Large Agricultural Machinery for Small Farmers

-Profitability of Wheat Harvesting Methods in Wheat-belt of Ethiopia-

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I. Introduction

The induced innovation theory (Hayami and Ruttan, 1985) identifies two paths of technological development in agriculture depending on whether they are labour saving
(mechanical innovation) or land augmenting (biological innovation). It was thought that innovation in peasant agriculture should be oriented to biological than to mechanical, because the latter depart most from considerations of social efficiency, employment creation and more equal income distribution. Two lines of argument prevail among researchers and development practitioners in Ethiopia concerning mechanization of harvesting and threshing operations. One group considers mechanization of harvesting and threshing operations as a substitute for animal power and labour and argues that there is little or no reduction in the overall cost of producing a given output, and no net efficiency gains in terms of higher output. Higher yields if observed are offset by higher production costs, especially if resources are valued at social, rather than private, efficiency prices. The other group claims that net productivity increase as a result of mechanization of harvesting and threshing technologies. The two lines of argument correspond to substitution view and net contribution view, respectively in agricultural mechanization literature (Binswanger, 1978).

Farming in Ethiopia like in most developing countries is generally labor intensive. However, in some localities (Asasa, Etheya, Lole, and Dhera) to some extent there is a shift in the type of agricultural machinery used particularly for wheat harvesting. Since the inception of Chilalo Agricultural Development Unit (CADU) in 1969, farmers in these areas are interested in mechanical harvesting and threshing (Lars-Ove Jonsson, 1972).

From 1974 to 1991, producer cooperatives and state farms were the main users of farm machinery, while the individual small-scale farmers did not have that opportunity. Since the political and economic reform of 1991, the producer co-operatives were dismantled and individual small-scale farmers have started to benefit from hiring agricultural machinery. Government owned agricultural machinery hiring stations and private owners provided these services. Since the transitional government, there is relatively better policy environment to invest in agricultural machinery and the number of private suppliers of agricultural machinery services has increased. This induced some individuals (e.g. civil servant, traders) in towns and well to do farmers to embark on farming business through renting land from surrounding farmers for a specified period, using hired machinery for all farm operations. This study is therefore designed to assess the benefit of combine harvesting Vis a Vis conventional harvesting and threshing in the wheat belt of the country.