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## Calling for Mechanisation: Farmers’ Willingness to Pay for Small-Scale Maize Shelling Machines in Tanzania

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### Abstract

While mechanisation is an important complement, and in some cases a necessary condition, to agricultural intensification, humans are the main power source of agricultural production in sub-Saharan Africa. This is partly because of the failure of the supply driven mechanisation policies promoted in SSA until 1980s which gave marginal attention to the demand side of mechanisation. We conducted a study in three districts of central Tanzania with the aim of assessing farmers’ willingness to pay (WTP) for two type of small-scale (diesel-powered and electric-powered) maize shelling machines and identifying factors affecting their WTP. We collected data from randomly selected 400 farmers constituting about equal number of both gender categories. We considered three mechanisation approaches namely: 1) the rental service model (RSM), 2) the group ownership model (GOM), 3) the private ownership model (POM). We used interval estimation econometric model to analyse the data. Our results show that mechanisation of maize shelling can be promoted in the study areas following the three business models. More than 98% of the farmers can fit to the RSM at existing market prices. The GOM is feasible for about 64% of the farmers considering the diesel machine while it can work for about 90% of the farmers considering the electric machine. The mean group sizes suggested by the farmers are ten and eight people for the diesel machine and the electric machine, respectively. Mechanisation of maize shelling is also possible through the POM for about 8% (diesel machine) and 64% (electric machine) of the farmers. The factors that positively influence farmers WTP include experience in using machines to shell maize, livestock wealth, cost of hired labour, volume of maize production, and off-farm income during off-harvest season whereas the factors that negatively influence farmers WTP include gender of respondents (being female), active female labour in the household, and age of respondents.

**Keywords:** Group ownership, maize shelling machine, private ownership, rental service, Tanzania, WTP