



Adoption Pathways project discussion paper 6

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Women's Empowerment in Agriculture in Tanzania Using Adoption Pathways Survey

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1. Introduction

Women comprise three-quarters of the agricultural labor force in Tanzania (FTF/Tanzania 2011). However, despite the significant participation in all aspects of agricultural production, they have limited involvement in production decisions, and lack ownership and access to resources (FTF/Tanzania 2011).

This report measures the extent of women's empowerment in agriculture using the Adoption Pathways survey data in Tanzania. It assesses the level of deprivation in eight of the ten indicators of the Women's Empowerment in Agriculture Index (WEAI) developed by United States Agency for International Development (USAID), International Food Policy Research Institute (IFPRI) and the Oxford Poverty and Human Development Initiative (Alkire, *et.al.*, 2013). The WEAI enables not only to measure the extent of women's empowerment, but also to pinpoint the areas where women are particularly disempowered. The breakdown of women's disempowerment can help policy makers and project managers to identify specific areas that would be most effective in empowering women. Unfortunately, the Adoption Pathways survey data in Tanzania did not collect information on one of the five dimensions of empowerment, namely Time. Therefore, the report does not calculate the WEAI score itself, but rather it discusses the indicators of deprivation in women's empowerment. Further, because the Adoption Pathways survey does not follow the standard WEAI questionnaire, there are likely to be some biases caused by the deviation from the standard questions. As a way of making some comparison, the results in Tanzania are compared with those of Uganda as the latter survey used the standard WEAI questionnaire.

Section 2 examines the Adoption Pathways data, and section 3 presents the raw headcount ratios. Section 4 analyzes the raw headcount ratios disaggregated by region. The conclusion is discussed in section 5.

2. Data and methodology

Tanzania's Adoption Pathways survey was conducted in three regions (Manyara, Arusha and Morogoro) by SIMLESA/CIMMYT and Sokoine University of Agriculture, Morogoro in October - December 2013. 413 women and 381 men in 552 households were selected in the districts of Mbulu (Manyara), Karatu (Arusha) and Mvomero, Kilosa and Gairo (Morogoro). The breakdown of the number of households and respondents interviewed in each district is presented in Table 1 below.¹

Table 1: Number of households and respondents

District name	Number of households	Number of women respondents	Number of men respondents
Manyara region			
Mbulu	116	94	73
Arusha region			
Karatu	145	109	89
Morogoro region			
Mvomero	116	90	85
Kilosa	136	94	107
Gairo	39	26	27
TOTAL	552	413	381

The Adoption Pathways survey was not intended to follow the standard WEAI questions precisely as the objectives of the survey, amongst others, were to examine respondents' access to extension services, the level of adoption to new varieties of crops and their responses to climate change. Therefore certain modifications of questions and exclusions were made to the standard WEAI questionnaire.

The standard WEAI Instructional Guide (Alkire, *et.al.*, 2013) uses 5 domains and 10 indicators, outlined in Table 2, to calculate the WEAI. However, because the domain on Time (which measures workload and respondents' satisfaction with their leisure time) was excluded from the Adoption Pathways survey, the analysis presented in this paper can only use four domains with 8 indicators. With the Time domain missing, it is not advisable to calculate the five Dimensions of Empowerment (5DE), the Gender Parity Index and the WEAI. Therefore, this paper will only analyze the raw headcount ratios on the eight indicators that were collected. The raw headcount ratios measure the percentage of the population who had inadequate achievement in the indicator of interest.

Table 2 Indicators and domains in the WEAI

Domain	Indicators	Included in Tanzania Pathways survey?
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¹ These three regions are among the targeted regions of USAID's Feed the Future (USAID/Tanzania 2011).

