

Gender and Livelihoods in Commercial Sugarcane Production: A Case Study of Contract Farming in Magobbo, Zambia

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Cover photo

Female irrigation worker at work on Zambia Sugar's plantation (Chrispin Matenga, 2013)

Table of contents

Summary.....	6
Acknowledgements.....	2
Table of Acronyms.....	4
List of tables and illustrations.....	5
1. Introduction.....	7
2. Methods.....	8
3. Gendered Outcomes in Agricultural Commercialization.....	8
4. Women’s Access to Land in Zambia.....	9
5. Context of the Small-scale Outgrower Scheme.....	10
6. Results.....	12
6.1 Women’s Participation in the Outgrower Scheme and Voice in Decision-making.....	12
6.1.1 Trust Governance.....	12
6.1.2 Household Decision-making.....	13
6.2 Employment and Changes in Women’s Labour Patterns.....	14
6.3 Access to Water and Natural Resources.....	16
6.4 Changes in Livelihoods and Well-being for Women and Men.....	17
7. Conclusion.....	18
References.....	20

List of acronyms

ACP	African, Caribbean and Pacific Group of States
AMS	Multi-annual Indicative Programme for the Accompanying Measures for Sugar
CGAM	Cane Growers' Association of Mazabuka
EU	European Union
GRZ	Government of the Republic of Zambia
KASCOL	Kaleya Smallholders Company Ltd.
LACA	Land and Agricultural Commercialisation in Africa
PLAAS	The Institute for Poverty, Land and Agrarian Studies

List of Tables and Photos

Tables

Table 1: Breakdown of the Expansion in the Area Available for Sugarcane Farming from 2006 to 2013

Table 2: Employment Statistics for Nanga Farms Disaggregated by Gender for Two Illustrative Months

Table 3: Women's Perception of their Change in Workload

Photos

Cover photo: Female irrigation worker at work in the Nakambala Estate

Photo 1: Young cane crop in fields near Magobbo, Zambia

Photo 2: Members of the Magobbo Trust executive committee standing in front of cane fields pictured at a promotional booth in Zambia's agricultural trade fair in Lusaka

Photo 3: Construction of new house in Magobbo, Zambia with income from sugarcane farming

Summary

This paper presents a case study of farmers' recent transition from growing traditional crops to cultivating sugarcane under a contract farming arrangement in Magobbo, Zambia. Responding to the need for a greater understanding of how the expansion of large-scale commercial agriculture impacts women, this study examines women's control over resources, employment and labour, and impacts on their livelihoods. The research revealed that existing gender inequalities were perpetuated within new forms of agricultural production, but that widows experienced unique benefits compared to married women through increased status and income. A brief exploration of the gains and risks of commercialization in Magobbo illustrates there are significant benefits derived from the switch to sugarcane production, but also threats to the sustainability of those gains. Overall, this paper contributes to understanding the complexities of agricultural commercialization through contract farming arrangements, and the resulting gender and livelihood implications.

1. Introduction

Large-scale land acquisitions increased in recent years after the 2007–2008 food crisis. Together, biofuel production, expected increases in agricultural commodity prices and concerns over food security are driving up the demand for agricultural land. Africa has been the target of much of the recent acquisitions and investments in land. The International Land Coalition estimates nearly 24m ha of land deals were concluded in Africa out of a total of 36m ha since 2000 (Anseeuw 2014; Land Matrix 2014). Researchers have sought to understand the drivers of land acquisitions, their scale and their impact.

One of the topics in the literature on large-scale land acquisitions is the distinct social outcomes of different farming models (Smalley 2013; Vermeulen and Cotula 2010). Contract farming, whereby farmers can be vertically integrated as suppliers in producer value chains, is for instance perceived by some to provide smallholders with better development opportunities compared to other models—a win-win arrangement for farmers and the contracting companies (Deininger et al. 2011; Hallam 2011; Liversage 2011; von Braun and Meinzen-Dick 2009).

One particular type of contract farming arrangement, the nucleus-estate outgrower model, is increasing in significance (Hall 2011). This model involves a large central plantation (the nucleus-estate) and processing facilities surrounded by outgrower farms that can range widely in size. In this way, small farms become subsumed into large-scale production without the need for companies to acquire direct ownership of all the land necessary for their production. It has become common policy to focus on the incorporation of smallholders into agricultural value chains in Africa (Prowse 2012; Oya 2012; UNCTAD 2009; Little and Watts 1994). Several countries promote large-scale commercial investment to increase agricultural competitiveness, while integrating smallholder production into global value chains (Oya 2012). Political motivations increase the appeal and significance of the model as well. Large-scale commercial agricultural projects that return to large plantation style models may be politically unviable if there is no attempt to vertically integrate smallholders within these projects.

Throughout the literature on the recent expansion in large-scale commercial agriculture, gendered impacts have received limited attention (see Behrman et al. 2012; Julia and White 2012; Daley 2011). There is a need for more empirical evidence to better understand how current processes of large-scale agricultural commercialisation are affecting women. Understanding how large-scale deals may change women's access to land and resources, influence labour burdens and affect earnings is particularly important since women make a significant contribution to the world's production of agricultural commodities and food.¹ An investment in agriculture presents the opportunity to re-negotiate the distribution of resources. When land deals are well-designed, existing inequalities can be challenged and the distribution of assets can be advantageous to women (Behrman et al. 2012). At the

same time, existing inequalities can be perpetuated or discrimination against women can be worsened (Daley 2011).

Given the likelihood that contract farming arrangements will increase and the lack of empirical evidence on the gendered impacts of increasing commercial pressures on land, this paper explores two interrelated questions: (1) how are women impacted by the expansion of commercial farming in the nucleus-estate outgrower model, and (2) what determines these gender differentiated outcomes? The paper will specifically examine these questions through exploring women's control over resources, employment and labour, and impacts on livelihoods. This study focuses on the expansion in sugarcane commercialisation in Mazabuka District, Zambia. In particular, it examines one sugarcane outgrower scheme in the Magobbo community that began supplying sugarcane to Zambia Sugar Plc. in 2011.

Research for this study is also aligned with several of the questions and concepts in gender analysis that guided the Land and Agricultural Commercialisation in Africa (LACA) project carried out by the Future Agricultures Consortium (Dancer and Tsikata 2015). This paper therefore asks questions such as: what is the gendered nature of existing land tenure systems? And how does the tenure system impact women's access to land and ability to become outgrowers? The paper applies the concepts of gender relations and gender ideology by examining how the social norms of the marriage contract and control over land affect different groups of women. In exploring women's ability to shape decisions, the paper asks how women are involved in decision-making at the community and intra-household level. With regard to labour, the paper examines access to wage employment and women's concentration in certain types of agricultural work, as well as changes in women's reproductive labour.

