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What Do Smallholder Maize Growers Do with their Maize Biomass? Empirical Evidence from the Maize Belts of Ethiopia

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Abstract

Cereals are main contributors of growth of Ethiopia’s agriculture based economy. Despite high cereals biomass potential and yield gaps, achieving food security, however, remains a challenge. Earlier studies attributed to decisions on production and productivity augmenting factors as the main reasons for food insecurity and poverty paying no attention to decisions on the utilisation of biomass. This study therefore tries to examine maize farmers’ decisions on the uses of maize biomass, extent of use and its implication on food security and the challenges therein. The study follows a mixed methods approach that involves both qualitative and quantitative techniques. Data were collected through key informant interviews, focus group discussions and household survey with 322 randomly selected farmers in two districts. Intensity of biomass use and households’ food security, respectively, were measured using proxy indicators, Herfindahl-Hirschman Index and Food Consumption Score. We examined the implication of intensity of biomass use decision on food security using an endogenous switching regression model. The study finds that more than half of the total biomass has been used for non-direct food purposes. The findings ascertain the importance of post-production decisions on the uses of maize biomass to ensuring of household food security. Our endogenous switching regression model further provides a compelling evidence of impact of diverse use decision on food security. The study further identifies factors such as markets, extension and information access as key determinants influencing post-production decisions on the uses of maize biomass. The findings therefore underscore the importance of integration of post-production decision on the uses of maize biomass into the maize sector’s development strategy. Institutional innovations, particularly in the research and extension systems, and integration of maize growers into markets are decisive to fully unlock the food security potential of maize.

Keywords: Biomass uses, challenges, ESR, food security, institutional innovations, markets, research-extension systems, use diversification