



Evans School Policy Analysis and Research (EPAR)

LSMS-ISA Land Tenure Summary Statistics
EPAR Technical Report #357

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This brief includes summary statistics on indicators of land tenure from the World Bank's Living Standards Measurement Study - Integrated Surveys on Agriculture (LSMS-USA) for all currently available survey waves for Tanzania (2008-09, 2010-11, 2012-13, 2014-15), Ethiopia (2011-12, 2013-14, and 2015-16), and Nigeria (2010-11, 2012-13, and 2015-16).

We present the same set of estimates for each survey wave in each country: the proportion of owned plots by sex of the plot owner and existence of a title/certificate. As questions about plot ownership are not asked in the same way in every country or survey wave, we note any differences across waves for each country. All estimates are weighted using plot-level weights calculated by multiplying the household survey weight by the plot area, following the convention of the World Bank LSMS-ISA team.

1. Tanzania

For the first three waves of the Tanzania LSMS-ISA, *plot ownership status* is based on the question "What was the ownership status of this plot?", with the response options "owned", "used free of charge", "rented in", "shared - rent", and "shared - own". We define plots as owned if respondents answered "owned" or "shared - own". This question is not asked in Wave 4. Instead, the survey asks "How was this plot acquired?", with the response options "inheritance", "gift", "borrowing from family member", "land allocation from village council", "purchased", "used free of charge", "rented in", "shared - rent", "shared - own", and "squatting, clearing". For this wave, we define plots as owned if respondents answered "inheritance", "gift", "purchased", or "shared - own".

For all four waves, *plot title/certificate* is based on the question "Did anyone in your household have a title for this plot?"¹ We do not distinguish between types of title/certificate/documentation, and only divide plots by whether they have any form of title/certificate.

In all four waves, sex of the plot owner is based on the question "Who in the household owns this plot?", where the respondent may choose to list up to 2 joint owners (most commonly, the head of household is listed first). We distinguish between plots with at least 1 female owner, plots with only female owners, plots with only male owners, and plots with 2 owners of mixed gender.

The first three waves of the Tanzania LSMS-ISA follow the same panel of respondent households, in addition to tracking "split-off" households of members of the panel households that left between survey waves to form their own separate

¹ In Wave 4, the survey asks "What type of certificate does your household have for this plot?" However, the response options for the types of certificate are the same as those previously asked for the type of title, so we consider this question as equivalent.

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households (leading to increasing sample sizes in later waves). Therefore, changes between the first three waves may be interpreted as representing changes among the same sample of households, plus splitoff households.

The survey sample was refreshed for Wave 4, however, with the selection of a new cohort of households that will be tracked in future survey rounds. As a result, the Wave 4 sample of 3,352 households is much smaller than the 5,010 households surveyed in Wave 3 which included all original panel households as well as all splitoff households. This difference in household sample size may account for the significant drop in the number of plots reported on between Waves 3 and 4.

The samples are nationally representative for all four survey waves, however, so even though the sample was refreshed in Wave 4, changes in the selected indicators may be understood as representative of average changes at the national level.

1.1. Tanzania Wave 4 (2014-15)

The sample includes 4,271 plots (excluding 20 plots with missing plot area), of which 3,047 (71.34%) are owned by household of the respondent (either inherited, gifted, purchased, or shared owned). 403 plots are rented in by the household, and the remaining 821 are used free of charge, borrowed from a family member, allocated from a village council, or squatted on by the household.

Table 1. Proportion of owned plots, by sex of owner and title/certificate type (Tanzania, 2014)

	(1) All Owned Plots	(2) Owned Plots with Title/Certificate	(3) Owned Plots with No Title/Certificate
Plot owned or co-owned by a female	0.574 (0.025)	0.635 (0.065)	0.555 (0.025)
Female-only owned plot	0.165 (0.019)	0.112 (0.025)	0.181 (0.022)
Plot with mixed gender ownership	0.409 (0.027)	0.523 (0.069)	0.374 (0.028)
Male-only owned plot	0.426 (0.025)	0.365 (0.065)	0.445 (0.025)
Observations	3044	650	2394

The sample excludes plots rented in or used free of charge, borrowed from a family member, allocated from a village council, or squatted on by the household, and three owned plots with missing data on gender of the plot owner. Estimates are plot-level cluster-weighted means, with standard errors in parentheses.

