Trends in Tobacco Production and Prices in Malawi

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Executive Summary

Diversification away from tobacco production has been framed as a priority for Malawi, historically one of the world's most tobacco-reliant countries. This paper characterizes broad trends in production since 2000 in order to understand whether Malawi is shifting away from tobacco and how production has changed over time. From 2004 to 2019, the share of Malawian crop farmers producing tobacco fell from 16% to 5%, and tobacco's share of the total crop production value also declined sharply. In important respects, a transition away from tobacco has already occurred. Tobacco farms are generally growing larger (in size and scale of production) over time. However, land productivity remains low, with median net returns of 93,000 MWK (128 USD) per hectare. Farm-gate prices for tobacco have declined relative to the prices of maize or fertilizer, rendering tobacco less lucrative as a means to generate cash income that would be used to purchase these key items. In addition, the share of the export price received by farmers has also declined over time, with the median farm-gate price dropping from 32% of the export price in 2004 to 18% in 2019. Additional research is needed to understand why the farm-gate share of tobacco export prices has declined over this period and how the livelihoods of smallholder farm-households that exited tobacco production have been affected.

1. Introduction

Malawi is one of the world's most tobacco-reliant countries, with tobacco historically accounting for up to 70% of foreign exchange earnings (Chirwa, 2011; Goger, Bamber & Gereffi, 2014) and contributing to the livelihoods of a substantial share of the country's rural population. Presently, the worldwide campaign to reduce tobacco use includes efforts to reduce tobacco supply, with Article 17 of the WHO Framework Convention on Tobacco Control requiring signatories to promote economically viable alternatives to tobacco (Appau et al., 2020). Though Malawi is one of the few countries that has not ratified this Framework (Lencucha et al., 2017), it is apparently considering doing so (Smith & Fang, 2020), and there are indications in its various agricultural policies that diversification has become a priority. For example, the 2016 National Agriculture Policy aims to shift farmers into nontraditional, high-value agricultural value chains and non-agricultural activities; the Malawian Growth and Development Strategy III focuses on establishing new markets for diverse agricultural commodities, including oilseeds, sugarcane, livestock, animal feed, and fisheries products; and the National Agricultural Investment Plan suggests sugarcane, cotton, coffee, tea, macadamia nuts, soybeans, oilseeds, and chilies as possible alternatives to tobacco (Lencucha et al., 2017).

The imperative to diversify stems at least partly from an expectation that global efforts to reduce tobacco consumption through tobacco control policies or increased trade barriers are likely to imperil the livelihoods of tobacco growers in Malawi. According to Milanzi (2017), tobacco markets have become increasingly unstable in recent years, translating into fluctuating and declining incomes for tobacco farmers. Though world demand for tobacco has continued to increase, Malawian burley has a reputation as a flavorless "filler," and recent policies to ban additives in Canada and flavorings (except menthol) in the U.S. seem to have reduced demand for the otherwise bland Malawian burley (Prowse & Moyer-Lee, 2014). Lencucha et al. (2017) cite a growing recognition within government that tobacco is not a viable or sustainable economic commodity. Nevertheless, alongside policies oriented towards diversification, the Government of Malawi continues to support tobacco production and marketing (Prowse, 2013; Lencucha et al., 2017). Though the government has at least loosely identified a goal of shifting away from tobacco, alternative sources of income that

are as profitable as tobacco for Malawian farmers—and as useful for Malawi as an export—have yet to be identified.

In light of concerns regarding the viability of tobacco production in Malawi, this paper aims to characterize broad trends in production since 2000 in order to understand whether Malawi is shifting away from this crop and how production has changed over time. Attention is given to trends in the scale of production on tobacco farms, their profitability, and the poverty status of tobacco farmers. This paper further investigates whether prices for tobacco are, in fact, in decline. Falling prices would motivate a policy to diversify away from tobacco, while stable prices could warrant a re-examination of the rationale for discouraging smallholder farmers' production of tobacco—particularly until suitable alternatives have been developed.

2. Background

Historically, there have been two categories of tobacco farms in Malawi: Estate growers cultivate tobacco on leasehold or freehold land and register with the Tobacco Control Commission as individual growers, while family farmers are organized into clubs of 10 to 30 farmers and cultivate tobacco on customary land (Chirwa, 2011). Prior to liberalization in 1992, tobacco was only cultivated by large-scale estate owners, as smallholders were assumed to lack the technical ability to grow such a high-value crop (Prowse, 2013). It should be noted that the political elite in the 1970s and 1980s were also large-scale estate owners (ibid), and to this day, the relationship between tobacco interests and government in Malawi can be characterized as one of "state capture," with political leaders benefiting from the industry and the industry deeply integrated into national development efforts (Prowse & Moyer-Lee, 2014; Smith & Fang, 2020).

It was only with repeal of the Special Crop Act in 1993 that smallholder farmers could participate in the cultivation of high-value crops, and by 2009–10, smallholder production overwhelmingly dominated burley tobacco production (Chirwa, 2011; Derlagen, 2012). The number of registered tobacco estates declined from over 61,000 to just over 11,000 between 2000 and 2007 (Chirwa, 2011), and estate involvement seems to be mostly in the form of tenancy agreements with smaller producers. Prowse (2013) references an economic boom in districts where smallholder tobacco production was concentrated. However, including

smallholders in tobacco cultivation led to declining profitability in the estate sector, as estates found it more difficult to recruit tenants, with a consequent increase in the prices paid to tenants. Moreover, the lower quality of tobacco brought to the auction floors from smallholder farms lowered the reputation of Malawian burley on international markets (Chirwa, 2011; Prowse, 2013). To market tobacco at auction, smallholders register their club with the Tobacco Commission (formerly known as the Tobacco Control Commission) and receive a marketing quota (Prowse & Moyer-Lee, 2014). However, low prices of tobacco at auction have been attributed to poor grading of tobacco by farmers and overproduction of tobacco due to weak regulations, among other reasons (Chirwa, 2011). According to Prowse (2013), "efforts to control the marketing of smallholder production were driven both by the vested interests of estate owners and by a genuine concern by government and stakeholders to ensure the long-term vitality of the industry."

As of the early 2000s, tobacco could only be sold in the auction system (with intermediate buyers banned in 2002) (Chirwa, 2011; Derlagen, 2012). However, in 2005, the Tobacco Association of Malawi introduced contract marketing, which facilitates product traceability "from seed to cigarette," and a majority of tobacco is now produced under contract farming arrangements (Makoka et al., 2017; Milanzi, 2017). The upshot is that tobacco companies are increasingly involved in financing the production of the tobacco crop, as they provide inputs on loan, extension services, and transport to market (Lencucha et al., 2017; Milanzi, 2017). According to Lencucha et al. (2017), "tobacco companies have largely taken over from government in the management of the supply chain."

Some analysts have found that tobacco farm revenues barely exceed the cost of physical inputs, such as seed/seedlings, fertilizer, and other agricultural chemicals, though contract farmers fare somewhat better than independent farmers (Makoka et al., 2017). The Farm Input Subsidy Programme (FISP) extended to tobacco growers between the 2005/06 and 2008/09 agricultural seasons, when smallholder tobacco farmers received coupons to purchase two bags of fertilizer suitable for tobacco cultivation at subsidized prices, a reduction of up to two-thirds of the commercial price (Chirwa, 2011). However, since 2009/10, tobacco farmers have been excluded from the subsidy program. A comparison of net margins realized by tobacco farmers between 2003/04 and 2009/10 reveals a loss of 14% in real terms (Prowse & Moyer-Lee, 2014). Though the government set minimum prices

beginning in 2007/08, leaf merchants argued in 2009–2011 that this led to an over-supply of Malawian burley (Prowse & Moyer-Lee, 2014), and the companies refused to buy tobacco from Malawi unless the price floors were removed (Kulik et al., 2017).

Reports of low and declining prices for Malawian tobacco beg the question of why farmers choose to produce this crop. Abundant research has established that economic concerns drive farmers' choices. Tobacco farmers in Malawi are very likely to report that they grow tobacco because they perceive it to be the "only economically viable crop." Specifically, 64% of tobacco farmers in Malawi reported that they began growing tobacco because it was the only viable option, and just 6% began because they thought it would be "lucrative" (Appau et al., 2020). According to Lencucha et al. (2017), stakeholders report that the price for tobacco is far higher than for other crops; in other words, there is no profitable alternative to tobacco production. A related concern is land availability, as crops like legumes require more land to produce the same crop value as tobacco (Lencucha et al., 2017). In addition to concerns of profitability, farmers could make their crop choices based on the assurance of buyers, reliability of prices, and access to extension, credit, and inputs. For example, a high share of tobacco farmers in the Rumphi and Kasungu districts cited the existence of a well-structured market (which was absent for other crops) as their motivation for growing tobacco (Appau et al., 2020). According to Makoka et al. (2017), tobacco farmers in Malawi are also motivated by the access to credit that comes with contracts.

