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Forest ecosystem services and their valuation in China

ZHAO Tong-qian^{1,2}, OUYANG Zhi-yun¹, ZHENG Hua¹, WANG Xiao-ke¹, MIAO Hong¹(1. Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing 100085, China; 2. Henan University of Technology, Jiaozuo 454000, China)

Forest ecosystem plays a special role in maintaining the structure, function and ecological process of natural ecosystems. At present, a series of ecological problems are becoming more and more serious because of forest damage in some regions. The accurate valuation of forest ecosystem services is very important to the reserve and rational development of forest resources in China. Forest ecosystem services are divided into four groups: provisioning services, regulating services, cultural services, and supporting services in this paper. On the basis of the service mechanism analyses, an index system for the assessment of forest ecosystem services has been established, which consists of 13 service indexes such as timber and other products, weather regulation, C fixation, water storage, erosion control, air quality purifying, nutrients cycle, windbreaks, cultural diversity, recreation and ecotourism, O₂ release, and provisioning of habitat. Then, 10 services of China forest have been assessed and evaluated by taking the year of 2000 as the base year. Including timber and other products provision, C fixation, water storage, erosion control, air quality purifying, nutrients cycle, recreation and ecotourism, O₂ release, and provisioning of habitat. As a result, the economic values of these services are 2 325.14×10⁸, 1 626.76×10⁸, 2 134.7×10⁸, 136.46×10⁸, 41.85×10⁸, 372.37×10⁸, 194.31×10⁸, 6732.48×10⁸, and 495.94×10⁸ yuan, respectively. The total value is estimated as 14 060.05×10⁸ yuan with indirect values being 11 540.60×10⁸ yuan, 4.6 times that of the direct values. The results show that forest ecosystems provide huge indirect values to human besides the direct value of goods, and that the indirect values are equally important as the direct values. The focuses of forest ecosystem services and their valuation in the future should be the service mechanism and the coupling and the application of different scales data.

【Key Words】 : **forest ecosystem function of ecosystem services valuation evaluation**

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