

University of Hohenheim



Master thesis

Adoption of Sustainable Land Management technologies
among smallholder farmers in Eastern Bhutan

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A microeconomic assessment using a mathematical
programming model approach

Master thesis submitted by

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Abstract

Bhutan is a small, landlocked country located in the rugged Himalayan mountain area. Due to its harsh geographic disposition, only 3% of the country's land area is suitable for agricultural production. With steep slope terrain, soil erosion and land degradation are common problems. In response, in 2006 the government began promoting the implementation of sustainable land management (SLM) technologies among farming households. Yet today, mainstreaming of SLM continues to be a challenge, as farmers often shy away from the high initial costs of establishment.

From this background, this thesis analyses to what extent such SLM technologies are economically feasible for the farmers to adopt in the first place. Drawing on a case study of two types of smallholder farms in Mongar *dzongkhag*, Eastern Bhutan, it examines the prospects of SLM adoption for a subsistence and a commercially oriented farm. The analysis is carried out with the help of a mathematical linear programming model, depicting a farm endowed with common characteristics for the study area.

As the results reveal, the technologies are economically viable and offer an increase of income and productivity compared to the status quo ante. Yet, the possibility to mainstream SLM technologies is rather limited due to external market constraints.