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**Gender Control and Labour Input: Who Controls the Proceeds
from Staple Crop Production among Zambian Farmers?**

by

Arthur M. Shipekesa and T.S. Jayne

Working Paper 68

September 2012

Indaba Agricultural Policy Research Institute (IAPRI)

Lusaka, Zambia

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EXECUTIVE SUMMARY

Because gender roles and relations are dynamic, programs built on a solid up-to-date understanding of how men and women share labor responsibilities and the proceeds from their agricultural activities have the potential to bring forth positive outcomes. Better information on gender-based constraints and intra-household power dynamics form the foundation for programs that can enhance gender equity.

So far, there is a lack of evidence in Zambia relating to the control of proceeds from crop production and the proportion of women contributing to agricultural labour. In the 2010 Crop Forecast Survey (CFS), a question was posed as to who was responsible for the largest respective staple crop field for over 10,000 smallholder farmers. This data provides an empirical basis for an exploratory analysis of gender control and labour input on the largest maize, cassava, and rice fields. Therefore, the objective of this study is to provide basic information on intra-household gender-linked differences as well as related gender divisions of labour on the three staple crops in Zambia.

Five main findings emanate from the analysis in this paper:

1. The agricultural labour activities are roughly equally split between males and females in the production of the three staples in Zambia. For most of the labour activities we find that these differences are insignificant;
2. Most of the maize, rice, and cassava fields in Zambia are controlled by men. There are small to moderate regional variations, but the general conclusion of male decision making and control over these staple food crops apply nationwide;
3. Household headship is the most important determinant of the gender of the person controlling the largest field. In terms of area, women control over 90 percent of the largest maize fields, and 79.6% of the cassava fields in female-headed households. By contrast men control over 90 percent of maize and rice fields in male-headed households. The fact that survey respondents indicated that most rural households in Zambia are headed by a man explains why, overall, most fields are controlled by a man;
4. These conclusions generally apply to both matrilineal and patrilineal areas. The land inheritance systems in Zambia have little impact on the extent of male control; and
5. Finally, the proportion of maize and rice fields controlled by a man rises as the household's degree of farm commercialization increases. Over 80% of the largest maize fields are controlled by a man in households where over half of maize production is marketed.

CONTENTS

ACKNOWLEDGEMENTS	iii
EXECUTIVE SUMMARY	v
LIST OF TABLES	vii
ACRONYMS	viii
1. INTRODUCTION	1
2. DATA	2
3. RESULTS	3
3.1. Gender Differences in Labour Input	3
3.2. Gender Differences in Control of the Proceeds from the Largest Field.....	3
4. CONCLUSION.....	7
REFERENCES	8

LIST OF TABLES

TABLE	PAGE
1. Percentage of Family Labour Hours in Cultivation Provided by a Woman, by Activity, 2010/11	3
2. Proportion of Households with Their Largest Crop Field Being Controlled by a Woman, By Province,2010/11	4
3. Area of Largest Field Controlled by a Woman, by Headship, 2010/11	5
4. Proportion of Households with the Largest Field Being Controlled by a Woman, by Type of District Inheritance System, 2010/11	5
5. Categorization of Household Commercialization Index (HCI) in Maize and Rice, 2010/11	6

ACRONYMS

CFS	Crop Forecast Survey
CSO	Zambia's Central Statistical Office
HIV/AIDS	Human Immune Virus, Acquired Immuno-Deficiency Syndrome
IAPRI	Indaba Agricultural Policy Research Institute
MAL	Ministry of Agriculture and Livestock, Zambia
MSU	Michigan State University
SADC	Southern Africa Development Community
SIDA	Swedish International Development Agency
USAID	United States Agency for International Development

1. INTRODUCTION

A better understanding of gender differences in the rural economy can lead to poverty reducing outcomes, not only for women but for their households as a whole. Moreover, gender is a dynamic component of developmental programs and if finely tuned has the potential to deliver positive changes in rural households. Issues of gender are also reflected in the 1997 Southern Africa Development Community Declaration on Gender Development (SADC 1997), to which Zambia is party. However, while it is widely understood that women play a major role in African agriculture, the implications of this fact for policy and programmatic development remain unclear. Better information on intra-household gender based constraints and opportunities in agriculture and power dynamics is needed in order to implement effective interventions for promoting rural agricultural livelihoods (World Bank 2009).