Production decision making	Input in productive decisions	Yes
	Autonomy in production	Yes
Access to productive resources	Ownership of assets	Yes
	Purchase, sale or transfer of assets	Yes
	Access to and decisions on credit	Yes
Control over use of income	Control over use of income	Yes
Community leadership	Group membership	Yes
	Speaking in public	Yes
Time	Workload	No
	Leisure	No

In addition to the time allocation questions that were excluded in the Adoption Pathways survey, certain questions were missing or were modified from the standard WEAI questionnaire. This is likely to bias the results from what would have been found had the standard survey been adopted. The notable modifications to the questionnaire design that are likely to cause the results to be underestimated are: input in productive decisions; the level of access to, and decisions on credit; ability to speak in public; and the level of group memberships. Note that the intention in this paper is not to assess the biases from the data collection or the quality of the data. The details on the consequences of modifications to the survey questions are discussed in the annex of this report. As a way of comparison, this paper also analyzes data from Uganda since it used the standard WEAI survey. The data from the Uganda draws from the WEAI pilot project.

3. Raw headcount ratios of indicators

The raw headcount ratios of eight indicators for Tanzania and Uganda are shown in Table 3, and in figures 1 and 2 for Tanzania and Uganda, respectively. They represent the proportion of the population that has an inadequate achievement in each indicator. Unlike the standard WEAI indicators, the raw headcount ratios are not weighted. The discussion focuses on the results for Tanzania, and Uganda results will only be used for comparison purposes.

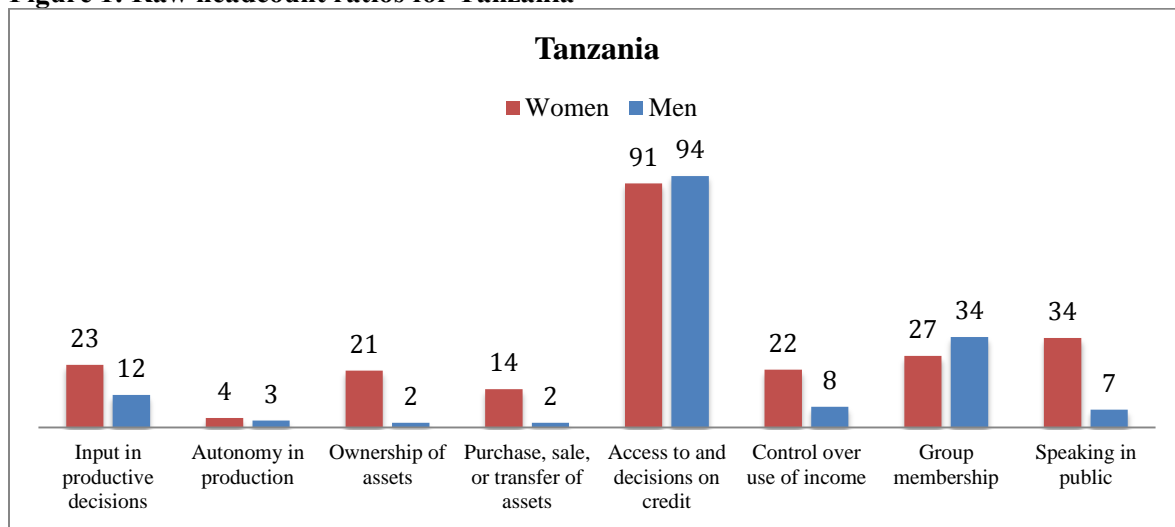
Table 3: Raw Headcount Ratios of Indicators of Disempowerment

	Tanzania		Uganda	
	Women (n=388)	Men (n=369)	Women (n=335)	Men (n=262)
Input in productive decisions	23.5%	12.2%	7.2%	5.0%
Autonomy in production	3.6%	2.7%	16.7%	49.6%
Ownership of assets	21.4%	1.9%	11.3%	1.9%
Purchase, sale, or transfer of assets	14.4%	1.9%	15.2%	6.5%
Access to and decisions on credit	91.2%	94.0%	75.2%	66.0%

Control over use of income	21.6%	7.9%	21.2%	9.2%
Group membership	26.8%	33.9%	37.6%	31.7%
Speaking in public	33.5%	6.8%	16.7%	4.2%

