Will Crop Production Centers Remain in The Future? Case Study of Subang District

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ABSTRACT

Climate fluctuation and land conversion are the two major challenges contributed to affect regional crop production, which is affected by planted area and crop productivity. This study evaluates changes in paddy production in Subang District with respect to changes in climate and land area. Regional climate over the study area was analyzed using cluster analysis of hierarchical and non-hierarchical (K-Means) applied to gridded climate data of WorldClim. The cluster analysis suggests the study region can be distinguished into seven climate types that covers regional production centers in the district. Evaluation of paddy production, productivity, and planted area was performed using trend analysis and location quotient (LQ). The evaluation justifies that paddy production shows a declining trend for about 11 sub-districts and an increasing trend for about 11 sub-districts. The changes in crop production are due to changes in either crop productivity or planted area as only about 6 sub-districts shows an increasing trend in planted area. The analysis on LQ is also utilized to identify the rate of changes for each production center, where paddy is the main commodity, within the district, namely: the sub-districts of Binong, Blanakan, Ciasem, Compreng, Legonkulon, Pamanukan, Patokbeusi, and Pusakanagara. Of these production centers, with the exception of the sub-district Compreng, the remaining seven sub-districts experience declining planted area. This situation may result in lower production for the sub-districts of Binong, Pamanukan and Pusakanegara; whereas, the sub-districts of Blanakan, Ciasem, Legonkulon, and Patokbeusi shows higher paddy production due to higher crop productivity.

Keywords: Production, climate, productivity, planted area, cluster, location quotient