



How much of the labor in African agriculture is provided by women? [☆]



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ABSTRACT

The contribution of women to labor in African agriculture is regularly quoted in the range of 60–80%. Using individual, plot-level labor input data from nationally representative household surveys across six Sub-Saharan African countries, this study estimates the average female labor share in crop production at 40%. It is slightly above 50% in Malawi, Tanzania, and Uganda, and substantially lower in Nigeria (37%), Ethiopia (29%), and Niger (24%). There are no systematic differences across crops and activities, but female labor shares tend to be higher in households where women own a larger share of the land and when they are more educated. Controlling for the gender and knowledge profile of the respondents does not meaningfully change the predicted female labor shares. The findings question prevailing assertions regarding substantial gains in aggregate crop output as a result of increasing female agricultural productivity.

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1. Introduction

Women are commonly considered to perform the bulk of work in African agriculture. Combined with new evidence of a non-negligible gender gap in agricultural productivity, this has motivated increased attention to raising agricultural productivity among African women.¹ Doing so is not only seen as important for empowering Africa's women and improving the development outcomes of the next generation, but also as an important vehicle

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¹ See Backiny-Yetna and McGee (2015), Kilic et al. (2015), Aguilar et al. (2015), Oseni et al. (2015), Slavchevska (2015), O'Sullivan et al. (2014).

to increase Africa's food supply, a key objective on the agenda of African and international policymakers (AGRA, 2012).²

This paper revisits the first premise of this reasoning, i.e. that women perform the bulk of work in African agriculture. Systematic data on women's labor contribution to agriculture are hard to come by. As such, it is no surprise that the widely shared notion that women in Sub-Saharan Africa (SSA) are responsible for 60–80% of the agricultural labor supplied, traces back to an undocumented, 1972 quote in a more general study of women's contribution to development.³ The statistical basis for these numbers has been questioned before (Jackson, 2005; Doss, 2014; Doss et al., 2011).

Taking the female share of the agricultural labor force as a proxy (calculated as the total number of women economically active in agriculture divided by the total population economically

² See also the 2003 Maputo Declaration, with the messages reiterated in the 2014 Malabo Declaration on Accelerated Agricultural Growth and Transformation by the African Union.

³ United Nations Economic Commission for Africa (1972, p. 359): "Few persons would argue against the estimate that women are responsible for 60–80 [percent] of the agricultural labor supplied on the continent of Africa." A decade later, the Food and Agriculture Organization of the United Nations (FAO) posited that women constitute between 70 and 90% of the agricultural labor force in many Sub-Saharan African countries (FAO, 1984). A later incarnation of the statement surfaced in a 1995 FAO Report: "In Sub-Saharan Africa, agriculture accounts for approximately 21% of the continent's GDP and women contribute 60–80 [percent] of the Labor used to produce food both for household consumption and for sale." A related assertion is that women produce 60–80% of the food in developing countries and 50% of the world's food supply (Momsen, 1991).

active in agriculture), [FAO \(2011\)](#) suggests that women's labor contribution to African agriculture is slightly less than half. Using more reliable, but non-nationally representative case study evidence from time use surveys, estimates reported in the same study range from 30% time contribution by women to agricultural activities in The Gambia, to 60–80% in different parts of Cameroon. In addition to the wide variation across countries (and at times within countries), the time use surveys reveal important differences in time allocation across crops, agricultural activities and technology. [FAO \(2011\)](#) concludes with a call for more systematic evidence on women's labor contribution to agricultural production in SSA.

The Living Standards Measurement Study – Integrated Surveys on Agriculture (LSMS-ISA) initiative provides a unique opportunity to start filling this void.⁴ Under the LSMS-ISA initiative, nationally-representative household surveys were fielded during the 2009–2011 period (and at least once thereafter) in six African countries (Ethiopia, Malawi, Niger, Nigeria, Tanzania and Uganda). Together, these countries cover a wide array of agro-ecological zones and farming systems, and make up approximately 40% of the region's population. Detailed labor input data was collected at the plot-level for each household member and across activity domains, enabling systematic estimation of women's time contribution to agricultural (crop) production as well as a systematic comparison across settings, crops and activities.

