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Fuel from the Farm: An Analysis of Farmer's Decisions to Produce Bioethanol from Cassava. A Case of Smallholder Farmers in Northern Uganda

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Abstract

The current global population continues to grow and in developing countries like Uganda, the population growth rate is 3.3 % which is higher than growth in agricultural sector estimated at 1.5 %. The increase in population means increased demand for food and energy thus raising questions on "Food versus Fuel". One of the key questions being debated is whether fuel should be extracted from the farms? In this study, we examined factors influencing smallholder farmers to produce bioethanol from cassava vis-à-vis cassava dry chips. We assessed profitability of producing bioethanol and identified best scenarios to maximise benefit from cassava bioethanol. Using multistage sampling, a total of 243 smallholder farmers were selected for the study. The data used was collected using structured questionnaire administered through individual household interviews with farmers in northern Uganda, a leading cassava producing region. The results demonstrated that improved cassava variety, land size, proportion of land under cassava, off-farm work, profitability of bioethanol, positively influenced farmers' decisions to produce bioethanol while sex of household head, pentecostal christian, profitability of dry chips, condition of the road negatively influenced farmers' decisions to produce bioethanol. Gross margin analysis demonstrated that three cassava products; - fresh tubers, dry chips and bioethanol are profitable although dry chips are more profitable than bioethanol. However, for bioethanol producers, those who grow cassava and process bioethanol benefit more than those who buy cassava and process bioethanol. Sensitivity analysis results revealed that firewood contributed noticeable change on profitability of bioethanol. Policy implications of the study is that deliberate efforts to promote alternative uses of bioethanol would help expand the market and increase the value of bioethanol hence raising the selling price and profits due to increased demand. Alternatively, policies to deliberately buy locally produced bioethanol from farmers and further processing to meet various market niches could be explored to encourage more production. In addition, there is need to promote cultivation of cassava to meet twin goal of food and fuel. Otherwise, without increased production farmers' priority would be to produce cassava for food and any intervention to promote the extraction of fuel from farms would increase vulnerability to food security.

Keywords: Cassava bioethanol, drivers of production, profitability analysis, smallholder farmers

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