According to the HIV/AIDS and Gender Impact Report of the Ministry of Agriculture and Livestock (MAL), Zambian women and youths contribute seventy percent of agricultural labour, and yet have little access to productive assets and are marginalized in the decision-making processes at both the household and community levels (MAL 2004). Fontana (2003), further shows that this most female-intensive sector is the least skill-intensive sector in the market economy in Zambia. These gender differences become more acute especially when productive resources are eroded, making female- and youth-headed households the most vulnerable of the rural poor. Consequently, the promotion of gender equity as a means to more effectively achieve household and national food security, job creation, poverty reduction, remains an elusive goal.

Doss (2001) and Quisumbing and Pandolfelli (2008) have argued for targeted research that accounts for the heterogeneity of farm households so that specific programmes can be targeted to households according to their specific circumstances. Developing technical and institutional innovations for women and their households based on the unique constraints they face have been increasingly recognized as potential conduits through which this approach can be operationalized and possibly close the gender induced production gap in agriculture (FAO 2011).

This study reports basic exploratory information on gender-linked differences in the control over farm households' largest maize, cassava and rice fields as well as the related gender division of farm labour on these three crops. Specifically, we report regional differences in the relative male and female labour input on maize, cassava, and rice fields, and examine the relationship between relative labour input by males and females, and control over the decisions on maize, cassava, and rice fields.

2. DATA

The study utilizes nationally representative household survey data drawn from the Crop Forecast Surveys (CFS), collected annually by the Central Statistical Office (CSO) in collaboration with the Ministry of Agriculture and Livestock (MAL). The CFS provides a comprehensive and statistically valid source of information on approximately 14,000 maize fields grown by an approximate 13,000 small- and medium-scale farm households in Zambia. Weights derived by CSO are used to estimate national level findings for the country's 1.5 million small- and medium-scale farm households,

In the 2011 CFS, a new question was added that asked which household member controlled the decisions on the particular field. In addition, the 2011 CFS asks respondents to indicate how much of their *own* family labour was provided on various crop production and marketing tasks, including, land preparation, planting, weeding, harvesting, shelling, drying, and marketing. All of these labour tasks are differentiated by gender.

3. RESULTS

3.1. Gender Differences in Labour Input

Table 1 shows the percentage of specific farm activities that are performed by women based on the nationally representative CFS. Perhaps surprisingly, the labour activities are roughly equally split between males and females, especially in maize and rice production. By contrast, women devote 60.4% of family labour hours to cassava, and this is statistically greater than male labour hours at the 5% significance level. Men provide more labour hours only in transporting maize from field to the homestead. The labour activities of land preparation, weeding, fertilizer application and planting are primarily undertaken by females, although the extent of the unevenness is less than often believed, especially for maize fields. In fact, the gender difference in the proportion of labour hours is statistically insignificant in maize production. Women account for 65.1% and 76.1% of the harvesting of cassava and processing into chips. Also, women provide 62.3% of the labour devoted to threshing and polishing of rice, but there are no significant gender differences in the amount of labour hours devoted to most of the other labour activities.

3.2. Gender Differences in Control of the Proceeds from the Largest Field

Table 2 shows the proportion of farm households' largest maize, cassava and rice fields that are controlled by a man or woman. According to the Crop Forecast Survey for 2010/11 season, 1,274,344 small and medium scale farm households in Zambia reported growing maize on their largest field. Cassava and rice were grown by 541,042 and 63,870 households, respectively.

The findings in Table 2 show significant control by males (74.4%) over the largest maize field in Zambia. Also, males controlled the proceeds from 62.1% of cassava and 69.2% of rice fields. Therefore, for all the three major staples, over 60% of the largest crop fields under consideration were controlled by men in Zambia.

