Rice Paddy Ecosystem Services for Climate Change using Land Use and Climate Change Scenario

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The purpose of this study is to establish the basic data for finding ways to respond to climate change using ecosystem services. Based on climate change scenarios and rice paddy scenarios, changes in the ecosystem services provided by rice paddies in the past and future. In Korea, due to urbanization and development, the area of ??rice paddy continues to decrease. As a result of analyzing the land cover data of the Ministry of Environment, agricultural land has been converted to other types of land use at a rate of -0.9% per year since the 1980s. Changes in land use were based on these data, and climate change was analyzed how the ecosystem services provided by rice fields will change in the future by using the IPCC Climate Change Scenarios (RCP 4.5 and 8.5) data. Ecosystem services analysis was performed by applying the integrated valuation of ecosystem services and tradeoffs (InVEST) model to South Korea, focusing on water yield services and carbon storage services that are particularly relevant to climate change mitigation and adaptation among various ecosystem services provided by rice fields. As a result, It was found that ecosystem services from paddy fields are affected not only by climate change but also by the size of area of rice paddy, and that there is a need to expand ecosystem services using paddy fields to respond more effectively to climate change in the future. Acknowledgement: This Study was supported by Rural Development Administration Research and Development Grant (PJ01353302).

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