



MALAWI RURAL AGRICULTURAL
LIVELIHOODS SURVEYS
2019 Survey Report



June 2022



Malawi Rural Agricultural Livelihoods Survey (MRALS) 2019 Survey Report

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ACKNOWLEDGEMENTS

The Malawi Rural Agricultural Livelihood Survey (MRALS) marks the beginning of the MRALS Panel Surveys. The objective of the MRALS Panel Surveys is to measure the impacts of the Agricultural Transformation Initiative (ATI) programs in Malawi. ATI, with support from the Foundation for a Smoke-Free World (FSFW), has initiated several interventions in Malawi aimed at supporting farmers to reduce their overreliance on tobacco by diversifying their production towards other profitable commodity value chains. Malawi's export revenue and the livelihoods of many of its farmers depend on tobacco, a crop facing declining international demand.

ATI recognizes the need to measure impacts attributable to their agricultural development interventions in Malawi. This requires a statistically representative sample of farm households that can be re-surveyed periodically to measure ATI program short-, medium-, and long-term impacts over time. ATI has especially stressed the need to monitor changes in the behavior and welfare of smallholder tobacco farmers in Malawi that ATI hopes to influence through its suite of programs. Additionally, as ATI's systems approach is designed to have diffused national impacts that spread outward from specific areas of program operations, a panel survey that covers all regions of the country is considered necessary to determine the geographic/spatial reach of its program impacts. Consequently, MRALS 2019 lays the baseline against which the short, medium and long-term impacts of ATI programs will be measured.

This report is based on the MRALS 2019 conducted in eight (8) districts in Malawi between October and November 2019. The survey was conducted by MwAPATA Institute and Michigan State University (MSU) in collaboration with National Statistics Office (NSO), Indaba Agricultural Policy Research Institute (IAPRI), Zambia and Tegemeo Institute, Egerton University, Kenya.

The implementation of the MRALS 2019 was made possible by a grant from FSFW through ATI. We are grateful for this generous support. The MRALS 2019 would not have been successful without the survey team led by Dr. Milu Muyanga (MSU/MwAPATA)- Survey Manager, Ms. Tiope Mleme (NSO) and Dr. Christone

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This report was prepared by a team of researchers from MwAPATA Institute. Any views expressed or remaining errors are solely the responsibility of the authors. Comments and questions should be directed to:

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MwAPATA Institute

MwAPATA Institute is an independent policy think tank in Malawi. The Institute is engaging the Government of Malawi, the private sector and civil society stakeholders in a program of applied policy analysis, capacity building, knowledge dissemination, and policy coordination on topics related to agriculture, natural resource management, and rural development. The ultimate goal of the MwAPATA Institute is to accelerate the adoption of effective Malawian-led policies and programs to drive

broad-based agricultural transformation, diversification and improved smallholder incomes and nutrition in Malawi.

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ACRONYMS

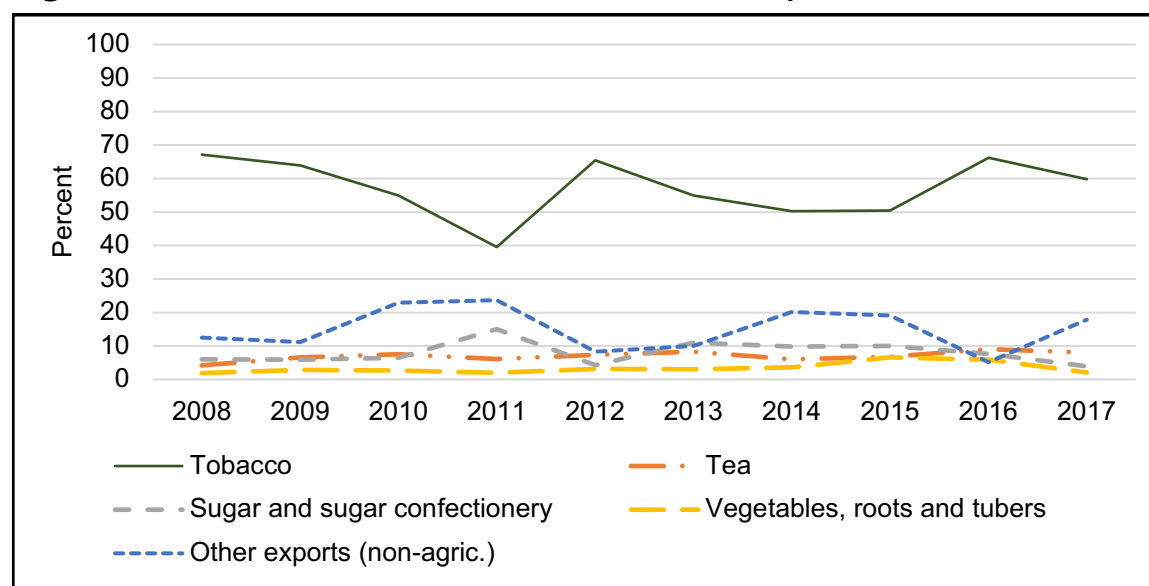
ATI	Agricultural Transformation Initiative
CAPI	Computer Assisted Personal Interview
CBO	Community-based Organizations
EAs	Enumeration Areas
EPDC	Education Policy and Data Center
FBO	Faith-based Organizations
FISP	Farm Input Subsidy Programme
FSFW	Foundation for a Smoke Free World
GDP	Gross Domestic Product
Ha	Hectares
HH	Household
IGOs	Intergovernmental Organizations
MwAPATA	Malawi Agricultural Policy Advancement and Transformation Agenda
MRALS	Malawi Rural Agricultural Livelihood Survey
MSU	Michigan State University
MT	Metric tons
NSO	National Statistical Office
NAP	National Agricultural Policy
NGOs	Non-governmental Organizations
PPS	Probability Proportional to Sizes
UNICEF	United Nations Children's Fund

CHAPTER 1: SURVEY MOTIVATION AND DESIGN

1.1 Motivation and survey objectives

Agriculture is the mainstay of Malawi's economy. It accounts for about 28% of the total Gross Domestic Product (GDP), contributes over 80% of forex earnings, employs about 80% of the workforce, and contributes to national food and nutrition security (Government of Malawi, 2016). Despite efforts to diversify into other crops, maize and tobacco have dominated Malawi's smallholder agricultural production and public policies and expenditures for the past two decades. Maize is the main staple food for most farming households and covers about 50% of the total cultivated land each season, while tobacco accounts for over half of Malawi's exports by value (Figure 1.1).

Figure 1.1: Contribution of tobacco to Malawi's exports [2008-2017]



Source: Trade Map- International Trade Statistics

The history of tobacco as a commercial crop in Malawi dates as early as the 1890s. In the early years of independence in 1964, tobacco was produced only by big estates on a larger scale. Smallholder farmers started producing tobacco in 1993, and the crop has played an important role in improving the livelihoods of not only producing households, but also those not producing through employment and increased incomes (Chirwa, 2011). With direct market linkages for rural smallholders

through contract farming arrangements, tobacco production continues to be an attractive crop for Malawi's commercially minded farmers.

Because of tobacco's importance in Malawi's economy, tobacco companies champion continued production (Otañez et al., 2009) and have emphasized the benefits of tobacco cultivation to farmers with events like the 2000 "road show" that promoted tobacco cultivation across sub-Saharan Africa (Otañez et al., 2009). However, NGO's and IGO's contest that tobacco dependence brings many drawbacks including human rights violations and long-term consequences of tobacco cultivation on soil health, human health, and the downstream effects of tobacco consumption far outweigh the current benefits that farmers might gain from growing tobacco (Arnott, 2018; Boseley, 2019).

Previous research has shown that tobacco cultivation requires more inputs and depletes the soil (Lecours et al., 2012; Novotny et al., 2015; Makoka et al., 2017). Additionally, tobacco is a labor-intensive crop, and thus may force children to miss school to help their families in the tobacco fields, especially during harvest time (Novotny et al., 2015; Xia and Deininger, 2019). Child labor in tobacco agriculture also impedes attendance of school, which interferes with compulsory primary schooling policy from the Malawian government as well as international human rights standards (UNICEF, 2019). There are also health risks for tobacco producers. Green Tobacco Sickness (GTS), a disease that results from prolonged dermal contact with tobacco leaves, can cause headaches, nausea, loss of appetite, and vomiting, and is especially pronounced in children (Lecours et al., 2012). GTS can impede student performance in school by making students too sick to attend class (Lecours et al., 2012).

These adverse effects of tobacco, together with a decline in global demand and uncertain future market prospects for the crop, led to introduction of the Agricultural Transformation Initiative (ATI) in Malawi. ATI was started by the Foundation for a Smoke Free World (FSFW) with the goal of facilitating a just transition away from tobacco farming for Malawi's farmers by supporting efforts to diversify the economy into other agricultural ventures. To effectively report on the impact that ATI programming has on the outcomes of interest in selected tobacco-dependent

districts, FSFW partnered with the MwAPATA Institute and Michigan State University (MSU) to conduct the Malawi Rural Agricultural Livelihood Survey (MRALS) in 2019.

MRALS was designed to collect agricultural production data in more detail and depth than other datasets available in Malawi with a special emphasis on tobacco-growing regions. The MRALS sample allows for statistical representativeness in eight tobacco producing districts as well as sufficient data generation from tobacco-growing smallholder households. MRALS is intended to establish a baseline with which researchers and analysts can assess the impacts of ATI programs, both directly on participants and indirectly through spillovers.

1.2 MRALS research themes

The key research themes to be investigated by MRALS data for tobacco producing districts are as follows:

Agriculture and market characteristics:

- Plot-level crop cultivation, farm management practices, and technology/input uses
- Livestock ownership and animal product sales
- Farm and community resilience including adoption of climate-smart agricultural practices
- Access to input and commodity markets, market participation, and prices received and paid by smallholders

Household income generation

- Asset ownership, incomes from farm and non-farm sources, and subjective poverty measures

Traditionally disenfranchised groups

- Women's empowerment measured by the Women's Empowerment in Agriculture Index (WEAI)
- Youth livelihoods, access to land, and migration

1.3 Survey design

1.3.1 Sample size and distribution

MRALS was conducted in eight purposively selected districts of Malawi where tobacco is heavily produced: two in the northern region, four in the central region and two in the southern region. A stratified two-stage sampling design was used to allow representative analysis of agriculture at the district level. In the first stage, the primary sampling units were Enumeration Areas (EAs) defined for the 2018 Malawi Population and Housing Census by the Malawi National Statistical Office (NSO). A total of 137 EAs were sampled using Probability Proportional to Sizes (PPS) across the 8 districts.

In the second stage, a household listing was completed in each EA to identify all farming households which were engaged in agriculture in the 2018-2019 growing season. With future rounds of MRALS data collection in mind, households were oversampled to account for the attrition that may occur between the baseline and subsequent surveys. As such, 24 farming households were randomly selected in each EA and of a total of 3,288 households selected for interview, 3,259 interviews completed after some replacement (Table 1.1 and Figure 1.2).

Table 1.1: Sample size distribution

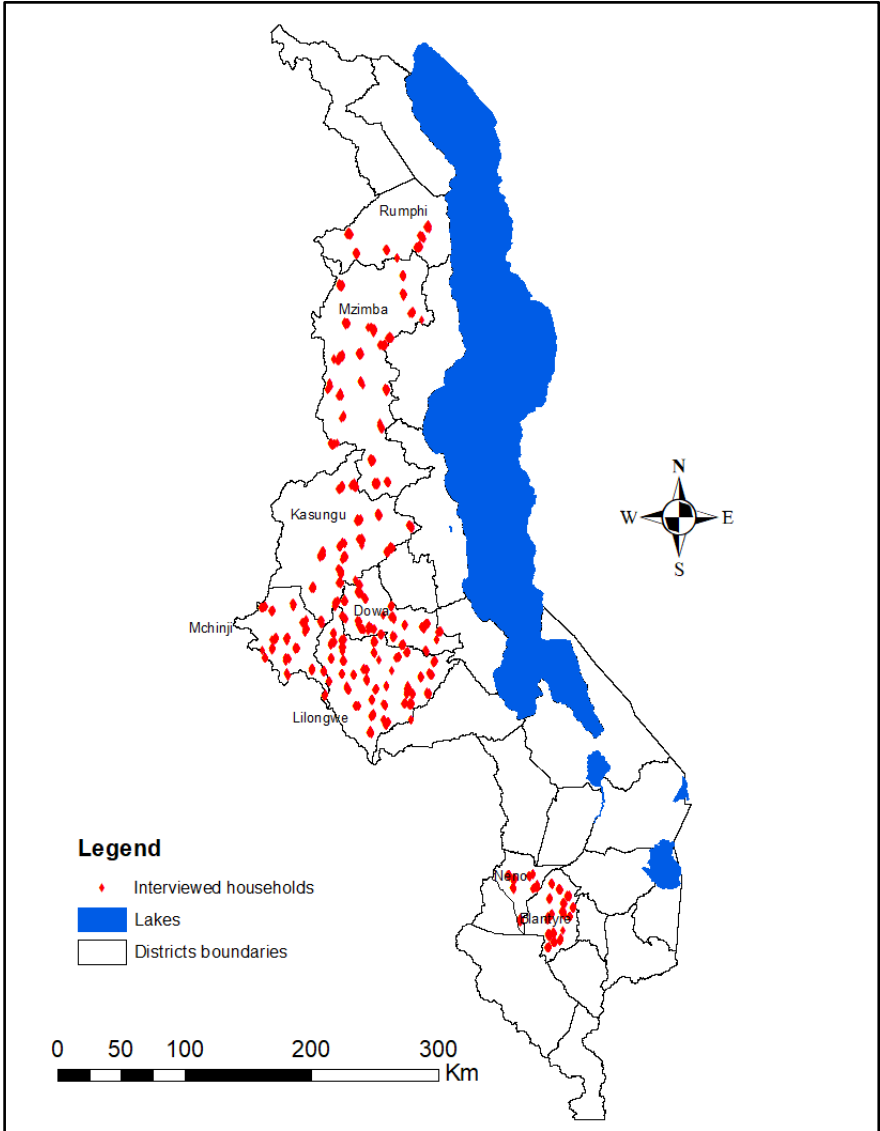
Selected districts	Number of farming households	Visited EAs	Interviewed HHs
Rumphi	46,897	7	169
Mzimba	194,823	20	480
Kasungu	179,008	18	409
Dowa	175,913	18	428
Lilongwe rural	387,335	37	889
Mchinji	136,663	14	337
Neno	31,488	6	144
Blantyre rural	109,962	17	403
Total	1,120,639	137	3,259

Source: MRALS 2019 data

1.3.2 Data collection

Data collection was conducted in October and November 2019. Lilongwe was assigned to two enumerator teams as it had a lot of sampled households, and 3 teams were assigned to the remaining districts in the Central region. Southern and Northern regions were assigned two teams each. The survey used Computer Assisted Personal Interview (CAPI) – Survey Solutions. Each enumerator was assigned a unique set of households to interview per day, and in case of the household being unreachable, the quality controller (QC) or supervisor was supposed to replace that household. To ensure quality data, each interview was checked by the supervisors and QCs before submitting the data to the headquarters. In case of irregularities, the enumerators through the supervisor were advised to arrange for callbacks.