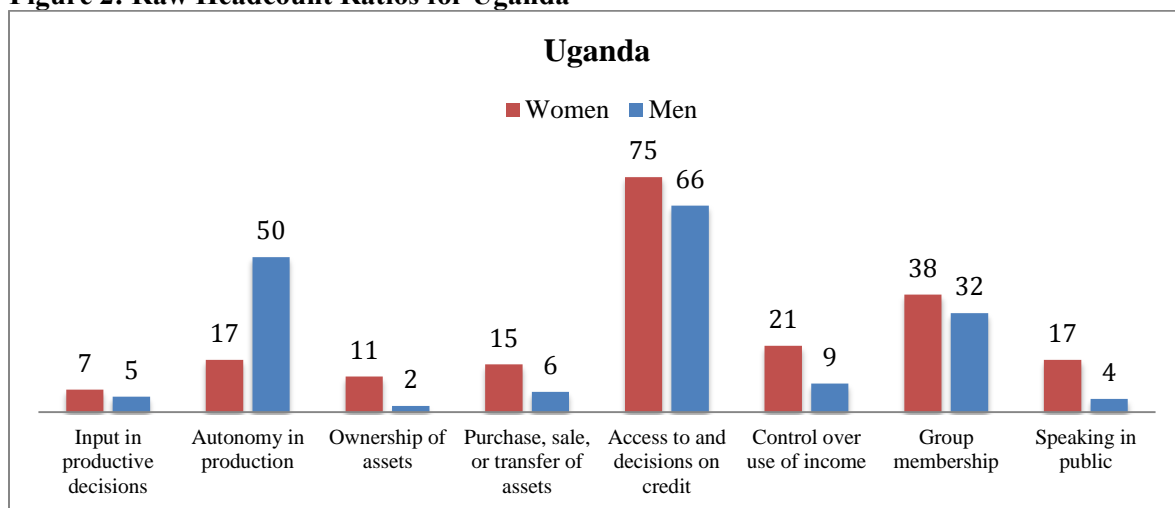
Source: Adoption Pathways survey, Tanzania

Figure 1: Raw headcount ratios for Tanzania



Source: Adoption Pathways survey, Tanzania

Figure 2: Raw Headcount Ratios for Uganda



Source: WEAI pilot, Uganda

Women are less likely than men to have adequate achievements in every area except for group membership and access to credit in Tanzania. In fact, access to credit is the largest constraint to empowerment with 91 percent of women and 94 percent of men lacking access to, and decision-making power on credit. These figures are about 15 percent and nearly 30 percent worse than those reported in Uganda for women and men, respectively. However, questions on access to credit for Tanzania are significantly different from Uganda's, with the former measuring the respondent's own access to credit, while the latter measures the households' access to credit. Secondly, the Tanzania survey excludes in-kind loans and loans that were taken for reasons that were not

specifically listed.² While it is likely that respondents in Tanzania had little access to credit, the phrasing of the questions on credit is likely to cause a significant underestimation of households who did indeed have access to credit (as discussed further in the Annex). In other words, the degree of deprivation in lack of access to credit may be overestimated, and it can partly be explained by the way the questions were structured and phrased.

The second largest area of deprivation for women in Tanzania is speaking in public. This is also the area with the largest gender gap with 34 percent of women who are uncomfortable speaking in public compared to only 7 percent of men. Note that the percentage of respondents who are deprived for Tanzania are higher than for Uganda, and this could be partly explained by the fact that one of the context in which the respondent is comfortable speaking in public is missing in the questionnaire (see Annex for details).³

The area with the second largest gender gap in Tanzania is the ownership of assets. 21 percent of women do not have adequate achievement compared to only 2 percent of men. Similarly, women have a much lower achievement in purchase, sale or transfer of assets with a figure of 14 percent against 2 percent for men. Therefore, access and ownership of resources constitutes a key constraint to empowerment for women.

