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## 黄淮海平原城镇化对耕地变化影响的差异性分析

### Difference analysis of effect of rapid urbanization on cultivated land changes in Huang-Huai-Hai plain

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中文关键词: [土地利用](#), [主成分分析](#), [回归分析](#), [模型](#), [城镇化](#), [耕地变化](#), [驱动因子](#)

英文关键词: [land use](#) [principal component analysis](#) [regression analysis](#) [models](#) [urbanization](#) [cultivated land change](#) [driving force factors](#)

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中文摘要:

为了有效保护耕地资源, 该文通过研究城镇化进程与耕地变化的内在联系, 揭示不同城镇化进程的差异化规律。采用土地利用变化分析方法, 对黄淮海平原1997—2008年城镇化进程中耕地的数量和质量变化进行分析; 选取4类城镇化指标(人口城镇化指标、空间城镇化指标、经济城镇化指标、生活方式城镇化指标), 构建城镇化对耕地变化的驱动力模型; 运用主成分分析法和多元回归模型, 对研究区城镇化进程中耕地变化的差异性特点进行分析。研究表明, 人口城镇化驱动因子、空间城镇化驱动因子对研究区影响显著, 而经济城镇化驱动因子和生活方式城镇化驱动因子因各研究区域所处城镇化阶段和发展特点而呈现不同规律。该文以数据分析和实证对比为中国城镇化的可持续发展提供政策建议: 城镇化的发展完全可以适时适度推进, 避免大量占用耕地牺牲粮食安全和生态环境; 产业拉动、用地集约、环境友好的新型城镇化发展模式是城镇化健康发展的明智选择; 城镇化的发展应与产业政策和产业规划紧密衔接, 通过优化用地布局, 既发展经济又保护耕地和生态环境, 从而真正促进城镇化的和谐发展。

英文摘要:

Abstract: Through the research of the internal relations of urbanization process and cultivated land change in Huang-Huai-Hai Plain, the paper reveals the regularity of urbanization process in different regions. The purpose is to provide a decision basis for the preservation of cultivated land and the sustainable development of urbanization in China based on data analysis and empirical contrast. By using the method of principal component analysis (PCA) and multiple linear regression model, land use change, the quality and quantity changes of cultivated land in Huang-Huai-Hai plain were analyzed. There were obvious differences in the 5 provinces and 2 cities during the urbanization from 1997 to 2008, such as the urbanization process, the speed of economic growth, the changes of industrial structure, growth of urban land area. With the rapid urbanization, the area of cultivated land presented decreasing trend year by year. The enhancing range and the development speed of urbanization negatively related with the change intensity and reducing speed of cultivated land change, and the change also presented a wave of increase and decrease. The cultivated land change of study area showed the obvious regional characteristics. For example, the biggest decline of cultivated land area in Hebei Province reached 210,100 hm<sup>2</sup>, while the least decline of cultivated land area in Jiangsu Province reached 26,400 hm<sup>2</sup>. The overall quality of cultivated land presented decline trend. More than 70% percent of the occupation of the cultivated land for the urban construction was the high quality arable land with good location, irrigation facilities, highly production capacity. However, the quality of arable land newly increased by reclamation and new development was lower. By selecting population urbanization factors, economic urbanization factors, spatial urbanization factors and lifestyle urbanization factors, the index system of driving force of urbanization was established. Based on PCA, some regularities can be revealed: At first, the population growth affecting on cultivated land change in these regions was the most direct and common; Secondly, the promoting functions of economic indicators were significant different due to the features of urbanization and the level of urbanization. Next, the influence of construction land growth on cultivated land was very significant, because that the space urbanization indicators load was higher; Lastly, life urbanization indicators were positive and high load, which showed that the attractions of lifestyle including income differences have an obvious role in promoting urbanization. Based the multiple linear regression model of driving force factors of urbanization and cultivated land change, it was showed that the commonness and difference of the relationship between urbanization process and cultivated land change in different regions in Huang-Huai-Hai Plain. According to those analyses, some conclusions and suggestions can be put forward. The urbanization can be promoted timely and moderately, to avoid massively occupying arable land at the expense of food security and ecological environment. So the conclusion can be drawn that occupation of less farmland, intensive use of construction land and preservation of cultivated land is the wise choice for the new urbanization development model with reasonable environmental policies.

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