Figure 1.2: Map of Malawi showing distribution of sampled households



Source: MRALS 2019 data

The MRALS questionnaire asked the respondent to recall events primarily for the 1st October 2018 to 30th September 2019 over two agricultural seasons – the main (rainy) season from October 2018 to May 2019 and the Dimba or dry season from May 2019 to September 2019. Specifically, the following modules were developed to guide collection of relevant information; household demographic factors, asset possession (productive and farms assets), loans and credit (access, source, amounts and payment), income sources and welfare (farm and non-farm enterprises, food security indicators), crop production (what crops, production, crop sales, input use) livestock production (what animals, production, livestock values and sales), land (sources,

access, allocations, ownership and use) as well as shocks that the household experienced.

1.3.3 Sample weighting

The survey data require weighting to be representative of rural farming households at the district level. To create representative weights, we first take the inverse ratios of sampled observations at the EA level, and the household level within EAs. The district weights are then the product of these to inverse ratios. Throughout the analysis in this report, we use the district weights. However, we note that the distribution of selected districts is such that there is reasonable external validity for inferences at the Malawi national level for some estimates (e.g., maize and tobacco production). National-level household weights are available in MRALS for such purposes.

1.4 Report roadmap

This report presents important descriptive results from the MRALS data. The analysis is not intended to be comprehensive, and the MRALS data include wider breadth and greater depth than the results presented here, rather our objective is to share important statistics illustrative of the data collected in MRALS. Given the importance of gender and tobacco production to the study design, we present many results split by the gender of household head and tobacco grower status – those producing tobacco and those not. We emphasize however that these simple comparisons should not be interpreted as causal impacts of tobacco production. We also provide many results by district, which are representative by design.

The remainder of this report presents results by thematic area including household demographics in Chapter 2; detail on land ownership and cultivation areas in Chapter 3; crop production and sales in Chapter 4; livestock and animal products in Chapter 5; Chapter 6 shows details on household income and asset ownership; and, finally, Chapter 7 describes household access to credit and extension.

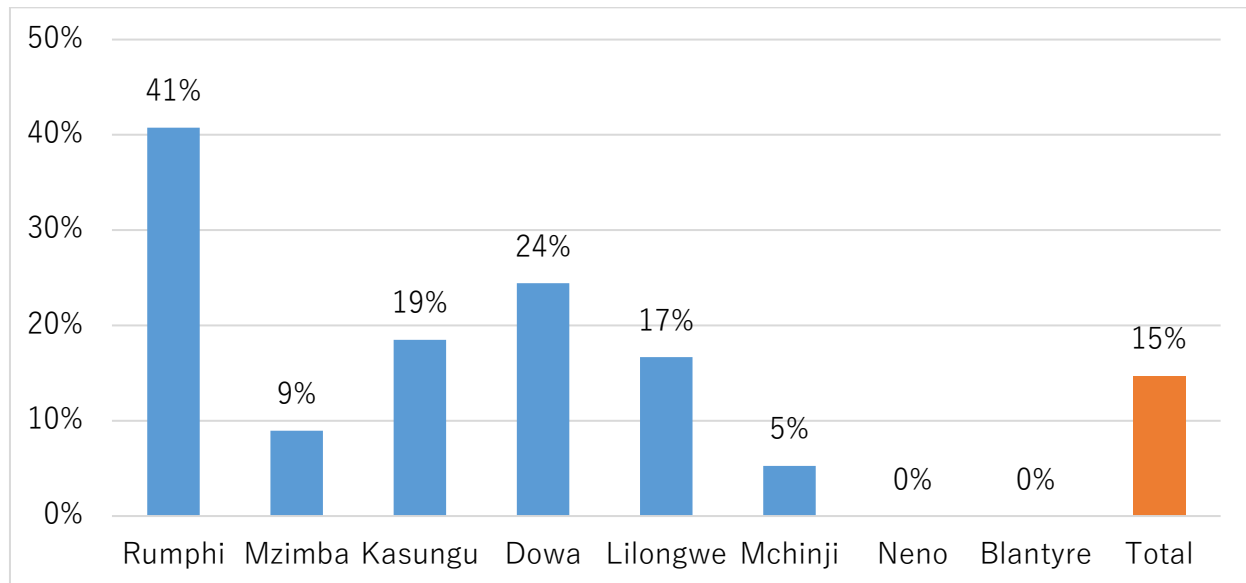
CHAPTER 2: DEMOGRAPHIC CHARACTERISTICS

This chapter presents key results on demographic characteristics of the interviewed households and its members. The demographic characteristics of the household in general including its members are presented first, followed by characteristics of the household heads.

2.1 Household characteristics

Tobacco production is central to the design of MRALS and for that reason we first show the share of households cultivating tobacco in the 2018/19 growing season by district (Figure 2.1). Overall, 15% of the households in the 8 districts covered by MRALS produce tobacco. Rumphi has the highest concentration of tobacco growers (41%) while the MRALS sample includes zero tobacco growing households in the two districts in Malawi’s southern region – Neno and Blantyre.

Figure 2.1: Percentage of households growing tobacco by district



Source: MRALS 2019. N=3,259

Table 2.1 displays characteristics of household members disaggregated by district and tobacco-grower status. The average household size is 5 members, three of which are working-age adults (18-65). Over 50% of the households have under-five children during the study period. The most educated member of the household completed 8 years of education on average. Rumphi and Blantyre are the best-

educated districts and Lilongwe and Dowa are the least educated. On average, tobacco growing households are better educated than non-growers. Illness and injury are major challenges for rural agricultural households, as evidenced by nearly one quarter reporting a member experiencing a major illness or injury in 2019

Table 2.1: Household characteristics by district

	Household composition			Major illness or injury in past year	Highest education achieved (years)
	Number of household members	Number of working age adults	Have a child under 5 years of age		
All households	5.0	2.6	55%	23%	8.2
<i>Tobacco growers</i>					
Yes	5.5	3.0	59%	23%	8.8
No	4.8	2.5	54%	23%	8.1
<i>District</i>					
Rumphi	5.4	3.0	57%	31%	10.1
Mzimba	5.5	2.8	56%	21%	8.9
Kasungu	4.9	2.5	55%	21%	8.5
Dowa	4.7	2.5	50%	19%	7.7
Lilongwe	4.9	2.5	57%	25%	7.5
Mchinji	4.9	2.5	55%	22%	8.1
Blantyre	4.7	2.6	51%	23%	9.5
Neno	4.6	2.3	57%	33%	7.9

Source: MRALS 2019 data

Table 2.2 shows the average distances from households to important. Households are generally quite rural, with an average distance of 40 km to the boma and 12 km to a tarmac road. In addition, the households are far from important services: about 12 km from an agriculture extension service office and 8 km from a health clinic. Primary schools (2 km) and cellphone network coverage (0.3 km) are more accessible. On average, tobacco growing households are relatively more remote than non-growing households.

Table 2.2: Household distances to important services

	All	Tobacco grower	
		No	Yes
<i>Distance (km) to...</i>			

Boma	39.5	38.2	47.6
Ag Extension Office	11.9	11.9	12.2
Tarmac	11.8	11.5	13.3
Primary school	2.2	2.2	2.1
Health clinic	7.6	7.4	8.5
Cellphone connectivity	0.3	0.4	0.2

Source: MRALS 2019 data

2.2 Household head characteristics

Overall, about ¼ of households are headed by females; large share (18%) of household heads have migrated to their current home; and 78% are married (69% monogamous, 9% polygamous).

There are some striking differences in household head characteristics across tobacco grower status. The share of female-headed households is much higher for those not growing tobacco (28%) than those growing tobacco (just 11%) while tobacco growers are more likely to be married (91% compared to 76%) and less likely to have migrated to their current home (13% compared to 19%). The highest percentage of female-headed households was recorded in Neno (32%) and Mzimba districts (31%) and the least was recorded in Rumphi district (19%).

Table 2.3: Characteristics of household heads

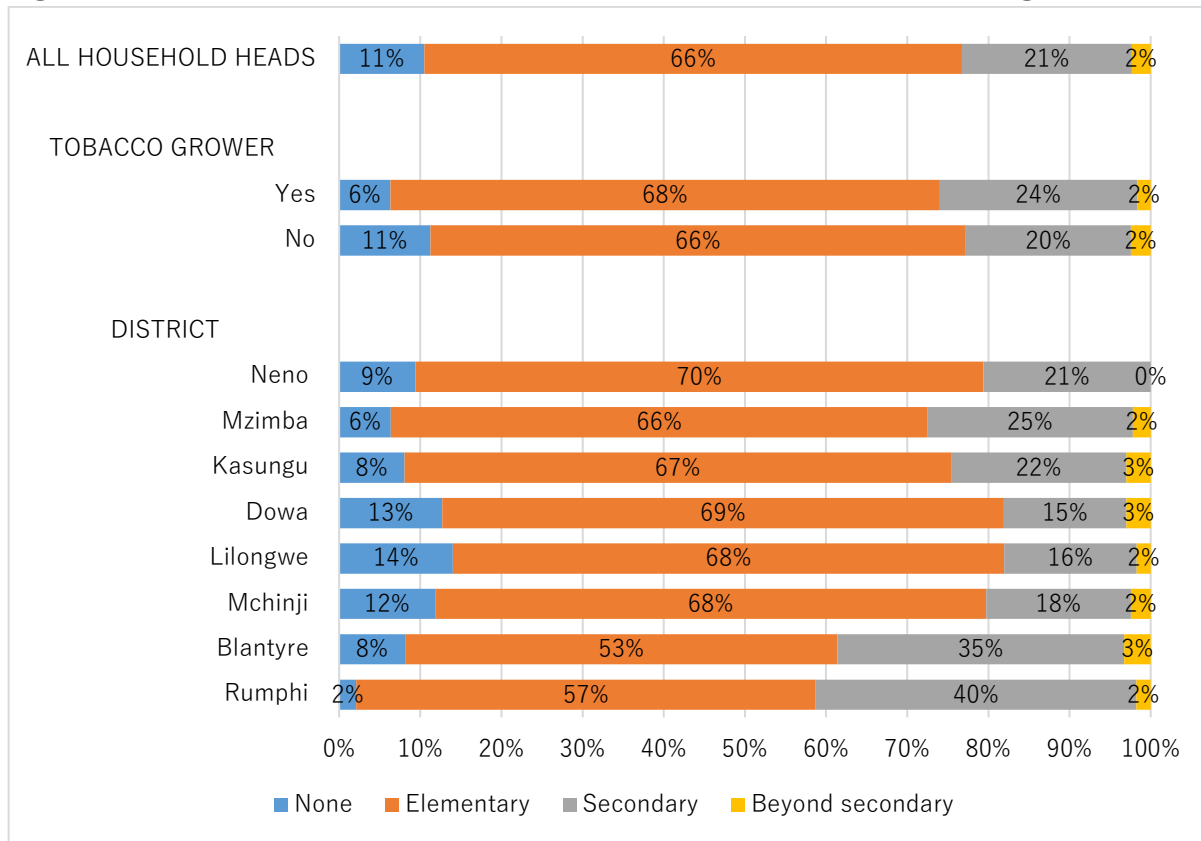
	Age	Female	Migrated to current home	Marital status			
				Married - mono	Married - poly	No longer married	Never married
All households	43.0	26%	18%	69%	9%	21%	1%
<i>Tobacco growers</i>							
Yes	42.3	11%	13%	77%	15%	8%	1%
No	43.1	28%	19%	67%	9%	23%	1%
<i>District</i>							
Rumphi	44.5	19%	20%	66%	18%	15%	1%
Mzimba	44.6	31%	15%	67%	13%	19%	1%

Kasungu	42.5	22%	24%	72%	8%	20%	1%
Dowa	43.4	21%	10%	72%	9%	18%	1%
Lilongwe	43.0	27%	17%	66%	11%	22%	0%
Mchinji	41.2	23%	20%	71%	4%	23%	2%
Blantyre	42.1	29%	26%	67%	4%	27%	3%
Neno	41.6	32%	17%	67%	4%	28%	1%

Source: MRALS 2019 data

Focusing on educational attainment of household heads (Figure 2.2), we see that 2/3rds of household heads stopped education at the elementary (primary) level, and just 21% reached or completed secondary school. There is variation across districts unsurprisingly follows the pattern of highest household educational attainment (Table 2.1). Rumphi and Blantyre have the highest education level attained by heads of household with 40% and 35%, respectively, reaching secondary school. The highest share of heads of households with no education of 14% was noted in Lilongwe. Educational attainment patterns are similar for tobacco growers and non-growers, though only 6% of tobacco growers did not go to school, while 11% were recorded in non-tobacco growers.