Input in productive decisions also limits women's empowerment in Tanzania with a figure of 23 percent, which is 11 percent higher than men's. Again, the level of inadequacy is higher than in Uganda, and this is partly explained by the missing questions in the survey. They underestimate certain cases whereby respondents feel that they can take decisions on production. In other words, it overestimates the extent of deprivation in this area (see annex for details).

Women have attained the most achievement in autonomy in production. Most men have adequate achievement in autonomy in production, ownership of assets and purchase, sale and transfer of assets.

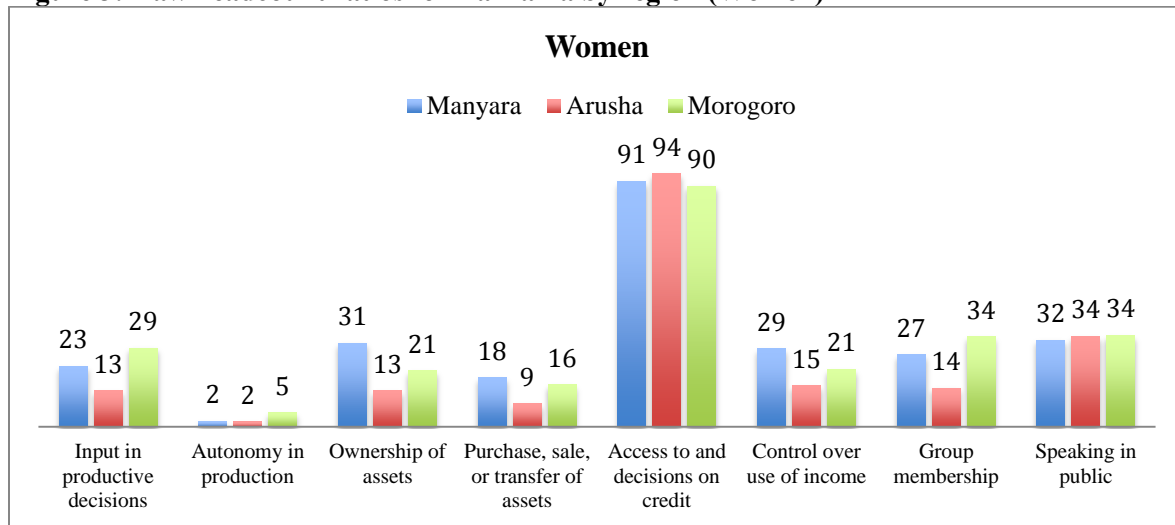
4. Raw headcount ratios of indicators by region

The raw headcount ratios for Tanzania are disaggregated by region in figures 3 and 4 for women and men, respectively.

² It asks whether the respondent needed credit for buying seeds, fertilizer, herbicide and pesticides, farm equipment, invest in transport, oxen for traction, livestock for fattening, invest in irrigation system, invest in seed drill or minimum tillage system, non-farm business or trade, pay land rent, food, or non-food consumption needs (health/education/travel/tax).