This research also makes comparisons with the contract farming literature. Previous work has demonstrated that existing gender inequalities in access and control over land have often meant that women have been excluded from holding contracts. Though women are excluded as contract holders, contract farming has often increased the agricultural labour burden in the absence of control over increased income (Dolan 2001; Carney 1994; von Bülow and Sørensen 1993). I therefore anticipated that women would not form the majority of the contract holders and that their labour burden would increase. Although low numbers of women were contract holders in Magobbo, contrary to what is common in contract farming, the findings reveal that women's overall productive labour burden did not increase because of the business model employed in this particular outgrower scheme.

Findings from this study also confirm that existing gender ideology curtails women's control of land within marriage and negatively affects women's ability to become contract holders. On the other hand, widows have benefited from participation in the scheme through gains in their social status. This case demonstrates the importance of considering these distinctions among

women. Married women, for instance, are disadvantaged in their participation in the scheme and control over household income. Married and widowed alike, however, are both disadvantaged through their access to employment opportunities and reduction in access to natural resources.

Informed by this analysis, I find that the existing gender inequalities and norms interact with the structure of the outgrower model to determine the opportunities available to women and the impacts on their livelihoods. While this scheme does not significantly worsen inequalities for women, it perpetuates existing ones within new forms of production. Overall, my analysis reveals that the sugarcane outgrower scheme has produced some opportunities for women, particularly for widows, but has produced an allocation of benefits less favourable to women overall. There are also important ways that the expansion in sugarcane production is producing gains and risks for both women and men. Through the case of the Magobbo outgrowers, this paper contributes to an understanding of gender differentiated outcomes from commercial pressures on land in the nucleus-estate outgrower model. It also sheds light on the complex ways in which contract farming arrangements are structured and the resulting livelihood implications.

2. Methods

This study uses an idiographic approach to assess the extent to which this case conforms or deviates from the typical allocations of costs and benefits for women in the contract farming and gender and land deals literature. Within the Mazabuka District, the area allotted for sugarcane production expanded by over 11,900 ha since 2006, in response to changes in European Union trade regulation that governs sugar, which created an incentive to supply greater quantities of sugar to their markets.² Most of the expansion took place on large-scale commercial farms in the area surrounding the plantation, with a smaller proportion on smallholders' farms. The combination of a large-scale plantation surrounded by outgrowers makes this site a fairly typical example of the nucleus-estate outgrower model and justifies its selection for studying the emerging trends in gender differentiation. There are also four smallholder outgrower schemes in various stages of development surrounding the 14,455 ha plantation owned by Zambia Sugar. The outgrowers in the Magobbo settlement were chosen as the focus of the study in order to examine a recent conversion to sugarcane outgrowing since they had only begun growing sugarcane in 2010.

The fieldwork was carried out in Mazabuka District, Zambia from June to August 2013 through a mix of qualitative methods including focus group discussions, 25 key informant interviews and a survey carried out with 45 women. Of the women surveyed, 15 were outside the outgrower scheme in surrounding communities, in order to make comparisons of the livelihoods of the two

groups.³ The quantitative survey was designed to examine women's perceptions of how the recent sugarcane outgrower scheme in Magobbo affected their lives in the following areas: 1) crop production and food security; 2) income, including women's control of this income for those who are married; 3) access to natural resources; and 4) women's labour patterns. The purpose of the quantitative survey was to triangulate the information gathered during the qualitative phase. The survey also intended to offer insight into household decision-making between wives and husbands through pointed questions with individual married women on how income was allocated.

A limitation to the study was that the sampling method was purposive in an attempt to target female outgrowers registered with the Magobbo Trust, since it was determined in the qualitative phase that these women were largely widows in female-headed households. Widows are uniquely vulnerable because of their tenuous access to land and lower incomes, and negative impacts are often concentrated among them, so the targeting sought to ensure greater representation and validity of conclusions about this group in the study. Another limitation is that changes in the lives of non-participants around the outgrower scheme could not be explored in depth. Some non-participants were present at the focus groups and 15 were surveyed, but they were less represented in this study than female farmers. Given time constraints and purposive sampling, the survey is not representative of the 94 outgrowers at the time of the fieldwork, though the qualitative data collection sought to triangulate the information from the surveys.

3. Gendered Outcomes in Agricultural Commercialisation

Most analysis of large-scale land acquisition in agriculture concludes that land deals produce negative overall outcomes for women. Researchers have called attention to women losing access to common pool resources, for instance, because their land rights are more insecure. A World Bank study (Deininger et al. 2011) found that women were disadvantaged through a greater burden in accessing common pool resources such as water and firewood. Lack of control over land also kept women out of the negotiations with investors (Cotula 2013; Behrman et al. 2012; Deininger et al. 2011; BMZ 2009).

One of the main potential benefits from increased agricultural commercialisation is the creation of employment for women. Investors that approach communities often promise to create jobs in the community in exchange for the control of agricultural land. Though investors create jobs – often fewer than promised – women may be less likely to benefit from employment, which contributes to their relative income poverty compared to men (Daley 2011). There is

contention over how to interpret trends in gendered employment. Some authors consider the casual employment associated with commercialisation as disadvantageous for women and see this trend as symptomatic of women's generally poor access to formal employment in better-paid positions (Tsikata and Yaro 2014; Wonani et al. 2013). The opposing narrative is that even if women are paid less, such employment may still give them greater economic independence (Cotula 2013).

The type of farming model employed may shape the outcomes of land deals for women (Smalley 2013; Behrman et al. 2012). We know little about the gendered impacts of the nucleus-estate outgrower model, in the context of the recent upsurge in acquisition of agricultural land. Studies by Tsikata and Yaro (2014) and Julia and White (2012) document the mostly negative consequences of contract farming arrangements for women. Julia and White show how women's livelihoods in West Kalimantan, Indonesia were undermined and women lost their right to inherit land when it was formally registered to grow palm oil. In contrast, women had greater access to compensated productive work since they dominate the daily workforce in oil palm plantations in the area. Similarly, women represented 58 percent of the workforce in a community in northern Ghana in the production of mangos on the nucleus estate and processing plant, though women also suffered a loss in access to land for their own farming (Tsikata and Yaro 2014). These findings suggest that contract farming may provide wage labour opportunities for women on the nucleus estate, but at the same time worsen their access to and control of land.

Outside the limited literature on the gendered outcomes of recent land deals, past studies on women in contract farming illustrate how current outgrower schemes may affect women's lives. Studies that provide data on women's roles in contract farming find that men are more often the contract holders (Maertens and Swinnen 2009b; Dolan 2001; Eaton and Shepard 2001; Porter and Phillips-Howard 1997; von Bülow and Sørensen 1993). Women's access to and control of resources, including land, can influence whether women obtain contracts. Dolan's work (2001) studying French beans contract farming in Kenya, for example, shows that women's control of land is a leading predictor of their ability to benefit from contract farming schemes. More than 90 percent of contracts were issued to men since men were overwhelmingly the titleholders as the result of post-independence tenure formalisation, and the companies needed contractors to have secure access to land and labour.

