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## Sustainability of Agriculture Land Use in Eastern Bhutan

Loday Phuntsho<sup>1\*</sup>, Takashi Oguchi<sup>2</sup>

<sup>1</sup>GPSS, GSFS, The University of Tokyo, <sup>2</sup>CSIS, GSFS, The University of Tokyo

### Abstract

In Bhutan about 70% of the population live in rural areas based on agriculture farming and related activities. The eastern region occupies a major agriculture share. However, in recent years, the sector has been facing challenges in the form of land degradation, instability in productivity, crop damage, and issues of fallow land, leading to decline in agricultural land use. These challenges were implicated as a result of climate variability, especially fluctuations in temperature and erratic precipitation patterns although no detailed study exists. Against this backdrop this research measures the influence of climate variability on agricultural land use by analyzing- land use change (LUC) in eastern Bhutan from 1994 to 2005 in relation to biophysical and socio-economic factors [LUC = f (biophysical and socio-economic factors)], using GIS and the SPSS programs.

Given the importance of agricultural sectors, the sustainable utilization of limited arable land will play a critical role in sustaining rural livelihood and food security. The sustainability of agriculture is viewed mainly in terms of the capacity of an agricultural system to adapt and deal with stresses and to carry itself on. This study gives insights into the importance of addressing agricultural sustainability issues in a holistic manner, and finally provides some inputs towards developing strategies to deal environmental impact and changes.

Keywords: Agriculture land use, Climate variability, Eastern Bhutan, GIS, Sustainability