

**Abstract of Doctoral Dissertation**

**A Study Toward More Accessible and Suitable Spatial  
Information for Risk Communication in Indonesia: Focusing on  
Supply and User Side**

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Widespread understanding of disaster risks is one of the main priorities in disaster risk reduction, and can motivate individuals to take protective action. Spatial information (maps) can be a useful visualization tool for facilitating this understanding since many disasters, particularly natural disasters, are spatial in nature. Advancements in technology have revolutionized how spatial information about disasters is created, used, and disseminated. Despite the importance and growing availability of methods of risk communication, there have been limited studies examining the dissemination and adoption of spatial information for disaster management, including risk communication.

To fill the gap in existing literature, this study aims to provide knowledge and empirical findings on the way spatial information is utilized for disaster risk communication in a developing country. It examines case studies in Indonesia from two sides: from the supply side (i.e., governments as the information providers) and the user side (i.e., public and relevant users who require this information). Specifically, there are three objectives of this study, and each is explained in a separate chapter of this dissertation.

**Chapter 1** focuses on the supply side as it examines the way spatial information (maps) about disasters is disseminated to the public for risk communication purposes in Indonesia. It includes an examination of relevant policies and regulations, and the role of each level of government. A thorough online examination found that spatial information about disasters is not widely available

online, and the way it is produced by different levels of government varies. Moreover, based on an evaluation using effective map criteria, it was found that the available information was not suitable for risk communication.

**Chapter 2** provides an evaluation from the user side. First, it shows the effects of spatial information about disasters in risk communication. It was found that to some extent, spatial information about disasters can affect one's awareness of hazards and risk perception. This chapter also shows the effectiveness of different types of spatial information for visualizing hazard risks, and details findings that maps displayed on a disaster application are more readable than conventional printed maps.

**Chapter 3** identifies the factors needed to improve the distribution and utilization of spatial information about disasters in Indonesia, from both the supply and user sides, so that this information can become more accessible and effective as a medium for risk communication. Findings from the supply side emphasize the need for clear regulation, guidelines, and the role of each level of government in the production and dissemination of information. The evaluation on the user side firstly highlights issues of lack of use and low awareness of the presence of information, which indicates the need for better promotion of the information. It also emphasizes perceived usefulness and user satisfaction of the application as factors significantly influencing users' intentions to use spatial information as a source of disaster information. The final section concludes the study and suggests some recommendations for future studies.