Although women are not often the contract holders, their labour is often heavily involved in contract farming and their labour burden often increases under these arrangements. This can lead to struggles between husbands and wives, as documented throughout sub-Saharan Africa (Raynolds 2002; Dolan 2001; Carney 1994; von Bülow and Sørensen 1993; Glover and Kusterer

1990; Mbilinyi 1988). In their evaluation of contract farming schemes in Africa, Porter and Phillips-Howard (1997) estimate that women's labour was responsible for 60 to 70 percent of sugarcane farming production, but only 43 percent of contract farmers were women. Carney (1994) also demonstrates that men were able to manipulate customary arrangements in The Gambia to gain control over land and women's labour even though the management of a rice outgrower project required joint titles. In this case, only when women had plots of land could they claim their customary usufruct rights and control the benefits of their own labour. Women's rejection of the non-remunerated appropriation of their labour has led to well-documented intra-household disputes. Wives have sometimes responded by withdrawing their labour from the production of the cash crops, or ceasing to apply farming inputs (Dolan 2001; Carney 1994; von Bülow and Sørensen 1993). Given this existing literature, I anticipated that sugarcane commercialisation may create employment opportunities for women. I also expected that women would likely not be contract holders, yet their labour burdens would increase. My findings nuanced these predictions as women's employment opportunities were limited, and their labour burden decreased because of the nature of the farming model.

4. Women's Access to Land in Zambia

Existing scholarship suggests that women's access to and control of land in Zambia could help explain the gendered outcomes seen in this case of contract farming. Like many African countries, Zambia has a dual land system with different laws governing statutory and customary land. Customary land dominates Zambia and covers approximately 94 percent of the land total, though that proportion is diminishing (Place 2009). As a consequence, customary arrangements define the majority of Zambians' ability to access land and their tenure security.

Practices in the customary system may be detrimental for women, and particularly for widowed women. According to the Government of Zambia's Draft Land Policy 2006:

Administration of land based on different customs is not consistent with equality of rights of all people to land. In its current form, customary tenure does not offer sufficient protection for disability care, gender equality and resource conservation as provided for in the Constitution of Zambia. (GRZ 2006: 7)

The document also notes that HIV/AIDS has made widows more vulnerable: 'In many places close relatives grab the land and orphans and widows lose access to the land on which they derived their livelihood' (Ibid). In theory, the statutory system could offer better protection to widows in terms of the guarantee for women's independent access and control of land in the case of

intestate property succession. Women may also have better protection in the formal courts in Zambia since they have the mandate to uphold the constitution, which disallows discrimination based on gender.

Women's access to land in the statutory system is most relevant to this case study since the outgrower production is on statutory lands. Men own at least 90 percent of statutory land in Zambia (Zambia Land Alliance 2002). High transaction costs and burdensome procedures also make it difficult for women to purchase statutory land. Registering a land title often requires multiple trips to Lusaka, the capital. The option of joint titling exists but it is rarely used. Given this context, in practice, women are disadvantaged in both the statutory and customary systems, despite some protections in the former land system (Chapoto et al. 2007; Machina 2002).

Throughout Zambia in both systems of land governance, women can gain access to land through inheritance – a right protected through state law when an estate on statutory land is not governed by a will. A survey commissioned by the Government of Zambia on women's access to land indicated that 22.2 percent of their respondents, the largest group, had gained access through inheritance (GRZ-GIDD 2005).⁴ When there is no will, the Zambia Intestate Succession Act (1989) states that widows should receive at least 20 percent of the inheritance. In fact, the Intestate Succession Act has protected widows in cases of 'property grabbing' where relatives from the late husband's side of the family come to try to control land that is part of the matrimonial property of the widow. The general impression expressed by women in the study area in Mazabuka was that the Zambian government has taken the problem of property grabbing seriously, so their district court currently always sides with the widow.

It is often unnecessary to apply the Intestate Succession Act when there is an oral will that is respected by the family, which specifies the allocation of properties as well as the administrator(s) of the estate. Husbands may or may not choose to leave the land to their wives in these cases. Residents in Magobbo indicated that the decision to register property with the children rather than the widow is influenced by the age of the widow and the perception that children are better placed to manage the land. Also, daughters are less frequently selected as administrators both in wills and in the application of the Intestate Succession Act, since they are expected to leave the community upon marriage. The cultural preference for men's control of land therefore influences the decisions made over statutory lands through wills and the application of the Intestate Succession Act.

Cultural norms influence the conditions under which it is appropriate for a woman to control land. The government survey conducted on women's land ownership suggests that the majority of women have access to land on both statutory and customary lands, but are often unable to control its use. Land ownership and control is seen as the domain of men (GRZ-GIDD 2005). Evidence from the customary system also suggests that marriage limits the ability of women to control land. Of married women, only 12.1 percent controlled decisions about land use and sale, compared to 28.7 percent of women in female-headed households (Milimo 1990 cited in GRZ-GIDD 2005). Widows are thus vulnerable to property grabbing, but they may not face the cultural constraints to control over land imposed by the norms of marriage. As the women in Mazabuka indicated, the government has been enforcing widows' right to retain ownership of their land, allowing them control over their land and therefore enabling them to become participants in the outgrower project.

5. Context of the Small-scale Outgrower Scheme

Zambia Sugar announced its intentions to expand operations in 2007 in response to changes in the EU sugar trade regime. These changes in the EU sugar trade regime came into effect in 2006 and resulted in a 36 percent drop in the price that the African, Caribbean and Pacific Group of States (ACP) obtained for sugarcane by 2009 (Palerm et al. 2010). In an attempt to smooth the transition to lower prices, countries that were affected by these changes were eligible for financial aid through the Multi-annual Indicative Programme for the Accompanying Measures for Sugar (AMS) (Ibid). Among the instruments of this programme, quotas were lifted that were in place during the period of preferential pricing. Countries that were affected by the change were able to increase exports, though by no more than 25 percent per year (Tyler 2008). By 2013, Zambia Sugar's exports of sugar increased by 147 percent while local sales have risen by 73 percent since 2006 (Zambia Sugar Plc. 2013; 2009).

It was because of these changes in the EU sugar regime that Zambia Sugar increased the production capacity of the plant, making it the largest sugarcane processing plant in Africa. The area of land designated for sugarcane production expanded to feed the plant's increased capacity. Table 1 shows the significant increase in land made available for sugarcane production on Zambia Sugar's plantation, on commercial outgrowers' farms and on land owned by smallholders.