1.2. Tanzania Wave 3 (2012-13)

The sample includes 7,474 plots (excluding 31 plots with missing plot area), of which 6,319 (84.5%) are owned by the household of the respondent (either owned and used alone or owned and shared). 308 plots are rented in by the household, and the remaining 845 are used free of charge by the household.

Table 2. Proportion of owned plots, by sex of owner and title/certificate type (Tanzania, 2012)

	(1) All Owned Plots	(2) Owned Plots with Title/Certificate	(3) Owned Plots with No Title/Certificate
Plot owned or co-owned by a female	0.534 (0.025)	0.502 (0.058)	0.541 (0.027)
Female-only owned plot	0.164 (0.016)	0.106 (0.021)	0.177 (0.018)
Plot with mixed gender ownership	0.370 (0.019)	0.395 (0.049)	0.364 (0.020)
Male-only owned plot	0.466 (0.025)	0.498 (0.058)	0.459 (0.027)
Observations	6315	1068	5247

The sample excludes plots rented in or used free of charge, and four owned plots with missing data on gender of the plot owner. Estimates are plot-level cluster-weighted means, with standard errors in parentheses.

1.3. Tanzania Wave 2 (2010-11)

The sample includes 6,066 plots (excluding 135 plots with missing plot area), of which 5,140 (84.7%) are owned by the household of the respondent (either owned and used alone or owned and shared). 221 plots are rented in by the household, and the remaining 705 are used free of charge by the household.

Table 3. Proportion of owned plots, by sex of owner and title/certificate type (Tanzania, 2010)

	(1) All Owned Plots	(2) Owned Plots with Title/Certificate	(3) Owned Plots with No Title/Certificate
Plot owned or co-owned by a female	0.527 (0.021)	0.641 (0.050)	0.508 (0.022)
Female-only owned plot	0.145 (0.012)	0.113 (0.023)	0.151 (0.014)
Plot with mixed gender ownership	0.381 (0.021)	0.527 (0.059)	0.357 (0.021)
Male-only owned plot	0.473 (0.021)	0.359 (0.050)	0.492 (0.022)
Observations	5139	640	4499

The sample excludes plots rented in or used free of charge, and one owned plot with missing data on gender of the plot owner. Estimates are plot-level cluster-weighted means, with standard errors in parentheses.

1.4. Tanzania Wave 1 (2008-09)

The sample includes 5,204 plots (excluding 132 plots with missing plot area), of which 4,315 (82.9%) are owned by the household of the respondent (either owned and used alone or owned and shared). 304 plots are rented in by the household, and the remaining 585 are used free of charge by the household.

Table 4. Proportion of owned plots, by sex of owner and title/certificate type (2008)

	(1) All Owned Plots	(2) Owned Plots with Title/Certificate	(3) Owned Plots with No Title/Certificate
Plot owned or co-owned by a female	0.422 (0.037)	0.214 (0.107)	0.452 (0.027)
Female-only owned plot	0.139 (0.015)	0.058 (0.026)	0.151 (0.014)
Plot with mixed gender ownership	0.283 (0.030)	0.156 (0.083)	0.302 (0.026)
Male-only owned plot	0.578 (0.037)	0.786 (0.107)	0.548 (0.027)
Observations	4313	380	3933

The sample excludes plots rented in or used free of charge, and two owned plots with missing data on gender of the plot owner. Estimates are plot-level cluster-weighted means, with standard errors in parentheses.

2. Ethiopia

The LSMS-ISA surveys in Ethiopia ask for information about “fields”, which are sub-divisions of larger parcels. Ownership information is collected at the parcel level, but area and other details are collected at the field level, so we conducted our analysis at the field level to avoid potentially losing any detail aggregating to the parcel level, and label fields as “plots” for comparability with the other LSMS-ISA surveys. Parcel characteristics are assigned to all fields in the parcel.

