

# Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

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HGG001-06

Room:201A

Time:May 26 09:55-10:10

## Assessment of biodiversity and ecosystem services of Satoyama, traditional rural landscape of Japan

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Satoyama is a Japanese word used to refer to the mosaic of mixed coppice forests, rice paddy fields, upland fields, grasslands, streams, ponds, reservoirs for irrigation and settlements that make up the traditional rural landscape of Japan. Although social, political and economic changes since 1960s such as agricultural innovations and fuel revolution have caused declines in ecosystem services and biodiversity in Satoyama, recent socio-economic and environmental situations have raised the people's awareness of energy and food securities, and potential values of Satoyama. Millennium Ecosystem Assessment has also chosen Satoyama and Satoumi (local coastal waters) as a target for sub-global assessment. However, little is known about the changes of biodiversity and ecosystem services, and their relation in Satoyama at national scale. In this study we devised indicators to assess biodiversity of Satoyama and developed models to assess regulating services at national scale using common database such as "digital national land information". We assessed biodiversity at national scale by using JOIN values (e.g. paddy-forest, paddy-built-up area). We also developed assessment models of regulating services by modifying existing models and measured the values of several regulating services. Those values were compared among rural landscape types which were established by Rural Landscape Information System (RuLIS) of Japan. The results suggested that the spatial and temporal conditions and trends of biodiversity and regulating services could be evaluated effectively by using RuLIS landscape types.

Keywords: satoyama, biodiversity, ecosystem service