MYANMAR

STRATEGY SUPPORT PROGRAM RESEARCH NOTE 81 JUNE 2022

Myanmar Agricultural Performance Survey (Q1 2022):

Farmgate prices and marketing by crop farmers

Key findings

This Research Note presents the results from an assessment of output markets and crop prices in Myanmar after the monsoon of 2021. The results are based on data from a phone survey – the Myanmar Agriculture Performance Survey (MAPS) – that was conducted with almost 4,000 crop farmers in 281 townships in all states/regions of the country, over the period February 2022 – March 2022. We found that:

- Commercial rice income was down on average by 5 percent as farmers sold less of their harvest and stored more compared to the year before.
- Prices of crops linked to export markets increased more because of international price changes as well as the MMK depreciation than crops marketed domestically. For example, maize exported to Thailand increased by 53 percent and pigeon pea exported to India by 44 percent.
- There is strong heterogeneity in the evolution of income reported from crop sales. Compared to one year earlier, 35 percent of the farmers indicated an increase of crop sales income of more than 20 percent while 36 percent saw a decrease of more than 20 percent.
- Small farms in more insecure areas saw lower crop sales income increases compared to average farmers while farmers connected to export markets (maize and pulses) had relatively higher income increases from crop sales.

Recommended actions

- Export markets should stay open as to allow farmers to benefit from high international prices, bringing much needed income into rural areas.
- Attention should be paid to the situation of smaller farmers and those that are remote as their agricultural incomes seem to have been most affected by the twin crises. They should be targeted for possible future agricultural interventions.
- An improved security situation would lead to better incomes of crop farmers.

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Introduction

This Research Note presents the results from an assessment of output markets and crop prices in Myanmar after the monsoon, the major agricultural season in the country, of 2021. The results are based on data from a phone survey – the Myanmar Agriculture Performance Survey (MAPS) – that was conducted with almost 4,000 crop farmers in 281 townships in all states/regions of the country, over the period February 2022 – March 2022. The note assesses price changes of major crops at the farm level, changes in commercial surplus, income changes from crop sales, and overall crop marketing challenges.

Data and method

The MAPS survey is a sub-sample of households interviewed during the first round of the Myanmar Household Welfare Survey (MHWS) that was fielded in the beginning of the 2022 (MAPSA 2022a). In the MHWS, information was collected on the background of these households, welfare indicators, and livelihoods. In this survey, 5,470 farmers were identified as crop farmers. The follow-up MAPS focused on the agricultural activities in particular. Of the farmers that were interviewed in the first round, only 3,891 farmers (71 percent) could be reached for this second interview.[1] This survey was implemented by the Myanmar Survey Research (MSR) over the period February 11th until March 25th, 2022.[2] The numbers of the crop farmers interviewed in MAPS are reported by state and region in Table 1 and are shown by township in Figure 1.