Figure 2.2: Educational attainment of household heads, percentage share



Source: MRALS 2019 data

CHAPTER 3: LAND OWNERSHIP AND USES

MRALS contains detailed data on land ownership and use. This chapter presents a few important descriptive results from the land modules including average owned areas, tenure and documentation, willingness to pay for a title deed, and land area uses and allocations.

3.1 Household land ownership, tenure types, and documentation

On average, households in the 8 MRALS study districts own just less than half a hectare of land (Table 3.1). Rumphi district has the largest household land sizes of about one hectare while more urban districts of Lilongwe and Blantyre have the smallest of about a third of a hectare. Female-headed households own less land on average than male-headed households, though with smaller household sizes the means per capita are the same. On tobacco-grower status, tobacco growing households had a higher owned land size of about (0.63 ha) while non-tobacco growing households had an average own land size of about 0.44 ha.

MRALS contains details on land tenure security rights, specifically customary, freehold, and leasehold tenures. Overall, about 83% of land is owned through customary rights, with the highest (98%) recorded in Neno district and the lowest (35%) recorded in Rumphi district, which has the highest share of freehold land at 63%. When disaggregated by tobacco grower status, households not growing tobacco owned a much larger share of land through customary rights (92%) than tobacco growers (64%).

Table 3.1: Household land ownership, by gender of household head, tobacco grower status, and district

	No. of households (unweighted)	Land area owned (ha)		
		Total	HH mean	Mean per capita
All households	3,259	1,418,838	0.47	0.09
<i>Gender of household head</i>				
Male	2,411	1,123,190	0.49	0.09

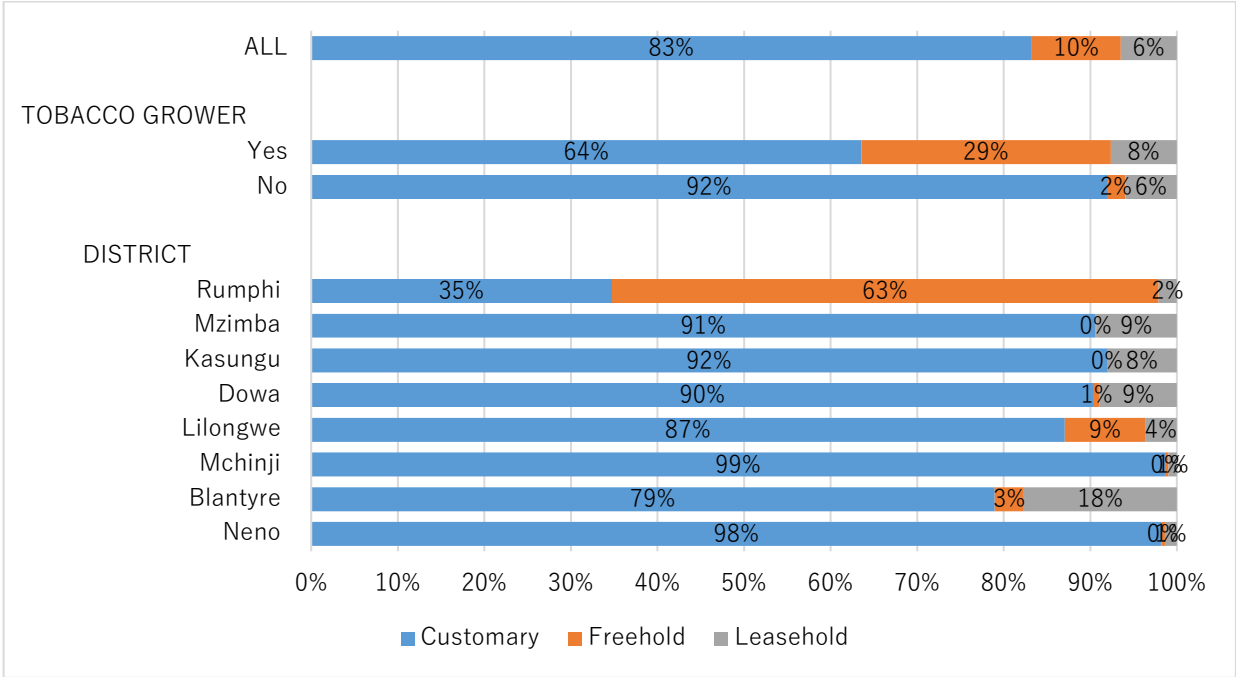
Female	848	295,648	0.40	0.09
<i>Tobacco growers</i>				
Yes	467	319875.9	0.63	0.11
No	2,792	1,098,962	0.44	0.09
<i>District</i>				
Rumphi	169	109,016	1.01	0.18
Mzimba	480	277,992	0.59	0.10
Kasungu	409	203,111	0.65	0.13
Dowa	428	221,932	0.48	0.10
Lilongwe	889	342,173	0.33	0.07
Mchinji	337	150,359	0.42	0.09
Blantyre	403	80,010	0.35	0.07
Neno	144	34,244	0.64	0.13

Source: MRALS 2019 data

Land held with leasehold rights is uncommon, accounting for just 6% of the land owned for the full sample. The highest percentage of leasehold rights land is in Blantyre (18%) followed by Mzimba and Dowa (9% each) and the least in Neno district (1%).

Formal documentation for land owned by rural farming households is even less common. Only 2% of all the households had formal land documentation (title deed) from the government (Table 3.2). Informal documentation (e.g., letter from the chief) is more common but still just 8% of households had informal land documentation. When comparing formal land documentation across districts, Rumphi district in the northern region recorded the highest share (8%) of households with formal land documentation, and the least of 1% was recorded in the central region districts of Lilongwe and Mchinji, and Neno in the southern region.

Figure 3.1: Share of land owned by tenure type, by tobacco grower status, and district



Source: MRALS 2019 data

Despite low rates of land documentation, a majority of households indicated that they want formal a land title (57%). This suggests that there is some perceived benefit from increased tenure security for most, but not all rural households. Tobacco growing households show the highest share wanting a title at 66%. Interestingly, female-headed households show lower share wanting a land title than male-headed households.

MRALS also asked respondents whether they would be willing to pay for land title, and if so, how much would they pay. Overall, just 35% of households are willing to pay for a title and the conditional average willingness-to-pay (WTP) is only MK14,600. Splits by gender of household head and tobacco growers show similar patterns to those wanting a title with higher shares and average values for tobacco growing households and male-headed households. When disaggregated across districts, Lilongwe records the highest WTP (MK19,500) though only 36% are willing to pay for a deed. Mizmba has the lowest shares willing to pay and the lowest average WTP.

Table 3.2: Land documentation and willingness to pay for a title deed, by gender of household head, tobacco grower status, and district

	Formal government documentation of ownership	Other informal documentation of ownership	Want a title	Willing to pay for title deed (1=yes)	Conditional willingness to pay for title deed ('000 MWK)
All households	2%	8%	57%	35%	14.6
<i>Gender of household head</i>					
Male	2%	9%	58%	37%	16.6
Female	1%	6%	51%	26%	7.6
<i>Tobacco growers</i>					
Yes	4%	8%	66%	50%	19.2
No	2%	8%	55%	32%	13.5
<i>District</i>					
Rumphi	8%	14%	50%	41%	13.4
Mzimba	2%	5%	28%	16%	7.9
Kasungu	3%	7%	63%	35%	10.2
Dowa	2%	6%	60%	43%	15.8
Lilongwe	1%	5%	68%	37%	19.5
Mchinji	1%	11%	55%	36%	8.9
Blantyre	3%	25%	58%	42%	9.6
Neno	1%	16%	49%	33%	8.1

Source: MRALS 2019 data

3.2 Land area uses and allocations

Unsurprisingly, most of the household land (73%) is used for own cultivation for crop production (Table 3.3). Mchinji district has the highest share (83%) of land for cultivation, followed by Lilongwe (80%) and the least of 50% was noted in Rumphi district. The share of land allocated for fallow and virgin land is very low – just 6 and 3%, respectively. The table also showed that less land is left fallow in tobacco growers (2%) while for non-growers is 7%. When disaggregated by districts, more land (15%) is left fallow in Neno and 6% is virgin land in Mzimba districts, while the lowest fallow and virgin land were observed in Lilongwe (2%) and Dowa and Lilongwe (0%) districts respectively.

Table 3.3: Shares of total land areas allocated to different uses, by head gender, tobacco grower status, and district

	Own cultivated	Fallow	Virgin	Residential	Others
All households	73%	6%	3%	9%	9%
<i>Gender of household head</i>					
Male	73%	5%	3%	9%	10%
Female	73%	7%	1%	12%	7%
<i>Tobacco growers</i>					
Yes	76%	2%	3%	8%	12%
No	72%	7%	3%	10%	8%
<i>District</i>					
Rumphi	50%	4%	4%	6%	0.36
Mzimba	68%	11%	7%	8%	6%
Kasungu	73%	7%	4%	10%	6%
Dowa	74%	4%	0%	12%	11%
Lilongwe	80%	2%	0%	10%	7%
Mchinji	83%	3%	1%	7%	6%
Blantyre	70%	7%	6%	12%	5%
Neno	61%	15%	6%	11%	7%

Source: MRALS 2019 data

CHAPTER 4: CROP PRODUCTION, SALES, AND EXPENSES

Having discussed land ownership and allocations to different uses, we now focus areas allocated to different crops. MRALS captures rich and detailed information on household crop production and marketing. In this chapter, we present details including district-level aggregate production and average yields for key crops. We also document household crop sales and explore the shares of households marketing a portion of their crops. Lastly, we examined household expenditures and labor use for crop production in different categories.

4.1. Crop production and yields

Unsurprisingly, maize is the dominant crop with a total production in 8 districts of more than 990,000 MT in the 2018/19 season. Groundnuts and soya were ranked the second and third highest production levels, but fall well below maize at around 150,000 MTs each. Tobacco is the third most important crop in terms of production for the 8 sampled districts with a little more than 100,000 MTs of total smallholder production.

Table 4.1: Crop production by district (metric tons MT)

	Maize	Tobacco	Groundnut	Soya	Pigeon pea	Sweet Potato	Common bean	Sugar cane
All households	991,825	104,600	149,499	146,961	8,883	34,912	9,626	21,874
<i>District</i>								
Rumphi	48,370	11,057	5,042	893	187	826	266	184
Mzimba	205,533	21,474	14,146	21,444	53	7,393	3,290	1,050
Kasungu	105,816	17,694	21,943	39,060	0	2,844	422	0
Dowa	159,448	22,508	27,379	20,979	0	4,808	1,027	2,273
Lilongwe	310,176	27,650	50,243	27,479	18	15,424	2,629	12,722
Mchinji	97,423	4,217	27,501	36,917	0	2,727	1,579	1,931
Blantyre	50,915	0	2,840	189	5,109	644	359	3,605
Neno	14,144	0	404	0	3,517	246	53	109

Source: MRALS 2019

There is some regional variation in crop production. The central region districts – Dowa, Lilongwe and Mchinji – lead in groundnut production while the southern region dominates pigeon pea production. Little or no production of pigeon peas was noted in central region districts, Kasungu, Dowa and Mchinji. Lilongwe

had the highest production of most of the crops including maize, groundnut, tobacco, sweet potatoes, and sugarcane, while lowest production of these crops is noted in Neno district. Maize is also the highest yielding main crop in the MRALS data with households achieving an average yield of 1500 kg/ha. Tobacco and soya each achieved average yields of less than 1 MT per hectare, while groundnut yields were lowest at 900 kg/ha of shelled nuts.

Table 4.2: Crop yields by gender of household head, tobacco grower status, and district

	Maize	Tobacco	Groundnut	Soya
All households	1,514	988	899	964
<i>Gender of household head</i>				
Male	1,595	1,027	905	1,019
Female	1,277	673	882	765
<i>Tobacco growers</i>				
Yes	1,998	988	1,031	1,084
No	1,425	-	875	942
<i>District</i>				
Rumphi	1,810	879	1,024	669
Mzimba	1,581	1,007	718	804
Kasungu	1,312	863	912	1,031
Dowa	1,649	1,032	847	1,086
Lilongwe	1,516	1,026	995	937
Mchinji	1,298	1,136	835	989
Blantyre	1,716	-	941	799
Neno	1,228	-	910	-

Source: MRALS 2019

There are some large differences across household head gender, whereby male-headed households displayed much larger average yields than female-headed households for most crops. The exception is groundnuts where yields are similar for both genders. Tobacco growers show higher yields than non-tobacco growers, achieving almost 2 MT per hectare of maize on average.

