



Assessing Gender Inequality in Food Security among Small-holder Farm Households in urban and rural South Africa

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Summary. — With the ongoing changes in climate, household food insecurity is likely to be more widespread in most small-holder and subsistence farm households in sub-Saharan Africa. However, the existence and extent of gendered household food security—or lack thereof—remains unclear. This study extends existing knowledge by assessing gender inequality in household food (in) security among small-holder farm households in urban and rural areas of South Africa. In doing-so, we use the gender of the head of household and treatment effects framework. Our results show that male-headed households are more food secure compared to female-headed households, with the latter depending more on agriculture to increase household food levels. We further find that the household food security gap between male- and female-headed households is wider in rural than in urban areas, where rural male- and female-headed households are more likely to report chronic food insecurity, i.e., are more likely than their urban counterparts to experience hunger. Interestingly, the effects of climatic characteristics on household food security are more apparent in rural than in urban areas. Our findings suggest that household food security initiatives are likely to be more effective, in closing the gender gap in household food security, if aligned with policies on urban and rural agriculture and development.

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1. INTRODUCTION

Household food security is defined as year-round access to an adequate supply of nutritious and safe food to meet the nutritional needs of all household members: men and women, boys, and girls¹ (WB, 2009, p. 12). At present, although South Africa has the second largest economy in Africa, with an adequate food supply at the national level, this has not translated into food security at the household level (Shisana, Labadarios, Rehle, Simbayi, & Zuma, 2014). The recent statistics show that 45.6% of South Africans are food secure, while 28.3% are at risk of hunger and 26% are actually food insecure, i.e., experience hunger (Shisana *et al.*, 2014). Vulnerability to food insecurity is likely to be more pronounced in female-headed and rural South African households, in comparison to male-headed and urban households (DOA, 2002). For example, one-third of South African households are headed by women, and in 1996, 52% of them spent a mere R1,000 per month on food, compared to only 35% of male-headed households who spent the same amount. Further, while 25% of male-headed households spent R3,500 per month, only 8% of female-headed households could afford to pay this amount for food (DOA, 2002). Regarding urban and rural patterns, Shisana *et al.* (2014) show that 32.4% of urban informal and 32.8% of rural formal South Africans are more food insecure compared to those in urban formal areas (19.0%).

In an endeavour to increase household food security and meet the Millennium Development Goals (MDGs), South Africa's programmes and interventions are strongly grounded in agriculture (RSA, 2014a), as elsewhere around the globe (FAO, 2014). In South Africa, an estimated 20.7% of households engage in agriculture, and 65% of these households use agriculture purely as a subsistence strategy to meet household food demand (RSA, 2014a). With the arrival of climate change, however, the strategy of using small-scale subsistence farming to promote food security continues to look bleak.

Food security, or the lack thereof, is by nature multifaceted; although it remains a significant concern in the policymaking arena, it is increasingly being recognized that more information is needed to guide decision makers (Nelson, Chaudhury, & Tranberg, 2013). The same has been noted in South Africa (RSA, 2014a). Added to this, female headed households continue to increase in sub-Saharan Africa (Horrell & Krishnan, 2007), bringing an increase in household gender inequalities. South Africa² appears to have the highest number of female-headed households, currently estimated to be 41.9%. This is relatively high, considering that the range of female-headed households' in West Africa is between 9.5% and 22.9%, while in East Africa it is between 24.4% and 29.5% (WB, 2016).

With increasing concerns about the increase of female headship, poor levels of household food security, the dependence on agriculture to improve these poor levels and the detrimental effects of climate change on agricultural productivity, areas that were somewhat dormant have found their way back into the literature with growing interest. The prime examples include male–female³ and urban–rural⁴ small-holder agriculture. However, limited evidence exists on household gender inequalities in food security and the participation of households in agricultural activities to increase food security in South Africa and the greater part of sub-Saharan Africa. This has been documented by the Food and Agriculture Organisation of the United Nations (FAO) which notes that: “In all developing regions, female-headed rural households are among the poorest of the poor... There is still

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limited understanding and few research results concerning the intersection of climate change, gender, and agricultural development” (Nelson *et al.*, 2013, p. 1).

In an attempt to provide the needed evidence to increase our understanding, this study explores the following: first, the role of agriculture in the food security of male- and female-headed households in urban and rural areas; second, the differences in the determinants of food security between male- and female-headed farm households; and third, the impact of gender of the head of household and geographical location on food security. Our study builds on the existing literature (see, e.g., Crush, Hovorka, & Tevera, 2011; Horrell & Krishnan, 2007; Ibnouf, 2011; Levin, Ruel, Morris, Maxwell, Armaklemesu, & Ahiadeke, 1999; Mallick & Rafi, 2010; Mkwambisi, Fraser, & Dougill, 2011; Modirwa & Oladele, 2012; Owusu, Abdulai, & Abdul-Rahman, 2011) and extends the more recent studies by Kassie, Ndiritu, and Stage (2014) and Tibesigwa, Visser, Hunter, Collinson, and Twine (2015). The recent two studies investigated the role of gender in food security in rural areas of Kenya and South Africa. In our study, we consolidate past studies and compare male–female and urban–rural small-holder subsistence farm households, who by definition engage in agriculture to boost household income and/or food levels. Generally, unlike rural agriculture, the role of urban agriculture in food security has received less attention, as indicated in a FAO report: “Poverty and food insecurity have been considered for decades to be rural problems. Some analyses have shown however that urban poverty is not only growing but has tended to be underestimated in the past... In urban settings, lack of income translates more directly into lack of food than in rural settings. In all regions, urban and peri-urban agriculture is an activity in which the poor are disproportionately represented” (Hoorweg & Munro-Faure, 2008, p. 10). Hence, our study will provide new insights by addressing urban agriculture, in addition to rural agriculture, in relation to food security.