Smith and Fang (2020) identify four structural barriers to diversification from tobacco: its perceived economic importance, a lack of alternatives, vested industry interests, and the polarized conflict between tobacco control advocates and farmers. Noting tobacco's advantage in having an established market, some stakeholders believe that farmers would diversify if alternative markets were developed (Smith & Fang, 2020). Indeed, there have been reports of farmers diversifying from tobacco, even as it remains dominant at the national level. In particular, when companies invest in other commodities such as oilseed or livestock, thereby creating demand for these farm products, tobacco farmers are said to respond by investing in these alternative livelihoods (Lencucha et al., 2017).

3. Data

This paper draws primarily from the Malawi Integrated Household Survey (IHS), which is part of the World Bank Living Standards Measurement Study – Integrated Surveys on Agriculture and is implemented by the National Statistical Office of the Government of Malawi. This survey is comprised of both a repeated cross-section and a panel component. While the cross-section samples are representative at the national, urban/rural, regional, and district levels, the panel samples are representative at the national, regional, and urban/rural levels. This brief draws on cross-sectional data from 2004/05, 2010/11, 2016/17, and 2019/20 (also referred to as IHS2, IHS3, IHS4, and IHS5), as well as panel data from 2013.[1] The survey waves will be hereafter referred to as years 2004, 2010, 2013, 2016, and 2019. The IHS survey is a key source of information on farm-gate prices received by farmers for tobacco and other crops.

The cross-section surveys were collected over the course of 12 months, such that the most recently completed growing season (the reference period for tobacco production) varies with approximately half of each sample citing one year and half citing the next year. For example, in IHS2, half the farmers referenced the 2002/03 growing season and half referenced the 2003/04 growing season. The samples in aggregate are representative of the population of family farmers (hence, excluding corporate and other nonfamily farms).[2] The samples from IHS2–IHS5 range in size from 11,280 to 12,447 households, while the sample from 2013 includes 4,000 households. In total, there are 4,293 observations of tobacco-growing households over these 5 survey waves. Survey weights are used in all analyses to generate statistics that reflect the population.[3]

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[1] IHS1, collected in 1997/98, has not been made available for use.

[2] Although the IHS is a population-based survey that is intended to be representative of the population, the extent to which this data source accurately captures the estate sector is unclear. In general, population-based surveys tend to under-represent relatively large farms (Jayne et al., 2016).

[3] The Stata do-file and constructed data files used in this analysis are available to readers upon request, and the IHS data are made publicly available by the World Bank at:
www.worldbank.org/en/programs/lsms/initiatives/lsms-ISA.

**Figure 1. Tobacco Area and Quantity Produced, 1961–2018**
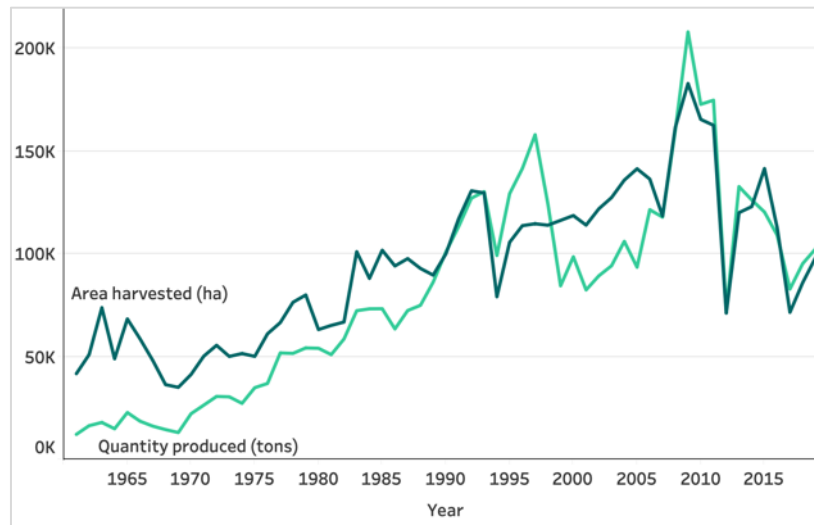
Source: FAOStat

The construction decisions of several key variables merit explanation. In every survey wave, at least 90% of cultivated plots are measured using GPS, and the areas of the remaining plots are imputed with reference to farmer estimates and the local relationship between estimated and measured land areas. The area cultivated with tobacco (or any other crop) is adjusted to account for intercropping, such that the area of a plot is divided among the crops whenever multiple crops are cultivated together on a single plot. The value of tobacco (or any other crop) is captured with respect to the sales price received by the farmer. If a farm reports harvesting more than the amount sold, the retained crop is valued at the sales price, and if a farmer reports harvesting a crop but has not sold it, the crop is valued at the median price observed in the data set at the most local geographic unit for which at least 10 sales observations are found. In this analysis, the values of seed and agrochemicals (fertilizer, herbicide, and pesticide) are captured with respect to commercial prices rather than expenditures. In other words, if a farmer accessed subsidized inputs through Malawi's Farm Input Subsidy Program, those inputs are valued at the median commercial price observed in the data set at the most local geographic unit for which at least 10 sales observations are found. For multi-cropped plots, the value of agrochemicals and hired labor applied to a given plot is divided among the crops according to their respective share of the plot's area. To address outliers, values of some key variables, such as crop yield and quantity of production, are winsorized such that values above the 98th percentile of the variable's

Figure 2. Value of Tobacco Production, 1961–2018
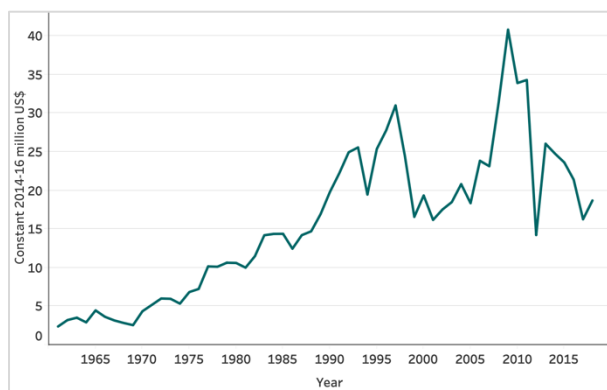
Source: FAOStat

Figure 3. Share of Tobacco in Total Merchandise Export Value, 1961–2018
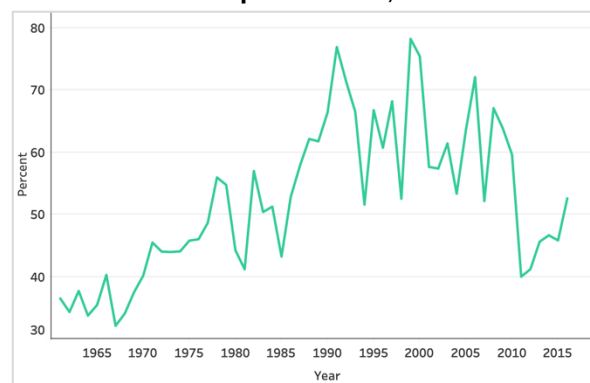

Source: FAOStat

distribution are set to the value of the 98th percentile. Most statistics in this paper are reported at the farm level. However, where appropriate, some analyses are conducted with statistics also generated at the level of hectares of land or kilograms of tobacco.

In addition to the IHS household-level data, secondary data used in this analysis come from the Food and Agriculture Organization of the United Nations statistical database (FAOSTAT), the World Integrated Trade Solution database (WITS), the World Bank Commodity Prices "Pink Sheet" database (FAO, 2020; WITS, 2020; World Bank, 2020a), the Tobacco Commission of Malawi, and the Fertilizer Association of Malawi.