Table 1: Breakdown of the Expansion in the Area Available for Sugarcane Farming from 2006 to 2013

Sugarcane growers	Total available area for sugarcane production prior to expansion in 2006	Available area for cane growing in 2013	Variance
Zambia Sugar Plantation including Nanga Farms ⁵	12,900.55 ha	17,310 ha	+4,409.45
Commercial outgrowers ⁶	2,146.50 ha	8,490.5 ha	+6344 ha
Smallholder outgrowers and smallholder run commercial farm ⁷	2,162 ha	3,360 ha	+1198 ha
Total	17,209.5 ha	29,160.6 ha	11, 951.1 ha

Source: Adapted by author based on information from Zambia Sugar Plc.

As seen in the above table, production from commercial outgrowers represents the most significant source of the increased supply of raw cane. Smallholder-run operations will supply only 11.5 percent of sugarcane, and even less if the 1,297 ha farm run by the Kaleya Smallholders Company Ltd. (KASCOL) as a large plantation, is subtracted from the total. Only 7 percent of production takes place on small farms of 4-6 ha. Zambia Sugar is therefore not highly dependent on smallholder production. By contrast, in 2013, when data for this study was collected, there were approximately 160 small cane outgrowers registered with KASCOL and 94 in Magobbo, with the potential for hundreds more to become suppliers through the Manyonyo scheme. These small-scale outgrower families are completely dependent on Zambia Sugar for the purchase of the sugarcane grown on their land, while Zambia Sugar is most dependent on its large-scale commercial outgrowers.

The outgrower scheme is located in a well-established area of commercial sugarcane production. Magobbo lies just on the edge of the Kafue Flats floodplain and

residents in the area complained of flooding and drought. The cultivation of sugarcane was an attractive option for smallholders as it is more flood and drought tolerant than traditional crops, and is commercially irrigated to supplement rainfall (S. Shambwenga, personal communication, 7 April 2016).⁸ A group of Magobbo smallholder farmers identified the opportunity to supply sugarcane to Zambia Sugar as the company was beginning to contract with larger farmers in the area. The community approached Zambia Sugar around the time of expansion, but nothing materialised until funds became available through the EU Accompanying Measures for Sugar. The Mazabuka Sugarcane Growers' Trust (the Mazabuka Trust⁹) – an organisation supporting smallholders across Mazabuka – managed the EU grant for 60 percent of the start-up costs to fund small-scale sugarcane production. Unlike other agricultural trusts in the area formed to manage the day-to-day affairs of specific groups of farmers, the Mazabuka Trust has an objective to support all sugarcane smallholders in Mazabuka whether they are organised as associations, companies or trusts. The outgrowers themselves financed



Young cane crop in fields near Magobbo, Zambia (Vera Rocca, 2013)

the remaining 40 percent of the start-up costs through a commercial bank loan that was later transferred to Zambia Sugar on more favourable terms. In practice, Zambia Sugar has some controlling influence in the Mazabuka Trust since employees from Zambia Sugar's management can be trustees. The field research did not reveal the exact nature of Zambia Sugar's influence over the Mazabuka Trust, but noted that its office, where at least some of the Trust's affairs are managed, is stationed at Zambia Sugar's main office in Mazabuka District.

The Magobbo Sugarcane Growers' Trust (The Magobbo Trust) was formed in 2007 as the organisation that represents farmers in Magobbo. This trust differs from the Mazabuka Trust in that it only governs the affairs of the farmers in Magobbo. The farmers registered in the Magobbo Trust have letters on file in the district council specifying their claim over a certain number of hectares of land for growing cane in Magobbo. These plots are part of a continuous block that was established because of the layout of the irrigation infrastructure Zambia Sugar was building, and few farmers had formal title to their land, making it easy to pool their land for block farming in the future. Since the block of land only encompassed some Magobbo farmers' land, a land trading or 'swapping' process was overseen to allow other Magobbo residents outside the block to gain access to land within the sugarcane catchment area. Those with plots entirely inside the catchment area would also gain access to land outside in which to grow their own food through this trading system.

The smallholder sugarcane outgrower scheme in Magobbo is one of three recent schemes planned in Mazabuka, which are in various stages of development – the Magobbo scheme being the furthest developed of the three. Planting was undertaken in 2010, and the first partial harvest was in 2011. What is critical in this structure is that the block of land is being farmed as an estate in that farmers have been removed from direct production on their plots: individuals hold claim to a parcel of land in the block, but the farming is done through a contractor, Nanga Farms, at the time of the research. The use of a contractor to manage the production for 10 years was a requirement for the initial commercial bank loan, though a five year contract was put in place that will expire in 2016. At this time of research, the Magobbo Trust was struggling with management issues and conflict, presenting a great challenge for the outgrowers to take over the management of their own project and jeopardising social gains.

6. Results

6.1 Women's Participation in the Outgrower Scheme and Voice in Decision-making

6.1.1 Trust Governance

Women's participation as registered outgrowers in the Magobbo Trust is lower than men's as a result of the existing gender gap in the control of land. At the time of this research, the number of official outgrowers registered with the Magobbo Trust was 94. These officially registered outgrowers have voting rights and bank accounts where they receive payments for sugarcane cultivated on their portion of land within the catchment area. Of these 94 registered farmers, 15 were women (16 percent). All but one of the 14 female members of the Magobbo Trust surveyed are widows. These widows are in a unique position to benefit from the scheme compared to married women since they have moved from being subsistence farmers to contract farmers, and are able to participate in decision-making within the Magobbo Trust. This switch from growing subsistence crops to commercial farming is accompanied by an increase in status and income. Widows' participation in the scheme also increases their status through their involvement in community-level decision-making.

The other 16 women surveyed were wives of participants. In this area, it is still the norm for women to access land through their husbands. These married women, therefore, do not have their names registered on the 'council offers' specifying their right to grow cane on the land. Though the married women may identify themselves as outgrowers, they are not ultimately the ones with the ability to vote and voice their opinions with the Magobbo Trust.

Women's participation in the trust is limited at the level of general membership and is ambiguous at the executive level. As 84 percent (n=79) of registered outgrowers are men, they have more influence in decision-making that takes place within the Magobbo Trust. There were, however, an equal number of men and women in the Magobbo Trust executive committee governing the sugarcane scheme, which was an improvement on women's prior participation in the trust. Members of the trust had agreed that the decision-making body should be more inclusive of women after one gender sensitivity training session was held. The

number of women on the executive committee increased to about 40 percent following this training (Palerm et al. 2010). Numerical representation in decision-making bodies does not automatically lead to meaningful participation. Only men hold the three most important leading roles of chairman, vice-chairman and secretary responsible for Magobbo Trust's finances. The Magobbo Trust's constitution indicates that executive board members have certain decision-making authorities. The constitution specifies, for instance, that they have power to formulate or propose amendments to the constitution. The constitution also outlines the executive committee's power to manage the day-to-day general administration of the Magobbo Trust's affairs; however, the way in which the women appear to be involved in the day-to-day affairs of the trust is uncertain.