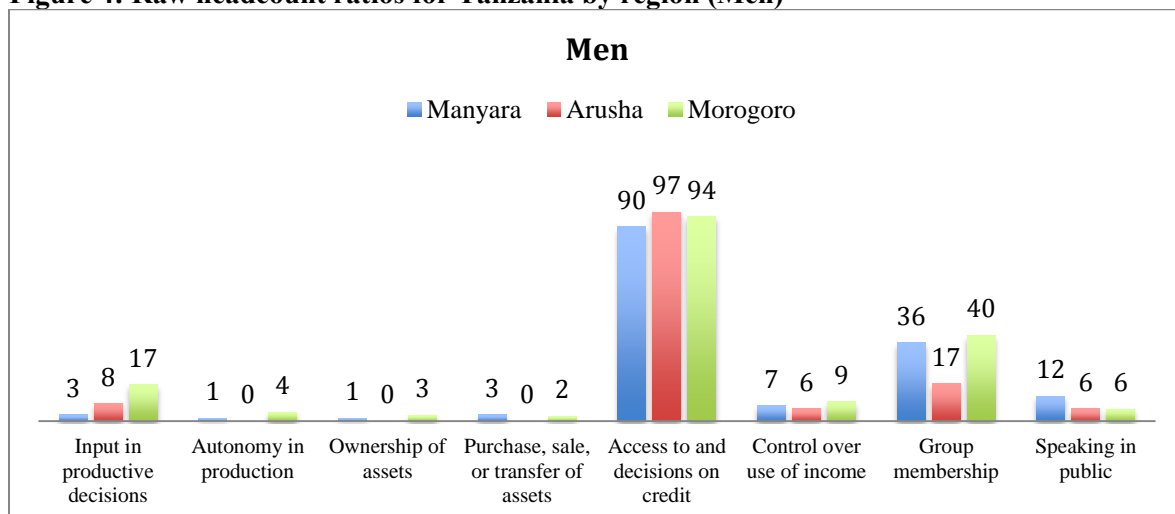
³ The question, "Do you feel comfortable speaking up in public to protest the misbehavior of authorities or elected officials?" is missing.

Figure 3: Raw headcount ratios for Tanzania by region (Women)



Source: Adoption Pathways survey, Tanzania

Figure 4: Raw headcount ratios for Tanzania by region (Men)



Source: Adoption Pathways survey, Tanzania

In all regions, regardless of the sex of the respondent, the largest source of deprivation comes from lack of access to and decisions on credit. Men and women in Arusha face the biggest constraint in this area. However, in other areas, women in Arusha fare better than women in Manyara and Morogoro, such as in input in productive decisions, ownership of assets, purchase, sale and transfer of assets, control over use of income and group membership.

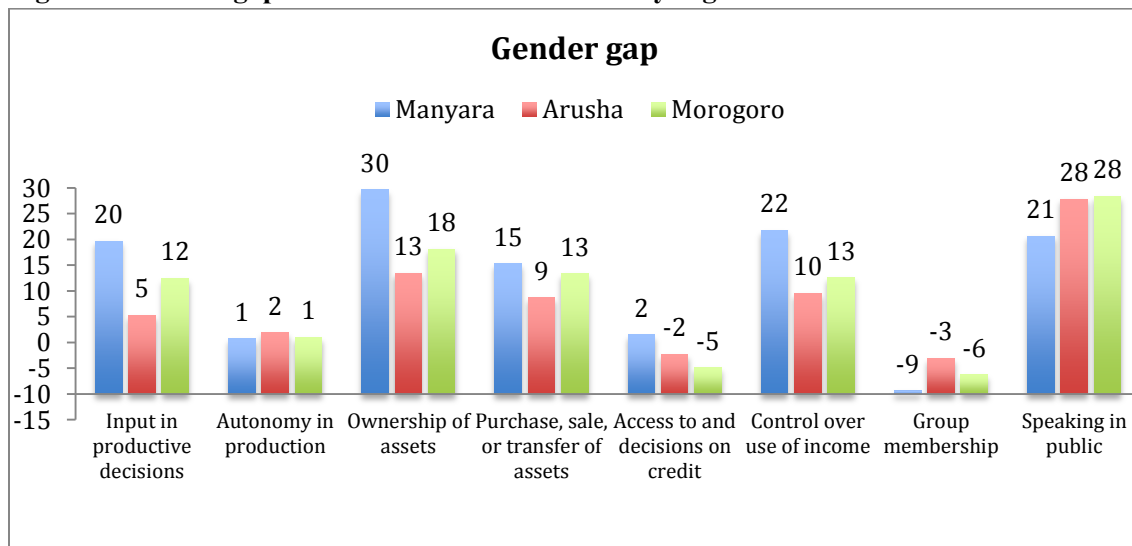
Women in Manyara have the least control over use of income and ownership of assets. Morogoro women face greater inadequacy in input in productive decisions and group membership than women in the other regions. The indicator that contributes the least to disempowerment is autonomy in production for women in all regions.

