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Are there “women’s crops”? A new tool for gender and agriculture

Alastair Orr, Sabine Homann Kee-Tui, Takujii Tsusaka, Harry Msere, Thabani Dube and Trinity Senda

ABSTRACT

A “Gender Control Tool” was developed to measure women’s control over decision-making for agricultural production, sales, and use of income. The tool was tested for groundnuts in Eastern Province, Zambia, where mechanisation has increased male participation in groundnut shelling, and for goats in Gwanda district, Zimbabwe, where the introduction of auctions has increased investment and sales. A mixed methods approach was used, that involved focus group discussions (FGDs) and a quantitative household survey. This article compares the results obtained from these two methods and discusses the strengths and weaknesses of the tool in understanding how commercialisation affects women’s control.

Un « Outil de contrôle selon le genre » (*Gender Control Tool*) a été mis au point pour mesurer le contrôle exercé par les femmes sur la prise de décisions pour la production agricole, les ventes et l’utilisation des revenus. Cet outil a été testé pour l’arachide dans la Province orientale, en Zambie, où la mécanisation a accru la participation des hommes au décorticage des arachides, et pour les chèvres dans le district de Gwanda, au Zimbabwe, où l’introduction de ventes aux enchères a accru l’investissement et les ventes. Une approche de méthodes mixtes a été employée, qui englobait des discussions en groupes de réflexion et une enquête quantitative parmi les ménages. Cet article compare les résultats obtenus de ces deux méthodes et discute des points forts et des points faibles de l’outil au moment de comprendre l’incidence qu’a la commercialisation sur le contrôle exercé par les femmes.

El presente artículo hace referencia a una “herramienta para medir el control por género”, creada con el fin de medir el grado en que las mujeres controlan las decisiones tomadas en torno a la producción agrícola, las ventas y el uso de los ingresos procedentes de éstas. Dicha herramienta fue probada en la Provincia del Este, Zambia, para el cultivo de cacahuates, después de que la mecanización elevó la participación de los hombres en el proceso por el que éstos son descascarados, así como en la cría de cabras en el distrito de Gwanda, Zimbabwe, donde la introducción de subastas produjo el aumento de las inversiones y las ventas. Al respecto se utilizó un enfoque de métodos mixtos, que implicó la realización de discusiones en grupos focales (DGF), además de una encuesta cuantitativa en hogares. El presente artículo compara los resultados obtenidos mediante la aplicación de cada una de estas dos modalidades, analizando las fortalezas y las debilidades de esta herramienta a fin de comprender cómo la comercialización incide en el control de la producción agrícola ejercido por mujeres.

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Introduction

“Africa is the region of female farming par excellence.” (Boserup, 1989, 16)

Women are central to smallholder agriculture in sub-Saharan Africa. Although claims that women contribute 80% of the labour for crop production are exaggerated (World Bank 2015), their productive role is still considerable. As well as working jointly with men, women also have separate roles and responsibilities. Women may operate their own fields with their own labour; they may be responsible for certain crop management tasks, such as weeding; and women may control specific crops (Cloud 1985). In practice, it is hard to identify crops that are grown exclusively or even mostly by women (Doss 2002; Carr 2008). However, it is possible to identify a “gender division of control” whereby women control the income from certain crops, usually food crops with a low market value (Geisler 1993).

Commercialisation of these “women’s crops” can disempower women. Traditional gender roles view women as the providers of food and men as the providers of cash income. When food crops become commercialised, these gender roles conflict. Typically, men then assert their role as providers of cash income to gain control of the income from what were formerly regarded as women’s crops, relegating women to being merely suppliers of labour (Carney and Watts 1990; Dolan 2001; Jones 1986; Quisumbing et al. 2015). As a result, while commercialisation may increase income for the household as a whole, the distribution of income within the household may become more unequal, with potentially adverse effects on food security and child nutrition. This makes it important to find appropriate, cost-effective tools to identify the gender division of control, so that programmes to develop new technology or new markets do not inadvertently disempower women.

This article aims to develop a tool to measure gendered control over agricultural resources. Handbooks for gender research in agriculture include tools to measure gender-disaggregated ownership, access, and activities, but not to measure gender-disaggregated control (Feldstein and Jiggins 1994). The Women’s Empowerment in Agriculture Index (WEAI) offers a tool that uses 10 indicators to measure women’s control over five multi-dimensional domains (Alkire, Meinzen-Dick, Peterman, Quisumbing, and Seymour 2013; IFPRI 2016). However, the comprehensiveness of the WEAI means that it requires time, financial resources, and specialist training to implement. Moreover, the WEAI does measure control over specific crops or types of livestock. By contrast, the “Gender Control Tool” presented here measures gender-disaggregated control over the management, sale, and income for specific commodities and is suitable for focus group discussions (FGDs) as well as a quantitative household survey, while its simplicity makes it particularly useful for development practitioners and researchers with limited budgets.

The paper is organised as follows. The next section describes the tool and our methods. We then present results from case studies of groundnuts in Zambia and goats in Zimbabwe. The following section discusses the results from qualitative and quantitative applications and some limitations of the tool. The final section summarises our conclusions.