Table 1: Sample crop farmers, MAPS

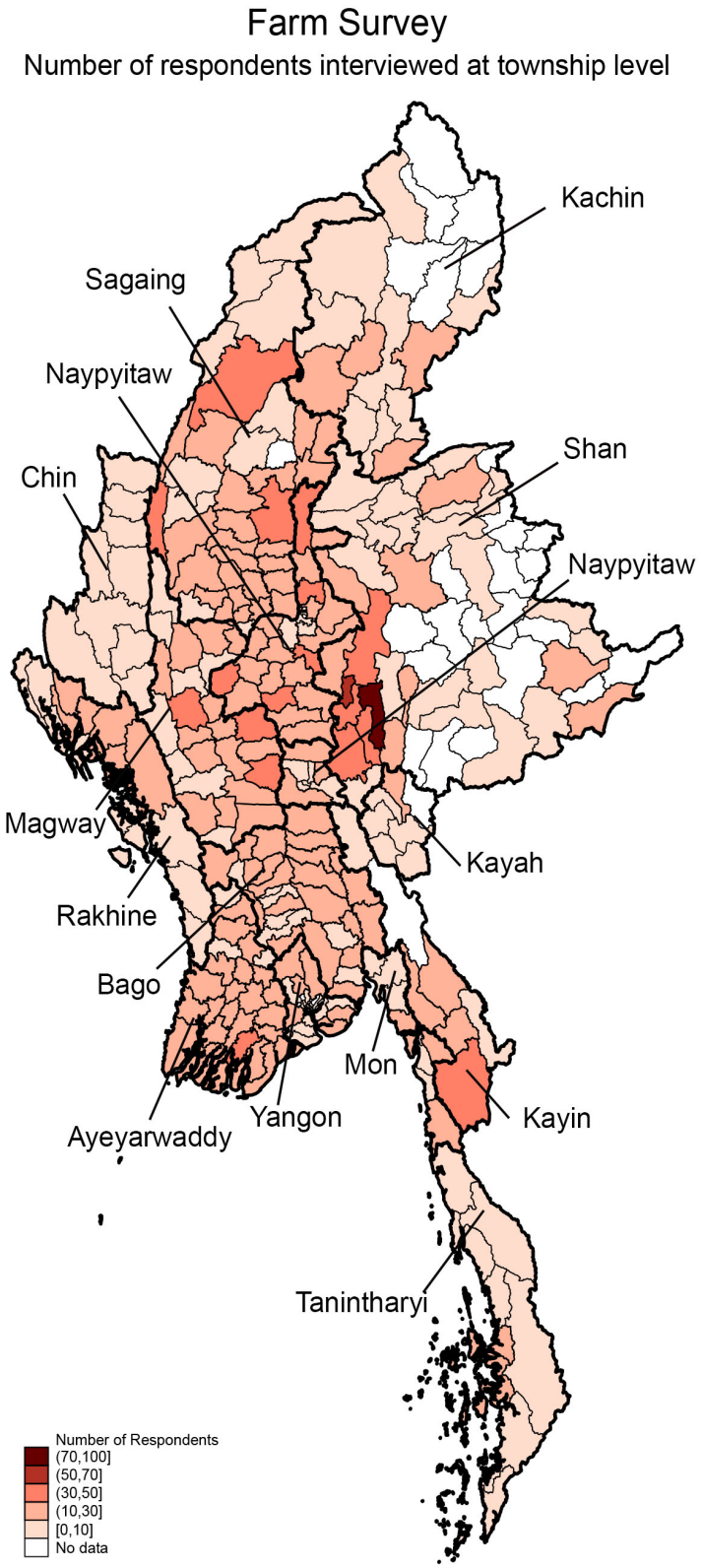
	MAPS
Ayeyawady	472
Bago	432
Chin	47
Kachin	108
Kayah	45
Kayin	116
Magway	422
Mandalay	496
Mon	123
Nay Pyi Taw	79
Rakhine	158
Sagaing	616
Shan	550
Tanintharyi	77
Yangon	150
Total	3,891

Source: Authors

[1] 1131 respondents could not be reached (no answer or lack of power), 326 refused, 70 terminated mid-interview, 40 were not eligible and 10 could not be interviewed because of language barriers.

[2] To avoid fraud and to ensure quality of data collected, MSR carried out a series of quality control procedures. The average length of the survey was 51 minutes.

Figure 1: Sample crop farmers, MAPS



Source: Authors

To assure that crop farmers are representative of the crop farming population in their state or region, a weighting factor was calculated building on the method used for the MHWS (for details, see MAPSA 2022a). The MAPS collected information on household characteristics, overall area cultivated, crops grown, input use and farm management practices, yields, rice and non-rice sales, output prices, and marketing behavior. In this research note, we focus in particular on prices, output

markets, and marketing behavior. Table 2 provides background statistics on those surveyed. We divide the country into four major agro-ecological zones that are commonly used in Myanmar and present our results at this level.[3] The average farm size of the interviewed farmers was 6.1 acres. Two-thirds of the crop farmers grew paddy during the monsoon of 2021. This increases to almost three-quarters of the farmers in the Delta and Coastal Zone. Other important crops grown during the monsoon were sesame (12 percent of the farmers), groundnut (11 percent), and maize (10 percent). Maize was especially important in the Hills where almost one-third of the farmers grew this crop. Pulses and oilseeds (groundnut, sesame, green gram, pigeon pea) were relatively more important in the Dry Zone.

Table 2: Descriptive crop farmers, MAPS

	Unit	National	Hills	Dry	Delta	Coastal
Total number of farmers	Number	3891	866	1613	1177	235
Area cultivated - acres	Mean	6.05	4.97	5.94	5.94	5.88
Area cultivated - acres	Median	4.00	3.00	4.00	5.00	4.00
Crops grown in monsoon 2021						
Rice (%)	% of farmers	65	59	60	74	74
Maize (%)	% of farmers	10	32	3	0	0
Groundnut (%)	% of farmers	11	5	25	4	3
Sesame (%)	% of farmers	12	7	24	4	1
Green gram (%)	% of farmers	5	1	8	6	0
Pigeon pea (%)	% of farmers	5	2	11	1	0
Betel leaves (%)	% of farmers	5	0	4	10	8