A third of men in Manyara and Morogoro have inadequate achievement in group membership, compared to 17 percent of men in Arusha. Men in Morogoro have the least control over input in productive decisions compared to men in other regions.

For all other areas of autonomy in production, ownership of assets, purchase, sale or transfer of assets, control over use of income, men generally face little constraints.

Figure 5 presents the gender gap of the raw headcount ratios between women and men, which is derived by subtracting women’s raw headcount ratios from men’s for each region. Positive numbers indicate that women are more deprived than men, while negative numbers denote that men are more deprived than women.

Figure 5: Gender gap of the raw headcount ratios by region



Source: Adoption Pathways survey, Tanzania

For all regions, speaking in public has the biggest gender gap where women are much more deprived than men. In Manyara, women are much worse off than men in attaining adequate ownership of assets with a largest gap of 30 percent. They also face the largest gender gap in input in productive decisions, purchase, sale or transfer of assets, and control over use of income compared to other regions.

5. Conclusion

In order to summarize the findings, Table 4 shows the areas that women and men have the least adequacy in.

Table 4: Key contributors to disempowerment by gender and region

	Women	Men	Gender gap
Region	Indicators	Indicators	Indicators
All	Credit	Credit	Speaking in public

	Speaking in public	Group membership	Asset ownership
Manyara	Credit	Credit	Asset ownership
	Speaking in public	Group membership	Control over income
Arusha	Credit	Credit	Speaking in public
	Speaking in public	Group membership	Asset ownership
Morogoro	Credit	Credit	Speaking in public
	Speaking in public	Group membership	Asset ownership
	Group membership		

Across all regions and gender, a lack of access to credit and the decision making power on credit are the largest constraint on empowerment. However, due to the way the questions were structured and phrased in the survey, the degree of deprivation in access to credit may be overestimated. In the Tanzania case, the indicator measures respondent's access to credit as opposed to the household's access to credit. Further, it excludes in-kind loans and loans that were taken for reasons that were not specifically listed in the survey. While keeping these limitations in mind, the results suggest that women and men are equally deprived of access to credit.

For women, the reluctance to speak in public is the second largest constraint to empowerment, while for men, it is the lack of membership in groups.

These results suggest that interventions that improve women's access to credit and increases their participation in decisions on credit would improve their empowerment significantly. Projects or activities that encourage women to speak in public and participate in group membership are also likely to strengthen their empowerment and reduce the gender gap between women and men.

Women are deprived of ownership and control over assets and income, and the gap in achievement with men is sizeable. Women in Manyara are particularly worse off in these areas and face the biggest gender gap. Therefore, projects and initiatives that promote women's ownership and control over assets and income would enhance women's empowerment and reduce the gender gap.

It must be noted that since the survey did not include questions about workload and the adequacy of leisure time, these factors were not considered in the analysis. The WEAI Baseline study (Malapit, *et.al.*, 2014) has revealed that heavy workload and lack of leisure time are significant impediments to women's empowerment in many countries, and this may also prove to be the case in Tanzania. Additional data collection on time use of women in agriculture would be recommended to examine whether this is indeed the case.

References

Alkire, S., Malapit, H., Meizen-Dick, R., Peterman, A., Quisumbing, A., Seymour, G. and A. Vaz (2013). Instructional Guide on the Women's Empowerment in Agriculture Index.

http://www.ifpri.org/sites/default/files/weai_instructionalguide.pdf. Accessed on [August 16 2013].

Feed the Future (2011). Tanzania FY2011-2015 Multi-Year Strategy

<http://feedthefuture.gov/sites/default/files/country/strategies/files/TanzaniaFTFMulti-YearStrategy.pdf>. Accessed on [Sept 25 2014].

Malapit, H., Sproule, K., Kovarik, C., Meizen-Dick, R., Quisumbing, A., Ramzan, F., Hoque, E., & Alkire, S. (2014). Women's Empowerment in Agriculture Index: Baseline Report. *International Food Policy Research Institute (IFPRI)*.