The two case studies – groundnuts and goats – focus on commodities traditionally under women’s control. In Zambia groundnuts are regarded as a “women’s crop” and Eastern Province, where this research was conducted, is the centre of groundnut production. Six in ten households in Eastern Province grow groundnuts, the majority in fields of below 1 ha. One-fifth of groundnut harvested is sold, mostly to private buyers (Mofya-Mukuka and Shipekesa 2013). Increased demand has resulted in new investment in seed production, processing, and grain trading. The Eastern Province Farmers’ Cooperative (EPFC) is a farmers’ organisation that buys and sells groundnut seed. Shelling groundnuts is generally done manually by women, but in 2012 EPFC distributed shelling machines to selected seed producer groups. High prices for groundnuts have encouraged greater male participation, and the new groundnut shellers are generally operated by men.

In the mixed crop–livestock farming system in semi-arid Zimbabwe, most households own cattle and goats. Traditionally, cattle management is viewed as a male domain, with women tending goats. Women use goats to pay for food, education, or health-related expenses. One goat buys 150 kg of maize, the staple food, so selling four to six goats can feed the average family for a year. Using an

Innovation Platforms approach, we have worked with partners in Gwanda district, southern Zimbabwe, to commercialise goat production, by establishing auctions for goats, building sale facilities, attracting buyers from large abattoirs, and increasing turnover by convincing local government to reduce levies on goat sales. Today, most farmers sell goats at auction rather than at the farm gate. Farmers have also started to reinvest in their goat herds.

Measuring women’s control

We used a mixed methods approach, combining qualitative and quantitative instruments. The growing use of qualitative methods for policy purposes has led to interesting debates over how best to combine them with quantitative methods (Kanbur 2001). The integration of both methods (Q-squared) is particularly useful for the study of social processes that are difficult to capture using conventional survey methods (Davis and Baulch 2011). Yet, although qualitative methods provide insights into perceptions and processes, testing hypotheses still requires the use of quantitative methods (Gladwin, Peterson, and Mwale 2002). In this paper, we use Q-squared methods to (1) compare the results obtained from different methods and explore the reasons for divergence, (2) test hypotheses suggested by qualitative methods, and (3) to help interpret the findings from a household survey.

The tool

Figure 1 shows the tool we developed to measure “women’s control”. The crops (C₁–C₄) in each quadrant are the crops for which women’s control is compared. The decisions (D₁–D₆) are the key decisions for crop production and sale for which the degree of women’s control is measured. The scores (S₁–S₆) measure the degree of control that women have over these key decisions. Finally, the weights (W₁–W₆) are the relative importance that women give to these key decisions (D₁–D₆). The weighted scores are aggregated to produce a gender control index.

The household-level sex-disaggregated weighted gender control index (WGCI) can be defined for each crop or enterprise as follows:

$$WGCI_g = \frac{\sum_{j=1}^k W_{jg} S_{jg}}{\sum_{j=1}^k W_{jg}}$$

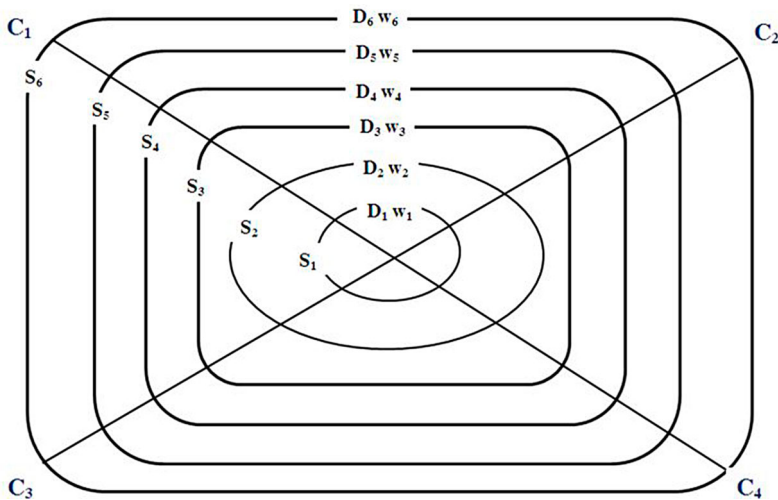


Figure 1. The “Gender Control Tool”.

where the subscript j is a decision, k is the number of decisions (i.e. 6 in the case of Figure 1), and g refers to either male (husband) or female (main wife).¹

Qualitative data

The FGDs followed a common sequence. First, we began by asking men and women together what word they used to describe “control” over decisions about crop production or sale. Second, we held FGDs separately with men and women. Each FGD scored how much control they believed that women had over each decision, using a percentage scale of 0–100. The FGDs also scored the importance of each decision for overall control on a 0–5 scale. Scores were preferred to ranks because they captured not only the relative importance of each decision but the degree of difference between them (Abeyasekera, Ritchie, and Lawson-McDowall 2002). Third, after completing the exercise, we brought the male and female groups together again to present their results to each other, and discuss them. These discussions were recorded and translated.