Rumphi district had high maize (1.8Mt/ Ha) and groundnut (1Mt/Ha) productivity than other districts. In addition, high tobacco productivity of over 1Mt/Ha

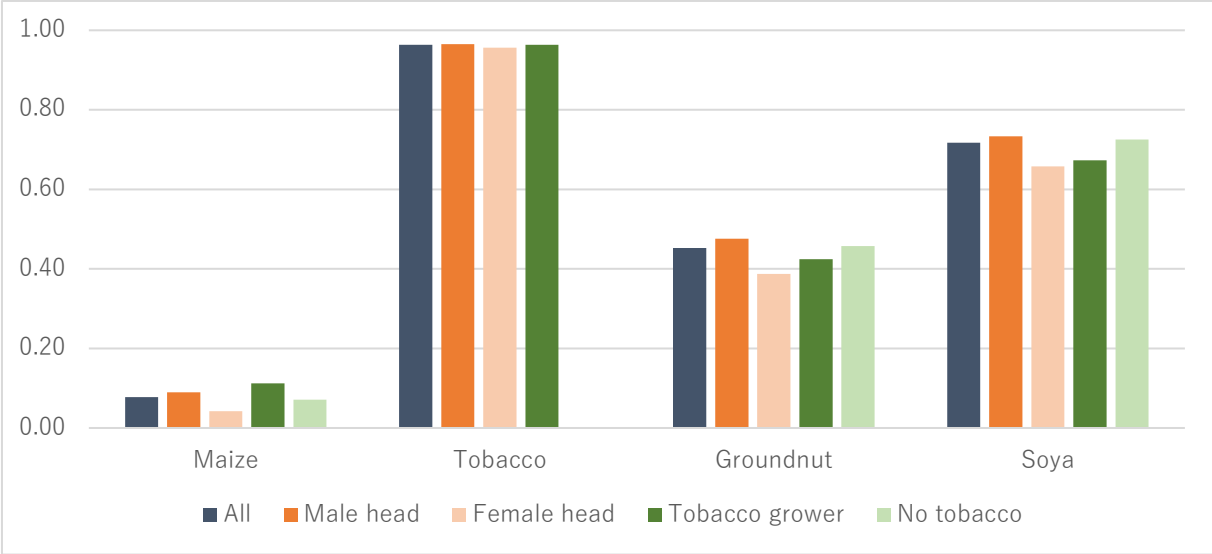
was noted in Mzimba, Dowa, Lilongwe and Mchinji districts, while no yield was noted in Blantyre and Neno districts. Furthermore, high productivity of over 1Mt/Ha of soybean was noted in Kasungu and Dowa districts.

4.2. Crop sales

We now turn to crop marketing. Figure 4.1 shows the shares of production sold for the four main crops in MRALS data. As expected, nearly all tobacco that is produced is sold as there is little direct value to the household. Soya is the second most marketed crop, with 72% of all production sold. A little under half of all groundnut production is sold (45%) and maize is mostly kept for household production as only 8% of production is sold.

There are notable variations in crop sales by gender for maize, soybean, and groundnut sales. Male-headed households had a higher share of crop sales than female-headed households. Households not growing tobacco had a higher marketed share of groundnuts and soybeans than tobacco growers perhaps because tobacco sales provide cash income and they diversify for their own consumption more than for market prospects. However, tobacco growers had a higher marketed share of maize at about 11%.

Figure 4.1: Shares of crop production sold, by gender of household head and tobacco growing status for key crops

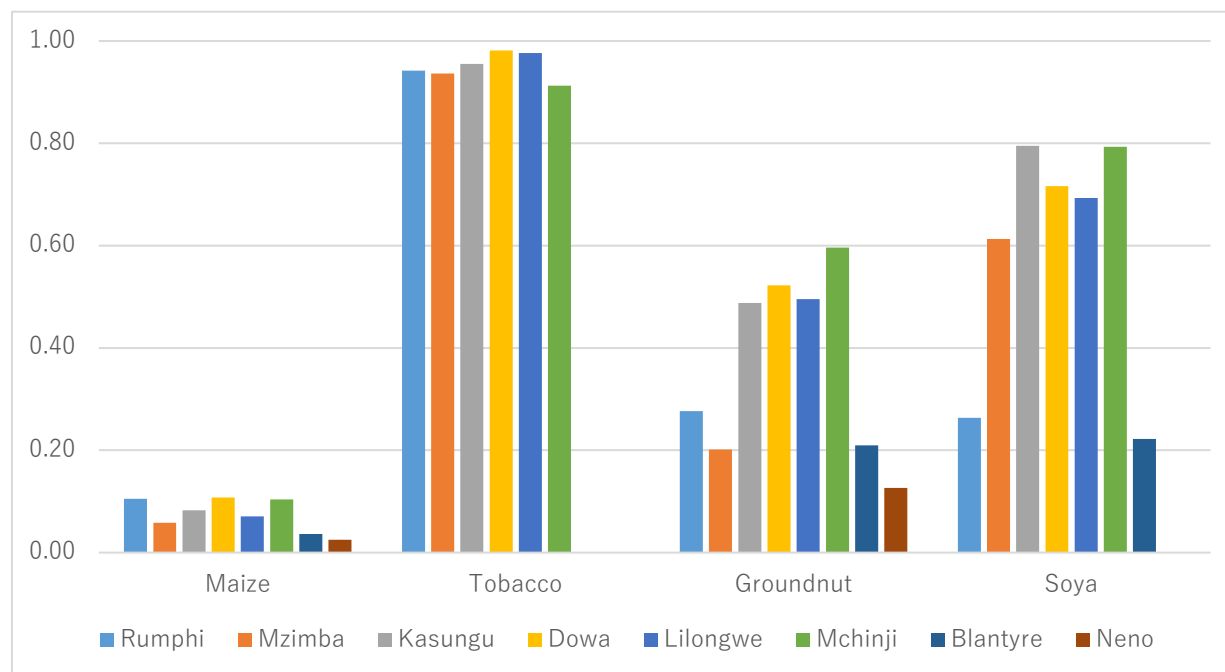


Source: MRALS 2019

Figure 4.2 shows shares of production by district. Marketed shares of groundnuts, soya, and maize vary widely across districts. Rumphi and Dowa districts marketed the highest share of maize (11%), while Blantyre and Neno districts sold the lowest of about 4%. Districts in central region had higher shares of production sold for maize, groundnuts and soya likely related to proximity to markets. The two Southern region districts have the lowest shares of marketed maize, soya, and groundnut.

Mchinji markets the highest share of groundnut and soybean. About 80% of households reported that all soybean produced in Kasungu and Mchinji districts is sold.

Figure 4.2: Shares of crop production sold, by district for key crops

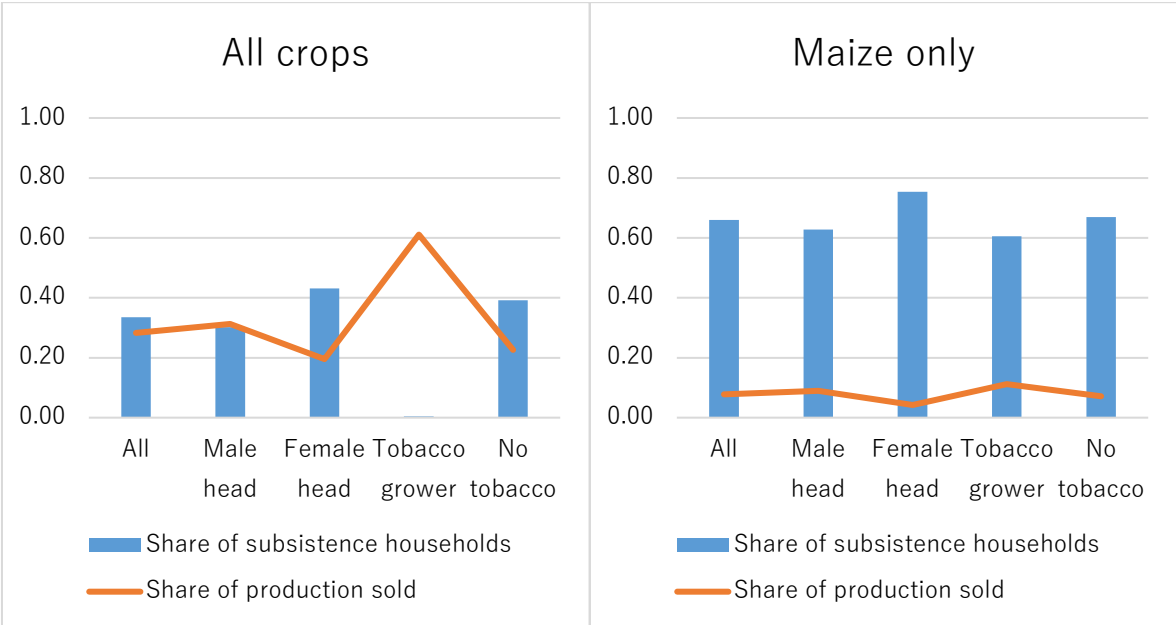


Source: MRALS 2019

With the household-crop-level marketing data in MRALS, we can identify which households are subsistence producers (i.e., not selling any crops) overall and for maize specifically. Overall, about 1/3rd of farming households in the MRALS study region are completely subsistence, where no crops are sold (Figure 4.3). Male-headed households are less likely to be subsistence growers as 43% of female-headed households are subsistence. Tobacco growers market 61% of their total crop production, compared to just 28% for the sample overall.

Looking only at maize, 2/3rds of households are subsistence and higher shares of female-headed households and households not growing tobacco are subsistence maize produces.

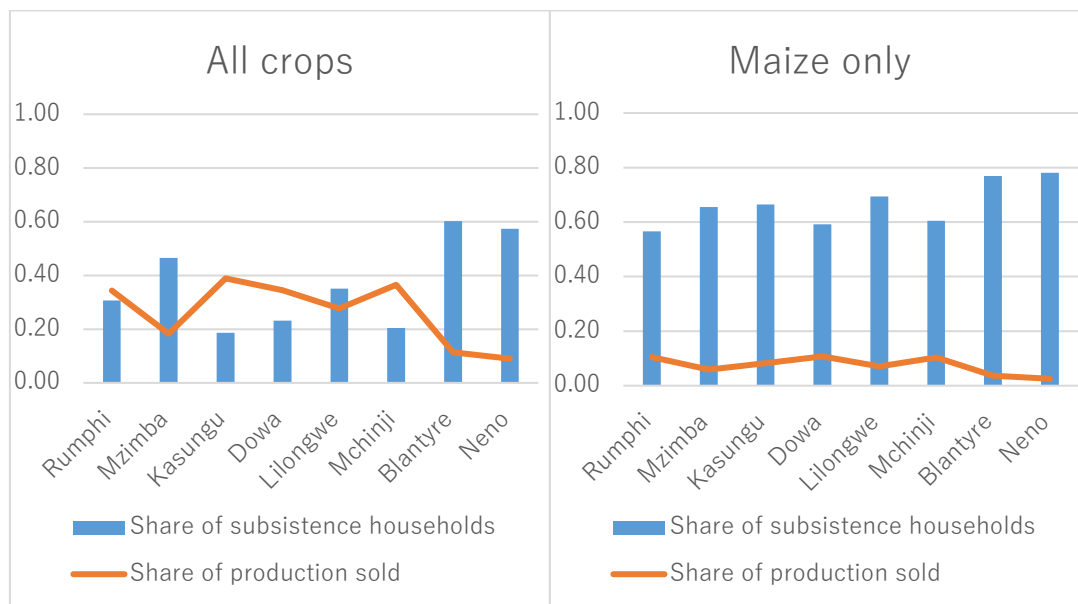
Figure 4.3: Share of households that are subsistence crop producers and average shares of production sold for all crops and maize only, by gender of household head and tobacco growing status



Source: MRALS 2019

Exploring the same information by district, Southern region districts have the highest shares of subsistence households with about 60% being subsistence in all crops and nearly 80% being subsistence in maize. On the other hand, the share of all crops that are grown for market purposes is higher in Kasungu (39%) and Mchinji (37%) districts, partly because they produce more tobacco which is mainly for commercial purposes.

Figure 4.4: Share of households that are subsistence crop producers and average shares of production sold for all crops and maize only, by district



Source: MRALS 2019

4.3. Input expenditures for crop production

MRALS also captures detailed household expenditures for crop production including costs for hired labor, seed, fertilizer, and other inputs. On average, farming households spend MK90,600 per hectare on crop production (Table 4.3) though there are disparities by gender of household heads, tobacco grower status, and districts. Male-headed households have larger expenditures (MK 100,000/ha) than female-headed households (MK63,300 /ha), and the gap between tobacco growers (MK151,700/ha) and non-growers (MK79,300/ha) is even wider.

When comparing input expenditures across districts, high input expenditure of about MK142,000 per hectare was observed in Blantyre district, followed by MK 127,000 observed in Rumphi district. Lower annual crop input expenditure was noted in Neno district, where MK60,000 was spent per hectare.