The primary objective of this paper is to provide detailed, systematic and nationally representative evidence on female labor input into agricultural activities for a series of countries in SSA. By putting the premise of the reasoning advanced above on more solid empirical footing, it helps assess its validity, while informing the policy dialogue on gender and agriculture more broadly. The focus is on time allocation to crop production. Crop production continues to make up the bulk of agricultural GDP in most African countries. Gender disaggregated data on labor input in livestock activities are also not yet systematically available. Food processing, which is typically the exclusive domain of women, is further excluded, consistent with the time use surveys reviewed by [FAO \(2011\)](#) and the aforementioned claims regarding female labor share in agriculture. The study further probes into the underlying processes and factors that affect, at the household-level, women's time allocation to crop production. The robustness of the findings is assessed by controlling for possible gender and knowledge bias in reporting, which may occur when responses on labor input come from proxies (i.e. other household members) as opposed to self-reporting.⁵

By way of headline number, the population-weighted female share of labor in crop production across the six African countries examined here is 40%. This is substantially less than the widely quoted figures of 60–80%. Consistent with [FAO \(2011\)](#), wide variation is recorded across (and within) countries, with the country-level shares ranging from 56% in Uganda to only 24% in Niger. For Nigeria as a whole, the share is 37%; it is only 32% in the North, and 51% in the South.⁶ The empirical finding that women do not disproportionately contribute to crop production proves robust to possible gender and knowledge biases in reporting. The primary factor underlying differences in female labor input across households is

the gender composition of the household. There is little systematic difference across countries in female labor provision across crops or agricultural activities. These findings attenuate the premise on which recent calls for boosting agricultural output by increasing female agricultural (whether land or labor) productivity are based. However, they do in and of themselves neither invalidate nor validate the conclusion of the argument. Other premises, such as substantial gender gaps in land productivity, may support the same conclusion. Additionally, there may be many other reasons for fostering female agricultural productivity, beyond boosting agricultural output, such as female empowerment. The key objective here is to put the policy dialogue on solid empirical footing.

The paper proceeds by describing the data in more detail and discussing the key methodological considerations in Section 2. The empirical findings regarding the female labor share in crop production in Africa, their robustness, and the key correlates are presented in Section 3. Section 4 concludes.

2. Data and methods

2.1. Understanding the information base

Nationally-representative time use surveys or labor force surveys that depict the relative labor contributions of men and women in agriculture within an appropriate reference period remain largely lacking ([FAO, 2011](#)). As such, the nationally-representative household surveys conducted under the LSMS-ISA initiative present a rather unique opportunity to study and compare the female labor share in agriculture across diverse settings. These data form the information base of the paper. In particular, the analysis uses the data from Ethiopia Socioeconomic Survey 2011/12, Malawi Third Integrated Household Survey 2010/11, Niger l'Enquête Nationale sur les Conditions de Vie des Ménages et l'Agriculture 2011, Nigeria General Household Survey – Panel 2012/13, Tanzania National Panel Survey 2010/11, and Uganda National Panel Survey 2010/11.⁷

In each LSMS-ISA country, all sample households are administered a multi-topic Household Questionnaire.⁸ Agricultural households, who are defined as owning and/or cultivating land and/or owning livestock, are additionally administered an Agricultural Questionnaire. The latter records (i) geo-referenced plot locations and Global Positioning System (GPS)-based plot areas, (ii) collects plot-level information on input use, cultivation and production, (iii) identifies the household members that manage and/or own each plot, and (iv) most importantly, solicits individual-disaggregated labor input at the plot-level. The information is collected separately for each agricultural season in the country (if there is more than one), and often in two visits, with information on the post-planting/pre-harvest and the post-harvest outcomes collected during the first and second visit, respectively.

While the data are collected at the plot-level in all countries, the quantification of the labor input at the plot level differs slightly across countries. The surveys in Malawi, Nigeria and Ethiopia collect data on the number of weeks of work provided by each household member on each plot, differentiated by activity (land

⁴ The LSMS-ISA is a household survey program established with a grant from the Bill and Melinda Gates Foundation to provide financial and technical support to governments in SSA in the design and implementation of multi-topic, national, panel household surveys with a strong focus on agriculture. The program is implemented by the Living Standards Measurement Study (LSMS) in the Development Research Group of the World Bank (www.worldbank.org/lsmis).

⁵ See [Bardasi et al. \(2011\)](#) for an analysis of the effects of proxy versus self-reporting on employment statistics.

⁶ The female share of agricultural labor for Nigeria overall may seem low at 37% given that the shares for the North and South are 32% and 51% respectively. However, although the population is about evenly split between North and South, a much larger share of the Nigerian population engaged in agriculture resides in the North.

⁷ All survey rounds, with the exception of Ethiopia Socioeconomic Survey (ESS) 2011/12, are representative at least at the national, rural and urban levels. The ESS 2011/12 round provides representative statistics for rural areas and small towns, which, based on population estimates from the 2007 Population Census, are defined as towns with populations of less than 10,000. See [Appendix A](#) for basic information regarding each survey used in the analysis.

⁸ The Household Questionnaire geo-references the dwelling's location and collects individual-disaggregated information on demographics, education, health, employment, anthropometrics, and control of off-farm income as well as data on housing, food and non-food consumption and expenditures, and asset ownership, among other topics.

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