4. Findings

Over the past six decades, the total amount of tobacco produced in Malawi has increased dramatically but has been volatile in recent years. According to the Food and Agriculture Organization of the United Nations, the total area devoted to tobacco increased from 41,763 hectares in 1961 to a high of 183,052 hectares in 2009 (Figure 1). In 2012, and again in 2017, Malawi experienced sharp declines in the area of tobacco harvested, and by 2019, the area under tobacco had fallen to 98,133 hectares. Since 1961, the total value of tobacco production increased along with quantity, albeit with a sharp drop observed in 2012 (Figure 2). Note, however, that if just four data points are removed between 2008 and 2011, the aggregate value of production would appear much more consistent over the past two decades. The share of tobacco in Malawi's total merchandise export value has varied between 35% and 78% since 1961, underscoring tobacco's dominant role in Malawi's foreign

Figure 4. Number of Tobacco Farms, 2004–2019
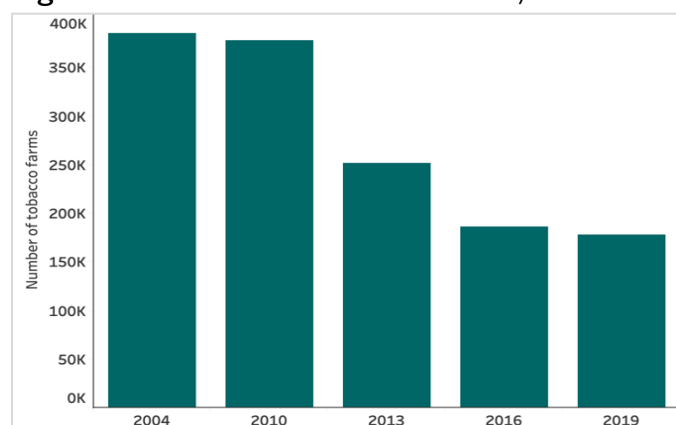
Source: IHS

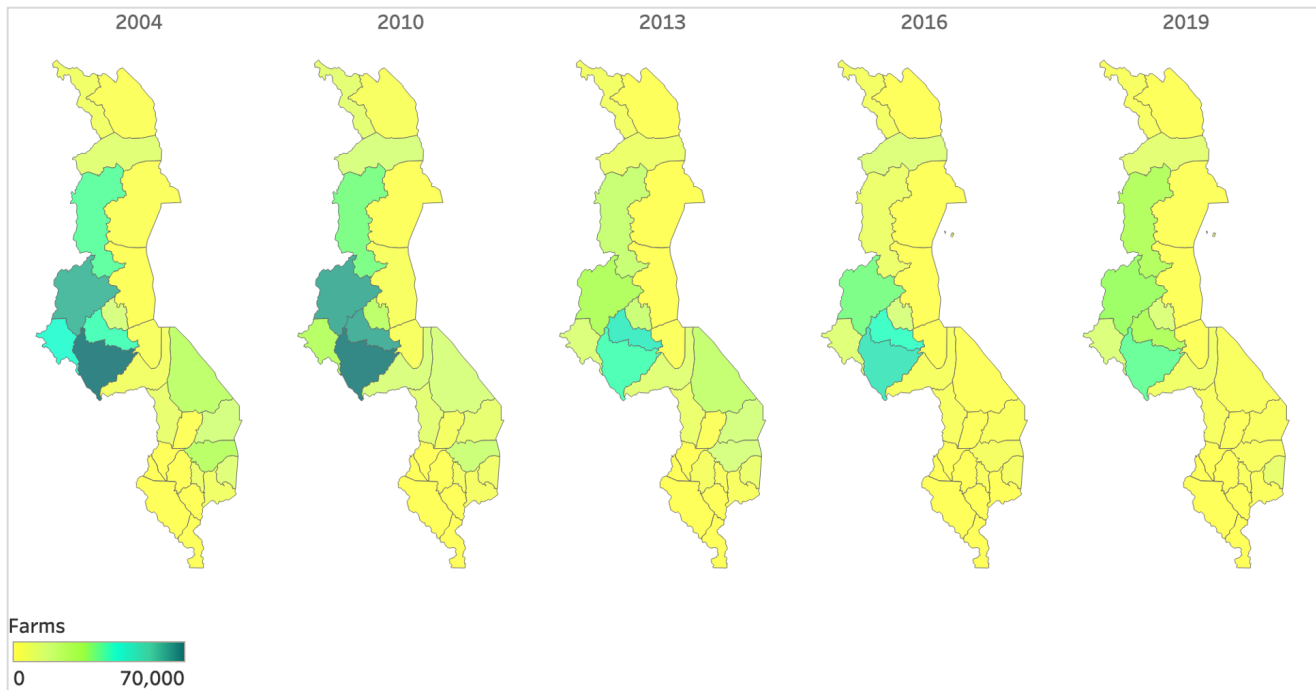**Figure 5. Share of Tobacco Farms**
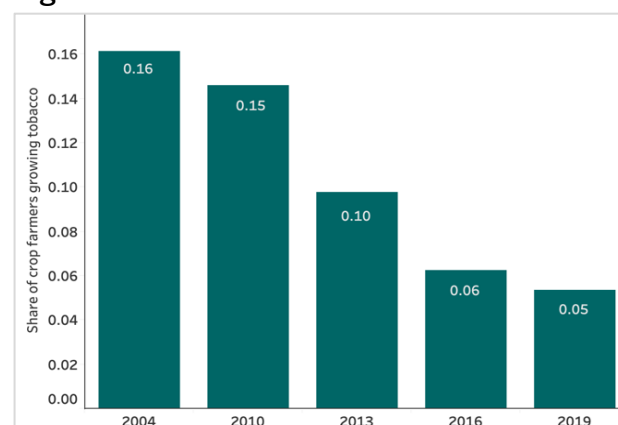
Source: IHS

exchange earnings (Figure 3). At the same time, tobacco claims a much more marginal role in the agricultural sector overall, as the share of tobacco in the value of total agricultural production (including all crops and animal products produced annually) ranged from 2.4 to 15.3% over the past six decades (source: FAOSTAT).

From 2004 to 2019, farmers in Malawi have shifted away from tobacco production.

While 16% of crop farms in 2004 produced some tobacco, this had fallen to 15% by 2010 and continued to fall to 10% in 2013, 6% in 2016, and 5% in 2019. This translated to a sharp decline in the total number of tobacco farms: 385,353 in 2004 but just 177,893 in 2019 (Figures 4 and 5). The number of tobacco farms operating in each district is presented in Figure 6. While tobacco had a presence in many districts as of 2004, production seemed to be clustered by 2019 in a smaller handful of districts, including Mzimba (in the Northern Region) and Kasungu and Lilongwe (in the Central Region).[4] Tobacco production has almost entirely disappeared in a number of districts in which it was once grown, such as Mangochi, which had 21,306 tobacco farms in 2004 but just 1,970 in 2019. The share of crop farmers in each district that grew tobacco is presented in Figure 7. In 2004, 53% of farmers in Mchingi and 55% in Kasungu grew some tobacco; by 2019, these figures had slid to 10% and 18%, respectively. In 2004, there were seven districts in which at least 20% of crop farmers grew tobacco; by 2019, there was just one.
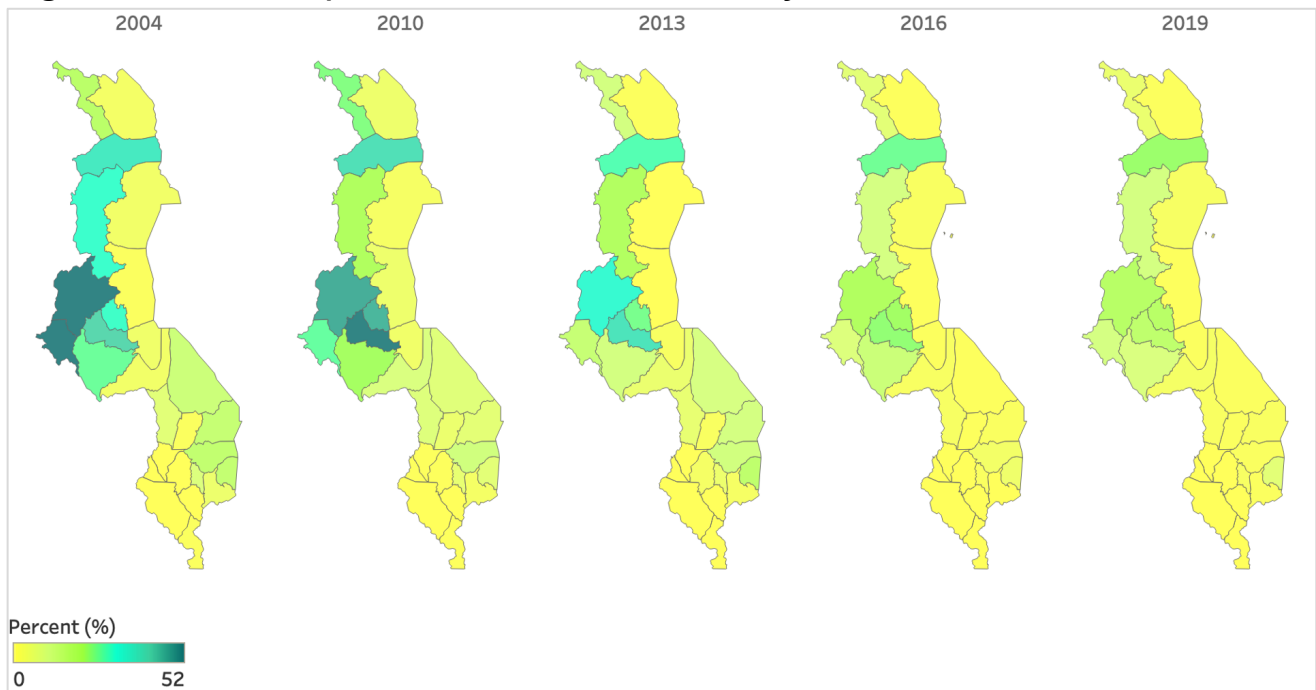
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[4] See Figure A1 in the appendix for a labeled map of the districts in Malawi.