In Zambia, we held FGDs with three types of EPFC seed producer groups, namely: (1) groups with more than three years’ experience of selling to EPFC, but without machine shellers, which we called “commercial” groups; (2) groups that had at least three years’ experience with the machine sheller, which we called “commercial sheller” groups; and (3) groups that had recently joined EPFC, which we called “non-commercial” groups. We purposively selected two villages that had EPFC seed producer groups in one of these categories, giving a total of six villages.² We asked each group to select men and women to participate in FGDs. A total of 123 men and women participated in 12 FGDs (six with women and six with men), giving an average group size of 10 (Table 1). Ten to 12 people is generally regarded as the optimum number for a FGD (Morgan 1997). All those who participated were members of EPFC seed-producer groups.

In Zambia, we asked participants the different Chichewa words for control (Table 2). These varied in meaning from “being in charge” (*kulamulira*) to “following an agreed plan or procedure” (*ndondomekho*). Although this meant it was not possible to use a common definition across all six villages, we ensured a common understanding of “control” by using *kulamulira* (the closest equivalent in Chichewa to the English word “control”), as a reference point in all the FGDs.

In Gwanda district, Zimbabwe, we purposively selected four villages in two wards that had different levels of goat market development (Table 2). The two “treatment” villages had a higher level of

Table 1. Sites for focus group discussions (FGDs), Eastern Province, Zambia.

Village	District	Group	Seasons with EPFC	Number in FGD			Distance (km)	
				Men	Women	Total	To tarmac road	To Chipata town
Kagunda	Chipata	Commercial+ Sheller	6	8	9	17	2	55
Mafuta	Chipata	Commercial+ Sheller	6	16	9	25	13	54
Bwanunkha	Chadisa	Commercial	3	9	8	17	33	40
Kapenya	Chipata	Commercial	5	8	8	16	3	58
Kazingizi	Chipata	Non-commercial	1	8	12	20	6	45
Stephen	Chipata	Non-commercial	1	10	18	28	0	40
Total				59	64	123		

Table 2. Sites for focus group discussions (FGDs), Gwanda district, southern Zimbabwe.

Village	Ward	Number in FGD			Distance (km)	
		Men	Women	Total	To sale pen/business centre	To tarmac road
Bulobelo	Nhwali	6	7	13	1	1
Patana	Nhwali	5	11	16	15	5
Sezhubane	Guyu	5	6	11	1	5
Balula	Guyu	7	8	15	20	4
Total		23	32	55		

market development for livestock. These were Bulobelo village in Nhwali ward, which was close to the sale pens and where extension and veterinary offices were located, and Sezhubane village in Guyu ward, which was close to the regional capital, Gwanda, where most farmers in Sezhubane sold their livestock. The two “control” villages had a lower level of market development for livestock. They were Patana village in Nhwali ward, which is located 15 km from a sale pen and which relies on the officers from distant Bulobelo for extension and veterinary services, and Balula village, 20 km from the nearest sale pen, and where farmers continued to sell their livestock at the farm gate.

In Zimbabwe, participants suggested a variety of *siNdebele* words to denote control: *ukulawula* (making a decision); *umqondisiwohlelo* (the one who directs things); *ukuquondisa* (to direct); *ukukhokela* (to lead) and *ukubalamandlawokutsho* (the power to say). In all the FGDs we used the word that villagers commonly used to describe making the decision about how things are to be done: for example, if it rains, who decides when and how we are going to plough.

Although originally designed for crops, we found that the tool was easy to adapt for livestock. Allocation of land for a specific crop became decisions about where to graze; land preparation became preparation of land for fodder crops; purchase of inputs referred to veterinary drugs and services. Some crop management decisions were replaced with others more relevant for livestock. These included feeding (the purchase of stock feed for cattle and goats) and milk and slaughter (which animals to milk and which to slaughter).

Quantitative data

Because of time and resource constraints, we collected quantitative data only in Zambia. This meant that we were able to rigorously test hypotheses about women’s control for only one of our two research sites. A household survey was conducted with smallholder farmers in three purposively selected villages at least 15 km apart but within the same agro-ecological zone. In order to compare the effect of the machine sheller on women’s control, we identified a treatment village with a commercial EPFC group where a machine sheller had operated successfully for two crop seasons, and two control villages with commercial EPFC groups but without a machine sheller. The treatment village was Kagunda (where we conducted FGDs) and the control villages were Kapenya (where we conducted FGDs), and Mkhazika village in Katete district (where we did not conduct FGDs). To compare the gender bias in perceptions, we interviewed the husband and his main wife separately, with the husband interviewed by a male enumerator and the wife by a female enumerator. Since the objective was to compare perceptions between men and women, only households with both male and female adults were selected for interview. Within each village, 100 households (i.e. 200 individuals) were randomly selected for interview, giving a total of 100 households from the treatment village with the machine sheller and 200 households from the two control villages without a machine sheller. The questionnaire is reproduced in Appendix 2.

Case study results

To make our results more accessible we have presented them in the form of charts rather than as statistics. Shrestha (2002) also used radar charts to show differences in gendered control, but in a non-agricultural context.

Groundnuts in Zambia

Figure 2 compares the weighted scores for women’s perceptions of control over eight key decisions for groundnuts, sunflower, maize, and cotton. The left-hand panel presents results from the FGDs while the right-hand panel shows results from the household survey.