The Ethiopia LSMS-ISA surveys do not ask whether plots (parcels/fields) are owned, since land in Ethiopia is held by the state. Instead in Waves 2 and 3 the survey asks “How did your household acquire this plot?”, with the response options “granted by local leaders, inherited, rent, borrowed for free, “moved in without permission”, “shared crop in”, “purchased” (in Wave 3 only), and “other (specify)”. For plots that are not rented, borrowed for free, or share-cropped, respondents are asked “Does anyone in the household have the right to sell this plot or use it as collateral?” We use plots that the household has the right to sell or use as collateral as a proxy for ‘owned’ plots, and as approximately equivalent in terms of land rights.

In Waves 2 and 3, sex of the plot owner is based on the question “Who in the household can decide whether to sell this plot or use it as collateral?”, where the respondent may choose to list up to 2 joint owners (most commonly, the head of household is listed first). We distinguish between plots with at least 1 female owner, plots with only female owners, plots with only male owners, and plots with 2 owners of mixed gender. Plot title/certificate in all three waves is based on the question “Does your household have a certificate for this plot?”

The question on selling plots or using them as collateral is not asked in Wave 1. The only question related to ownership for which we can then disaggregate ownership by sex is “Does your household have a certificate for this plot?” As a result, we cannot produce the same estimates of the proportion of owned plots by sex and title/certificate type for Wave 1, since ownership information is only available for the subset of owned plots for which the household has a certificate. We therefore report on sex-disaggregated ownership for just that sample of plots in Wave 1, where sex of the certificate holder is defined in the same way as sex of the plot owner in Waves 2 and 3.

2.1. Ethiopia Wave 3 (2015-16)

The sample includes 12,902 plots (called fields in the Ethiopia LSMS-ISA questionnaires). We use plots that the household has the right to sell or use as collateral as a proxy for ‘owned’ plots, and as approximately equivalent in terms of land rights. This represents 10,229 plots (79.3%), including most plots granted by local leaders (4636 of 4897 plots) and inherited (4789 of 5336 plots) and excluding all plots that are rented in (772 plots) or used for free (165 plots).

Table 5. Proportion of owned plots, by sex of owner and title/certificate type (Ethiopia, 2015)

	(1) Owned Plots HH Has Right to Sell or Use as Collateral	(2) Owned Plots with Title/Certificate	(3) Owned Plots with No Title/Certificate
Plot owned or co-owned by a female	0.848 (0.023)	0.874 (0.016)	0.792 (0.056)
Female-only owned plot	0.193 (0.017)	0.210 (0.019)	0.157 (0.033)
Plot with mixed gender ownership	0.655 (0.028)	0.664 (0.027)	0.635 (0.053)
Male-only owned plot	0.152 (0.023)	0.126 (0.016)	0.208 (0.056)
Observations	10143	6082	4050

The sample is plots the HH has the right to sell or use as collateral. Plots with missing information on the sex of the owner are excluded. Estimates are plot-level cluster-weighted means, with standard errors in parentheses.

2.2. Ethiopia Wave 2 (2013-14)

The sample includes 12,557 plots (called fields in the Ethiopia LSMS-ISA questionnaires). We use plots that the household has the right to sell or use as collateral as a proxy for ‘owned’ plots, and as approximately equivalent in terms of land rights. This represents 9,777 plots (77.9%), including most plots granted by local leaders (4521 of 4916 plots) and inherited (4742 of 5202 plots) and excludes all but 12 plots that are rented in (1508 plots) or used for free (154 plots).

Table 6. Proportion of owned plots, by sex of owner and title/certificate type (Ethiopia, 2013)

	(1) Owned Plots HH Has Right to Sell or Use as Collateral	(2) Owned Plots with Title/Certificate	(3) Owned Plots with No Title/Certificate
Plot owned or co-owned by a female	0.756 (0.034)	0.802 (0.023)	0.660 (0.074)
Female-only owned plot	0.137 (0.017)	0.150 (0.024)	0.116 (0.020)
Plot with mixed gender ownership	0.619 (0.036)	0.652 (0.031)	0.544 (0.067)
Male-only owned plot	0.244 (0.034)	0.198 (0.023)	0.340 (0.074)
Observations	9656	5004	4460

The sample is plots the HH has the right to sell or use as collateral. Plots with missing information on the sex of the owner are excluded. Estimates are plot-level cluster-weighted means, with standard errors in parentheses.