Figure 6. Number of Tobacco Farmers by District and Year
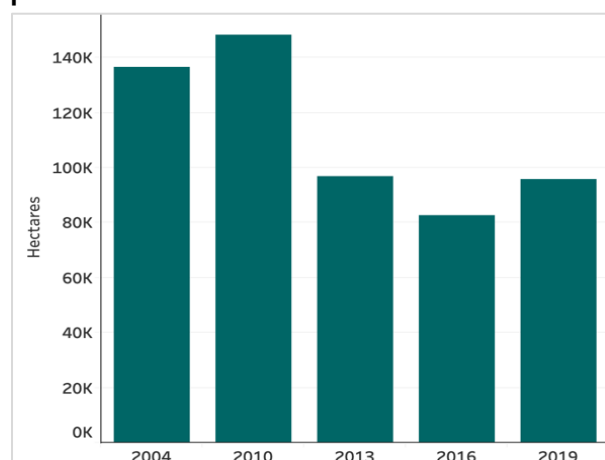

Source: IHS

Figure 7. Share of Crop Farmers That Grow Tobacco by District and Year
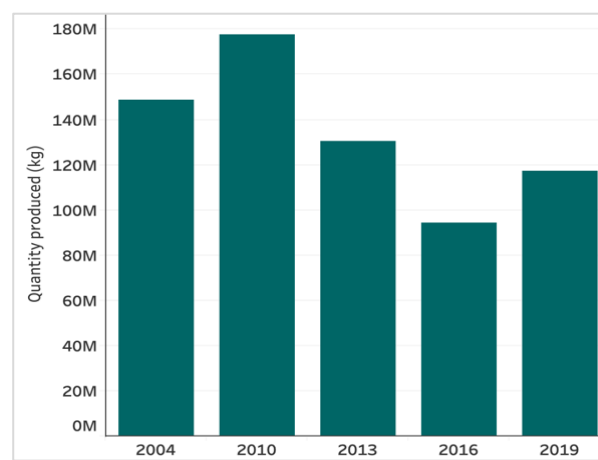

Source: IHS

Figure 8. Aggregate Area of Tobacco production

Source: IHS

**Figure 9. Aggregate Quantity of Tobacco Production**

Source: IHS

The area of farmland devoted to tobacco production declined from 2010 to 2016, though it increased again in 2019.

Although the IHS was collected over two agricultural seasons in most survey waves, the information in each wave can be aggregated to loosely estimate the total production in a year. According to the IHS, the total area cultivated with tobacco fell from a value of 148,278 hectares in 2010 to 82,430 hectares in 2016 (Figure 8). However, this value ticked upward in 2019 to 95,485 hectares. Given the small number of tobacco farms in this year, this indicates that the farms that remain are growing larger, on average. Over these years, the trend in the aggregate quantity of tobacco produced mirrored that of the area of production (Figure 9), indicating that average yields have been stable. (For most years, the annual values generated from the IHS data are extremely similar to those reported in the FAOSTAT database, which suggests that the IHS is able to capture the full story of tobacco production in Malawi.) The geography of tobacco production has also been fairly consistent over this time period, with approximately 50–60% being sourced from the Central Region, 30% from the Southern Region, and 10–20% from the Northern Region in each survey wave.

Tobacco's share of the total land area under cultivation in Malawi, as well as its share of the total crop production value, have also declined over time.
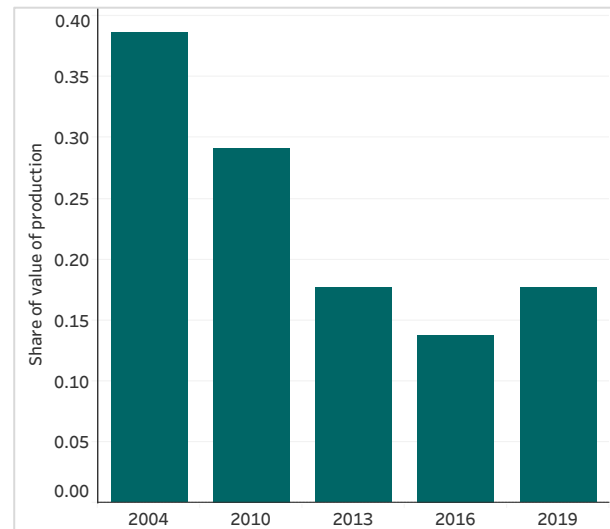
Figure 10 shows that the share of total cultivated land that is allocated to tobacco production

Figure 10. Share of Cultivated Land Area Under Tobacco
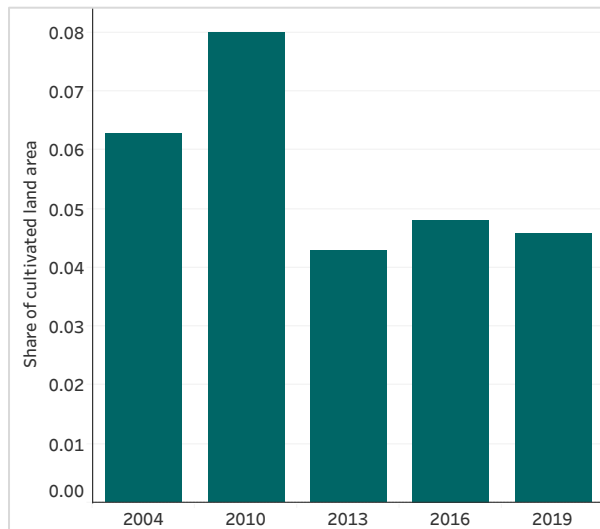
Source: IHS

Figure 11. Share of Total Value of Crop Production Derived from Tobacco

Source: IHS

fell from a high of 8% in 2010 to 4.5% in 2019. An even starker pattern is evident in Figure 11, which shows that tobacco's contribution to the total crop production value fell from 39% in 2004 to 14% in 2016 before slightly rebounding to 18% in 2019. This seems to reflect the rising importance and relative value of non-tobacco crops (even if other crops remain less valuable than tobacco on a per-hectare basis). This pattern is noteworthy because the imperative to diversify away from tobacco is often cast as a looming challenge for Malawi (Lencucha et al., 2020; Smith & Fang, 2020). Yet, in some important respects, it seems this transition has already occurred.

Tobacco farms are generally growing larger (in size and scale of production) over time.