Annex

Notes on the data in Tanzania using the Adoption Pathways survey

The questions in the Adoption Pathways survey are not exactly consistent with the standard WEAI questions. The modifications to the questionnaire design are likely to cause an underestimation or overestimation of results compared to those arising from the standard WEAI questionnaire. The discussion below presents the modification to the indicators and the likely consequences of biases arising from these changes. Note that these biases arise from what would have been found had the standard WEAI survey been adopted. The intention is not to assess the biases from the data collection or the quality of the data.

Indicator: Input in Productive Decisions

1. The question, “Did you participate in fishing and fishpond culture in past 12 months?” is missing. However, this may not be a problem if the communities in the survey are not likely to engage in fishing.
2. In the standard WEAI calculations, the sub-indicator on the level of input into decision-making and a sub-indicator on the extent to which the individual feels he/she can participate in decision-making are aggregated to create an indicator called *input in productive decisions*. However, the questions used to create the latter sub-indicator (the extent to which the individual feels he/she can participate in decision-making) are missing. Specifically, the missing questions are: “When decisions are made regarding the following aspects of household life, who is it that normally takes the decision?” (g01_a); and “To what extent do you feel you can make your own decisions regarding these aspects of household life?” (g02_a). The aggregated indicator therefore only uses information from the sub-indicator on the level of input into decision-making, resulting in an underestimation of this indicator compared to standard WEAI indicators because the information from the latter sub-indicator is missing.

Indicator: Ownership of assets

1. Unlike the standard WEAI questions, household’s ownership of land is not disaggregated into agricultural and non-agricultural land. The extent of household land ownership in the survey is high with figures 96.6 percent for women and 97.4 percent for men. However, since the **ownership of assets** indicator combines

all assets (including non-agricultural assets), this should not cause a bias in results.

Table A1. Indicator: Ownership of assets

	Women n=413	Men n=381
Household owns (agricultural or non-agricultural) land	96.6%	97.4%

2. Among the agricultural household assets, the question on ownership of agricultural fish pond or fishing equipment is missing. However, this may not be a problem if the households in the survey area are not likely to own these assets.

Indicator: Purchase, sale, or transfer of assets

1. The indicator on **purchase, sale, or transfer of assets** measures whether the individual jointly has at least one right (purchase, sale or transfer) in at least one agricultural asset. However, since land includes non-agricultural land, if women are more likely to control non-agricultural land but not control agricultural land, there could be an overestimation of this indicator.

Indicator: Access to, and decisions on credit

1. The questions on access to credit are different from the standard WEAI survey in several ways. Firstly, the Adoption Pathway survey doesn't ask whether the respondent had access to in-kind loans, so there would be an underestimation of in-kind loans. Secondly, the survey asks whether the respondent received credit rather than whether any household member received credit. Therefore it underestimates the instances of other household members receiving credit. Thirdly, the survey asks whether the respondent needed credit for a particular reason such as to buy seeds, fertilizers, buy food, etc. before they ask whether they actually received credit. Asking this way (by each reason of a loan), rather than asking, "Did anyone in your household take any loans or cash/in-kind from source X" is likely to underestimate the access to credit for other reasons that are not specifically listed. These reasons likely explain why the average number of credit sources is low as shown below.

Table A2. Indicator: Access to, and decisions on credit

	Women	Men
Average number of credit sources that the individual uses	0.09	0.06

Indicator: Group membership

1. Questions on membership in Forest users' group, mutual help or insurance group, trade and business association, civic groups and local government are excluded from the survey. Hence, there may be a downward bias in estimating group memberships because of these missing categories.

Indicator: Speaking in public

1. The question, "Do you feel comfortable speaking up in public to protest the misbehavior of authorities or elected officials?" is missing. This likely leads to a downward bias in the indicator on whether they are comfortable speaking in public (in at least one context) since one context is missing.

Indicators: Workload and Leisure

1. The questions measuring the time use of respondents and their satisfaction with their leisure time are missing.