In terms of crops, Figure 2 shows a marked contrast between cotton and groundnuts. Women perceive they have little control over decisions about cotton production, and minimal control over

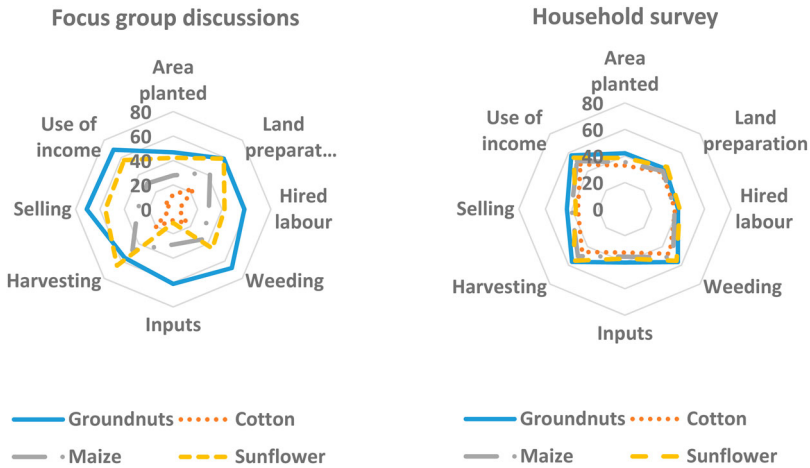


Figure 2. Women’s perceptions of control over groundnuts, cotton, maize, and sunflower in Eastern Province, Zambia (weighted scores). Source: Focus group discussions and household survey, 2014.

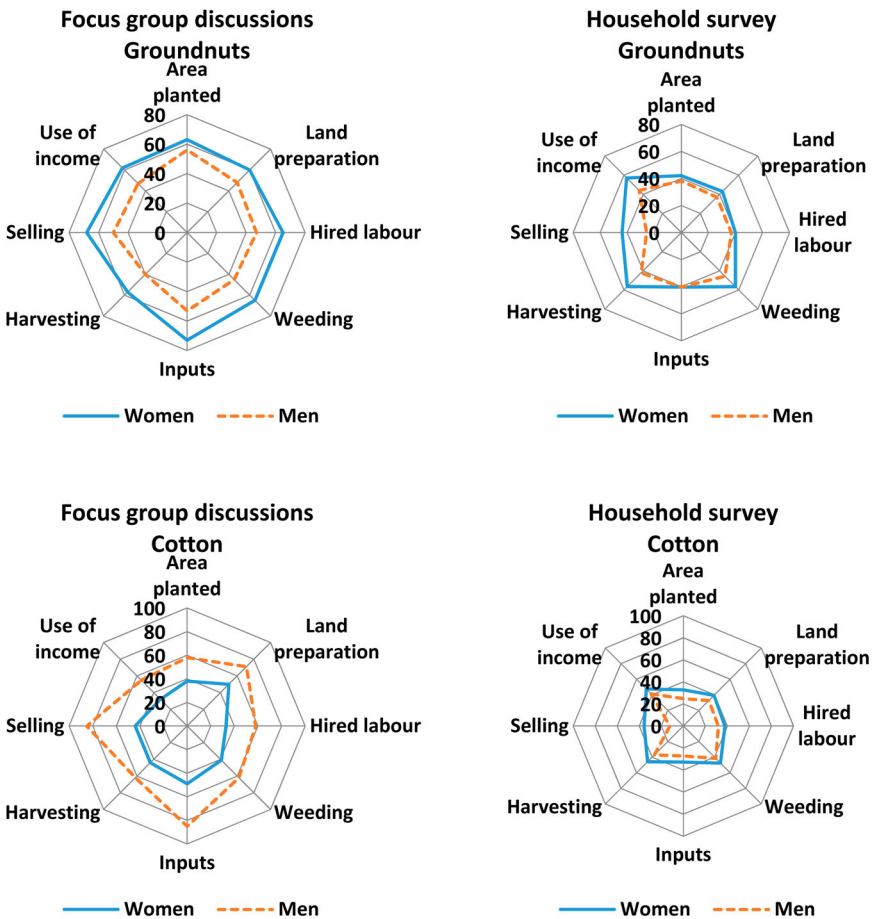


Figure 3. Perceptions of control for groundnuts and cotton, Eastern Province, Zambia. Source: Focus group discussions and household survey, 2014.

selling and use of cotton income. By contrast, women feel that they control all the major decisions about groundnuts, right from planting to the use of groundnuts income. Maize occupies the middle ground, with control shared fairly evenly between women and men.

In terms of methods, women in FGDs perceived greater differences in control than women interviewed in the household survey. This was particularly true for groundnuts and cotton. By contrast, women in the household survey perceived fewer differences in control between the four crops. Even so, the difference between cotton and groundnut for the household survey is statistically highly significant for all eight decisions. (The *p*-value for the paired *t*-test is < 0.001 for all eight decision categories.) In this respect, the qualitative and quantitative results are similar.

Figure 3 compares perceptions of control for groundnuts and cotton. For groundnuts, women perceived themselves as having more control, while men perceived themselves as having less control. For cotton, the opposite is true. Women perceived themselves as having very little control, whereas men perceived themselves as having more control. In terms of method, both FGDs and the household survey gave similar results. However, women in the FGDs perceived they had greater control over groundnuts, and less control over cotton than did women in the household survey.