2.3. Ethiopia Wave 1 (2011-12)

The sample includes 10,800 plots (called fields in the Ethiopia LSMS-ISA questionnaires). The other two LSMS-ISA waves for Ethiopia include a question on whether the household has the right to sell or use a plot as collateral, which we use as a proxy for ‘owned’ plots, and as approximately equivalent in terms of land rights. This question is not asked in the first wave. Instead, the only question related to ownership is whether the household has a certificate for the plot. This question is asked for the 3,808 plots (35.3%) that were granted by local leaders or inherited. Similarly, while for the other two waves for sex of the plot ‘owner’ we used the sex of the household members who can decide whether to sell or use plots, in this wave the only ‘owner’ information available is the name of the plot certificate holder(s). As a result, we cannot only produce estimates of ownership by gender for the second column, “Owned plots with title/certificate”.

Table 7. Proportion of owned plots, by sex of owner and title/certificate type (Ethiopia, 2011)

	(1) Owned Plots HH Has Right to Sell or Use as Collateral	(2) Owned plots with Title/Certificate	(3) Owned plots with No Title/Certificate
Plot owned or co-owned by a female		0.610 (0.062)	
Female-only owned plot		0.157 (0.022)	
Plot with mixed gender ownership		0.452 (0.064)	
Male-only owned plot		0.390 (0.062)	
Observations		3664	

The sample is plots for which the HH has a certificate. Plots with missing information on the sex of the owner are excluded. Estimates are plot-level cluster-weighted means, with standard errors in parentheses.

3. Nigeria

For all three waves of the Nigeria LSMS-ISA, *plot ownership status* is based on the question “How was this plot acquired?”, with the response options “outright purchase”, “rented for cash or in-kind goods from other households”, “used free of charge”, “distributed by the community”, and “family inheritance” (the latter two options are combined in Waves 1 and 2). In all three waves, we define plots as owned if respondents answered “outright purchase”. In Wave 3, we also define inherited plots as owned, since respondents are asked to identify the owners of these plots as well as purchased plots. In Waves 1 and 2, respondents only identify the owners for plots which are purchased, and plots acquired through inheritance are not distinguished from plots “distributed by community or family”. Additionally, in Waves 1 and 2, the post-harvest survey does not include the response option “family inheritance” for the question “How was this plot acquired?”. For consistency across waves, we also record plots as “owned” if they are “distributed by community or family” AND someone in the household has the right to sell or use the plot as collateral (following the same approach for implicit ownership as in the Ethiopia LSMS-ISA).

For Waves 2 and 3, *plot title/certificate* is based on the question “Have you or any other household member acquired a legal title that verifies the rights of occupancy to this plot?”, where plots with a “yes” response are considered to have a title/certificate. In Wave 3, this question is asked for all plots that were purchased, distributed by the community, or inherited. In Wave 2, this question is only asked for purchased plots, so we can only analyze titles among that subset of plots. Further, in Wave 2 respondents are allowed to answer “don’t know” to this question. For respondents who answer “don’t know” and then answer “yes” to the question “Do you or any other household member have other ownership or legal documents for this plot?”, we record that plot as having a title/certificate. We do not distinguish between types of title/certificate/documentation, and in both waves we only divide plots by whether they have any form of title/certificate. No questions about plot title/certificate are asked in Wave 1, so we cannot disaggregate plots by whether they have a title/certificate for this wave.

In all three waves, sex of the plot owner is based on the question “Who is(/are) the owner(s) of this plot?”, where in Waves 2 and 3 the respondent may choose to list up to 2 joint owners (most commonly, the head of household is listed first). We distinguish between plots with at least 1 female owner, plots with only female owners, plots with only male owners, and plots with 2 owners of mixed gender. In Wave 1, the respondent may only list one plot owner. In Wave 3, this question is asked for all plots that were purchased, distributed by the community, or inherited. In Waves 1 and 2, however, this question is only asked for purchased plots. As a result, we use the gender of the individual(s) who have the right to sell or use plots as collateral for plots distributed by community or family, which we also count as “owned” when at least one person in the household has that right. In both Waves 1 and 2, the respondent is asked whether they have the right to sell or use a plot as collateral, and is then asked to identify up to three other household members with that right. We define plots with only female owners, plots with only male owners, and plots with owners of mixed gender in the same way as for the question on “Who is(/are) the owner(s) of this plot?”.