6.1.2 Household Decision-making

In terms of women's decision-making authority within the household, married women may not be able to control income from the scheme or make investment and consumption decisions. The percentage of income women control may even have declined because of the

loss in sales of traditionally female-marketed crops such as groundnuts.¹⁰ With regard to control of income within the household, the quantitative survey revealed that women are involved in decisions over how income is spent within approximately half of all households (n=16). Though the sample is not large, it appears that women may have greater ability to influence decisions that concern their gendered roles, such as the purchase of food, where 81 percent (13/16) reported involvement in food purchase decisions.

This data should be interpreted with caution since the sample is small but it is consistent with a larger baseline survey commissioned by the EU. The survey, carried out in 2010, showed 51 percent of respondents believed both men and women should have decision-making responsibilities over household resources. A smaller but substantial amount, 43 percent, thought that household resource use should be the responsibility of men (Nabanda and Lubasi 2010). This study was done the first year cane had been planted in 2010 so farmers did not yet have revenues from the scheme. These findings imply that gender inequality in decision-making over resources has persisted, but not worsened.



Members of the Magobbo Trust executive committee standing in front of cane fields pictured at a promotional booth in Zambia's agricultural trade fair in Lusaka (Vera Rocca, 2013)

6.2 Employment and Changes in Women's Labour Patterns

The types of employment opportunities generated for women are key indicators of the gendered impacts of the nucleus-estate outgrower model. In Zambia, the sugarcane sector is an important source of formal employment, though women's participation is low. Richardson (2010) estimated that employment in the sugarcane sector is 10 percent of all formal wage labour in the country. A Strategic Environmental Assessment of the Zambian sugarcane sector (Palerm et al. 2010)

estimated that participation of women in the sector ranges between 15 to 30 percent. This assessment also suggests that this low level of participation does not seem to be a concern for major companies, since they have no gender policy in place. While the introduction of the outgrower scheme was an opportunity to increase women's participation, in practice, women's employment opportunities in Magobbo appear to have been limited.

At Nanga Farms, the management service provider that is cultivating the farmers' land in Magobbo, women's participation breaks down as follows in two illustrative low and peak season months.

Table 2: Employment Statistics for Nanga Farms Disaggregated by Gender for Two Illustrative Months

Peak harvesting season (October)				Low season (February)			
Classification	Men	Women	Percent women	Classification	Men	Women	Percent women
Fixed term	222	16	7%	Fixed term	204	10	5%
Seasonal	571	19	3%	Seasonal	92	10	10%
Casual	114	251	45%	Casual	185	59	24%
Total	930	149	14%	Total	481	79	14%

Source: Adapted by author based on information from Nanga Farms; year unspecified

Women's participation in the wage labour force at Nanga Farms in these two illustrative months is fairly consistent with the overall range of women's participation in the sector at the time the Magobbo outgrowers scheme was established (Palerm et al. 2010). Part of the reason for the low presence of women in the sector is the perception that sugarcane is a man's crop. Women in the Southern Province are mostly responsible for food crops whereas cash crops are under men's control (Wonani et al. 2013). In sugarcane farming, a gendered division of labour exists that limits women to a minority of the jobs and to tasks that have a shorter duration (Ibid). According to focus group discussions, women are normally hired for planting, but sugarcane is a perennial crop and does not need to be replanted on a yearly basis. Cane cutting, by contrast, an activity limited to men, occurs every year and is better compensated. The jobs that women can hold in the sugarcane sector are mostly limited to planting, weeding and disease control. Women and men both hold jobs as irrigators and shift supervisors, while men exclusively dominate cane cutting, fertiliser application and herbicide spraying (focus group discussions and key informant interviews). Truck drivers are almost always male, in contrast with the mining sector, where women have been able to drive trucks (C. Wonani, personal communication, 6 March 2014). Women's opting to remain outside the formal labour market could also explain their low levels of participation, although some key informants suggested that women's demand is higher than the supply of farming jobs that are open to them.

Women are under-represented at the management level as well. Though it was not possible to obtain statistics across the sector for women in management

positions, focus group discussions suggested that the number of women in management positions is low. Existing educational disparities underpin the gap in women's participation in management positions. Employers' educational requirements may also present a barrier for women to access managerial positions. Commercial sugarcane farms such as Nanga Farms require Grade 12 education for office clerks, and Grade 12 and higher education in agriculture for supervisory positions. Given the educational gap in agriculture, the pool of qualified women who can be hired for farm management positions is smaller (Beintema and Marcantonio 2010).

Focus group discussions revealed a general concern about the inadequate transfer of knowledge on the management of sugarcane cultivation, and how women's access to that knowledge was hampered by their unequal access to employment. The outgrower scheme was originally planned to mirror the Kaleya outgrowers scheme in the area, in which farmers have control over the management of their own plots, but it was not possible to initiate the scheme in this way because of farmers' lack of technical knowledge on sugarcane cultivation. Given that sugarcane is mostly produced on large-scale commercial farms in the area, smallholders were not familiar with the entire production process as only a few individuals in Magobbo had relevant experience, resulting from wage employment, for instance, in cutting, weeding, and fertilising (key informant interview). A management service provider was therefore necessary to guarantee that sugarcane would be grown profitably, and Nanga Farms was selected for that purpose.

As part of the transition to growing sugarcane, the Magobbo Management Company took responsibility for the transfer of knowledge and skills to build the capacity of farmers in sugarcane cultivation. The management company held workshops to familiarise farmers with the management of sugarcane. Focus group participants mentioned their expectations that the complete transfer of cane management would take place in approximately five years. The second part of the planned knowledge transfer was for one physically capable member per household to gain employment experience at Nanga Farms. There are various phases to growing cane including land preparation, planting, cultivation and harvest. Each family member had the opportunity to learn the farm work associated with each phase through rotating farm work at Nanga Farms. The elected farm workers were not only working on their own parcel of land, but also on cane fields owned by Nanga Farms. Though the intention was for one member per household to learn how to grow sugarcane, in reality, it was not possible for Nanga Farms to respect this commitment. The company cited disciplinary concerns as the primary issue with workers from Magobbo (key informant interview). Participants expressed skepticism in the focus groups about whether these training activities would be sufficient to allow the Magobbo Trust and its farmers to take over the management of sugarcane cultivation.