We can also compare the results of the FGDs and the survey, and contrasting perceptions between women and men, in terms of the dominant decision-maker. In this case, we defined “dominance” as more than 50% control and “non-dominance” as equal control. Figure 4 shows that women in FGDs saw 85% of decisions for groundnuts as dominated by women, while women in the household survey

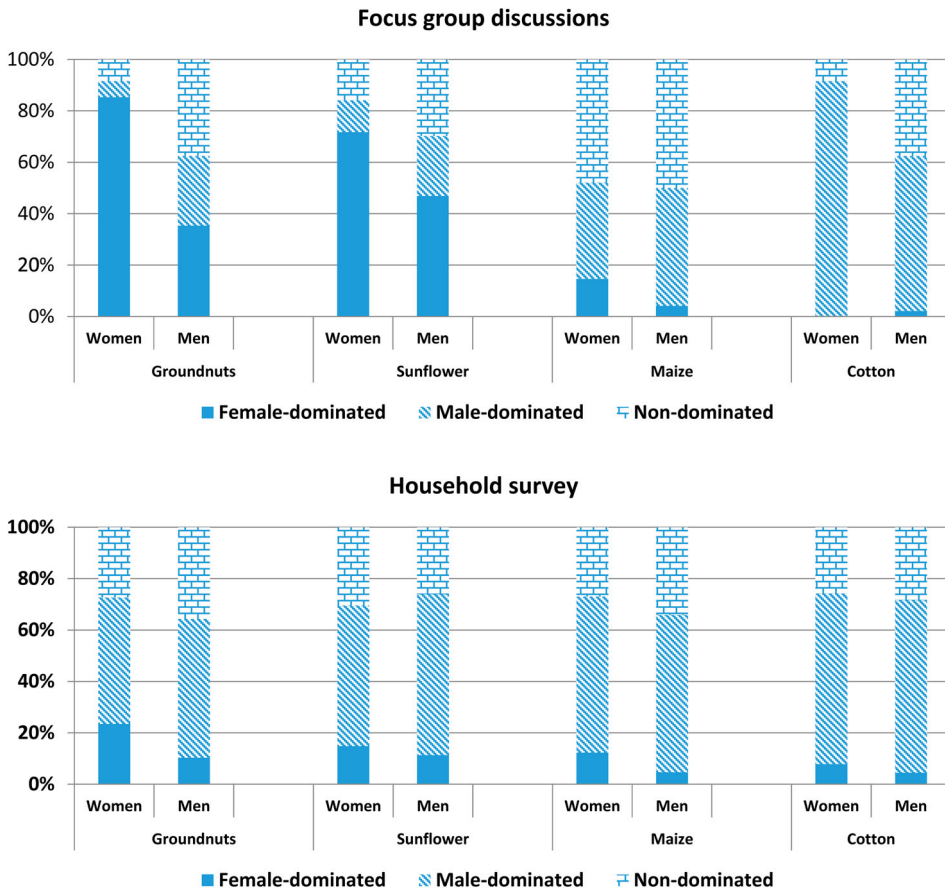


Figure 4. Contrasting male and female perceptions of who dominates key decisions, for four crops, Eastern Province, Zambia. Source: Focus group discussions and household survey, 2014.

saw only 23% as dominated by women. Women in the household survey also saw men as having more control over maize, with only 27% of decisions non-dominated.

In terms of method, therefore, the FGDs and household survey gave similar results for cotton. Both men and women perceived this as a man's crop over which women had limited control. When it came to groundnuts, however, women in FGDs perceived much greater control than women in the household survey.

Did the machine sheller reduce women's control? Women in groups with access to a machine sheller perceived they had *greater* control over land preparation, weeding, harvesting, and the use of income from groundnuts (Figure 5). These differences were statistically significant at the 5% level or above (p -values: land preparation (0.0976), weeding (0.0167), harvesting (0.0016), use of income (0.0296)). The weighted gender control index (WGCI) was significantly (p -value = 0.0078) higher for women with access to the machine sheller than for women without access. Multivariate analysis also showed that the WGCI for women was higher in groups with access to the machine sheller (Orr, Tsusaka, Homann Kee-Tui, and Msere 2014). Thus, the commercialisation of groundnuts using the machine sheller was associated with an *increase* in women's operational and financial control.

Goats in Zimbabwe

Figure 6 shows the weighted scores for men and women's perceptions of women's control over eight key decisions for cattle and goats. Men controlled most of the decisions over cattle, whereas decisions over goats were shared. Importantly, women perceived they had an equally strong say