The area of tobacco farms is presented in Table 1, which gives the values for the 10th, 25th, 50th, 75th, and 90th percentiles of land area cultivated with tobacco in each year. These results show that the distribution of tobacco farm sizes was fairly stable until 2016, though the largest farms were larger in 2019. The median tobacco farm was 0.30 hectares in 2004 and 0.35 hectares in 2019, and the 75th and 90th percentile values in 2019 (0.70 hectares and 1.16 hectares) were noticeably larger than in earlier years. This suggests a shift (at least in this year) towards a larger scale of tobacco production. Table 2 repeats this exercise for the quantity of tobacco produced across farms, showing that even farms at the 10th

Table 1. Distribution of Area of Tobacco Cultivated Across Farms (hectares)

	Percentiles				
Year	10th	25th	50th	75th	90th
2004	0.1	0.2	0.3	0.4	0.81
2010	0.11	0.2	0.33	0.49	0.77
2013	0.06	0.12	0.21	0.4	0.69
2016	0.11	0.19	0.34	0.57	0.85
2019	0.11	0.19	0.35	0.7	1.16

Source: IHS

Table 2. Distribution of Quantity of Tobacco Produced Across Farms (kg)

	Percentiles				
Year	10th	25th	50th	75th	90th
2004	50	100	210	500	1,000
2010	55	100	230	480	900
2013	50	100	200	473	900
2016	80	150	300	600	1,210
2019	70	150	340	700	1,600

Source: IHS

Table 3. Distribution of Tobacco Yield Across Farms (kg/hectare cultivated)

	Percentiles				
Year	10th	25th	50th	75th	90th
2004	198	465	914	1,557	2,718
2010	240	430	780	1,326	2,288
2013	297	618	1,063	1,947	3,769
2016	323	562	950	1,594	2,296
2019	305	612	1,009	1,614	2,739

Source: IHS

Table 4. Distribution of Value of Tobacco Production Across Farms (1,000s MWK, real 2010 values)

	Percentiles				
Year	10th	25th	50th	75th	90th
2004	4	11	28	70	158
2010	5	15	35	78	140
2013	5	19	45	108	241
2016	1	10	33	95	256
2019	3	12	41	120	325

Source: IHS

Table 5. Distribution of Net Value of Tobacco Production Across Farms (1,000s MWK, real 2010 values)

	Percentiles				
Year	10th	25th	50th	75th	90th
2010	-8	7	27	68	142
2013	0	12	40	94	220
2016	-12	6	25	79	208
2019	-12	4	30	91	264

Source: IHS

Table 6. Distribution of Net Value of Tobacco Production Per Hectare Across Farms (1,000s MWK, real 2010 values)

	Percentiles				
Year	10th	25th	50th	75th	90th
2010	-26	27	93	199	374
2013	0	66	194	401	865
2016	-41	21	89	222	403
2019	-26	23	93	206	442

Source: IHS

percentile were larger (in terms of quantities produced) in 2016 and 2019, compared to earlier years. However, this difference becomes more noticeable around the 75th percentile, which was 500 kg in 2004 but 700 kg in 2019. It is possible that relatively less productive farms have exited tobacco farming in recent years, while the more productive farms have remained. Table 3 presents the distribution of tobacco yield (kilograms harvested per hectare cultivated) in each survey wave. No clear trend over time is evident, though yields at the low end of the distribution were higher in 2016 and 2019 than in earlier years.

Although tobacco farms are growing somewhat larger in economic scale, land productivity remains low.

Table 4 shows the distribution of the value of tobacco produced across farms. All prices have been adjusted for inflation using the Malawi Consumer Price Index (CPI) for the year in which the growing season ends.[5] Consistent with the farms' tobacco cultivation and harvest quantity patterns, the value of tobacco produced seems to be rising—particularly at the higher end of the distribution. The 75th percentile of this distribution was approximately 70,000 MWK in 2004, 108,000 MWK in 2013, and 120,000 MWK in 2019. Interestingly, the Gini Index of the concentration of tobacco production across farms is fairly stable with respect to the value of production (at 0.66, 0.59, 0.67, 0.69, and 0.69 across the survey waves). Table 5 presents the distribution of the net values of tobacco production, with the value of seed, agrochemicals (including fertilizer, pesticide, and herbicide), and hired labor subtracted from the value of tobacco production. Due to missing information in the 2004 survey wave, results are only presented for 2010–2019.[6] The results confirm that most farms are operating at a profit, although there is not a clear trend over time. Table 6 shows the distribution of the net value of production per hectare cultivated with tobacco. In 2019, the tobacco farm at the median level of productivity generated approximately 93,000 MWK in net revenue per hectare cultivated (equal to roughly 128 USD per hectare at the mid-2019 exchange rate).

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[5] National CPI values are drawn from the World Development Indicators database (World Bank 2020b).

[6] In 2004, the commercial value of seed and fertilizer could not be computed; only actual input expenditures are netted out in this year. In addition, only fertilizer but no other agrochemical was captured in this year. For this reason, 2004 is removed from analyses of the gross margins of production (Tables 5 and 6).

Figure 12. Rate of Poverty Among Tobacco Farmers and Other Crop Farmers
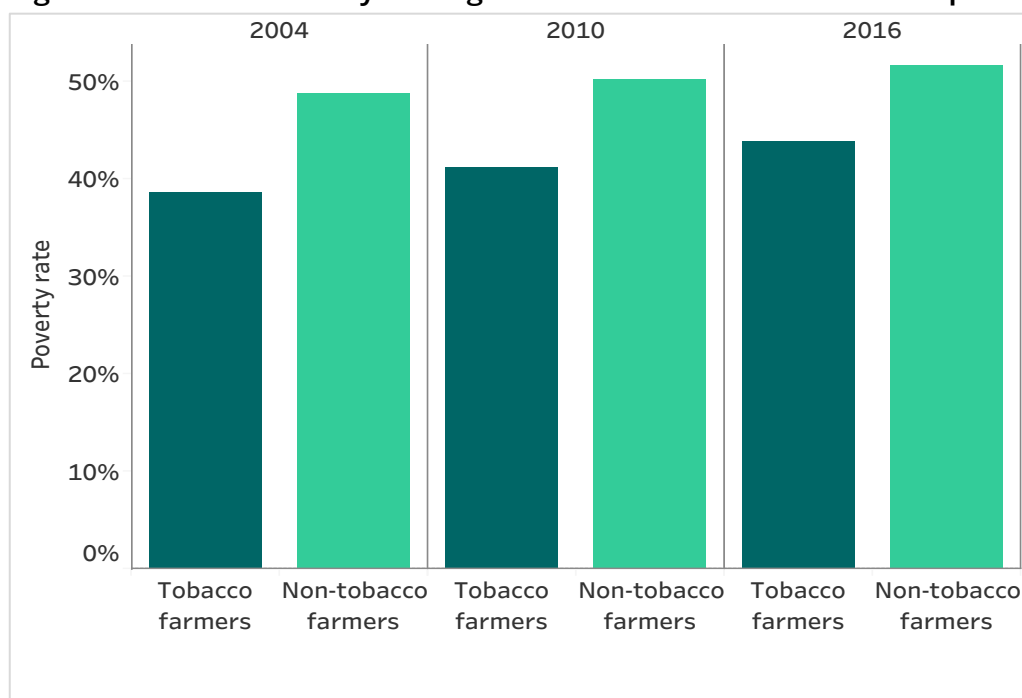
Source: IHS

Poverty is rising among tobacco farmers in Malawi, and this is occurring at a slightly faster rate than that of other crop farmers.

Given indications from the preceding analysis that farmers are exiting (or no longer entering) tobacco production, and that the scale of tobacco farms has become somewhat larger in recent years, it is worth considering whether tobacco farmers are, on average, more or less likely to be poor over time. The farm-household poverty status is based on the estimated value of food and nonfood items consumed by the household over the previous year, relative to the national poverty line. Figure 12 displays the rate of poverty across households that produce tobacco, as well as other crop-farming households that do not produce tobacco. (The poverty values for the 2019 survey wave are not yet available, and 2013 is not shown because the poverty rate in this year is much lower than in other years, suggesting a problem with the data.) Poverty among tobacco farmers rose from 39% in 2004 to 41% and 44% in 2010 and 2016, respectively. At the same time, poverty among other (non-tobacco) crop farmers rose from 49% to 52%. In other words, while the poverty rate for tobacco farmers was lower by 10 percentage points in 2004, this difference had narrowed to 8 percentage points by 2019. Although overall poverty rates are lower for tobacco farmers, it seems that tobacco