Very few women from Magobbo were able to participate in the training through the labour rotations. Though it was not possible to obtain exact numbers of women employed in Magobbo as a direct result of the outgrower scheme, focus group discussions and individual interviews suggested that fewer women were involved in the training. One focus group said there were no women employed in their community section and another revealed that there was only one woman working in the cane fields in their community sections.¹¹ Women interviewed individually reported knowing between one to seven women working at Nanga Farms, if they knew any. Nine women claimed they did not know any female neighbours who received employment, representing 9 of 21 respondents that answered the question.

The cane growing families selected mostly male household members to work in the fields as part of the

skills transfer exercise. Their decision was likely influenced by the gendered division of farm labour in sugarcane and may reflect the broader views of women's primary roles in biological and social reproduction (Beneria and Sen 1997; Moser 1993). The shift to sugarcane commercialisation therefore does not challenge these entrenched norms, or contribute otherwise to women obtaining equal access to employment. It is plausible that families rationalised that if they sent a woman for the training through employment, she may only learn planting, weeding, disease control and irrigation, whereas a man could learn everything. Electing a male family member for training highlights the perception that men and women both internalise: that sugarcane farming is a man's job in Zambia (Wonani et al. 2013). The decision is also rational if a family is looking to maximise its income. As women are confined to jobs that are not as well compensated as men's work, and there are lower numbers of working days required, then it is logical to send a man for training. A man's comprehensive knowledge of cane growing gained through this training would make him a more employable labourer on another farm in the future and he would have the knowledge to teach his family how to manage their own plot of cane.

The fact that a contractor currently manages production significantly reduces the amount of household farming labour compared to contract farming arrangements where farmers are actively involved in the work on their plots. Because of this institutional structure, this case stands out from much of the contract farming literature. As discussed, husbands often compel their wives to work on contract farming plots, invoking norms that require wives to provide labour. The resulting tensions as well as instances of resistance have been documented (Dolan 2001; von Bülow and Sørensen 1993; Carney 1994). The case of Magobbo is not consistent with that literature since farming services are provided under a management contract with Nanga Farms so women's farming labour is not being appropriated within the household. Every woman working in Nanga Farms's sugarcane fields, including the catchment area in Magobbo, is remunerated, though there are fewer female employees overall. Since the number of jobs provided to women on Nanga Farms remains low, the workload of the majority of women has declined (Table 3).

Table 3: Women's Perception of their change in workload

Response	Respondents	Percentage
Decreased	24	80%
Unchanged	3	10%
Increased	3	10%
n=30		

Women explained the reduction in workload as the result of farming less now or sometimes not at all, with no additional activities required of them. These women now have more time for reproductive household activities. The three respondents who noted that their workload has increased linked this to building activities they supervise, such as rebuilding their own homes after relocation, or investing in building upgrades to newly acquired properties.

These results could be interpreted as advantageous for women previously burdened with farming and household maintenance activities because they reduce their workloads. However, women may also want to be employed and receive an income they can control in their household. It is worth noting that women's

perceived needs and interests differ, making it difficult to conclude whether a change in labour patterns is a positive outcome for women. As mentioned, qualitative evidence from this study, based on key informants' observations, suggests that women's demand for work outstrips the supply available to them at their skill level (key informant interviews). The reduction in workload, then, reflects the declining amount of farm work needed, but also the fact that women are unable to access employment through the outgrower project. Two women interviewed indicated that they would prefer to be farming more, but could not currently access new farmland since rent is too high. In this way, the reduction in workload is not a positive outcome for these women. On the other hand, another woman welcomed the reduction in burdensome farming work.



Construction of new house in Magobbo, Zambia with income from sugarcane farming (Vera Rocca, 2013)

6.3 Access to Water and Natural Resources

The expansion of commercial agriculture has been critiqued for increasing the difficulty for women to access resources such as water and fuel (Tandon and Wegerif 2013; Spielloch and Murphy 2012). Collecting water can become more burdensome since access to water sources is restricted by the enclosure of large areas of land. The fencing off or the destruction of forests could also make firewood scarce and send women farther away for

sources of fuel, or force families to divert financial resources to fuel provision such as buying of charcoal.

The quantitative phase of this research explored women's perception of changes in access to natural resources including water, fuel and grazing land. Access to firewood was the biggest concern for women as 88 percent of respondents (23/26) indicated that access was now more difficult. The 11,900 ha expansion of sugarcane has brought a greater land area under cultivation and diverted previously cultivated land to sugarcane production. Women used to easily gather firewood from

nearby fallow land adjacent to their homes but now collect it from fallow lands that belong to Nanga Farms, though trips to gather firewood are only allowed by the company on weekends. Women reported that this activity could take up to half of their day depending on how often they must go. The chore is perceived to be more burdensome than before. Nanga Farms's policy is that deadwood can be collected and taken away, though women are supposed to avoid cutting down trees for firewood. In practice, women cannot find enough deadwood so they cut down trees and in some cases hire ox carts to take larger quantities of firewood away. Nanga Farms is aware of this violation of the policy but currently tolerates it. In the future, Nanga Farms plans to bring this forested area of their land under cultivation as well, therefore further limiting the community's access to firewood. What was once a relatively easy task for women has become more labour intensive, and future access is uncertain. It is important to note, however, that access to firewood could have become a problem regardless of the outgrower scheme due to increasing land pressure in the area. There is a notable lack of natural forest cover in the areas surrounding cane fields in Mazabuka.

Over one-third of respondents found access to water was problematic, although 18 of the 30 respondents surveyed had hand dug wells on their property before the scheme. Fetching water from any point beyond their property was viewed as a greater inconvenience. However, my observations of the condition of on-property wells in the area suggest that the water quality of these hand dug wells was already a concern before the switch to sugarcane farming.

In focus group discussions and survey interviews with women, respondents complained about the poor quality of the boreholes that had been installed to replace those dismantled to make way for the sugarcane catchment area. The installation of new boreholes was overseen by the Magobbo Trust executive committee and funded by Zambia Sugar. The pipes had already begun to rust, resulting in poor quality water with a rusty appearance and taste. Faulty pumping equipment also necessitates greater effort than normal for this kind of well, so women spend more time trying to fill their containers and queues form at the borehole. The scheme appears to have also worsened the problem of borehole water quality since the community boreholes families could previously access were not defective or affected by rust.

6.4 Changes in Livelihoods and Well-being for Women and Men

Though access to resources such as firewood, and poor water quality, are negative livelihood outcomes of the outgrower scheme, it has also generated positive outcomes for both women and men. One way in which the project has benefited families is through improved

incomes and resilience. Though the exact change in income remains uncertain, all sources indicate a significant improvement in income after households started receiving revenue from growing cane. A baseline study of the Magobbo farmers finds that income was between US\$16 and US\$80 per month for smallholders surveyed. Another source states that income for the average smallholder prior to the scheme was US\$600 per annum (or US\$50 per month) (Landell Mills Ltd. 2012). After the first harvest in 2011, the Magobbo Trust's executive committee reported that farmers' income was US\$4,500 per annum on average (or US\$375 per month). As the first harvest in 2011 was only a partial harvest because the planting began late in 2010, a typical harvest year would likely result in even greater monthly incomes.