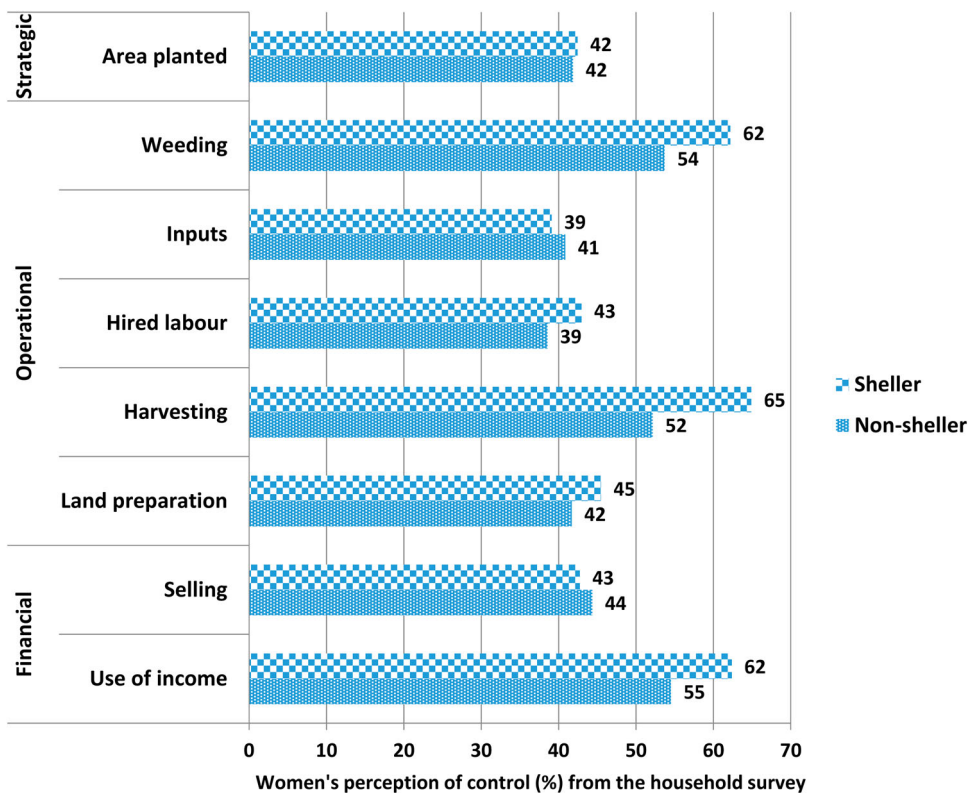


Figure 5. Women's control over groundnuts, by access to the machine sheller.
Source: Household survey, 2014.

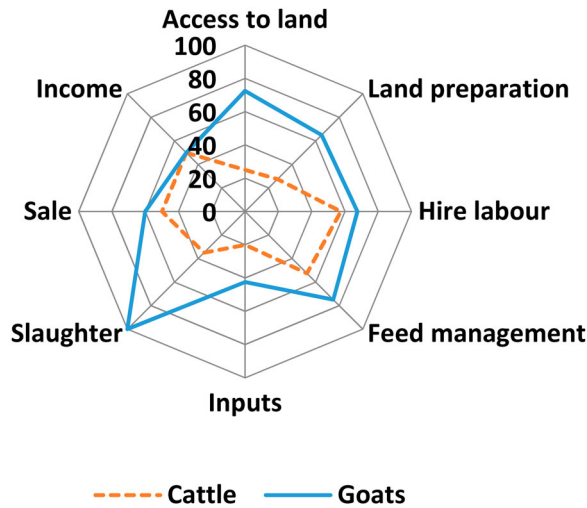


Figure 6. Women’s perceptions of their control for cattle and goats, Gwanda district, Zimbabwe. Source: Focus group discussions, 2014.



Figure 7. Women’s perceptions of their control over goats, by access to formal markets. Source: Focus group discussions, 2014.

in when and where goats were sold and how the income from sales was used, confirming that goats were viewed as an important livelihood strategy for women.

How has commercialisation changed women’s control? To answer this question, we compared women’s control between villages near well-established markets and those further away. **Figure 7** shows that women living near the recently established formal goat markets felt that they had a *stronger* influence on decision-making over goat marketing and sales compared to women living further away. This suggests that market development for goats has not reduced women’s control over sales but has helped women make better decisions and increase their income from goats.

Discussion

Our discussion focuses on comparing the Q-squared results, and some limitations of the tool. Other implications of these results have been discussed more fully elsewhere (Orr et al. 2014).

Although both the FGDs and the household survey identified groundnuts as a “women’s crop” and cotton as a “man’s crop”, the results from FGDs were more extreme, with women perceiving greater

control over groundnuts and less control over cotton (Figure 3). Similarly, women in FGDs saw 80% of key decisions for groundnuts as dominated by women, while the corresponding figure in the household survey was only 20% (Figure 4). Other studies on gendered decision-making have noted discrepancies when using different methods (von Bulow 1992). How can we explain these differences?

First, FGDs are a very public arena, where the views expressed are normative (what “ought to be”) rather than “what is” (Mosse 1994). FGDs brought normative views on “women’s crops” into sharp focus. This public exposure of decisions that are usually hidden within the household proved explosive, as if we had lit a fuse. The Gender Control Tool is not a neutral tool, like a crop calendar or a village map. FGDs offered women an opportunity to defend their “right” to control over groundnuts as a “women’s crop”. “*We make a bowl of peanut butter for the men and the children. The rest is for us. It’s our money*” (Kapenya). By contrast, FGDs also offered an opportunity for men to stake claims for greater control. “*Next year if the market is good, we will take total control of groundnuts*” (Kagunda). According to the men’s FGD in Kagunda, “*Groundnuts are not necessarily a women’s crop because it fetches a higher price than cotton.*” “*Groundnuts are not a women’s crop. This house was built with money from groundnuts.*” Men also staked their claim to control on their ownership of land (“*A woman doesn’t come with land*”), which gave them strategic control over the area planted to groundnuts.

