Classification of Residential Location Trend in Tokushima Urban Area

Kojiro WATANABE and Akio KONDO

Institute of Technology and Science, The University of Tokushima

Abstract

Japanese provincial city has diffusive urbanization in suburban area. These area are covered with residential area mainly. The relation of the urbanization and disaster risk is important information for land use planning. The purpose of this paper is to show the characteristics of residential location from the viewpoint of Tsunami disaster risk. Target area is Tokushima Urban Area (TUA) with Tsunami risk in coastal zone. Before analysis, we made the residential location data from the building certification data from 2010 to 2012. Next, we calculated disaster risk with use of Tsunami flood potential by Tokushima prefecture. 4m Tsunami is estimated in the coastal area in Naruto, Komatsujima and south area of Anan city. 2 to 4m Tsunami is estimated in the central area of Naruto, Komatsujima Anan city and all area of Matsushige city. These area has much population and buildings. Therefore, we need to make suitable land use plan with disaster mitigation of Tsunami. Number of residential area increased from 1447 to 1990 during 2010 to 2012. These are located in suburban area mainly. Residential location data includes single family house, small and large cluster housing. For 2010, 2011 and 2012, the area from a distance of 4km includes residential area of 46.1%, 44.7% and 52.1%, and the area under 500 meters from coast line includes residential area of 8.3%, 9.7% and 6.5%. These results show that the residential area is migrating to inside area. After the Great East Japan Earthquake, the number of residential area is increasing but the location of coastal area is decreasing. Next, we classified the area according to residential location trend and Tsunami flood risk. Spatial unit of the classification is 1km grid cell. The area with the increase in residential area and low Tsunami risk are evaluated in inland area, and the area with the increase in residential area and high Tsunami risk are evaluated in coastal area.

Keywords: Residential Location Trend, Tokushima Urban Area, Tsunami Disaster, Classification