The improvement in farmers' incomes was confirmed through qualitative research on women's perception of changes to their families' economic well-being. As mentioned, women may not control how this income is spent, but the survey data indicates that women perceive that the economic well-being of their families has improved as a result of growing sugarcane. Ninety percent of women interviewed thought their families' economic well-being had improved (this sample includes both female-headed households and women from married households). Households are better off now and less vulnerable to flooding and drought. Focus group discussions revealed that flooding in particular was a major concern for residents in the area before and seen as a threat to their livelihood.

Contract farming arrangements have often led to increases in overall household income (Maertens and Swinnen 2009a; Glover and Kusterer 1990), thereby raising consumption for households with very low levels to begin with. In this case, as reported through focus group discussions and across almost all households surveyed, increased consumption is a clear positive outcome of involvement in the outgrower scheme. Households purchased increased quantities of goods and services such as furniture, housewares, televisions and many household improvements. Some households were also making investments in properties purchased in Mazabuka town.

The survey data and qualitative evidence also suggest that the diversity of families' diets and food security have improved as a result of the project. There is concern in the literature that involvement in contract farming results in the diversion of productive farmland from subsistence crops to the production of cash crops, though the empirical evidence is unclear on this relationship (Maertens and Swinnen 2009a). With the change in production, farmers can be left worse off without the subsistence crop to rely on and thus more food insecure. Indebtedness and price instability can affect farmers' ability to purchase food as well. With the arrival of cane production, however, 80 percent of women interviewed in Magobbo (24/30) have noted an improvement in their families' diets.

Respondents were asked about the number of meals eaten per day, as a general indicator of access to food.¹² They were asked to compare the frequency of meals before and after the introduction of the outgrower scheme, which revealed an increase in meals consumed. Eighty-three percent (25/30) of women surveyed reported three or more meals per day compared to 50 percent (15/30) before the outgrower scheme. In addition to increased frequency of meals, respondents note more variety in their diet, including more meat and fish and the use of more cooking oils. As with improvements in household economic well-being, these are gains for both women and men.

There are also a number of risks that could jeopardise the benefits observed up to this point. Some authors, in particular, have been critical of contract farming arrangements for the vulnerability they create through indebtedness (Little and Watts 1994; Glover and Kusterer 1990). Collectively, producers have taken on large amounts of debt, for instance a US\$2.1m loan through Zambia Sugar over a 40-year term at concessional interest rates. There are also shorter-term loans that total approximately US\$830,000 with terms up to 10 years. The interest rates on these loans range from 0 percent for small sums of money up to 7 percent. In addition, variable market conditions for sugar could also make it more difficult for the Magobbo Trust to service the large collective debts, especially if prices for sugar drop or the EU restricts imports of sugar. Depending on the terms of the contract, debt could result in the dispossession of land for failure to repay loans (Little and Watts 1994). For the Magobbo Trust and its members, however, it does not appear that land can be appropriated this way for failure to pay.¹³

The imbalance in power between the buyer and producers in monopsonist conditions can contribute to indebtedness as well. In this situation, a single purchaser interacts with a larger number of producers, which can worsen returns for farmers. Fees charged for inputs and services from the company may increase while prices farmers receive do not rise enough to offset the costs. This situation can reduce the independence of the farmers and they may become indebted to the company (Little and Watts 1994). Currently, smallholder sugarcane farmers are represented through one permanent seat that KASCOL holds on the Cane Growers' Association of Mazabuka (CGAM). This organisation represents both commercial and small-scale outgrowers in their relationship with the mill and it is responsible for negotiating the Sugarcane Agreement, which is the generic supply contract for all the sugarcane outgrowers in the Mazabuka area. Commercial farmers and smallholders are affected similarly by a large number of factors such as regulations governing quota, pricing, cane delivery, mill laboratory auditing and milling season length (T. King, personal communication, 5 March 2015). Though the current impression is that the CGAM is working relatively well to represent the interests of smallholders in their supply relationship with the

company, it is not always the case that smallholders' interests align with those of larger, wealthier farmers (Smalley et al. 2014).

Regarding access to the European market, the EU announced in 2013 that it will end production quotas on beet sugar in Europe by 2017, which will drastically reduce imports from African producers (Viljoen 2014). The changes in the EU regulation that initially motivated Zambia Sugar's multimillion-dollar expansion will no longer be relevant. Zambia Sugar is now looking towards expansion in domestic and regional markets as well as opportunities to diversify its products (Hancock 2015). For the immediate future, the company appears confident about the stability in the demand and price for sugarcane. If indebtedness becomes a real risk, the Magobbo Trust has not clarified if producers will be permitted to switch out of sugarcane into other crops if conditions become more favourable to the production of alternative crops.

Another important risk farmers face is the fragmentation of land and the resulting reduction of income from growing sugarcane. Fragmentation occurs when assets or income become divided among a greater number of individuals. Both customs and the legal system interact with the current arrangement of the outgrower scheme to produce fragmentation. Under current arrangements, the fact that family labour is not required to cultivate sugarcane appears to be increasing the claims that are made to the benefits derived from the land. Claims are being made to income from sugarcane cultivation the same way claims would be made to rental income, which is divided among all the children that inherited a rental property. These additional claims can worsen the increasing fragmentation of land. Farm size has also been declining in Zambia's more densely populated rural areas (Jayne et al. 2012). Zambia's underutilised arable land is largely inaccessible, and as a result, land pressure and declining farm size prevents land-constrained farmers from producing surplus crops (Hichaambwa and Jayne 2012). Higher income from sugarcane farming could therefore be diluted in an area where much land is already devoted to growing sugarcane. Gains women reported in overall well-being and economic stability for their family could therefore be eroded if fragmentation of the plots and profits continues.

7. Conclusion

The Magobbo outgrower scheme is a case that nuances the discussion on the gendered effects of investments in agriculture since it has produced important benefits for women, and especially widows. Many studies have demonstrated that development interventions in agriculture through contract farming produce outcomes that reinforce gender inequality or worsen existing gender relations (Dolan 2001; von Bülow and Sørensen 1993; Mbilinyi 1988). Within contract farming, case studies have shown that women have been

disadvantaged because they face higher labour demands but limited participation, or that when they join such schemes they have little control over the income generated. Similarly, the literature on large-scale land acquisitions has mostly highlighted the negative potential outcomes for women, though some authors mention the positive potential of wage employment (Cotula 2013; Behrman et al. 2012).

