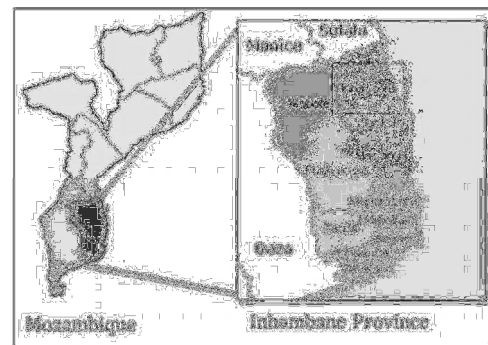


Gendered baseline studies for targeted development interventions: lessons learned from goat value chains in Mozambique

B.K. Boogaard, E. Waithanji, J. Poole and J.-J. Cadilhon, International Livestock Research Institute

Problem to address: Despite emerging public and donor attention on women and agriculture, relatively little quantitative sex-disaggregated data is currently available, particularly on women's involvement in marketing of livestock products. However, collecting and analysing data in a gender-disaggregated fashion enables to identify specific constraints faced by women in rural communities, which can lead to tailored development projects that address the needs of women and other underprivileged social groups. For example, the imGoats project in Mozambique intended to diversify smallholders' livelihood options by supporting goat products' commercialization. A baseline study before the project started has identified gendered differences in goat asset ownership, in income control and in goat meat consumption patterns. These three elements constitute key indicators of potential change in livelihood capabilities. The summarized information below shows that sex-disaggregated baseline data form a crucial start to setting up well targeted livestock development projects.

Data collection method: The target zones of the imGoats project were semi-arid areas of Mozambique, more specifically Inhassoro District, which is situated in the northern part of Inhambane Province. The district consists of two agro-ecological zones: a coastal and an interior zone. The interior zone is relatively dry with brown-red rather fertile soils, whereas the coastal zone is more humid with less fertile sandy soils. In both zones, livelihoods are based on subsistence agriculture; in the coastal zone livelihoods are also based on fishing. One of the factors strongly influencing the level of market access for smallholders in Inhassoro is



their distance to a tarmac road; the closer the community is to a tarmac road, the better the market access. Market access in this study was, therefore, defined in terms of distance to tarmac road, with less than 10 km representing 'high' market access and more than 10 km representing 'low' market access. Another factor is 'Project participation', which is related to earlier CARE activities in several communities. It was expected that communities that had worked before with a CARE project might have had different practices and attitudes compared with communities that had not previously worked with CARE. The household survey covered 6 project communities in Inhassoro district, with 14 respondents per community resulting in 84 household interviews. Baseline communities were selected using three criteria that might affect smallholders' goat production and marketing practices, namely: agro-ecological zone in Inhassoro (interior; coastal), market access (high; low), and history of participation in CARE development projects.

The initial questionnaire was developed in English and then translated to Portuguese for use by the enumerators. Prior to household surveys, the questionnaire was pre-tested in the field and revised to enhance clarity. Household interviews were conducted in the local language *Xitswa* and responses documented in Portuguese by eight enumerators. Each interview took about 1.5 hours. There were four female and four male enumerators. No effort was made to match the sex of the enumerator and the sex of the household respondent. For each household, one person was interviewed, which could be the person who took care of goats, head of household or his spouse. Sex of the respondent and that of the household head were documented. This resulted in three different gender categories: men in male-headed households (M-MMH), women in male-headed households (W-MMH) and the household head of female-headed households (FHH).

A week before data collection, each community received an official letter announcing the visit, explaining the purpose of the visit and requesting goat keepers to come to the centre ('*sede*') of the community to

participate in the interviews. The *sede* is a village meeting place and is the traditional mode of meeting and consulting communities which are widely spread out. Most interviews were, therefore, conducted at the centre of the community, not at respondents' homes. For interviews not conducted at the *sede*, respondents were selected purposively according to whether they were present at, or close to, the centre of the community. The intention was to have equal numbers of men and women from each community, but in some communities hardly any women showed up at the time of the interviews. In these communities, therefore, more men were interviewed. Hence, the survey data may inherently contain sample bias in terms of differences between those goat keepers who showed up at the *sede* and those who did not.

