

Full Length Research Paper

Adoption of agro-forestry technologies among small-holder farmers: A case of Zimbabwe

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The objectives of this study were to assess and compare the levels of adoption of agro-forestry technologies between trained and untrained farmers, and identify specific factors that affect adoption of technologies. Data from 300 smallholder farmers selected by snowballing from villages where change agents had been trained by the International Center for Research in Agro Forestry was collected using structured questionnaires. The data were analyzed using the Statistical Package for the Social Science and Microsoft Office Excel. The results showed that there was low level of awareness of agro-forestry technologies among farmers. Formally trained farmers adopted agro-forestry technologies more than informally-trained farmers. Logit regression results showed that the likelihood to adopt live fence was influenced significantly by land ownership, awareness, training, drought, labour and local institutions ($p < 0.05$). Adoption of trees for nutrition was influenced by belonging to a farming group, awareness, training, land size and local institutions ($p < 0.05$). Adoption of improved fallows was influenced by employment status, belonging to farm group, awareness and land size ($p < 0.05$). Factors that influenced adoption of fodder banks were employment status, awareness and training ($p < 0.05$).

Key words: Adoption, agro-forestry technologies, change agents, logit regression.

INTRODUCTION

Land degradation and siltation of rivers are major environmental concerns that tend to drastically reduce yields (Rasto, 1996). Adoption of agro-forestry is an alternative to high-cost inputs such as chemical fertilizers, herbicides, insecticides and pesticides since it offers opportunities of improving the quality of life of resource-poor farmers, while ensuring the sustainability of the natural resources base and the environment (Govere, 2003).

Adoption of agro forestry can lead to improved crop and livestock production because agro-forestry practices are less costly, more affordable and because inputs for fodder and soil amendments are readily available to small-holder farmers. Besides, agro forestry also offers a number of service functions. The major service function of agro forestry is its role in soil management, including

control of erosion and maintenance and improvement of soil fertility (Young, 1997). Other service functions include shade, reduction of wind speed, weed control and fencing. Adoption of agro-forestry therefore has the potential to halt land degradation, improve soil fertility and solve fodder problems among smallholder farmers. The key factor is that when trees are properly managed and integrated into farming systems, they improve agricultural productivity and maintain environmental integrity (Hoekstra, 1983).

Many research projects aimed at identifying and domesticating tree species for various soil fertility replenishment practices and developing agro-forestry management principles for improved fodder supply have been widely carried out in the southern part of Africa (NEPAD, 2006). Furthermore, research has also been conducted to identify and test promising indigenous and exotic live fence tree species across a wide range of biophysical conditions and making promising species available for increased farm productivity and cash income

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