Determinants of Adoption of Physical Soil Conservation Measures in Central Highlands of Ethiopia: The Case of Three Districts of North Shewa

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This paper examines factors influencing farmers' adoption decision of physical soil conservation practices in the Central Highlands of Ethiopia. Data were collected from 116 randomly selected farmers through a structured questionnaire. Results from a logistic regression analysis show that security of land ownership, size of cultivated land, technology-specific characteristics, level of schooling, wealth status of the household head, availability of off-farm income and assistance from different sources were important determinants of adoption of physical soil conservation practices. About 97 percent of the sample cases were correctly predicted using the model.

1. INTRODUCTION

In Ethiopia, as in most developing countries, land degradation has manifested itself in rapid rates of natural capital depletion exemplified by deforestation and soil erosion¹. According to the Soil Conservation Research Project (SCRP, 1996), land degradation from soil erosion and depletion of organic matter and nutrients is taking place at a much faster pace than they can be replaced. This fact can be substantiated by the rate of soil erosion from the highland areas of the nation, which constitute about 45 percent of the total area of the country. The rate of soil erosion from the highland areas is estimated to be 35 tons per hectare per year (EHR, 1986). According to the same source, it is also estimated that 80 percent of the gross soil loss is from cropped lands, which brings the estimated soil loss in this area to about 100 tons per hectare per year. This happens because of the inherent erodible nature of the soils and the likely expansion of cultivation to these areas to feed the steadily growing population of the country.

With increasing intensity of cropping on sloping lands and with intensive cultivation of smaller farmlands without amendments to replace lost

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