Spatial correlation characteristics and mechanism of cultivated land fragmentation and cultivated land quality in the Central Plain of Liaoning ,Northeast China

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January 3, 2023

Abstract

In order to reveal the spatial correlation characteristics and action mechanism of cropland fragmentation and cropland quality, this study takes the central plain area of Liaoning as an example, constructs the evaluation system of cropland "area-shape-distribution" fragmentation and cropland natural-standing quality, and explores the effect of cropland fragmentation on cropland quality based on the evaluation using bivariate spatial autocorrelation method and spatial lag model. The results showed that the quality of cropland in the Central Plain region was affected by the fragmentation. The results showed that the overall degree of cropland fine-fragmentation in the central plain area was light, and the cropland quality showed a spatial distribution trend of "high in the middle and low at both ends". There was a negative spatial correlation between cropland fine fragmentation and cropland quality. The increase of the number of patches (NP), boundary density (ED) and aggregation degree (AI) in the central plain area will hinder the improvement of the cultivated land quality. When the NP, ED and AI values in the evaluation unit increased by 1 unit, the cropland quality in the central plain area decreased by 0.275, 1.306 and 1.085, respectively.

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