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Studies on Service Value Evaluation of Agricultural Ecosystem in Beijing Region

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The agricultural ecosystem in Beijing rural areas plays a special role in maintaining the environmental function of the city. At present, because area of farmland in the area is decreasing a series of ecological problems are becoming more and more serious. The accurate valuation of farmland ecosystem services is very important to reserve rational development of agricultural resources. In this paper, the agricultural ecosystem (farmland and orchard) service values are evaluated by various methods such as a market value, substitution engineering, shadow price, opportunity cost for various crop types. Some index systems are selected for assessment of agricultural ecosystem services, which consist of 11 service indexes such as agricultural products, CO₂ fixation and O₂ release, environment purifying such as air quality purifying, sewage treatment, dung decomposition, OM accumulation in soil, nutrients cycle, soil conservation, water storage, and agriculture tourism. The results showed that the total service value of agricultural ecosystem decreased from 45133.84 million yuan in 1996 to 34 269.90 million yuan in 2002 a decrease of 10 863.93 million yuan, of which various values of food crops decreased and others increased to some extent. The total average value of agriculture services during six years was eight times of the production value. The total average value of agricultural ecosystem services during this period of time added up to 91 567.61 million yuan with indirect values being 34 616.05 million yuan, i.e., six times of the direct values. In terms of composition, under present cultivation system, the value of farm products is 12.41%; the total value, including carbon fixation, oxygen production and environment purification, are very great, making up 77% (carbon fixation and oxygen production 39.48% and environment purification 37.51%); the value of soil OM accumulation 4.4%; nutrients cycle maintenance 1.27%; water-holding and agriculture tourism 2.21% and 3.8% respectively; and soil conservation 0.01%. Therefore, agricultural ecosystem has provided huge indirect values to human beings besides direct values.

【Key Words】 : **Beijing region agricultural ecosystem services function value evaluation**

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