



Simulating Non Structural Factors in Disaster Mitigation: The Case of Typhoon Ondoy on the Marikina Watershed

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Abstract: The typical factors studied in disaster mitigation typically focus on physical and engineering factors such as infrastructure in the area, and informational, such as training and education in disaster preparedness. This paper highlights the non-structural approaches to understanding disaster mitigation. This paper suggests that some well-intentioned socio-economic policies, which seemingly have no impact on the environment and disasters, could develop longer term negative impact. Cumulative effects and feedbacks may unwittingly lead to disasters. The study focuses on the disaster following Typhoon Ondoy (international name Ketsana) in 2009. Past studies suggest that the flooding was related to denudation of the Marikina Watershed, which in turn, was related to the resettlement program in 1986. A System Dynamics model was developed to explore the interactions of socio-economic factors leading to the disaster.

Key Words: environment; disaster mitigation; system dynamics; simulation