Table 4.3: Annual input expenditures for crop production ('000 MK/ ha), by gender of household head, tobacco grower status, and district

	Expenditure ('000MK)
All households	90.6

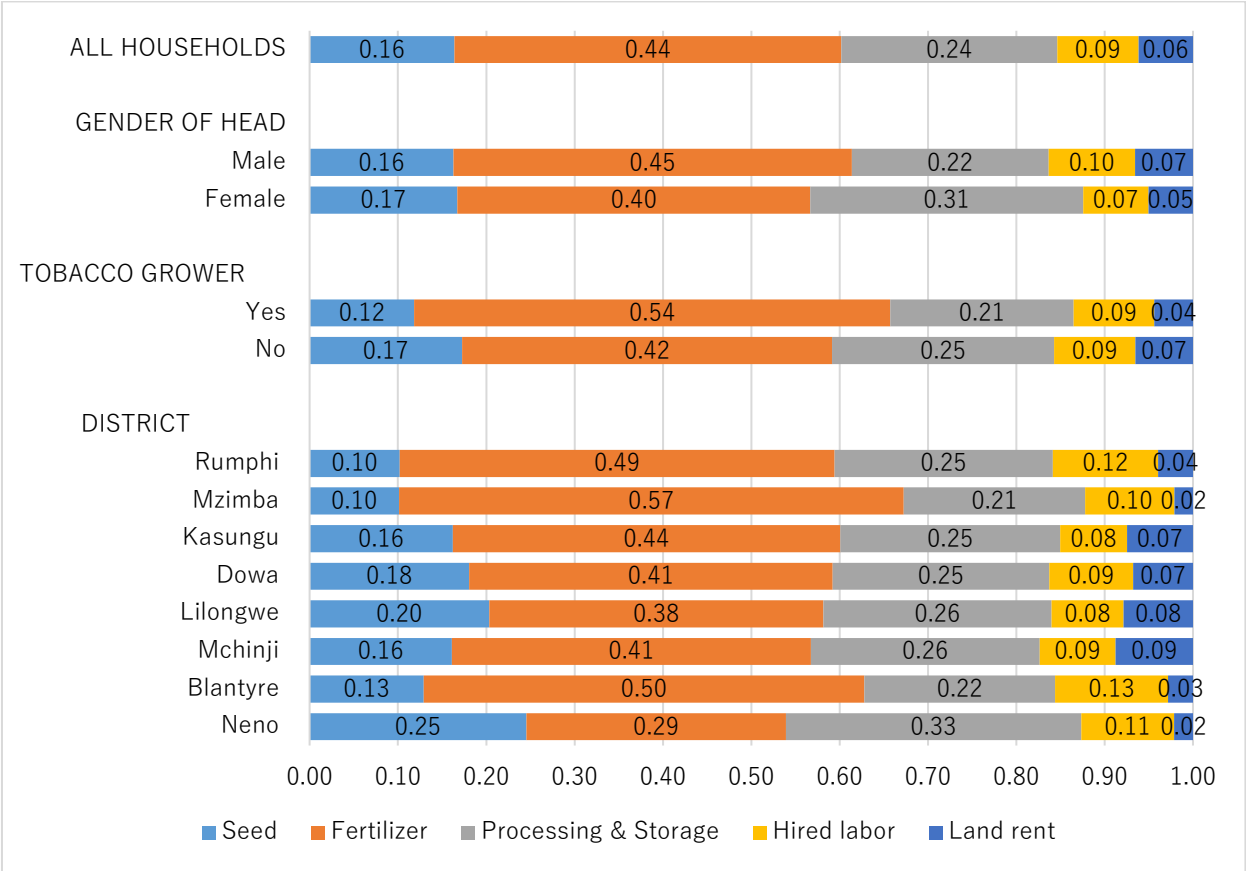
<i>Gender of household head</i>	
Male	100.0
Female	63.3
<hr/>	
<i>Tobacco growers</i>	
Yes	151.7
No	79.3
<hr/>	
<i>District</i>	
Rumphi	127.2
Mzimba	114.3
Kasungu	74.6
Dowa	89.4
Lilongwe	80.9
Mchinji	64.3
Blantyre	142.7
Neno	60.3
<hr/>	

Source: MRALS 2019

Overall, the largest share (44%) of households allocated their income for purchasing fertilizer. Over 50% of tobacco growers allocated their income for purchasing fertilizer. When comparing expenditure across districts, Mzimba district has the larger share (50%) of households that spends more on fertilizer, and the least expenditure (29%) is noted in Neno district.

Processing and storage is second most important crop expenditure category. On average, 24% of households reported to have total input expenditure on processing and storage, and the highest is noted in female headed households, with expenditure of about 31%. There are only minor differences across tobacco grower status and across the 8 districts.

Figure 4.5: Share of crop expenditures by input type, by gender of household head, tobacco grower status, and district



Source: MRALS 2019

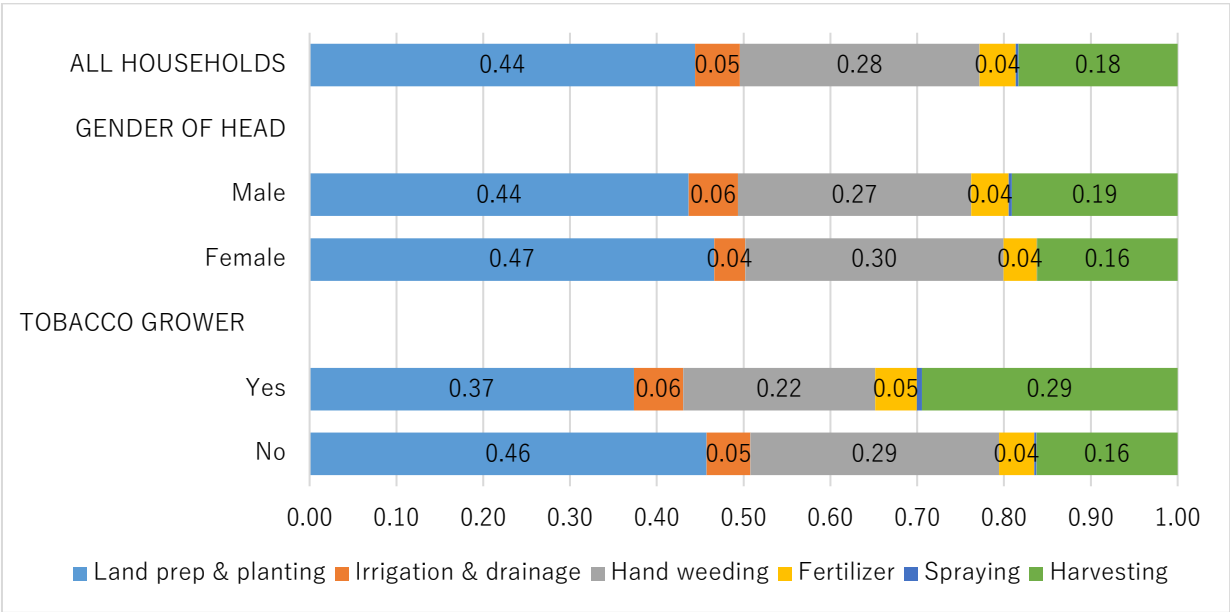
On average, 16% of all expenditure on farm inputs is allocated to purchasing seed. Lastly, expenditure on hired labor and land rent is about 9% and 6% respectively, with no major disparities between gender of household head, tobacco grower status, and across districts.

4.4. Household labor for crop production

As a final area of detail on crop production explored in this MRALS Report, we examine household labor allocation for crops by activity. Land preparation and planting require the largest allocation of labor at 44% overall (Figure 4.6). Weeding is the second largest pull of household time with 28%, followed by harvesting at 18%. Similar patterns are shown when comparing male and female headed households, but

bigger differences in labor allocations are higher across tobacco grower status. Tobacco growing households allocate a smaller share of household labor to land prep and planting, though this is largely due to a much higher allocation of time to harvesting.

Figure 4.6: Shares of total household labor person days allocated to crop activities, by gender of household head and tobacco grower status



Source: MRALS 2019

CHAPTER 5: LIVESTOCK OWNERSHIP AND SALES

Beyond crop production, Malawi's agricultural sector has a diverse livestock industry which also contributes to household food and nutrition security and incomes (National Livestock Development Project, 2004; Government of Malawi, 2004). MRALS also captures a wealth of information on livestock production and sales. This chapter presents high-level statistics on livestock ownership and sales.

5.1. Livestock ownership and values

Over half of farming households (57%) own at least one livestock animal, and the average value of livestock owned conditional on ownership is MK158,000 (Table 5.1). Male-headed households are more likely to own livestock than female-headed households, but conditional average values are similar. Tobacco growers show both a higher share of ownership and higher average values than households not growing tobacco.

When comparing across districts, Mzimba district has a higher average livestock value (MK373,000) followed by Neno and Rumphi districts, with livestock value of about MK227,000 and MK224,000 respectively. The percentage share of households owning livestock is highest in Rumphi district (76%) followed by Dowa district (68 percent).

Chickens are the most common livestock animal with 44% of all households owning at least one (Table 5.2). The second most common animal is goats which are raised by 20% of the households, followed by pigs with 13%, and cattle/oxen with just 6% owning. Larger shares of households own chickens, pigs, goats and other fowl in Rumphi district, while cattle is commonly raised in Mzimba district for lobola cultural purpose. For each type of livestock, there is a gap in ownership across gender of household head and tobacco grower status. Higher shares of male-headed households and tobacco growers keep each animal type than their counterparts. .

Table 5.1: Share of households owning any livestock and average total value conditional on ownership ('000 MWK), by gender of household head, tobacco grower status, and district

	Share of households owning	Average total livestock value ('000 MWK; conditional on ownership)
All households	57%	158
<i>Gender of household head</i>		
Male	60%	158
Female	50%	155
<i>Tobacco growers</i>		
Yes	72%	228
No	55%	142
<i>District</i>		
Rumphi	76%	224
Mzimba	65%	373
Kasungu	59%	88
Dowa	68%	90
Lilongwe	50%	111
Mchinji	47%	97
Blantyre	54%	77
Neno	58%	227

Source: MRALS 2019

Although chickens are common, they are of low value. The average value of all chickens raised conditional on raising them is MK18,000. Cattle/oxen, on the other hand, are less common, but high value (average total value of MK792,000 among households raising them). Though a large share of cattle is raised in Mzimba district, high average value is noted in Rumphi with only 5% share of households raising them, followed by Neno district with only 6% of households raising cattle. It is also important to note that pigs had a higher average value in Kasungu and Dowa, comparing with Rumphi district where a large share of households raise them.

Table 5.2: Share of households owning any livestock animals and average total value conditional on ownership ('000 MWK), by gender of household head, tobacco grower status, and district

	Share of all households owning livestock						Average value of livestock ('000 MWK; conditional on ownership)					
	Chickens	Goats	Pigs	Cattle/ oxen	Other fowl	Other	Chickens	Goats	Pigs	Cattle/ oxen	Other fowl	Other
All households	44%	20%	13%	6%	6%	2%	18	71	115	792	15	78
<i>Gender of household head</i>												
Male	46%	22%	15%	7%	7%	2%	18	73	114	743	15	80
Female	39%	16%	7%	5%	3%	0%	15	60	125	971	12	38
<i>Tobacco growers</i>												
Yes	57%	32%	22%	14%	9%	4%	21	82	121	655	15	148
No	42%	19%	12%	5%	5%	1%	17	67	113	857	15	38
<i>District</i>												
Rumphi	62%	28%	23%	5%	14%	1%	34	98	125	1,687	19	52
Mzimba	51%	24%	22%	18%	6%	1%	23	91	129	991	20	15
Kasungu	49%	17%	9%	3%	7%	1%	19	54	153	691	10	40
Dowa	52%	25%	18%	5%	6%	3%	15	67	69	502	14	29
Lilongwe	40%	17%	11%	4%	3%	2%	13	59	138	490	10	149
Mchinji	27%	20%	8%	5%	3%	1%	13	58	82	429	19	114
Blantyre	39%	18%	6%	1%	10%	1%	19	84	89	791	14	23
Neno	42%	32%	7%	6%	9%	0%	23	88	64	1,548	10	.

Source: MRALS 2019

5.2. Livestock sales of animals and animal products

While livestock ownership is reasonably common in our study region, marketing of livestock is very limited. The most commonly sold animals – chickens, goats, and pigs – still had only about 1 of 4 households that own them selling some in 2018/19. Only 11% of households raising cattle/oxen sold an animal. This all highlights livestock's importance as a store of value in rural communities.

