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Valuation of fragile agriculture ecosystem services in loess hilly-gully region:a case study of Ansai county

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Much research work has been done since the introduction of the conception of the eco-system services.However most of the work has been focused on macroscopic(global or national)scale which could hardly touched upon the fragile agroecosystem disturbed by human,especially the aggravated eco-environmental problem in Loess Plateau because of severe soil erosion and bad natural condition.The present study tries to provide some new references for rehabilitating e-ecological environment and improving productivity of the agroecosystem.Using different methods such as market value,substitution engineering,shadow price,opportunity cost,this article calculated the value of agriculture ecosystem services including conserving soil (Es)and water (Ew),fixation of CO₂ and release of O₂ (Ea),maintaining nutrient circling(En)and decontaminating environment(Ee)in Ansai county of loess hilly-gully region.The results showed that the gross value of ecosystem service was31698.70million yuan,or170times of production value(Ep).This implied even the fragile ecosystem displayed an important service function though it had been disregarded in a long period of time.In Ansai county agriculture ecosystem provided great eco-logical services for economic productivity.Various services values respectively were En2848141.82ten thousand yuan(89.85%),Ew139136.26ten thousand yuan(4.39%),Ea 132511.32ten thousand yuan(4.18%),Vp18505.66ten thousand yuan(0.58%),Es 25824.60ten thousand yuan(0.81%),and Ee 5750.80ten thousand yuan(0.18%).On the other hand,this also showed that there was imbalance between ecological productivity and economic productivity in the study area,which was a general problem throughout the Loess Plateau region.So the effective way in rehabilitating ecological environment is to enlarge grassland and forest area so as to improve soil and water conservation function.

【Key Words】 : **Loess Plateau ecosystem service Ansai valuation**

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