

Spatial Analysis of Social Vulnerability to large-scale flood: a case study on the Katsushika Ward, Tokyo

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Due to global climate change, the scalability and frequency of flooding is increasing. On the other hand, population aging and family structural changes, as well as the lack of adaptation measures, accelerate vulnerability to flooding. It is necessary to reduce the vulnerability to floods and to accelerate adaptive capacity. Therefore, assessing social vulnerability to flooding disasters is an important step in reducing flooding vulnerability and accelerating resilience.

In this study, we refer to the MOVE framework (a disaster vulnerability assessment framework) and analyze social vulnerability from three perspectives: exposure to a flood, susceptibility, and resilience. We subsequently develop an index system to evaluate the social vulnerability using 14 indicators. Spatial distribution of the social vulnerability of floods in the Katsushika Ward, Tokyo, is revealed based on the collected data using the information entropy method and geographic information system (GIS).

Keywords: GIS, large-scale flood, Social Vulnerability