Kandy City Sudden Flood in December 2022

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An unexpected flood in Kandy City in December 2022 brought about the investigation into its root cause. The investigation sought to find out the causes of the unusual event as there had never been a flood in the area. Initially, rainfall data was analysed to determine how flooding affected the disaster. Surprisingly, the findings showed no significant link between the flood disaster and considerable rainfall. As a result, interest shifted to the analysis of land use changes using satellite imaging. The analysis showed that built-up areas had significantly increased while watershed areas had decreased at the same time. These results strongly indicate that ongoing construction, land use changes, and reduction of water catchment areas were the main factors that contributed to the unexpected flooding in Kandy City. Inadequate drainage infrastructure exacerbated flooding. This study highlights the need for good urban planning, sustainable development, and improved drainage systems to prevent future flood risks in Kandy City by illuminating the significance of land-use changes in flood occurrence.

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