Second, women in FGDs may have experienced an energising sense of power as a group, encouraging them to challenge the status quo to meet their need for greater control.

“Men are not confident that we can go, negotiate and sell cattle. We want our husbands to feel free and trust us, so that we can come back from a sale, have the money in our pockets and give it to them. This would give us confidence and high esteem. It’s about prestige. I want to be seen at a sale pen as a powerful woman.” (Bulobelo)

“If men would know how well we can sell cattle they would be surprised.” (Patana)

“We want to feel moving the money from our wallets.” (Balula)

This reflects the empowering effect of women’s groups.

Third, women may also have faced group pressure to exaggerate their right to control. Women are not a homogeneous group. Some may have felt compelled to show solidarity with others or been influenced by more vocal members of the group, or deferred to older, better-off members with more to lose if they lost control over groundnuts. The “Asch effect”, where members subordinate their own judgement to that of the group, is well known to social psychologists (Asch 1955).³ Of course, FGDs are not Asch experiments, and trained facilitators allow all voices to be heard. Nevertheless, although Participatory Rural Appraisal (PRA) relies heavily on small groups, it has paid scant attention to the importance of group dynamics. A trawl through all 66 volumes of *Participatory Learning and Action* yielded not one study of how such dynamics affected the results from FGDs. In particular, using FGDs to resolve conflicts of interest remains “*a frontier for participatory methods*” (Chambers 1994). Where gender rights are at stake, the social dynamics of FGDs may polarise perceptions of control.

Quantitative data on household decision-making are “*simple windows on complex realities*” (Kabeer 1999). As one participant explained, decisions about control are “*bedroom decisions*” – a private matter between husbands and wives. The value of the FGDs, therefore, was not so much to confirm the quantitative data (although both methods agreed that groundnuts were a women’s crop) but to make bedroom decisions visible and to highlight normative views on “women’s crops”.

One limitation of the tool is that, by framing the questions in terms of control, commercialisation is viewed as a zero-sum game. Women either gain or lose control. There can only be winners and losers. In FGDs, however, women also expressed a different view. They welcomed men operating the machine sheller because it relieved them from the drudgery of shelling groundnuts by hand. “*Men never used to help us but now they know there’s money, they have joined us, so we are very happy*” (Kazingizi). Similarly, they expressed the hope that, if men and women worked together, the

whole household would benefit. *“It used to be a woman’s crop. Now it’s a crop for everyone.” “We thank men for coming in to help growing groundnuts, we can go higher and higher”* (Kagunda). Women were therefore willing to trade some degree of autonomy in exchange for a reduced workload and the opportunity to increase income from groundnuts for the household as a whole.

By bringing the issue of control into the open, therefore, the tool can also help women and men appreciate the need for greater cooperation if the household is to capture the full benefits from commercialisation.

“It is important to consult one another, nowadays families have a lot of responsibilities and sharing the burden is good for our wellbeing and we can also avoid exhausting family money at beerhalls ... It is a good thing to discuss and agree on issues because agreement brings forth progress and harmony within the family.” (Bulobelo)

“Groundnuts are now the main cash crop. Husbands have to decide with their wives how to use the income from groundnuts. The decision has to be made jointly. Men deciding alone would mean the end of the marriage.” (Men’s FGD, Kagunda)

This opens the door for women to re-negotiate gender roles so that men recognise their contribution to the household’s cash income, and that the gains from cooperation outweigh the gains from absolute control. This allows a new dialogue over the gendered control of agricultural resources.

Conclusion

The value of a tool depends on whether it is easy to use and whether it gives useful results. The Gender Control Tool meets both these criteria. Its simplicity makes it flexible enough to be used either qualitatively in FGDs or as part of a quantitative household survey, while its applications to groundnuts in eastern Zambia and goats in southern Zimbabwe gave results that have implications both for methodology and for the study of commercialisation.

In terms of methodology, the tool gave more extreme results when used in FGDs than in a household survey. We attribute this to the public nature of FGDs, which provide a space for women and men to defend their existing rights to control, as well as stake new claims for control. Because commercialisation challenges traditional gender roles in which cash income is largely controlled by men, the use of the tool in FGDs generated strong emotions and helps explain the polarised results from FGDs. Group dynamics may also play a role, with participants influenced by other group members who were older or better off. While this does not invalidate the findings, it suggests caution in interpreting results from FGDs.

One limitation of the tool is that it frames commercialisation as a zero-sum game in which women either gain or lose control. Certainly, women defended their traditional right to control groundnuts and income from goats, as well as asserting new claims to control, such as the right to sell cattle at auction. But they also saw commercialisation as an opportunity rather than a threat. Our two case studies suggested that commercialisation did not necessarily disempower women. Contrary to expectation, women in eastern Zambia perceived that mechanised shelling increased their control over groundnuts, while women in southern Zimbabwe perceived that improved access to markets increased their control over goats. Women saw commercialisation as a way to enhance their bargaining power within the household and to benefit the household as a whole. Commercialisation was not a zero-sum game.