From a policy perspective, documenting the current male–female and urban–rural evidence is important because gender inequalities, rural development and urban planning are at the heart of policy concerns of most countries in the developing regions. In our investigation, we use the 2008 nationwide National Income Dynamics Study (NIDS) and a treatment-effects regression framework to tease out the gender differences in food security of rural and urban small-holder farmers in South Africa. To capture food security, we use both a subjective and an objective measure. The former is a self-reported perception of household food, where household food security takes a value of one and food insecurity takes a value of zero, while the objective measure is per capita household monthly food consumption. The conceptualization of these measures follows FAO (2002) and previous studies.

Overall, our analysis yields interesting results. First, similar to Kassie *et al.* (2014) and Tibesigwa, Visser, Hunter *et al.* (2015), we find that male-headed households are more food secure than female-headed households. This finding is consistent under objective and subjective measures. Second, extending the study of Kassie *et al.* (2014) and Tibesigwa, Visser, Hunter *et al.* (2015), we find that, although male-headed households are more food secure in both rural and urban areas, the gender gap in food security is wider in rural than in urban areas. Third, and extending the current studies, we observe that the contribution of agriculture to food security is higher in female-headed households, especially those in rural areas. Fourth, and further extending the current studies, we find that male- and female-headed households in rural areas are more likely to report chronic food insecurity than those

in urban areas, where chronic food insecurity refers to having less than adequate food, i.e., the experience of hunger. This is in contrast to urban households, who are more likely to report either break-even, i.e., household food was just adequate and surplus food, i.e., household food was more than adequate and, therefore, they were food secure. Fifth, the climate and soil characteristics, especially precipitation, are more significant in predicting food security in rural than in urban areas. Also, winter climate appears to have a uniform impact on food security for both male- and female-headed households, while summer climate is more significant in predicting the food security of female-headed households. The rest of the paper is structured as follows. Section 2 summarizes the literature on food security and agriculture among male and female farmers in urban and rural areas. Section 3 describes the estimation strategy. Section 4 provides the empirical results and Section 5 discusses our conclusion.

2. FOOD SECURITY AND THE PARTICIPATION OF MALE AND FEMALE FARMERS IN URBAN AND RURAL AGRICULTURE

Fifteen years into the Millennium Development Goals (MDGs), Africa still remains overwhelmed by food insecurity. A recent FAO report on “The State of Food Insecurity in the World” states that: “A stock-taking of where we stand on reducing hunger and malnutrition shows that progress in hunger reduction at the global level has continued but that food insecurity is still a challenge to be conquered” (FAO, 2014, p. 4). The report goes on to note that: “In Africa, there has been insufficient progress toward international hunger targets, especially in the sub-Saharan region, where more than one in four people remain undernourished—the highest prevalence of any region in the world” (FAO, 2014, p. 9). Yet another FAO report, “Growing Greener Cities in Africa, states that: “The challenge of achieving a zero hunger world—in which everyone is adequately nourished and all food systems are resilient—is as urgent in African cities as it is in rural areas” (FAO, 2012, p. 5). This alludes to the fact that food security, or the lack thereof, is both a rural and an urban problem. Agriculture, and, more specifically, urban (FAO, 2012; Rogerson, 2003; Zezza & Tasciotti, 2010) and rural agriculture (FAO, 2014) appear to be one of the solutions to this stubborn problem, especially if practiced by poor households.⁵ In South Africa, approximately 20.7% of all households engage in agriculture, which is equivalent to about three million households (RSA, 2014a).

However, agriculture will not have similar effects on rural and urban households’ food security owing to the distinctive features of the two groups. That is, there are substantial variations between urban and rural areas (e.g., economic opportunities, population density, access to financial markets, tenure security, and access to water), which are likely to affect agricultural productivity in different ways.⁶ Even gender roles differ between rural and urban areas (Oberhauser, Mandel, & Hapke, 2004). Hence, further complicating the agricultural productivity differences in urban and rural areas is gender inequality (Crush *et al.*, 2011; Hovorka, 2005). In general, female-headed households are more vulnerable than male-headed households (Babatunde, Omotesho, Olorunsanya, & Owotoki, 2008; Kassie *et al.*, 2014; Mallick & Rafi, 2010). This inequality is also evident among small-holder farming households (Babatunde *et al.*, 2008; Tibesigwa, Visser, Hunter *et al.*, 2015). For example it is estimated that 61% of South African farmers are women and close to two thirds of them

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