Table 1. Percentage of Family Labour Hours in Cultivation Provided by a Woman, by Activity, 2010/11

Activity	Maize	Cassava	Rice
	%	%	%
Land preparation	50	51	50
Planting	54	58	55
Fertilizer application	50		
Weeding	53	59	54
Harvesting	52	65	53
Transporting crop from the field to homestead	49	63	53
Shelling and packing	52		
Processing into chips		76	
Threshing and polishing			62
National	51	60	53

Source: Central Statistical Office 2011.

Table 2. Proportion of Households with their Largest Crop Field Being Controlled by a Woman, by Province 2010/11

Province	Maize (n=1,274,344)	Cassava (n=541,042)	Rice (n=63,870)
	(%)	(%)	(%)
Central	22.7	27.5	46.8
Copperbelt	27.9	26.1	NF
Eastern	22.8	15.4	34.3
Luapula	27.8	45.4	23.1
Lusaka	30.2	56.8	33.2
Northern	21.8	34.4	27.3
N/Western	22.6	35.2	46.4
Southern	26.4	36.2	NF
Western	38.2	39.9	31.7
National	25.6	37.9	30.2

Source: Central Statistical Office 2011. Note: NF=No field.

Regionally, the distribution shows that Northern Province has the largest proportion of households exhibiting male control followed by North-Western, whereas Western, then Lusaka has the lowest proportion. The results also indicate that the proceeds from the largest cassava field are mostly controlled by men in Eastern, Copperbelt, and Central Provinces. Southern and Copperbelt Provinces reported no rice cultivation. These results clearly indicate that despite the apparent equal splitting of labour roles during crop production, control of most of the fields is within the domain of men.

The results in Table 3 show that of the total hectares devoted to the largest maize fields in Zambia, 80.2% is controlled by men. There is more land (5.4%) under female control in male-headed households than there is land (3.7%) controlled by males in female-headed households. Women are responsible for over 20.4% of hectares devoted to cassava in male-headed households. Also, they control a relatively bigger proportion of total cassava area at the national level than with the other two staple crops. In female-headed households that cultivate rice, we find a relatively higher proportion of men (8.1%) exercising control over the largest field. However, this only translates to 393 hectares of total land within these households. The pattern observed shows that headship is the most important determinant of the gender of the person controlling the largest field. In terms of area, women control over 90% of the largest fields in female-headed households; men control over 90% of the area under maize and rice fields and 79.6% of the area under cassava.

Table 4 shows that among women controlling the largest maize and cassava fields in Zambia, over three-quarters can be found in matrilineal areas. Among women controlling the largest rice fields, roughly 62% of these cases are also in matrilineal areas. Nonetheless, the results still underscore the preceding finding of male control even in matrilineal areas; (74.9%) of the largest maize fields in matrilineal areas are controlled by men. A similar pattern is seen in cassava and rice production. Also, there exists significant control by men in patrilineal districts in all three staple crops. The findings in Table 4 clearly indicate that there is hardly any impact on the gender differences (*gender of the person controlling the decisions on the staples' fields*) obtainable within the two types of land inheritance systems in Zambia.

Table 3. Area of Largest Field Controlled by a Woman, by Headship, 2010/11

Head of household	(A) Hectares controlled by a woman (%)	(B) Total hectares under crop	(C=A/B) Proportion of area controlled by a woman (%)
Maize			
Male	53,080 (23.0)	981,672	5.4
Female	177,973 (77.0)	184,859	96.3
National	231,052 (100)	1,166,531	19.8
Cassava			
Male	42,790(47.9)	209,372	20.4
Female	46,493(52.1)	49,949	93.1
National	89,283(100)	259,321	34.4
Rice			
Male	2,185(32.9)	24,476	8.9
Female	4,461(67.1)	4,854	91.9
National	6,646(100)	29,330	22.7

Source: Central Statistical Office 2011.

Table 4. Proportion of Households with the Largest Field Being Controlled by a Woman, by Type of District Inheritance System, 2010/11

Type of inheritance system	(A) Number of households where largest field is controlled by a woman (%)	(B) Total number of households	(C=A/B) Proportion of households with largest field being controlled by a woman (%)
Maize			
Matrilineal	246,635 (75.7)	984,509	25.1
Patrilineal	79,330 (24.3)	286,835	27.4
National	325,965 (100)	1,274,344	25.6
Cassava			
Matrilineal	162,036 (78.9)	427,7979	37.9
Patrilineal	43,276(21.1)	113,244	38.2
National	205,313 (100)	541,042	37.9
Rice			
Matrilineal	12,025(62.3)	42,076	28.6
Patrilineal	7,289(37.7)	21,793	33.4
National	19,314(100)	63,870	30.2

Source: Central Statistical Office 2011.