Notes

1. We used the term “main wife” to denote the eldest or first-married wife in a polygamous household.
2. The villages were Kagunda and Mafuta (commercial + sheller), Bwanunkha and Kapenya (commercial) and Kazingizi and Stephen (non-commercial). All were located in Chipata district, except for Bwanunkha which was located in Chadisa district.
3. The original Asch experiment involved a group of seven to nine men, of whom all but one were primed to give the incorrect answer. Group pressure resulted in incorrect answers by the minority group member in 32% of cases.

Further experiments revealed that the minority member gave the same percentage of incorrect answers when the majority against them was only three to one. A sometimes forgotten sequel is that, when just one of the subjects was primed to give a different answer from the rest, the pressure to conform was immediately relaxed, and the minority member of the group felt able to disagree (Harford 2011).

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Appendix 1. Applying the Gender Control Tool in focus group discussions.

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- Step 1.** Choose crops for analysis. They should be crops that are widely grown and with which farmers are familiar. Second, they should include at least two crops that are widely recognised as "men's crops" or "women's crops" that can provide a benchmark against which other crops can be measured. Four crops are recommended as the most that should be attempted in one exercise and fewer if you want to include more decisions.
- Step 2.** Prepare the diagram by drawing the circles, the boxes, and naming the crops before you go to the field.
- Step 3.** Agree on the definition of "control" that will be used in the exercise. This should be done in the plenary session before splitting into men's and women's groups, so that both groups use the same definition. Emphasise that you are not asking about "participation" or the share of labour they contribute to each crop, but about their power to make decisions.
- Step 4.** Complete the boxes for "control" using scores of 0–100 (percentages) or 0–10. You can either complete one crop at a time or complete each key decision at a time. We tried both methods and there does not seem to be much difference between them.
- Step 5.** Once you have completed the scores for each crop or enterprise, move to scoring the importance of each individual decision. The objective here is to obtain a set of weights to use in constructing an overall index. We used a scoring of 0–5 for this component. This scoring is generic, rather than for an individual crop or enterprise. Which decisions is it most important to control and why?
- Step 6.** Once you have completed the generic scoring, ask about recent changes in control for the crop or enterprise you are particularly interested in. Changes can be shown as arrows up or down or an equal sign for no change. For decisions where groups identify a change in control, ask them to specify what this means by giving concrete examples.
- Step 7.** When each group has finished, reconvene in plenary to compare results and let each group ask the other questions. Ask one member of each group to present results for their group. To save time, restrict the presentation of results to the crop or enterprise that you are particularly interested in.
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Lessons from experience

- (1) The complete exercise took about 2½ to 3 hours. We provided soft drinks and snacks at the end to thank farmers for their participation.

- (2) Each group requires a facilitator, a note-taker, and someone to take photographs while discussions are in progress. Voice-recorders are useful to capture the arguments that participants use to reach a consensus and to capture direct speech. Use a male facilitator for the men's group and a female facilitator for the women's.
- (3) Groups start slowly but will complete the decision-making boxes quite quickly once they get the idea.
- (4) Limiting the size of the group to eight, improved participation and the quality of the discussion.
- (5) Periodically remind groups about the difference between "participation" in activities and "control" over decisions.
- (6) At Step 4 above, it is often difficult to obtain convincing explanations on the figure, e.g. explaining only the difference across crops but not across aspects, or vice versa.
- (7) At Step 5, participants tended to misinterpret what they are expected to answer, e.g. answering the feasibility of actually acquiring control rather than the potential positive impact or importance. Participants need to be periodically reminded of the question that we are asking them.

Appendix 2. Applying the Gender Control Tool in household surveys.

In the last crop season (2012–13), what was the level of influence of household head on decision-making on the following matters? Answer what level (%) of "decision-making" or "control" does the household head have over these decisions? Give the percentage. (For example: 0% means spouse only, 10–40% means spouse leads, 50% means you and spouse equally, 60–90% means you lead, 100% means you only.)

For groundnut, has the level of control increased, decreased, or stayed the same over the last three seasons? Circle one.

Activities for decision-making		Household head's control					Remarks
Choice of crop							
A111	What crop to grow in the field	%					
		Maize	Groundnut		Cotton	Sunflower	
		1	2	3	4	5	
A112	Seed selection (local seeds)	%	%	↑ = ↓	%	%	
A113	Seed selection: (improved seeds, hybrid)	%	%	↑ = ↓	%	%	
Management							
A114	How much land to cultivate	%	%	↑ = ↓	%	%	
A115	Use of draft power	%	%	↑ = ↓	%	%	
A116	Use of family labour	%	%	↑ = ↓	%	%	
A117	How much/when to spend on hiring labour	%	%	↑ = ↓	%	%	
A118	How much of chemicals to buy (fertiliser/pesticide/herbicide)	%	%	↑ = ↓	%	%	
A119	When to apply chemicals (fertiliser/pesticide/herbicide)	%	%	↑ = ↓	%	%	
A120	When to weed	%	%	↑ = ↓	%	%	
A121	When to harvest	%	%	↑ = ↓	%	%	
A122	When to carry from field to storage	%	%	↑ = ↓	%	%	
Post-harvest							
A123	When to shell (kutongola)		%	↑ = ↓			
A124	How long to dry	%	%	↑ = ↓	%	%	
A125	When/how much to sell or store	%	%	↑ = ↓	%	%	
A126	Use of crop income	%	%	↑ = ↓	%	%	