Table 1: Selected baseline variable for statistical gender analysis

Variable	Type	Categories (if applicable)
Gender	Nominal	M-MHH; W-MHH; FHH
Community	Nominal	Cachane; Chichangue; Mabime; Nhapale; Rumbatsatsa; Vulcanjane
Market access	Binary	Low access (>10km from tar road); High access (<10km from tar road)
Agro-ecological zone	Binary	Coastal zone; Interior zone
SEED project participation	Binary	No; Yes
Age	Continuous	Normal distribution
Years of education	Continuous	Non-normal distribution – recoded into binary variable
	Binary	No education; One or more years of education
Main occupation	Nominal	Crop production; Livestock; Monthly salaried job; Business; Handicraft; Other
Second occupation	Nominal	Crop production; Livestock; Business; Handicraft; Agricultural labour; Other
Land ownership	Nominal	Husband; Wife; Joint; Other relative
Goat ownership	Nominal	Men only; Women only; Jointly; Children
TLU per household	Continuous	Non-normal distribution – transformed to natural log
Goats per household	Continuous	Non-normal distribution – transformed to natural log
Years of goat keeping	Continuous	Non-normal distribution – recoded into nominal variable
	Nominal	1 to 3 years; 4 to 8 years; 9 to 14 years; 15 or more years
Market participation (goat sales)	Binary	No; Yes
Income control	Nominal	Household male; Household female; Joint household; Other
Expenses covered	Binary	No; Yes (Education; Food; Health; Housing; Clothing)
Goat meat consumption	Binary	No; Yes

Results:

Table 2: Main and second occupation of respondents disaggregated by gender

Gender categories	Total N	Crops	Live- stock	Monthly salaried job	Business	Handi- craft	Agricul- tural labour	Other
		Main occupation n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
M-MHH	44	28(63.6)	1 (2.3)	3 (6.8)	4 (9.1)	4 (9.1)	-	4 (9.1)
W-MHH	18	10 (55.6)	4 (22.2)	1 (5.6)	2 (11.1)	0 (0)	-	1 (5.6)
FHH	21	15 (71.4)	2 (9.5)	1 (4.8)	2 (9.5)	0 (0)	-	1 (4.8)
Total (%)	83 (100)	53 (63.9)	7 (8.4)	5 (6.0)	8 (9.6)	4 (4.8)	-	6 (7.2)
Gender categories	Total N	Second occupation						
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
M-MHH	41	14 (34.1)	13 (31.7)	-	6 (14.6)	4 (9.8)	1 (2.4)	3 (7.3)
W-MHH	18	6 (33.3)	4 (22.2)	-	3 (16.7)	0 (0)	4 (22.2)	1 (5.6)
FHH	20	5 (25.0)	5 (25.0)	-	4 (20.0)	1 (5.0)	1 (5.0)	4 (20.0)
Total (%)	79 (100)	25 (31.6)	22 (27.8)	-	13 (16.5)	5 (6.3)	6 (7.6)	8 (10.1)

Table 3: Livestock ownership by women

Animal species	Households (hh)		Animals						
	hh with animals	hh where women own animals	Total	Animals owned by women			Animals per household		
				n	n	(%)	Mean	s.e.	Med.
Goats ¹	83 (100)	41 (49)	727	279	(38)	8.8	0.77	6	7.2–10.3
Poultry	70 (84)	42 (50)	1278	513	(40)	18.3	1.68	14	14.9–21.6
Pigs	12 (14)	2 (14)	36	5	(14)	3.0	0.43	3	2.1–3.9
Sheep ²	6 (7)	3 (50)	37	12	(32)	6.2	2.2	5	0.4–11.9
Cattle	7 (8)	1 (13)	31	2	(6)	4.4	1.2	3	1.5–7.4

¹ In 3 households, children owned goats. On average, children owned 2 goats per household.

² In one MHH, a man owned 70 sheep; this number is considered an outlier and deleted from analysis, resulting in 82 households.

³ Percentages calculated over households with animals (i.e. households which do not have the specific animal have been excluded)

Table 4: Goat herd size and Tropical Livestock Unit for each gender category

Gender categories	Goat herd size						Tropical Livestock Unit					
	n	Raw data		Natural log transformed data			n	Raw data		Natural log transformed data		
		Mean	s.e.	Mean	s.e.	95% CI		Mean	s.e.	Mean	s.e.	95% CI
M-MHH	44	9.0	1.1	1.91	0.12	1.66-2.15	43	1.44	0.19	0.04	0.13	-0.22 - 0.30
W-MHH	18	10.1	1.8	2.06	0.17	1.70-2.42	18	1.98	0.47	0.25	0.22	-0.21 - 0.72
FHH	21	7.1	1.4	1.66	0.17	1.29-2.02	21	0.89	0.20	-0.42	0.17	-0.77 - -0.08
Total	83	8.8	0.77	1.88	0.09	1.70–2.05	82	1.42	0.16	-0.03	0.10	-0.22–0.16

