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"Development on the margin"

The Effect of Conservation Policies on Farm Labor Allocation Decision among Crop Livestock Farmers in Bhutan: A Household Modelling Approach

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Abstract

About 80 % of the population in Bhutan are concentrated in the rural areas and most farmers practice crop and livestock integrated farming system as a means to sustain their livelihoods. The country imports about more than 70% of its food requirements and internal production is constraint by huge challenges relating to factors like land degradation, soil fertility issues, economic factors like high cost of inputs, low market prices. Bhutan is lauded for its strict nature conservation policies wherein the country has been able to maintain 72 % of the land area as natural forests and preserving a wide variety of plant and animal species. The country is one among the ten Biodiversity hotspots in the world. Such policies also generate negative externalities and the more recent problems that are arising are the conflict between wildlife and the farming communities. The strict rules prevent the farmers from doing any harm to the wild life species. The farmers spend a considerable amount of their productive time guarding their fields against wild animals. Some skeptics also point out that the farmers are paying a huge price for conservation. Therefore, the objectives of this study were to study the farm household?s decision making in labor allocation and the decisions of the farmers in response to changes in some conservation policy scenarios.

The data for this study was collected in 2009 in Bhutan. The primary data was collected through a purposive stratified random sampling method among 292 households from three sub districts in Bhutan. The secondary data was used from FAO, Agristat, 2009.

The methodological part consists of using a non separable household model with an objective function to maximize the utility gained by the households from the consumption of own produced food, market purchased goods including food, education, health, etc and leisure subjected some constraints which are identified as maximum available resources like land, labor and income. The production and consumption parameters were calculated using a Cobb Douglas factor share method which are used in a non linear programming model to analyse the decision making of the farmers. The model is solved by using General Algebraic Modelling System (GAMS).

Keywords: Agriculture policy analysis, crop and livestock farming system, household model

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