3.1. Nigeria Wave 3 (2015-16)

The sample includes 5,941 plots (excluding 6 plots with missing area information). We record plots that are purchased outright as well as plots inherited or distributed from the community that someone in the household has the right to sell or use as collateral as “owned” plots. This represents 4,049 plots (68.1%), and excludes all plots that are rented in (462 plots) or used for free (525 plots).

Table 7. Proportion of owned plots, by sex of owner and title/certificate type (Nigeria, 2015)

	(1) All Owned Plots	(2) Owned Plots with Title/Certificate	(3) Owned Plots with No Title/Certificate
Plot owned or co-owned by a female	0.094 (0.012)	0.084 (0.030)	0.093 (0.014)
Female-only owned plot	0.035 (0.006)	0.015 (0.007)	0.038 (0.007)
Plot with mixed gender ownership	0.059 (0.011)	0.069 (0.030)	0.055 (0.012)
Male-only owned plot	0.906 (0.012)	0.916 (0.030)	0.907 (0.014)
Observations	4046	488	3514

The sample is plots that the HH (1) acquired through outright purchase, or (2) acquired through inheritance/distributed by the community and has the right to sell or use as collateral. Three plots with missing information on the sex of the owner are excluded. Plot certificate information is missing for plots only recorded in the post-harvest survey. Estimates are plot-level cluster-weighted means, with standard errors in parentheses.

3.2. Nigeria Wave 2 (2012-13)

The sample includes 6,093 plots (excluding 79 plots with missing area information and 26 plots with missing plot acquisition information). We record plots that are purchased outright as well as plots inherited or distributed from the community that someone in the household has the right to sell or use as collateral as “owned” plots. This represents 3,732 plots (61.3%), and excludes all plots that are rented in (585 plots) or used for free (717 plots). This wave only asks whether the household has a title/certificate for a plot for plots that were purchased outright.

Table 8. Proportion of owned plots, by sex of owner and title/certificate type (Nigeria, 2012)

	(1) All Owned Plots	(2) Owned Plots with Title/Certificate	(3) Owned Plots with No Title/Certificate
Plot owned or co-owned by a female	0.110 (0.017)	0.143 (0.057)	0.013 (0.008)
Female-only owned plot	0.026 (0.009)	0.027 (0.013)	0.009 (0.006)
Plot with mixed gender ownership	0.084 (0.015)	0.116 (0.055)	0.003 (0.004)
Male-only owned plot	0.890 (0.017)	0.857 (0.057)	0.987 (0.008)
Observations	3732	163	98

The sample is plots that the HH (1) acquired through outright purchase, or (2) acquired through inheritance/distributed by the community and has the right to sell or use as collateral. Plot certificate information is only available for plots purchased outright. Estimates are plot-level cluster-weighted means, with standard errors in parentheses.

3.3. Nigeria Wave 1 (2010-11)

The sample includes 6,517 plots (excluding 245 plots with missing area information and 75 plots with missing plot acquisition information). We record plots that are purchased outright as well as plots inherited or distributed from the community that someone in the household has the right to sell or use as collateral as “owned” plots. This represents 3,789 plots (61.1%), and excludes all plots that are rented in (620 plots) or used for free (647 plots). This wave does not include a question on whether the household has a title/certificate for a plot. Therefore, we cannot calculate the number of owned plots with Title/Certificate.

Table 9. Proportion of owned plots, by sex of owner and title/certificate type (Nigeria, 2010)

	(1) All Owned Plots	(2) Owned plots with Title/Certificate	(3) Owned plots with No Title/Certificate
Plot owned or co-owned by a female	0.072 (0.012)		
Female-only owned plot	0.022 (0.006)		
Plot with mixed gender ownership	0.050 (0.010)		
Male-only owned plot	0.928 (0.012)		
Observations	3774		

The sample is plots that the HH (1) acquired through outright purchase, or (2) acquired through inheritance/distributed by the community and has the right to sell or use as collateral. Plot certificate information is not available in this wave. Estimates are plot-level cluster-weighted means, with standard errors in parentheses.