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The Economic Contribution of Trees on Farms to livelihood in Sub-Saharan Africa

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Trees outside of forests are often overlooked in research and policy relating to forests, agriculture, and rural livelihoods in Sub-Saharan Africa. Yet they are widespread across the continent, with 30% of Africa's agricultural land area estimated to have at least 10% tree cover in recent years (Zomer et al. 2014). Sub-national case studies suggest that management of trees on farms can affect the ecological status of forests (Minang et al. 2014; Rao et al. 1998) and that on-farm trees make a substantial contribution to households' welfare (Mbow et al. 2014; Kalaba et al. 2010). The livelihoods dimension of trees on farms assume additional importance given that trees can help reduce exposure and sensitivity to external shocks such as those related to climate change, market volatility, and liquidity constraints (Place and Garrity 2015). Despite their prevalence and importance, national scale knowledge of their economic contribution across Africa remains limited. As a result, policy recognition and support for agroforestry also remains lacking. We address this gap in knowledge using nationally representative data from the Living Standards Measurement Study - Integrated Surveys on Agriculture (LSMS-ISA) in six African countries: Ethiopia, Malawi, Niger, Nigeria, Uganda and, Tanzania. Together, these countries represent 40% of the population in SSA and cover a wide array of agro-ecological zones found on the continent. Our dataset includes information from more than 32,000 households surveyed during 2010-2012. We examine the prevalence of trees on farms (including fruit, timber and cash crop trees such as coffee) and their contribution to total household income. We then use multi-level regression models to explore the effect of household and larger-scale factors on income from trees on farms. We find that trees are widespread on farmland across LSMS-ISA countries, with more than a quarter and in some cases (e.g. Tanzania) more than 50% of landholders reporting trees for productive use on their farms. Overall, production from trees on farms accounts for an average of 22% of agricultural income and 8% of annual gross household income across the six study countries LSMS-ISA countries. For those households with on-farm trees the contribution increases to around 20% of total income. We do not find any systematic difference in income and expenditure between households with and without trees, but the share of production used for the households' own consumption and that sold does differ. This paper provides the first national-scale evidence on the contribution of trees outside of forests to household incomes in Africa. Our findings form an important complement to on-going research on the economic contribution of forests and open up new avenues for exploring the interaction between trees on farms and forests to gain a more complete picture of their contribution to rural livelihoods. Our results also suggest that trees on farms should be given much more attention in debates on agriculture, food security and poverty-related policy in Sub-Saharan Africa.