Table 5: Significance of main effects for average TLU and goat herd size per household

Independent variables	df	Dependent variables	
		TLU ^a	Goat herd size
Gender	2	0.086*	0.643
Agro-ecological zone	1	0.267	0.129
Market access	1	0.042**	0.779
SEED project participation	1	0.448	0.779
First occupation	5	0.770	0.264
Second occupation	5	0.096*	<0.001***
Years of goat keeping	3	0.487	<0.001***
Goat herd size	1	<0.001***	-
Model parameters			
Change in log-likelihood		100.121	52.297
Df		19	18
Significance		<0.001***	<0.001***

^a Excluding outlier with 70 sheep (n=82)

* Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 6: Ownership of goats disaggregated by gender

Gender categories	N	Men only	Women only	Jointly	Children
		n (%)	n (%)	n (%)	n (%)
M-MHH	41 (100)	18 (44)	5 (12)	16 (39)	2 (2)
W-MHH	18 (100)	5 (28)	3 (17)	10 (56)	0 (0)
FHH	21 (100)	2 (10)	15 (71)	3 (14)	1 (5)
Total (%)	80 (100)	25 (31)	23 (29)	20 (36)	3 (4)

Table 7: Significance of main effects for goat meat consumption

Independent variables	df	Dependent variable
		Goat meat consumption
Gender	2	0.039**
Agro-ecological zone	1	0.099***
Market access	1	0.016**
SEED project participation	1	0.109
First occupation	5	0.699
Second occupation	5	0.582
Years of goat keeping	3	0.152
Goat herd size	1	0.243
Model parameters		
Change in log-likelihood		30.933
Df		19
Significance		0.041**

* Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 8: Control over income for goats and other livestock disaggregated by gender

Gender categories	Control over goat income				Control over other livestock income			
	Men n (%)	Women n (%)	Jointly n (%)	Sub total n (%)	Men n (%)	Women n (%)	Jointly n (%)	Sub total n (%)
M-MHH	12 (46)	5 (19)	26 (35)	26 (100)	7 (25)	7 (25)	14 (50)	28 (100)
W-MHH	3 (23)	3 (23)	7 (54)	13 (100)	3 (25)	2 (17)	6 (50)	12* (100)
FHH	0 (0)	7(100)	0 (0)	7 (100)	0 (0)	11 (100)	0 (0)	11 (100)
<i>Total</i>	<i>15 (33)</i>	<i>15 (33)</i>	<i>16 (35)</i>	<i>46 (100)</i>	<i>10 (20)</i>	<i>20 (39)</i>	<i>20 (39)</i>	<i>51* (100)</i>

* Includes 1 women in MHH responding that another household member had control over income.

Table 9: Expenses covered with money from goat sales disaggregated by gender

Expenses covered	Responses (n=114) %	Respondents (n=55) n (%)	Gender categories		
			M-MHH n (%)	W-MHH n (%)	FHH n (%)
Food	28.1	32 (58)	17 (53)	9 (64)	6 (67)
Education	24.6	28 (51)	15 (47)	8 (57)	5 (56)
Human Health	21.9	25 (46)	13 (41)	8 (57)	4 (44)
Clothing	10.5	12 (22)	3 (9)	6 (43)*	3 (33)*
Housing	5.3	6 (11)	3 (9)	2 (14)	1 (11)
Cropping	1.8	3 (4)	2 (7)	1 (7)	0 (0)
Family event	2.6	2 (6)	1 (3)	1 (7)	0 (0)
Other	5.3	6 (11)	5 (16)	0 (0)	1 (11)
<i>Total (%)</i>	<i>100</i>				

* Significant at P<0.05 level

Group 1: From the analysis of this data, what recommendations can you make to help set up development interventions that are more likely to address the issues faced by women in Issahoro District of Mozambique?

Group 2: Using the data displayed above, build a case for investing into rural development interventions that are more likely to lead to increased food security, greater school enrollment of children and better human health in Issahoro District of Mozambique.

Group 3: After reviewing the research methodology and its results, suggest improvements in the methods for data collection and analysis to reach even more robust gender-disaggregated evidence.