**Figure 13. Tobacco Export Prices (WITS) and Import Prices (Pink Sheet)**
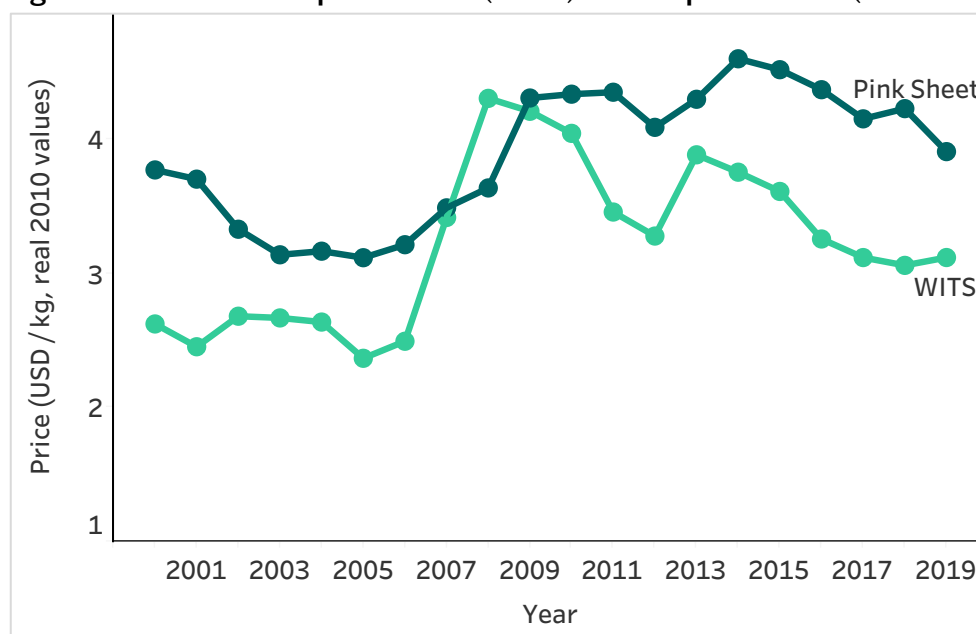
Sources: World Integrated Trade Solution (WITS) database and World Bank Pink Sheet. Note: The 2014 value for export prices (source: WITS) is imputed using information obtained from the Tobacco Commission, as the original data appeared to contain a data entry error.

production is increasingly unlikely to serve as a pathway out of poverty. It is worth considering whether this is because farmers have been receiving lower prices for their product, as is widely believed.

Tobacco prices have been fairly stable on the international market since 2000, though export prices from Malawi seem to have decreased since 2008.

Figure 13 shows the international price for tobacco as captured in the World Bank "Pink Sheet" for commodity prices. Note that these international data are not specific to burley tobacco (i.e., they seem to pool all types of tobacco), though logically prices may differ across different tobacco varieties. These annual values are an average of the monthly prices in each year, and values have been adjusted for inflation using the CPI for the United States. This shows that the price for tobacco increased from 2005 to 2015 before it drifted downwards, although the international price of tobacco in 2019 (USD 3.9/kg) is still higher than all values

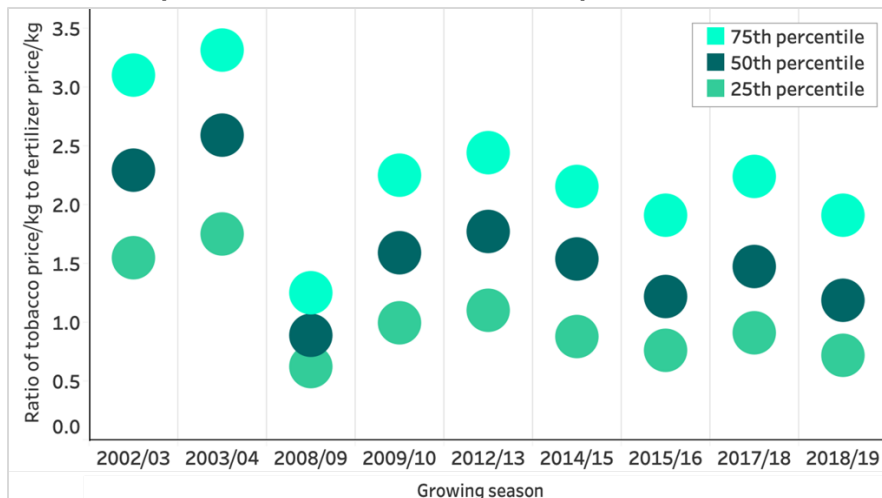**Figure 14. Tobacco Prices (percentiles, real 2010 Malawian kwacha)**
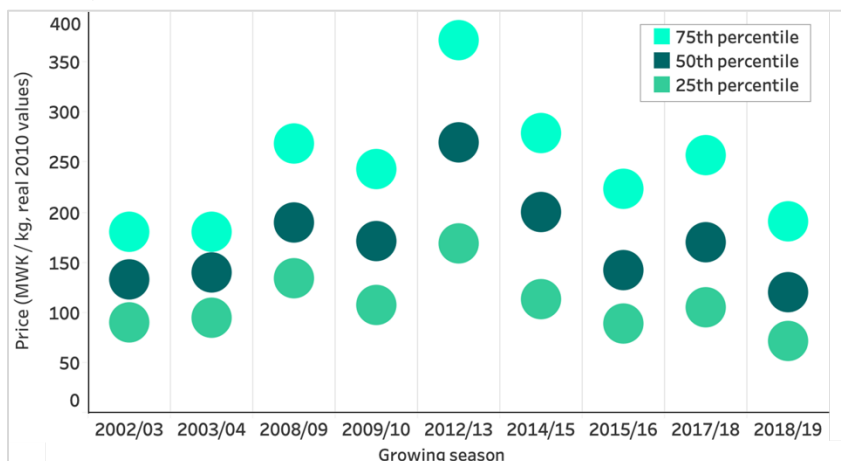
Source: IHS

Figure 15. Tobacco Prices (maize price as numeraire – ratio of tobacco price to median maize price)
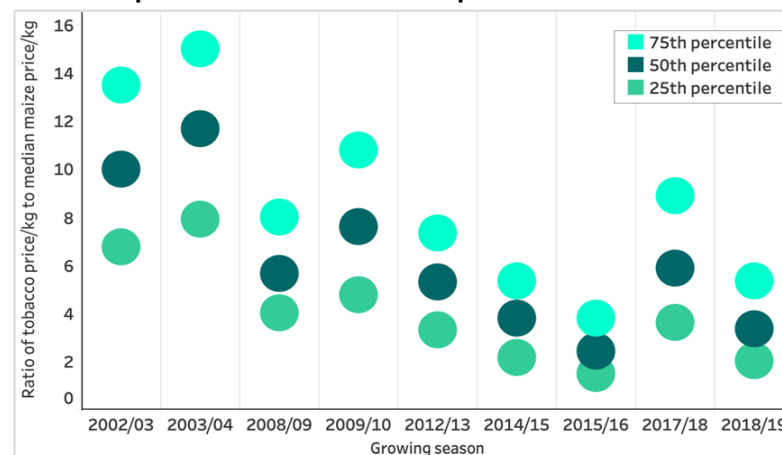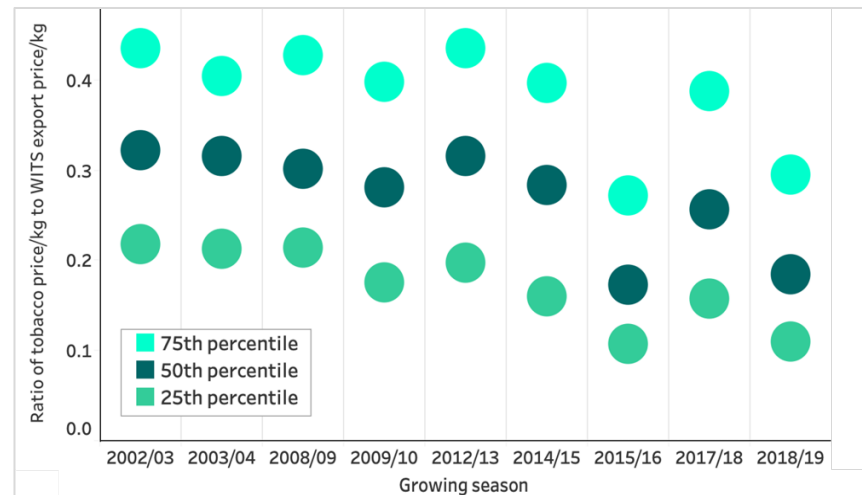

Source: IHS

Figure 16. Tobacco Prices (fertilizer price as numeraire – ratio of tobacco price to commercial fertilizer price)

Source: Fertilizer Association of Malawi and IHS

Figure 17. Share of WITS Tobacco Export Prices Received by Farmers

Sources: World Integrated Trade Solution (WITS) database and IHS

before 2009. At the same time, the export prices for Malawi tobacco,[7] as documented in the World Integrated Trade Solution (WITS) database, tell a somewhat different story. Note that these prices are also not disaggregated by type of tobacco, though burley tobacco is overwhelmingly dominant in Malawi. Export prices seem to have fallen dramatically since the high of USD 4.3/kg seen in 2008, which was the peak of the global commodity price boom when the prices of many commodities soared high above average. Nevertheless, the export price in 2019 (USD 3.1/kg) is still higher than all prices before 2007. Moreover, the removal of just a few extreme values would make this trend appear much more stable over time.

