Determinants of Rural Household Effective Demand for Biogas Technology in Southern Ethiopia.

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ABSTRACT

The objectives of the study were to identify factors affecting rural households' willingness to install biogas plant and amount willingness to pay in order to examine determinants of effective demand for biogas technology. A multistage sampling technique was employed to select 120 respondents for the study. The binary probit regression model was employed to identify factor affecting rural households' decision to install biogas technology. The probit model result revealed that household size, total household income, access to extension services related to biogas, access to credit service, proximity to water sources, perception of households about the quality of biogas, perception index about attributes of biogas, perception of households about installation cost of biogas and availability of energy source were statistically significant in determining household's decision to install biogas. Tobit model was employed to examine determinants of rural household's amount willingness to pay. Based on the models result, age of the household head, total annual income of the household, access to biogas related extension service and availability of other energy source were significant variables in explaining maximum amount they are willingness to pay. Providing due considerations for extension services related to biogas technology, availability of credit or subsidy, improving the quality and attributes of biogas technology, design an integrated cooking stove that includes "injera" [1]making *and minimizing cost of installation by using locally available materials are the main suggestions of this research to create effective demand for biogas technology.*

Key words: **Biogas technology, Effective Demand, Probit model, Tobit model, Willingness to pay**

Injera*[1] *: *is the fermented pancake-like flatbread cooked in a circle and used as a familiar food in Ethiopia, made with "teff" commonly.*