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### 基于宏微观尺度的三江平原区域农业水土资源承载力

#### Regional agricultural water and soil resources carrying capacity based on macro-micro scale in Sanjiang Plain

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英文关键词: [water resources](#) [soils](#) [grain](#) [carrying capacity](#) [Sanjiang plain](#)

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中文摘要:

针对现有的农业水土资源承载力评价中将农业水、土资源视为独立系统分别进行研究容易导致系统超负荷运行的问题,该文将农业水、土资源作为一个整体系统,提出了从微观和宏观尺度进行农业水土资源承载力评价的新思路。在构建微观和宏观农业水土资源承载力评价指标体系的基础上,建立了农业水土资源承载力微观和宏观计算模型,其中微观模型用于求解农业水土资源支撑的最大粮食产量和最大人口数量,宏观模型用于评价区域农业水土资源承载力的相对等级,并将宏微观模型应用于三江平原农垦建三江分局的农业水土资源承载力分析中。结果表明该模型求得的建三江地区宏观和微观农业水土资源承载力大小和制约因素,很好地反映出建三江分局农业水土资源承载力的实际水平,表明该模型切实可行,并为区域农业水土资源系统整体效能的充分利用提供了依据。

英文摘要:

The agricultural water resources and soil resources are viewed as independent system, which are respectively researched in evaluating the carrying capacity of agricultural water and soil resources. It is easy to cause the overload operation of the agricultural water and soil resources system. This paper studied the carrying capacity of agricultural water and soil resources as a whole system, and put forward a new idea that the carrying capacity of agricultural water and soil resources is evaluated from the macro and micro scale. On the basis of building microcosmic and macroscopic evaluation index system for the carrying capacity of agricultural water and soil resources, it also established the micro and macroscopic computing models. The microscopic model was used to compute the maximum grain yield and the maximum number of people that the agricultural water and soil resources can support. The macroscopic model was used to evaluate the regional relative rank of the carrying capacity of agricultural water and soil resources. The models were also used to analyze the carrying capacity of agricultural water and soil resources of Jiansanjiang region of Sanjiang plain. The results showed that the size and restrictive factors of agricultural water and soil resources carrying capacity in Jiansanjiang region, which is obtained by macro-micro model, reflected the realistic levels of carrying capacity of agricultural water and soil resources of Jiansanjiang region. It shows that the model is practical, and can provide the basis for making full use of overall efficiency of regional agricultural water and soil resources carrying capacity system.

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