From 2004 to 2019, tobacco prices received by Malawian farmers have been stable in real terms.

Figure 14 shows percentiles of tobacco prices received by farmers in each growing season, as calculated from the IHS. Note that the IHS covers 9 growing seasons across the 5 survey waves used in this analysis. Tobacco prices have been adjusted for inflation using the Malawi CPI for the year in which the growing season ends. With the exception of higher values seen in 2013 (corresponding to the 2012/13 growing season), the median price received across households has remained fairly consistent. A simple linear regression of price on year reveals an upward trend (Coef=3.6, P=0.000), though the trend is less steep when year 2013 is excluded (Coef=0.2, P=0.000).

However, tobacco prices are seen to decline when the price of tobacco is set relative to the median price for maize or the commercial price for fertilizer observed in a given growing season.

Figure 15 shows a generally declining trend in the ratio of tobacco to maize prices (i.e., the price of tobacco with maize as a numeraire), with the median maize price calculated in each growing season. A simple linear regression reveals a downward trend (Coef=-0.5, P=0.000).[8]

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[7] The export price refers to unmanufactured but processed tobacco, while the auction price refers to cured but not processed tobacco (Derlagen, 2012).

[8] This result is consistent when using quantity-adjusted weights (Coef=-0.4, P=0.000). All regression results in this analysis produce coefficients with the same sign and level of statistical significance and similar magnitude when the regression is alternately conducted using the unit of tobacco-growing households or kilograms of tobacco.

Figure 18. Share of Tobacco Commission Export Prices Received by Farmers
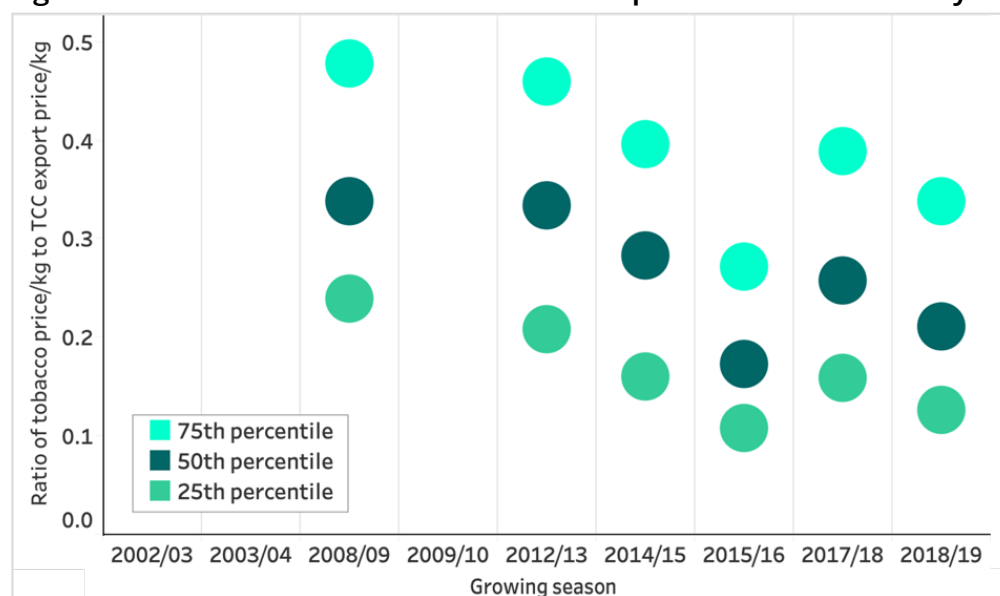
Sources: Tobacco Commission and IHS

The shifting ratio of tobacco to maize prices is consistent with the story seen in Figure 11, in which tobacco constitutes a shrinking portion of the value of total crop production in Malawi, with tobacco's share of crop value declining faster than its share of cropland. Figure 16 sets the price of tobacco received by farmers relative to the commercial price of fertilizer in each growing season. (According to Prowse and Moyer-Lee (2014), few smallholders use the fertilizers that are best for tobacco, instead using the cheaper fertilizer designed for maize.) Fertilizer prices refer to the year in which the growing season begins, and the percentiles again refer to the distribution across households that sell tobacco. This generally shows a gentler downward trend in the ratio of tobacco to fertilizer prices (Coef=-0.07, P=0.000). International fertilizer prices increased substantially in 2008/09 (Chirwa 2011), accounting for the sharp drop in this ratio in that year. Note that a statistically significant negative trend is observed even when the first two growing seasons are excluded (Coef=-0.05, P=0.010).

The share of the tobacco export price that is received by farmers has also been declining over time.

Figure 17 presents the percentiles in each growing season of the ratio between the price reported by farmers and the tobacco export price for that year, as found in the World Integrated Trade Solution (WITS) database. Export prices refer to the year in which the

growing season ends, and prices have been converted to MWK using the exchange rate for June 1 of the year in which the growing season ends. In 2003, a farmer receiving the median farm-gate tobacco price (the 50th percentile) received 32.1% of the per-kg export price for Malawian tobacco. In 2019, the median farm-gate price was 18.4% of the export price. A simple linear regression reveals a downward trend in the share of the export price received at the farm-gate (Coef=-0.012, P=0.000). This means that, on average, the share of the export price retained by farmers declined by 1.2 percentage points each year over this period. The same exercise using 6 years of data on auction prices[9] for Malawian burley tobacco from the Tobacco Commission (Figure 18) again reveals a downward trend in the share received by farmers (Coef=-0.006, P=0.000).

5. Conclusion

The aim of this paper was first to identify broad trends in tobacco production in Malawi. Since 1961, the total amount of tobacco produced has increased dramatically but has also been volatile, with some recent years (2012 and 2017) posting the lowest quantities seen since the late 1980s. These recent troughs do not seem to form an overall decline in aggregate tobacco production, however, the number and share of farmers growing tobacco has been on a consistent downward trajectory. In 2004, 16% of Malawian crop farmers produced tobacco; by 2019, only 5% did. National tobacco production has not closely mirrored the downward trend in number and share of tobacco farmer at least in part because most farms that have remained in tobacco are allocating greater area to the crop. At the same time, the tobacco farmers that remain are clustered into a smaller number of districts, especially Lilongwe, Kasungu, and Dowa. Tobacco is evidently becoming less and less important as a backbone of the rural economy in most other districts. Although the need to diversify away from tobacco is often cast as a looming challenge for Malawi, it seems this transition has—in important respects—already occurred. In addition, poverty rates among tobacco farmers have been rising, indicating that tobacco production is not able to serve as a pathway out of poverty.

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[9] As noted earlier, the export price refers to unmanufactured but processed tobacco, while the auction price refers to cured but not processed tobacco. Between auction and export, the stalks are removed, resulting in a weight reduction of approximately 25% (Derlagen 2012).

The second aim of this paper was to ascertain whether tobacco prices have been declining in Malawi, with potential policy implications for whether an agricultural diversification strategy is needed in order to safeguard the welfare of tobacco farmers. (Note that other pieces of evidence, such as the relative values of different crops and the existence of other established markets, should also be considered when evaluating such a diversification strategy.) Here, the evidence appears to be mixed. Export prices gathered from the WITS appear to be in decline since 2008, though prices are still higher than they were in 2000–2006. An analysis of real farm-gate prices does not point to a decline, though it seems tobacco prices are declining relative to the prices of other important products, including maize and fertilizer. This would make tobacco less lucrative for farmers if they are less able to use their cash earnings to purchase these key items. Furthermore, farmers seem to be receiving ever smaller shares of the auction and export prices for tobacco, which may contribute to the perception that prices are declining. Further research on the tobacco value chain is needed to understand the implications of this latter finding.

Future research may seek to understand why tobacco production in Malawi is becoming less and less common, even as it remains more profitable than other crops. This pattern may reflect increasingly narrow opportunities to sell tobacco that are available mostly through contract, rather than at auction (Makoka et al., 2017; Milanzi, 2017), particularly if these contracts are ever more difficult for farmers to secure. While the IHS data set does not capture the information necessary to answer this question, additional data collection could shed light on recent trends in tobacco contract arrangements and how these are offered by tobacco companies and secured by tobacco farmers. Another question for future consideration is what would constitute a "successful" or "complete" transition away from tobacco in Malawi. From 2010 to 2019, the number of tobacco farms declined from 378,264 to 177,893. Is the ultimate goal to eliminate tobacco production entirely? Alternatively, is the goal to minimize production to match a certain level of demand on the part of tobacco companies? If the latter, how many farmers would be affected?