Table 5.3: Share of livestock owners selling any animals, by gender of household head, tobacco grower status, and district

	Chickens	Goats	Pigs	Cattle/ oxen	Other fowl	Other
All households	25%	27%	28%	11%	17%	23%
<i>Gender of household head</i>						
Male	26%	29%	29%	12%	17%	20%
Female	20%	19%	22%	8%	19%	65%
<i>Tobacco growers</i>						
Yes	30%	36%	38%	11%	22%	22%
No	24%	25%	25%	11%	15%	23%
<i>District</i>						
Rumphi	26%	52%	29%	0%	25%	0%
Mzimba	14%	16%	13%	10%	9%	13%
Kasungu	35%	31%	31%	29%	25%	26%
Dowa	28%	36%	49%	16%	20%	32%
Lilongwe	27%	26%	29%	12%	14%	20%
Mchinji	22%	12%	21%	7%	18%	21%
Blantyre	21%	33%	45%	11%	14%	15%
Neno	20%	40%	9%	0%	0%	0%

Source: MRALS 2019

Again, male-headed households and tobacco growing households are more likely to sell most animal types than their counterparts. Interestingly, the shares of households selling animals in Lilongwe and Blantyre are not markably higher than other districts, suggesting that smallholder farmers may not be main suppliers to urban markets.

Table 5.4: Share of households producing animal products and share selling conditional on production, by gender of household head, tobacco grower status, and district

	Share of all households producing for sale or consumption				Share selling conditional on producing			
	Eggs	Manure	Meat	Milk	Eggs	Manure	Meat	Milk
All households	16%	12%	3%	1%	6%	4%	6%	31%
<i>Gender of household head</i>								
Male	16%	14%	3%	1%	7%	4%	7%	34%
Female	16%	8%	3%	<1%	6%	5%	2%	<1%
<i>Tobacco growers</i>								
Yes	18%	21%	5%	1%	8%	9%	14%	16%
No	15%	11%	3%	1%	6%	3%	3%	36%
<i>District</i>								
Rumphi	12%	4%	5%	3%	17%	0%	14%	28%
Mzimba	10%	4%	6%	2%	0%	5%	0%	21%
Kasungu	20%	14%	3%	0%	5%	0%	0%	48%
Dowa	20%	19%	5%	1%	10%	11%	5%	47%
Lilongwe	10%	10%	2%	0%	9%	4%	17%	35%
Mchinji	15%	15%	0%	0%	0%	0%	0%	0%
Blantyre	32%	19%	4%	0%	0%	4%	4%	62%
Neno	37%	16%	3%	0%	26%	0%	21%	.

Source: MRALS 2019

Selling animals is not the only way to derive value from livestock. MRALS also captures detailed information on consumption and sales of other animal products, including eggs, manure, meat, and milk. Production of these animal products is very low, and commercial sales are negligible (Table 5.4). Despite relatively high rates of chicken ownership, only 16% of the households produce eggs. 12% of households produce livestock manure. Meat and milk production are of minor importance, produced by 3% and 1% of households, respectively. However, almost 1 in 3 households that produce milk sell some of it. For other products the share is 6% or less.

CHAPTER 6: HOUSEHOLD ASSETS, INCOMES, AND WELFARE

In addition to agricultural data, MRALS captures information on household assets, incomes, and welfare. This chapter presents summary statistics on household assets (agricultural and productive), incomes (farm and off-farm), and welfare indicators.¹

6.1 Asset ownership

Unsurprisingly, nearly all rural households own a hoe (93%). There is a steep drop to axe ownership at 50% of households. Ownership of other agricultural productive assets is much lower. Less than 5% of households own an oxcart, ox-plough, or backpack sprayer. On non-productive assets, cellphones are the most common, owned by 59% of households. Slightly less than 1 in 3 households owns a bicycle or a radio. As observed with livestock, tobacco growing households and male-headed households have higher ownership shares than their comparison group of each asset. Thus, these groups are likely better connected and have better access to goods and services.

Axes are commonly owned in Rumphi and Mzimba districts in the northern region of Malawi, with household ownership shares of 86% and 78% respectively, and are least owned in Lilongwe district (36%). In addition, axes are also common in male-headed households (55%) and among tobacco growers (63%). Furthermore, ox-carts, ploughs and sprayers are commonly owned in Mzimba district, with a share of household ownership of about 10, 9, and 7% respectively. On other productive assets, cellphones are commonly owned in the agricultural households, especially in male-headed and tobacco growing households, followed by bicycles and radios with ownership share of 31 and 29% households respectively.

¹ Table 6.1 only presents information on a few selected assets. The full list of assets in MRALS is more than 30 assets.

Table 6.1: Percent of households owning selected agricultural and productive assets, by gender of household head, tobacco grower status, and district

	Agricultural					Other productive assets					
	Hoe	Axe	Oxcart	Ox plough	Sprayer	Bicycle	Motor-cycle	Vehicle	Solar panel	Radio	Cell-phone
All households	93%	50%	4%	2%	4%	31%	3%	1%	18%	29%	59%
<i>Gender of household head</i>											
Male	94%	55%	5%	1%	6%	38%	4%	1%	20%	35%	64%
Female	90%	36%	2%	2%	1%	12%	1%	1%	11%	12%	46%
<i>Tobacco growers</i>											
Yes	98%	63%	13%	2%	8%	42%	7%	2%	27%	40%	64%
No	93%	49%	3%	2%	4%	30%	2%	1%	17%	27%	59%
<i>District</i>											
Rumphi	97%	86%	4%	1%	11%	27%	3%	2%	23%	28%	85%
Mzimba	91%	78%	10%	9%	7%	32%	1%	2%	33%	32%	80%
Kasungu	96%	52%	1%	0%	1%	29%	3%	0%	24%	32%	57%
Dowa	94%	47%	3%	0%	4%	25%	3%	1%	14%	30%	54%
Lilongwe	92%	36%	5%	0%	5%	35%	3%	1%	11%	24%	47%
Mchinji	94%	45%	3%	0%	4%	39%	4%	0%	18%	27%	52%
Blantyre	90%	40%	0%	0%	3%	22%	3%	3%	14%	38%	71%
Neno	92%	53%	0%	0%	7%	20%	2%	0%	12%	30%	63%

Source: MRALS 2019

6.2. Farm income

Using the MRALS information on crop and livestock sales as well as input expenditures, we can calculate household farm incomes, defined as the sum of gross margins from crop and livestock production. Almost all households (93%) earn farm income from crop production, while only 39% of households earn any income from livestock production. The mean crop income for farmers is MK197,600 overall and MK210,700 per hectare while livestock income is MK7,600. There is a huge gender gap in farm incomes with male-headed households earning three times as much as female-headed households on average. The difference between tobacco growing households and those not growing tobacco is smaller, but tobacco growers still earn almost twice as much.

When comparing average value and conditional mean per hectare of crops across districts, Lilongwe has the highest mean values of MK335,100 and MK395,200 respectively, and the lowest values were noted in Blantyre (MK43,800 and MK74,600 respectively). On the mean value of livestock income, higher value of MK14,100 was noted in Blantyre district, followed by value of MK12,200 which was noted in Kasungu and the none was discovered in Neno district. The unconditional mean value of farm is highest in Blantyre district (MK319,400).

Table 6.2: Farm incomes (crop and livestock), share receiving and conditional mean values, by gender of household head, tobacco grower status, and district

	Crop income			Livestock income		Total farm income (unconditional)
	Share receiving	Conditional mean	Conditional mean per hectare	Share receiving	Conditional mean	
All households	93%	197.6	210.7	39%	7.6	187.2
<i>Gender of household head</i>						
Male	93%	238.1	244.1	43%	8.9	225.8
Female	93%	79.5	113.5	30%	2.1	74.6
<i>Tobacco growers</i>						
Yes	100%	305.7	201.6	57%	15.6	314.5
No	92%	177.4	212.4	37%	5.4	165.2
<i>District</i>						
Rumphi	94%	173.4	145.7	58%	8.0	168.4
Mzimba	90%	161.3	127.0	36%	5.1	146.3
Kasungu	96%	145.3	140.6	34%	12.2	143.6
Dowa	94%	156.6	162.2	50%	11.4	153.1
Lilongwe	94%	335.1	395.2	39%	14.4	319.4
Mchinji	94%	134.1	121.3	29%	-7.0	124.3
Blantyre	91%	43.8	74.6	40%	-3.8	38.2
Neno	93%	107.9	141.5	54%	-18.5	90.3

Source: MRALS 2019

6.3. Off-farm income

Off-farm incomes consist of cash or in-kind earnings from all other income sources (excepting from crops, livestock and fisheries). Table 6.3 shows the shares of households receiving off-farm incomes by type and the conditional average values. The off-farm economy is an important component of rural livelihoods in Malawi. About 62% of households earned incomes from wage or casual work, followed by 33% from non-farm enterprises, and 27% from other sources (which includes rent, pensions, and gifts). Notable differences are shown by tobacco grower status, whereby non-tobacco farmers earn more non-farm incomes than tobacco farmers, likely due to a combination of less labor allocated to own crop production and a greater need to diversify income sources. Both male and female-headed households have similar shares earning wage incomes, though male-headed households are more likely to have a non-farm enterprise.

There is variation in the share of households that earn off-farm incomes across the 8 sampled districts, which likely reflects the local contexts around the rural economy. For instance, Mchinji and Neno district off-farm income profiles may reflect their proximities to the international border, and the corresponding cross-border business.

The conditional mean values of off-farm income activities show that non-farm enterprises produce more income than other sources, with mean incomes of MK446,000 and MK181,000 respectively. Income differences across household head gender vary by the activity, but overall female-headed households earn only about 70% of male-headed household in the off-farm economy. The divide across tobacco grower status is much smaller, and in fact, households not growing tobacco actually earn slightly more in the off-farm economy. Rumphi district has the highest average mean value of income obtained from off-farm activities, with MK290,000 obtained from wage or casual work and MK1,626,000 obtained from non-farm enterprises, and the lowest value was noted on Neno district.

Figure 6.1 puts farm and off-farm incomes together to show the shares of total income from each group of activities disaggregated by gender of household head, tobacco grower status, and district. The importance of the off-farm economy

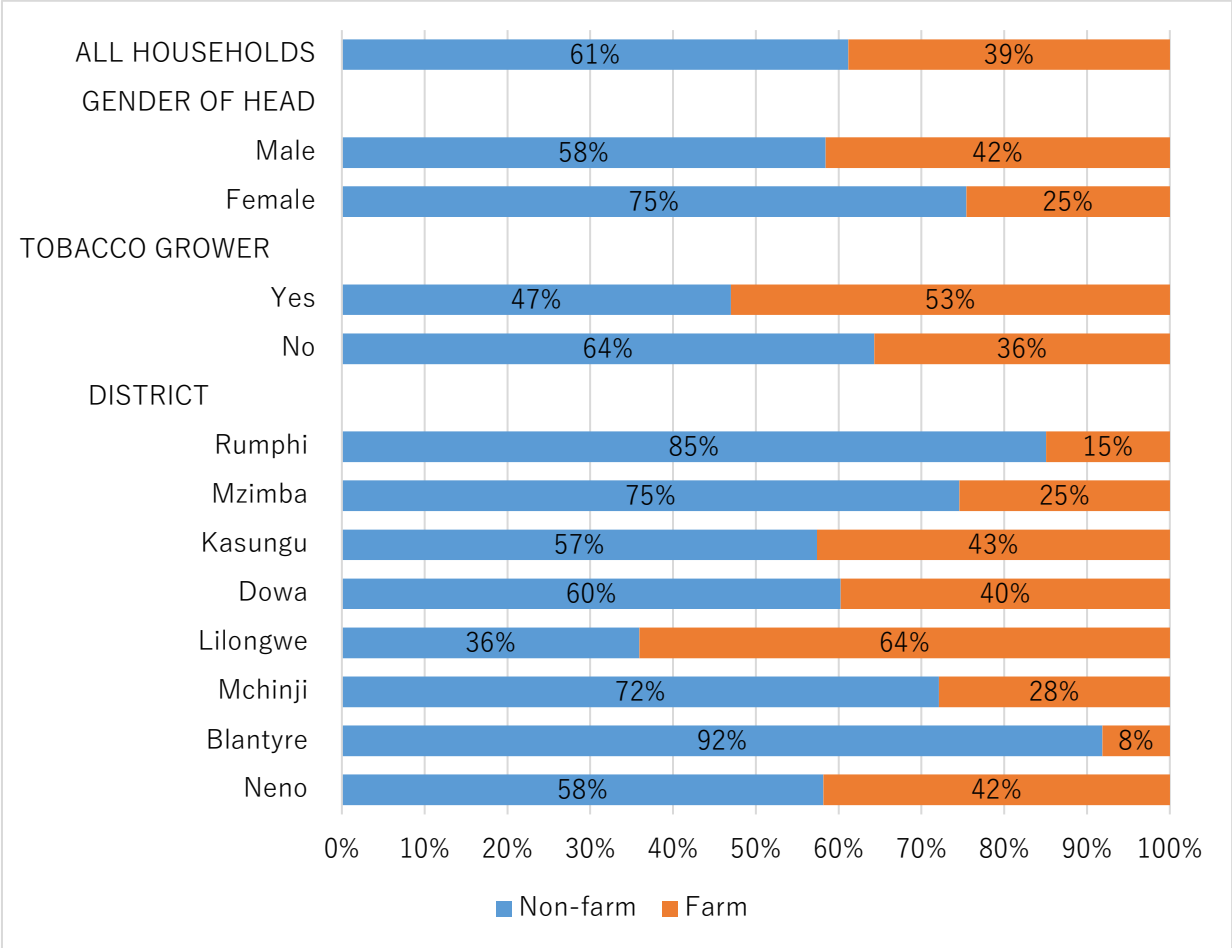
is immediately evident, though it is also clear that both farm and off-farm incomes are important to rural households. Off-farm incomes account for 61% of total household income while farming accounts for 39%. However, farm incomes are greater than off-farm for tobacco growers and households in Lilongwe. Off-farm incomes are relatively more important for female-headed households and households not growing tobacco compared to their comparison groups. Blantyre and Rumphi have the highest shares of off-farm incomes to total income at 92 and 85%, respectively.

