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A study on the choices of construction land suitability evaluation of ecological index

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Abstract

Ecological index plays an important role in the establishment of the construction land suitability evaluation index system. This paper analyzes the ecological sensitivity, vegetation coverage, soil quality, atmospheric environment and other factors' effect on the construction land suitability evaluation index system. Moreover, according to the actual situation of construction land, this paper comes up with different ecological index to establish different construction land suitability evaluation index system.

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Keywords: Construction Land; Suitability Evaluation; Ecological Index

1. Introduction

The construction land suitability evaluation is refer to compare the land quality to the requirements of construction land quality in the specific research area, and the aim is to determine the suitability of construction land[1].In construction land suitability evaluation process, the construction of evaluation index system is a particularly important step. A good indicator system can not only fully reflect the quality level of the construction land in the study area, but also determines the sustainability of the construction land use.

Since construction lands have specific uses, the key point of assessment index selection of applicability lies in the bearing capacity of the building foundation and the construction difficulty level. The assessment indexes of ecological environment are rarely chosen. However, ignorance of assessment indexes of ecological

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environment will lead to ecological imbalance, environmental degradation and reduction of living quality. People will pay for the huge cost finally.

This paper makes a further study on the ecological environment indicators used in the suitability evaluation of construction land, which can provide reference for the establishment of construction land suitability evaluation index system.

2. The common ecological index of the construction land suitability evaluation

2.1. the ecological sensitivity

The ecological sensitivity refers to the carrying capacity of ecological factors in different activities of mankind, that is in the same intensity of human activities influence or external force, the situation of regional ecological environment problems in each ecosystem [2]. When constructing the index system of the suitability evaluation of the construction, the ecological sensitivity index is usually used after comprehensive consideration. Its evaluation principle is as follows: In a certain region of the same function of various ecological factors, the comprehensive ecological sensitivity depends on the most sensitive ecological factor [3].

The ecological sensitivity is higher, the local ecological environment is more vulnerable to human disturbance of building construction causing ecological problems. On the contrary, the ecological sensitivity is lower, the impact of the land development and construction on the local ecological environment is weaker, the suitability of the construction land is higher. In the construction of urban and rural areas, the relationship between different land cover types and ecological sensitivity is shown in table 1. In the selection of the construction site, we should pay attention to avoid the ecological sensitive area.

Table 1. The ecologic sensitivity and surface land cover types [4]

| The ecologic sensitivity | Ecologically sensitive area | Ecologically more sensitive area | | Ecologically medium sensitive area | Ecologically less sensitive area | Ecologically insensitive area |
|--------------------------|-----------------------------|----------------------------------|----------------|------------------------------------|----------------------------------|-------------------------------|
| Surface land types | Reservoir or pond | Woodland | Tidal wetlands | Aquaculture water | Cultivated land | Construction land |

2.2. the vegetation coverage

Vegetation coverage ratio refers to the ratio of the area of a certain area to the total area of the region expressed as a percentage. It is an important indicator of the status of the vegetation used by investigating of ecological environment and it is also one of the methods to express the green index in the ecological environment protection [5].

Woodland and grassland contribute the highest to reduce soil erosion, loss of land [6-7], the higher the vegetation coverage rate, the greater impact on the regional ecological environment, the worst of the degree of suitability for construction land.

2.3. soil quality

The ecological function of the soil are mainly the biological support and carrying capacity, which depend on the number of soil nutrients and richness of nutrient content [8]. Because oil damage which caused by land development and construction is difficult to recover, so the land in which soil nutrient content is more abundant and high ecological value, is not suitable as construction land.

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