To the extent that tobacco prices appear be declining, there is also a need to rigorously assess how this has affected farmers' welfare and whether farmers have suitable crop alternatives (with established markets) and other livelihood options. Although this may be changing, Malawi has historically been characterized by a lack of developed value chains for

non-tobacco agricultural products (Lencucha et al., 2017). Given the reports that tobacco is more economically viable than other crops, it would be fruitful to explore what farmers who have abandoned tobacco are producing instead, or what a new cohort of young farmers are doing if they have opted not to enter tobacco farming. Also relevant is whether farmers are able to access the benefits (such as credit) they might otherwise have accessed only through contract tobacco farming. As the Government of Malawi has identified a diversification goal in several agricultural policy documents, it would be gratifying to find that farmers have been exiting tobacco farming because more profitable and stable alternatives have surfaced in recent years.

Acknowledgements

References

Appau, A., Drope, J., Goma, F., Magati, P., Labonte, R., Makoka, D., Zulu, R., Li, Q. and Lencucha, R., 2020. Explaining why farmers grow tobacco: evidence from Malawi, Kenya, and Zambia. Nicotine and Tobacco Research, 22(12), pp.2238-2245.

Chirwa, E. W. 2011. Competition issues in the Tobacco Industry of Malawi. Report Prepared for UNCTAD Secretariat. United Nations: New York.

Derlagen C., 2012. Analysis of incentives and disincentives for tobacco in Malawi. Technical notes series, MAFAP, FAO, Rome.

Food and Agriculture Organization of the United Nations (FAO). 2020. FAOSTAT database. FAO: Rome. Accessed January 6, 2021 at http://www.fao.org/FAOStat/en/#data.

Goger, A., Bamber, P. and Gereffi, G., 2014. The tobacco global value Chain in low-income countries. Center on globalization, governance and competitiveness, Duke University.

Jayne, T.S., Chamberlin, J., Traub, L., Sitko, N., Muyanga, M., Yeboah, F.K., Anseeuw, W., Chapoto, A., Wineman, A., Nkonde, C. and Kachule, R., 2016. Africa's changing farm size distribution patterns: the rise of medium - scale farms. Agricultural Economics, 47(S1), pp.197-214.

Kulik, M.C., Bialous, S.A., Munthali, S. and Max, W., 2017. Tobacco growing and the sustainable development goals, Malawi. Bulletin of the World Health Organization, 95(5), p.362.

Lencucha, R., Moyo, T., Labonte, R., Drope, J., Appau, A. and Makoka, D., 2020. Shifting from tobacco growing to alternatives in Malawi? A qualitative analysis of policy and perspectives. Health Policy and Planning, 35(7), pp.810-818.

Makoka, D., Drope, J., Appau, A., Labonte, R., Li, Q., Goma, F., Zulu, R., Magati, P. and Lencucha, R., 2017. Costs, revenues and profits: an economic analysis of smallholder tobacco farmer livelihoods in Malawi. Tobacco control, 26(6), pp.634-640.

Milanzi, T. S. 2017. Living on the Edge: Smallholder Growers' Responses to a Changing Tobacco Economy in Malawi.

Prowse, M., 2013. A history of tobacco production and marketing in Malawi, 1890–2010. Journal of Eastern African Studies, 7(4), pp.691-712.

Prowse, M. and Moyer - Lee, J., 2014. A Comparative Value Chain Analysis of Smallholder Burley Tobacco Production in Malawi–2003/4 and 2009/10. Journal of agrarian change, 14(3), pp.323-346.

Smith, J. and Fang, J., 2020. 'If you kill tobacco, you kill Malawi': Structural barriers to tobacco diversification for sustainable development. Sustainable Development, 28(6), pp.1575-1583.

World Bank. 2020a. Commodity Price Data (The Pink Sheet). World Bank: Washington, D.C. Accessed November 16, 2020, at https://www.worldbank.org/en/research/commodity-markets.

World Bank. 2020b. World Development Indicators Database. World Bank: Washington, D.C. Accessed November 1, 2020, at https://databank.worldbank.org/data/reports.aspx?source=world-development-indicators.

World Integrated Trade Solution (WITS). Database. 2020. World Bank: Washington, D.C. Accessed January 6, 2021, at https://wits.worldbank.org/about_wits.html.

Appendix

Figure A1. Districts of Malawi
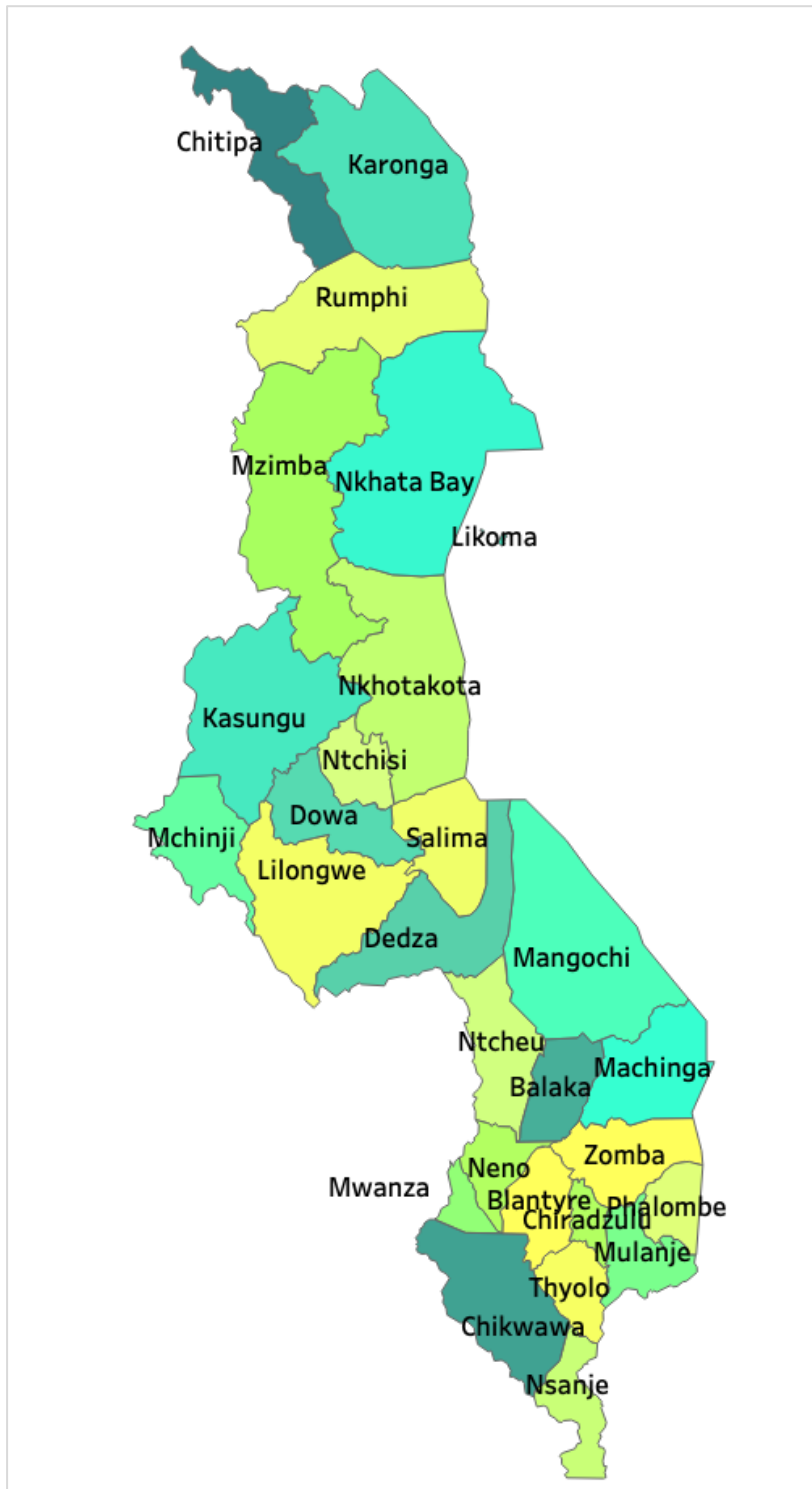
Note: Likoma district was not captured in the IHS until 2016. Neno was created from Mwanza district between 2004 and 2010; in maps, district-level values for Mwanza are applied to both Mwanza and Neno in 2004.