Table 6.3: Off-farm incomes, share receiving and conditional mean values, by gender of household head, tobacco grower status, and district

	Share receiving			Conditional mean value ('000 MWK)			Total off-farm income (unconditional, '000 MWK)
	Wage / casual work	Non-farm enterprise	Other source	Wage / casual work	Non-farm enterprise	Other source	
All households	62%	33%	27%	152	446	181	294.9
<i>Gender of household head</i>							
Male	62%	36%	24%	176	421	221	317.5
Female	62%	26%	36%	80	546	103	228.9
<i>Tobacco growers</i>							
Yes	48%	33%	24%	104	528	203	279.0
No	64%	33%	28%	158	431	178	297.6
<i>District</i>							
Rumphi	45%	42%	34%	290	1626	357	959.7
Mzimba	49%	27%	33%	255	818	244	429.4
Kasungu	64%	32%	22%	154	236	93	193.5
Dowa	67%	33%	30%	143	335	67	231.9
Lilongwe	64%	31%	24%	103	300	59	179.0
Mchinji	70%	35%	18%	114	369	633	321.3
Blantyre	64%	47%	38%	225	398	248	431.5
Neno	69%	33%	36%	73	130	84	125.5

Source: MRALS 2019

Figure 6.1: Farm and non-farm shares of household income, by gender of household head, tobacco grower status, and district

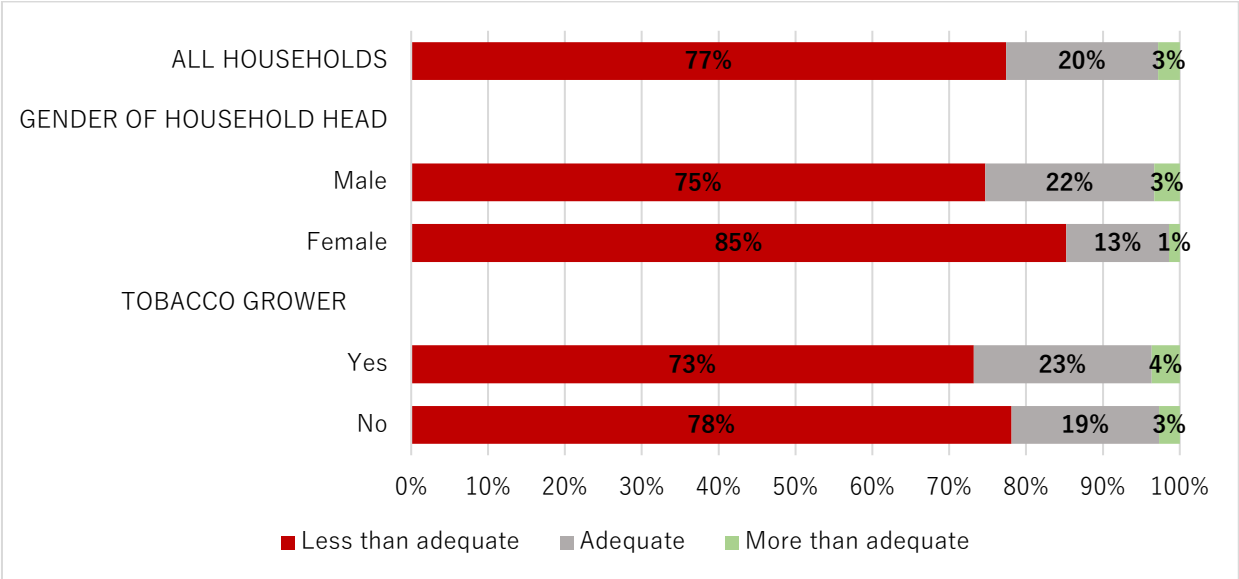


Source: MRALS 2019

6.4. Self-reported welfare indicators

MRALS includes several questions to provide a picture of self-reported household welfare. Several welfare indicators were captured, including household income and food security. Results in figure 6.2 indicate that 77% of households report to have less than adequate monthly income to meet their basic household necessities. This holds across head of household gender and tobacco grower status, although there are modest differences.

Figure 6.2: Household reported adequacy of monthly income to meet basic household needs, by gender of household head, and tobacco grower status



Source: MRALS 2019

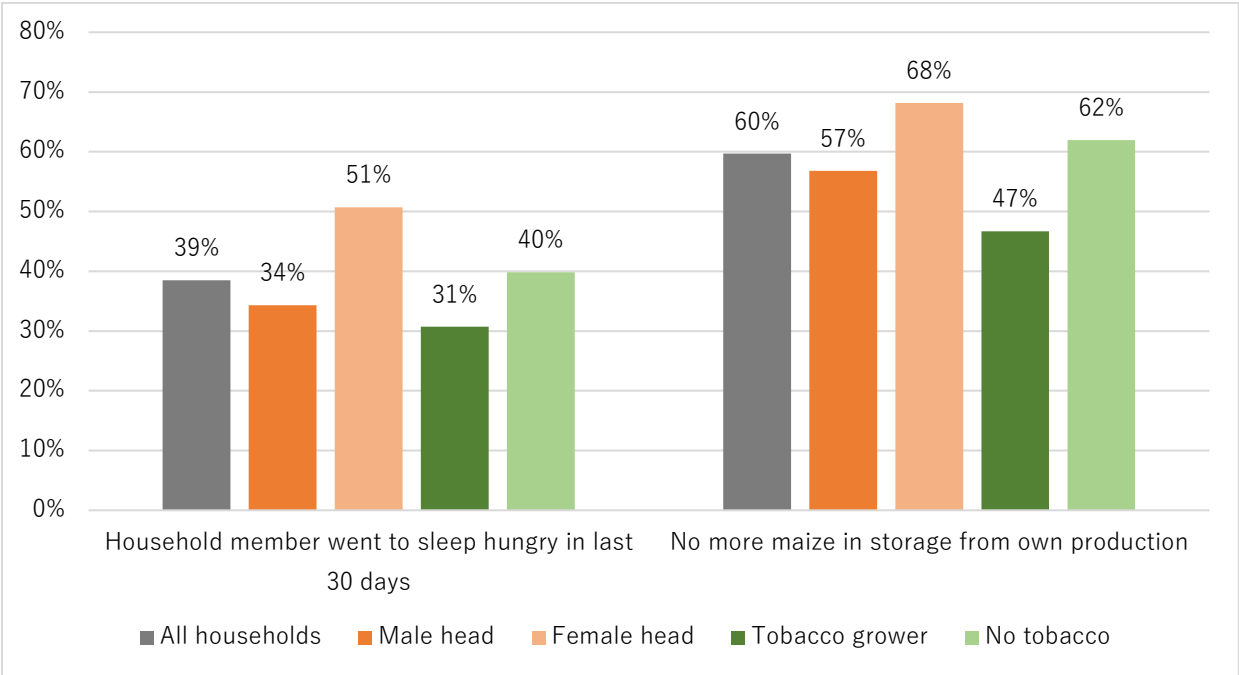
Only 20% of all households report an adequate monthly income and an incredibly small share of 3% report more income than their needs require. Notable differences are shown in gender of household head, where only 13% of female headed households had enough monthly income.

Figure 6.3 presents two self-reported household indicators of hunger: if a household that had a household member go to sleep without food in the past 30 days, and households with no maize in storage from their own production when the survey was conducted. On average, the results show that 39% of households in the study region had a member go to sleep without food in the past month, while 60% had no more maize in storage at the time of the survey.

Female-headed households and those not growing tobacco are much worse off by these hunger metrics. Female-headed households were 50% more likely (17 percentage points) to have a member go to sleep hungry and 20% more likely (11 percentage points) to have no stored maize. Households not growing tobacco were about 30% more likely to report each hunger indicator. About 40% of non-tobacco growers reported to have slept hungry in the last month, while 62% said they did not have enough maize in storage for food. Tobacco growers are more productive in maize

and cash from tobacco sales may allow them to save more of their own maize for later consumption.

Figure 6.3: Household reported hunger indicators, by gender of household head, and tobacco grower status



Source: MRALS 2019

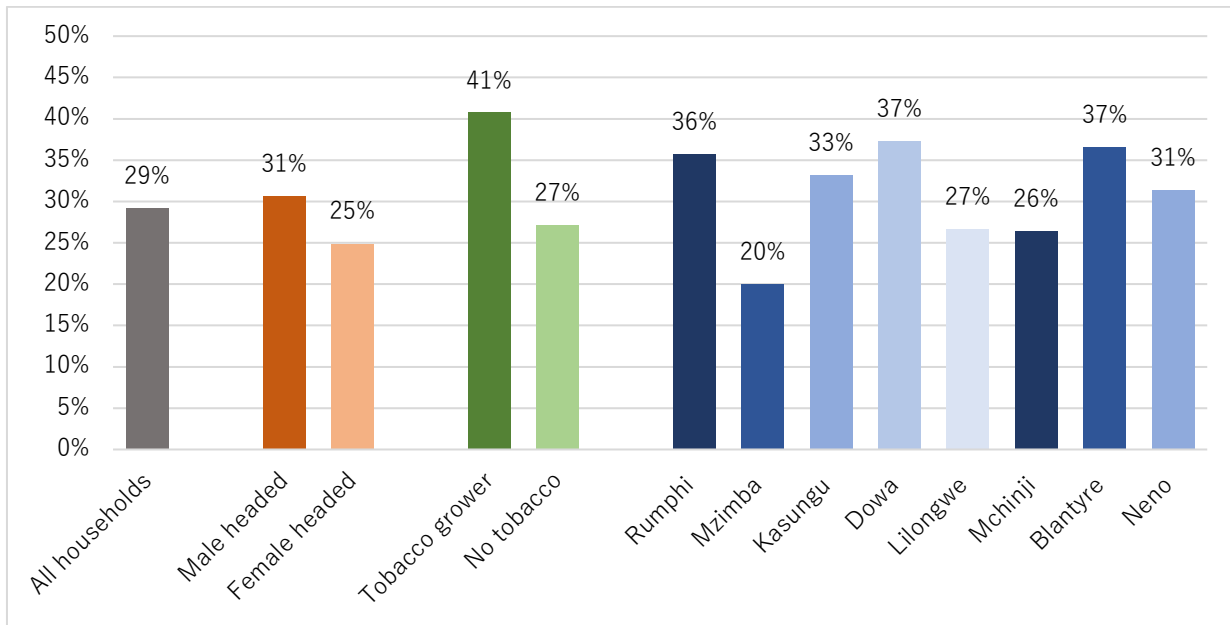
CHAPTER 7: CREDIT & EXTENSION

As the final chapter in this report, we present findings on agricultural households' access to credit and extension services, along with details on loan source and purpose, and payment status as at the time of the survey. The MRALS survey and the following analysis takes a broad definition of credit that includes informal loans from other households, i.e., it is not restricted to formal loans from banks or creditors.

7.1 Share of households receiving credit, sources, and uses

Credit access is low in our 8 study districts: 29% of all households received any credit in the 12 months prior to the interview (Figure 7.1). Tobacco growers and male-headed households had larger share of households that obtained loans (31 and 41%, respectively), and tobacco growers were 50% more likely to receive credit than those not growing tobacco. When comparing across the survey districts, Rumpfi, Dowa and Blantyre had the highest shares that received credit, and Mzimba had the lowest.

Figure 7.1: Share of households receiving any credit, by gender of household head, tobacco grower status, and district



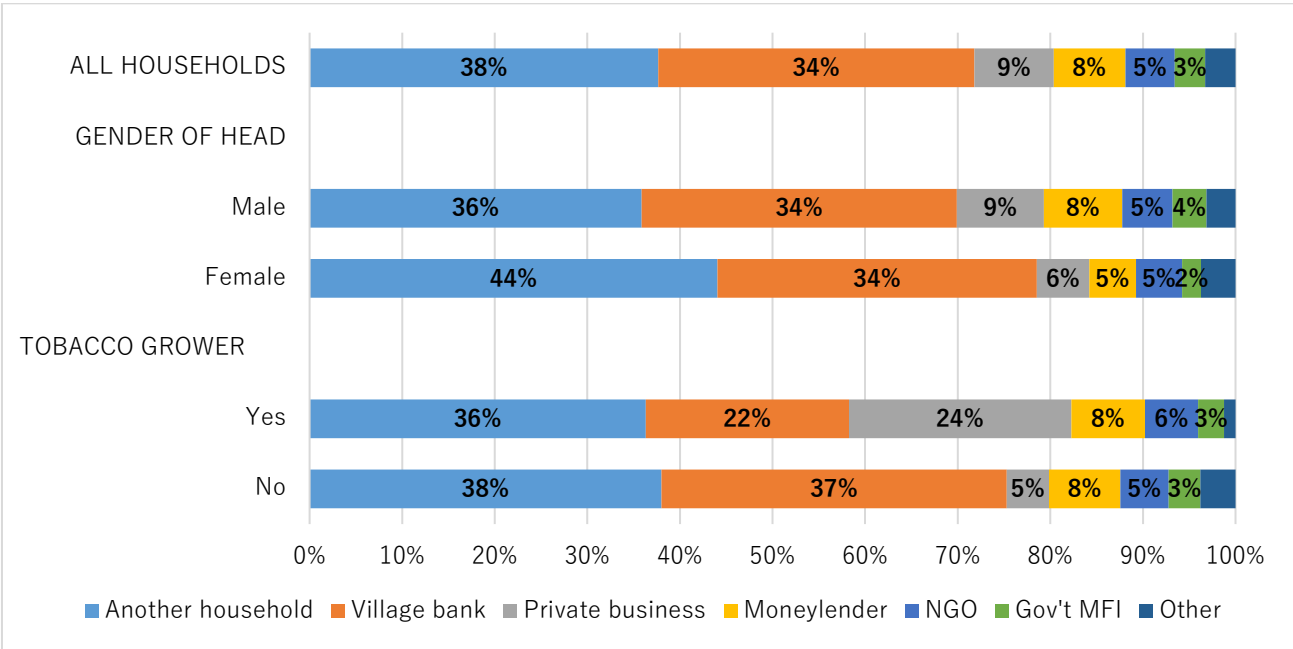
Source: MRALS 2019

In exploring the different sources of credit, other households (neighbors, friends, family; 38%, Figure 7.2) and village banks were the main providers of loans. Private businesses and money lenders are small players in rural credit provision with

less than 10% of loans, and government micro-finance institutions (MFIs) and NGOs are even smaller with 5% or less overall.