The Household Commercialization Index (HCI) is a measure of the level of market participation amongst smallholder farmers. The HCI is measured as the ratio of the value of crop sales over the value of crop production in percentage terms. The HCI can vary from zero (for households that sell none of the production) to 100 (for households that sell all of their production). The index was only computed for maize and rice production; information on cassava sales was not captured in the survey.

Table 5 shows that 44% and 46.8% of the respective maize and rice producing households sold some portion of their produce and hence had HCI scores greater than zero. The greatest proportions of these households (households that are commercialized to some extent) fall within the 0.25-0.75 HCI band. There is marked difference between the proportions of fields controlled by a woman in commercialized vs. non-commercialized households. In both crops, results show that men are significantly more commercialized than women. There is a widening gap over control between the two sexes as the level of commercialization increases. The proportion of fields controlled by a man rises as the household's degree of commercialization increases. Therefore, the skewed pattern towards men being observed in the control over the largest field could partially be attributed to the level of commercialization prevailing in the staple crop.

Table 5. Categorization of Household Commercialization Index (HCI) in Maize* and Rice*, 2010/11

HCI	Maize Households (1,274,344) %	Proportion of households with maize field controlled by		Rice Households (63,870) %	Proportion of households with rice field controlled by	
		Female %	Male %		Female %	Male %
Not Commercialized (=0)	56	29.5	70.5	53.2	36.5	63.5
> 0 to 10	1.6	23.0	77.0	0.4	21.2	78.8
> 10 to 25	6.5	22.3	77.7	1.6	21.4	78.6
> 25 to 50	14.4	23.3	76.7	15.3	21.2	78.8
> 50 to 75	13.7	18.3	81.7	17.2	26.2	73.8
> 75 to < 100	7	18.0	82.0	9.8	20.0	80.0
Sold everything (=100)	0.8	14.2	85.8	2.5	18.4	81.6

Source: Central Statistical Office 2011.

Note: * Indicate only households with the largest maize and rice fields.

4. CONCLUSIONS

The paper has addressed the gender disparities in the control of crop production for the major food staples in Zambia. We also examine the extent to which control of crop production is congruent with gender-differences in labour provided for the production of these crops. Five findings emanate from this analysis:

1. The labour activities are roughly equally split between males and females in the production of the three staples in Zambia. For most of the labour activities we find that these differences are insignificant.
2. Most of the maize, rice, and cassava fields in Zambia are controlled by men. There are small to moderate regional variations, but the general conclusion of male decision making and control over these staple food crops apply nationwide.
3. Household headship is the most important determinant of the gender of the person controlling the largest field. Women are mainly responsible over the largest field in female-headed households; men are mainly responsible in male-headed households.
4. These conclusions generally apply to both matrilineal and patrilineal areas. The land inheritance systems in Zambia have little impact on the extent of male control; and
5. Finally, the proportion of maize and rice fields controlled by a man rises as the household's degree of farm commercialization increases. Over 80% of the largest maize fields are controlled by a man in households where over half of maize production is marketed.

These findings suggest that sweeping generalizations that women account for most of the labour in Zambian agriculture appears to be misleading. Crucially, there is a high correlation between gender of household head and the gender of the person controlling the largest staple field. Male dominance in control over the largest staple fields appears to be related to the power assigned to headship. This dominance is not dependent on the proportion of labour time provided by men, and in this sense the conventional wisdom of male dominance over farm decision making and control appears to be valid. Policies and programmes designed to empower women and enable them to have greater control over the fruits of their labour will need to address culturally sensitive issues of the meaning of headship and intra-household resource allocations and decision making. These issues are beyond the scope of this paper, but the findings here provide a more solid empirical foundation for the patterns of gender labour allocation and control that currently exists in Zambian agriculture.

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