

Making community resilience strategy for natural hazards based on climate change scenario

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ABSTRACT

Recently, the whole world is witnessing increasing frequency of natural disasters, together with a complicated form of disaster aspects. For decades, Intergovernmental Panel on Climate Change (IPCC) is analyzing future climate change scenarios to reduce damage due to climate change. Countries over the world are applying climate change scenario analyzed by IPCC to their countries' environment, and are establishing plan for possible disasters in the future.

Rep. Korea also suffering growth of deaths and damage scale due to natural disaster, and Korea government's effort to reduce them is ongoing. However, current researches remain in climate change scenario analysis level and there are also lack of discussions about how cities will change and what kind of damage will be caused by climate change. To establish exact strategy, not only climate change scenario but also future social change of cities should be considered with current scenario. Therefore in this study, we combine social change scenario of cities with climate change scenario to expect damage scale and suggest plan to establish community resilience strategy for damage.

In this study, Rep. Korea was selected for case region, and five climate models were used to supplement inaccuracy of climate change scenarios. Based on climate change scenarios, social change scenarios (such as urban population change, land use change, etc.) and facility change scenarios (such as infrastructure, old building, etc.) were combined to analyze future vulnerability. Furthermore, we suggested community resilience strategy by establishing strategies (such as social vulnerability improvement plan, institutional supplement method, etc.) based on urban vulnerability.