

Land use scenarios: An analysis of urban resilience

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Increase of natural hazard risks is projected in the global scale, and it is getting more and more important to adapt and mitigate natural hazard risks in multiple spatial scales, including global, national, and regional/urban scales. This study discusses adaptation and mitigation to natural hazard risks in an urban scale. Specifically, we focus on a mitigation policy, which reduces CO₂ emissions by urban compaction, and an adaptation policy, which reduces flood hazard risks by moving people living in flood prone areas to safer areas. Impacts of these policies are analyzed using the landuse-transportation-energy model, which is an economic equilibrium model. The target area is the Tokyo metropolitan area. The result suggests the importance of applying both of these policies for effective reduction of natural hazard risks. Besides, influence of these policies on resulting urban form is also analyzed. Based on these results, it is discussed how to increase urban resilience.

Keywords: urban resilience, land use scenario, socioeconomic scenario, hazard risks