Female-headed households are more dependent than male-headed households on informal credit from other households. Households that produce tobacco had much better access to private business credit (24% of all credit sources), likely reflecting direct links to private tobacco companies through contract farming arrangements whereby expensive farm inputs are accessed on credit from the companies that purchase the produce.

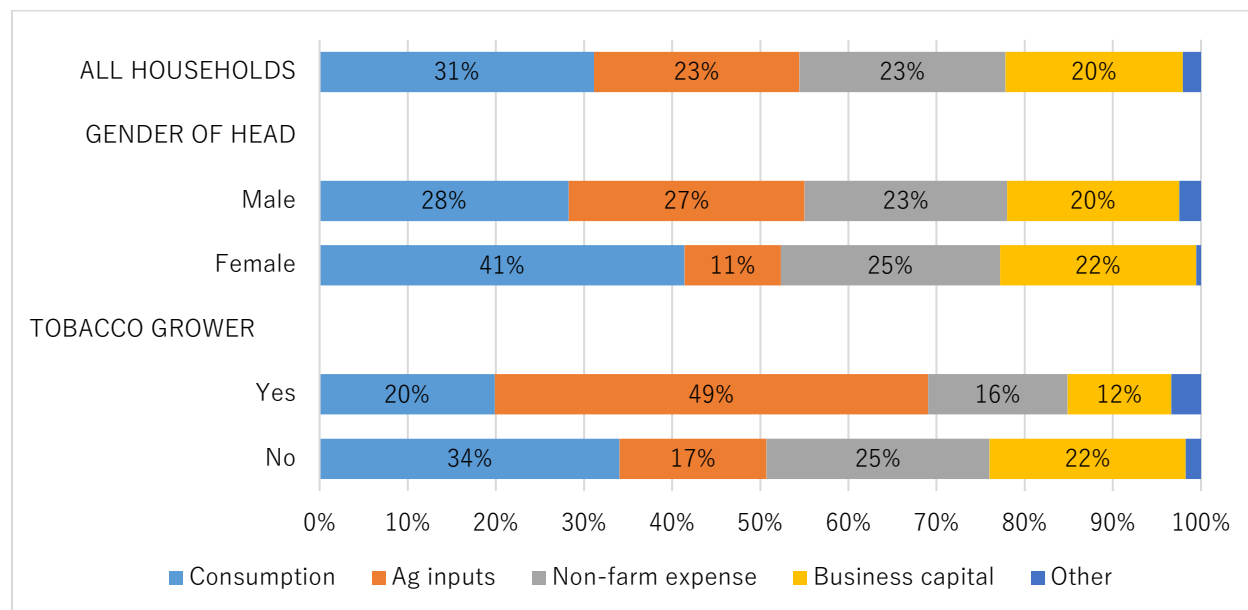
Figure 7.2: Main source of credit among those receiving, by gender of household head, and tobacco grower status



Source: MRALS 2019

Households which reported to have obtained a loan or credit were further asked about the reasons for getting the loan. The results in Figure 7.3 show the highest proportion of 31% of households obtained their loans for consumption, followed by 23% of households which got the loans to purchase non-farm inputs and agricultural farm inputs like fertilizers, seed and other chemicals, and 20% obtained loans for business capital.

Figure 7.3: Main use of credit among those receiving, by gender of household head, and tobacco grower status



Source: MRALS 2019

The large share of female headed households (41%) and non-tobacco growers (34%) reported to have obtained credit for consumption, further confirming the self-reported food insecurity metrics in the previous chapter. About half of tobacco grower households and 27% of male headed households obtained credit for purchasing farm inputs. Tobacco farmers were less likely to use credit for business capital (12%) likely because they are more focused on farm production for incomes.

7.2 Extension topics and sources

According to NAP of 2016, the provision of agricultural extension services drives the development of smallholder farmers in Malawi, thus, access to extension services has the potential to increase productivity and contribute to the agricultural transformation (Government of Malawi, 2016). However, MRALS data shows that extension access for rural farmers is low with only 40% of households receiving (Table 7.1). Reflecting the high dependence on crop production as a livelihood strategy, crops were the topic with the greatest share of households receiving advice. Extension advice not related to crops reached less than 10% of households in the 8 districts.

Table 7.1: Percent of households receiving extension advice by topic, by gender of household head, tobacco grower status, and district

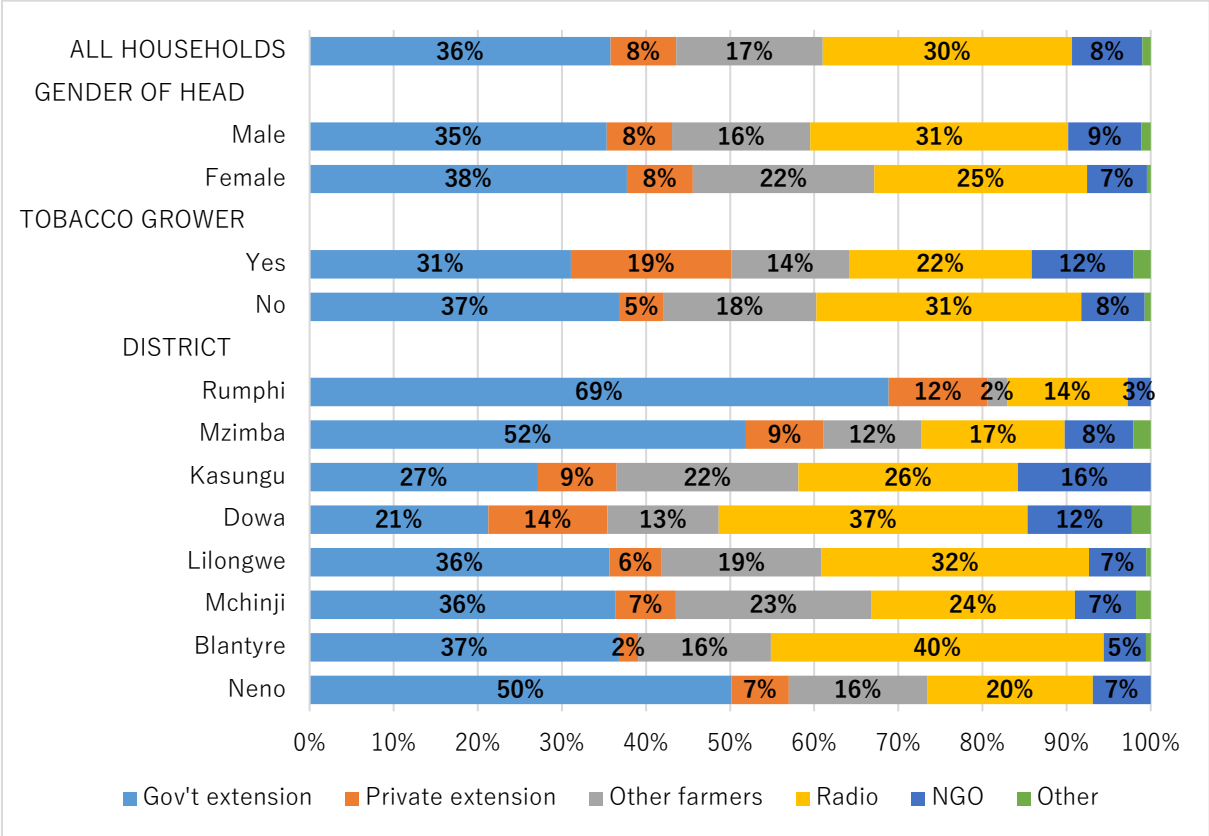
	Any	Crops	Livestock	Credit & Insurance	Forestry	Other
All households	40%	36%	9%	5%	6%	1%
<i>Gender of household head</i>						
Male	43%	39%	10%	5%	6%	1%
Female	30%	27%	7%	5%	5%	0%
<i>Tobacco growers</i>						
Yes	53%	46%	13%	7%	8%	1%
No	38%	34%	9%	5%	6%	1%
<i>District</i>						
Rumphi	45%	36%	13%	6%	5%	1%
Mzimba	19%	17%	6%	1%	1%	0%
Kasungu	34%	32%	5%	3%	1%	1%
Dowa	38%	32%	6%	5%	3%	1%
Lilongwe	46%	41%	10%	5%	9%	1%
Mchinji	45%	42%	13%	6%	6%	0%
Blantyre	63%	58%	18%	20%	18%	0%
Neno	49%	44%	20%	10%	12%	0%

Source: MRALS 2019

Access to extension advice is higher for male-headed households and those growing tobacco. When comparing across districts, Blantyre and Neno in the southern region had the highest share of about 63% and 49% of households respectively, that received extension advice. Crop information was most common in these districts, but other topics including livestock, credit and insurance, and forestry were also more common than the other districts.

MRALS also contains data on the main source of extension services, presented in Figure 7.4 for crop advice conditional on receiving information. Government extension and radio are the leading sources with over 30% of households reporting them as their main source of crop information. Interestingly, the distribution across sources is similar for male and female-headed households, though there are some larger differences across tobacco grower status. Tobacco growers were much more likely to receive crop advice from private extension agents, again reflecting their direct connections to tobacco growing companies.

Figure 7.4: Main source of crop advice among those receiving, by gender of household head, tobacco grower status, and district



Source: MRALS 2019

Households in Rumphi district had the largest share of households with government as their main source of crop extension information (69%), followed by Mzimba (52%) and Neno (50%) districts, though these districts had the lowest shares for radio at 20% or less.

REFERENCES

- Arnott, D. (2018). The impact diverging public opinion on cannabis and tobacco regulation has on constructive engagement between advocates. *Addiction* 2018; 113:605–606.
- Boseley, S. (2019, November 3). US suspends Malawi tobacco imports after child labour allegations. *The Guardian, USA*
- Chirwa, E. W. (2011). *Competition issues in the Tobacco Industry in Malawi*. New York and Geneva: United Nations.
- Government of Malawi. (2004). *Policy Document on Livestock in Malawi*. Ministry of Agriculture and Food Security, Lilongwe, Malawi
<https://cepa.rmportal.net/Library/government-publications/Policy%20Document%20on%20Livestock%20in%20Malawi%202004.pdf>
- Government of Malawi. (2016). *National Agriculture Policy*. Ministry of Agriculture and Food Security. Lilongwe, Malawi
- Government of Malawi (2018). *National Agricultural Investment Plan (NAIP): Prioritized and Coordinated Agricultural Transformation Plan for Malawi: FY 2017/18-2022/23*. Lilongwe: Malawi Government.
- Lecours, N., G.E.G. Almeida, J.M. Abdallah, and Novotny, T.E. (2012). Environmental Health Impacts of Tobacco Farming: A Review of the Literature. *Tobacco Control* 21: 191–196.
- Makoka, D., Drope, J., Appau A. et al. (2017). Costs, revenues and profits: an economic analysis of smallholder tobacco farmer livelihoods in Malawi. *Tobacco Control*, 26(6):634–640
- National Livestock Development Project. (2004). *National Livestock Project Development Project Report*. African Development Fund.
- Novotny, T.E., Bialous, S.A., Burt, L, et al. (2015). The environmental and health impacts of tobacco agriculture, cigarette manufacture and consumption. *Bulletin of the World Health Organization*, 93:877-880

Otanez, M., Mamudu, H., & Glantz, S. (2009) Tobacco companies' use of developing countries' economic reliance on tobacco to lobby against global tobacco control: The case of Malawi. *American Journal of Public Health*; 99 (10): 1759–1771.

UNICEF. (2019). Child protection budget analysis in Malawi: Analysis of trends, gaps and opportunities. UNICEF Malawi, Lilongwe, Malawi.
https://www.unicef.org/malawi/sites/unicef.org.malawi/files/2019-03/UNICEF_CP_BudgetAnalysis_13032019_WEB.pdf

Xia, F & Deininger, K. (2019). Spillover effects of tobacco farms on the labour supply, education and health children: evidence from Malawi. *American Journal of Agricultural Economics*, 101(4), 1181-1202.



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