In calling attention to differences between groups of women, this paper supports the idea that it is more acceptable for a widow to control land in Zambia because she is single, despite her disadvantaged position in society on the whole (Mulolwa 2006; Milimo 1990 cited in GRZ-GIDD 2005). This suggests that it may be more difficult to challenge gender norms within marriage, as this more directly confronts men's dominant position in the household. Schemes that do not require the outright ownership of land could therefore be more gender equitable (Wonani et al. 2013). Married and widowed women, however, are both disadvantaged by the unequal distribution of employment, knowledge transfer opportunities and participation in leadership structures. Further work and representative samples would be needed to confirm these findings, but the qualitative work supports the emerging patterns in the survey data.

In this case, it appears the scheme has enhanced economic resiliency and improved the quantity and diversity of household food consumption. These gains could help explain why women support the scheme. Existing inequalities in household decision-making continue though, as married women are still excluded from participating fully in these decisions. This study has therefore made a limited contribution to understanding intra-household relations through a small quantitative component of the field research, but more work is needed to explore these impacts in-depth (Dancer and Tsikata 2015).

A more proactive gender policy would have been needed to make the scheme more gender equitable, including joint titling and bank accounts; women's participation in the Magobbo Trust's meetings; women's leadership training; and an affirmative action policy for hiring greater numbers of women. Men would likely resist some of these changes, presenting an additional challenge in achieving greater gender equality.

In terms of employment opportunities, this study is also consistent with studies showing fewer benefits accruing to women (Tsikata and Yaro 2014; Wonani et al. 2013). However, this finding could be highly dependent on the crop in question and the gendered division of labour in existence before an expansion in commercialisation (Behrman et al. 2012). Existent gendered cropping patterns could determine how women's labour will be incorporated into changing agricultural economies. In Zambia, fewer women are

employed because cane cutting is viewed as men's work, confining women to more infrequent, poorly compensated tasks. The gender gap in agricultural education also underpins the lack of women in supervisory or management roles.¹⁴ Further work of a larger scope could take a comparative approach to explore gender differentiation in agricultural commodities, as there is evidence that some high value crops are more dependent on women's labour (Maertens and Swinnen 2009a; Dolan and Sorby 2003).

Also significant here are the gendered effects of institutional arrangements, specifically the use of a management service provider for the production of sugarcane. These arrangements have turned smallholders into wage labourers on their own land, an alienation from processes of production that has been observed in other cases of contract farming (Oya 2012; Little and Watts 1994). Through the use of a 'block title,' creating one contiguous area for sugarcane farming, the farmers end up operating as an estate farm. Women's labour is not used to the same degree as men's under this mode of production. It is also important to acknowledge that this scheme produced the first harvest in 2011 so follow-up would be needed to see how the contractual arrangements unfold and what this implies for production and gender differentiation. If the plots are separated by feeder roads in the future to allow for some smallholder control over production, this scheme would become another form of block farming. Block farming, where plots are next to one another to take advantage of economies of scale in the application of inputs and use of technology, may be the current trend in the Southern African region for outgrower schemes (R. Hall, personal communication, 25 November 2014; Smalley et al. 2014; Oya 2012).

The gendered implications of outgrower schemes with large management contracts for production are not well understood. For example, this study shows that women's productive labour burdens have declined, freeing up time for reproductive tasks, which are now a greater proportion of their work. Under this arrangement, women do not experience the kind of unremunerated appropriation of their labour that they have in the past, but this may have undermined the position of some women. Some women may view the reduction in labour negatively since there is less reliance on their productive labour, and they cannot access wage employment. Others may welcome the reduction of arduous farm labour. This research did not explore the reasons for these differences. This difference in views emphasises that women's interests are not necessarily the same, pointing to potential generational and class differences (Benería and Sen 1997; Rathgeber 1990). Further research could investigate the reasons for women's divergent interests, and explore the gendered implications of institutional arrangements in the nucleus-estate outgrower model that is coming to resemble estate production or block farming.

Endnotes

- 1 An exact measure of women's contribution to food production is impossible to determine given existing data (see Doss 2011). Available data aggregated across countries shows that women make up 43 percent of the agricultural labour force, and nearly 50 percent on average in Africa (SOFA Team and Doss 2011).
- 2 See section on 'Context of the Small-scale Outgrower Scheme' for a discussion of these changes.
- 3 Subsequent follow-up correspondence with key informants was carried out into 2014 and 2015.
- 4 The survey interviewed women with land in the statutory and customary system, and did not present results separately for the two groups. Though this figure is not exclusively about inheritance in the statutory system, it was the best source I found that indicates the importance of inheritance for women gaining access to land in Zambia. It is included here for illustrative purposes on the importance of inheritance for women's access to land in Zambia, rather than presenting a definitive statistic on the percentage of women that access land through inheritance in the statutory system. This figure must also be viewed with caution because it was not a representative survey.
- 5 Zambia Sugar has an 85% ownership stake in Nanga Farms Plc. This land also includes land that Zambia Sugar is renting from large-scale commercial outgrowers.
- 6 Six of these 15 farmers had not grown sugarcane prior to the Zambia Sugar plant expansion
- 7 KASCOL Ltd., an organisation of 160 smallholder farmers, runs a 1,297 ha plantation as a commercial operation. KASCOL increased their growing area by 209.5 ha but it is unknown to the author if this took place on the smallholder farms or the commercially operated plantation. Also note that 555 ha from the Manyonyo smallholder scheme was allocated for production of sugarcane but production had not yet got underway at the time of the collection of information in May–August 2013.
- 8 Though it is a medium rainfall area of Zambia, the climate is more drought-prone than other regions to the north. Farmers in Mazabuka have thus struggled to produce staple crops (Fynn 2008).
- 9 The official name of this organisation is the Mazabuka Sugarcane Growers' Trust (MSGT) but the Mazabuka Trust will be used for simplification and to avoid conflating the acronyms MSGT and MCGT (The Magobbo Sugarcane Growers' Trust).
- 10 Twenty-six households produced groundnuts prior to growing sugarcane, but only 13 produced groundnuts after the switch to sugarcane production.
- 11 Magobbo was divided into five community 'sections' at the time of field work in 2013: Woodlands, Canaan, Site and Service, Artisan and Kalonga.

- 12 This indicator is recommended by FAO (Marie 2005) as a way to measure access to food and food consumption at the household level.
- 13 A key informant who had been working for the Magobbo Trust indicated that none of the trust's creditors would be able to appropriate the land under the terms and conditions of the loans.
- 14 Ilovo (Zambia Sugar's parent company) is strict in reinforcing this gender division of labour across its operations (Richardson 2009).

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