Source: Authors' calculations based on MAPS

Rice marketing

Table 3 presents the production and the commercial surplus of paddy per farm for the monsoon of 2020 and 2021. Crop farmers sold 71 percent of the paddy harvest in February/March from the monsoon of 2020. However, the share of paddy sold at the same this year decreased substantially (64 percent had been sold at the time of the survey). While overall paddy production did not decline very much for the paddy farmers interviewed (by 2 percentage on average)[4], it seems that more farmers are holding on to their paddy harvest compared to before. Commercial surplus has therefore on average been 13 percent lower this year compared to last year, at the time of the survey. Part of the reason of lower sales might be linked to problems with electricity and fuel which limited the normal functioning of rice mills in March 2022 (MAPSA 2022b). It is also possible that farmers are dealing with the increasing uncertainty in the country by relying less on agricultural output markets and instead storing more for their own consumption.

We see large variation in the size of commercial surplus as well as the share of the production that is sold between states/regions. The biggest production and sales per farm are noted in the Delta region where an average farm produced 10.0 tons of paddy this year, of which they sold 78 percent (7.8 tons). Table 3 further shows especially large farms in the Yangon area with production levels reaching 15.2 tons per farm, of which 82 percent was sold at the time of the survey. Low levels of rice commercialization are noted in the Hills and Mountain zone, where only 36 percent of rice production was sold in 2021.

[3] Delta (Ayeyawaddy, Bago, Mon, Yangon); Coastal (Rakhine, Tanintharyi); Central Dry (Mandalay, Magwe, NPT, Sagaing); Hills and Mountains (Chin, Kachin, Kayah, Kayin, Shan).

[4] This figure is in line with other estimates of changes in paddy production (USDA 2022).

Table 3: Commercial surplus of paddy per farm

	2020			2021		
	Quantity produced Kg per hh	Quantity sold kgs per hh	Share sold %	Quantity produced Kg per hh	Quantity sold kgs per hh	Share sold %
Kachin	8073	3749	46	6696	2472	37
Kayah	3118	1469	47	2504	1100	44
Kayin	4011	1685	42	3994	1685	42
Chin	1486	0	0	1334	0	0
Sagaing	5899	3759	64	6399	2889	45
Tanintharyi	5028	2994	60	4691	2536	54
Bago	10631	8841	83	10266	8030	78
Magway	4108	2605	63	3870	1982	51
Mandalay	4661	3166	68	4263	2521	59
Mon	11930	7755	65	11749	8344	71
Rakhine	6084	3586	59	6130	3246	53
Yangon	15247	13383	88	15158	12461	82
Shan	2814	1150	41	2714	950	35
Ayeyawady	8405	7094	84	8355	6568	79
Naypyitaw	6301	4605	73	6298	3889	62
Hills	3675	1561	42	3418	1244	36
Dry Zone	5247	3417	65	5339	2653	50
Delta region	10157	8429	83	9973	7818	78
Coastal	5847	3453	59	5815	3091	53
Total	6671	4761	71	6551	4167	64

As of February/March, 35 percent of the paddy farmers did not sell rice yet from the monsoon of 2021. For the monsoon of 2020, that percentage was 27. For those that did sell, we see relatively few changes over time in sales outlets (Table 4). Brokers or traders are normally the most important buyer of paddy from farmers (30 and 15 percent respectively). Direct sales to the mill were done by 13 percent of the rice farmers in 2021. The share sold to mills is slightly higher in the Coastal zone.

Table 4: Most important buyer of paddy/rice of the rice farmer

		2020	2021			
	Unit	National	National	Hills	Dry	Delta	Coastal
Trader	%	17%	15%	6%	5%	32%	16%
Broker	%	33%	30%	13%	29%	37%	19%
Mill	%	15%	13%	13%	9%	13%	19%
Other farmer	%	5%	3%	4%	5%	3%	2%
Other	%	4%	3%	4%	4%	2%	6%
No sales	%	27%	35%	60%	47%	12%	37%

Source: Authors' calculations based on MAPS

The survey requested information about farmgate paddy prices as well as at the same period last year. Based on reported prices and the quantities of paddy sold, we calculate changes in paddy sales income for the two monsoons. Table 5 shows that average paddy prices have increased by 8 percent while median prices increased by 7 percent. Given the decline in commercial surplus, average income from paddy sales declined between these two years by 5 percent. For the median, that decline was significantly higher, at 25 percent.

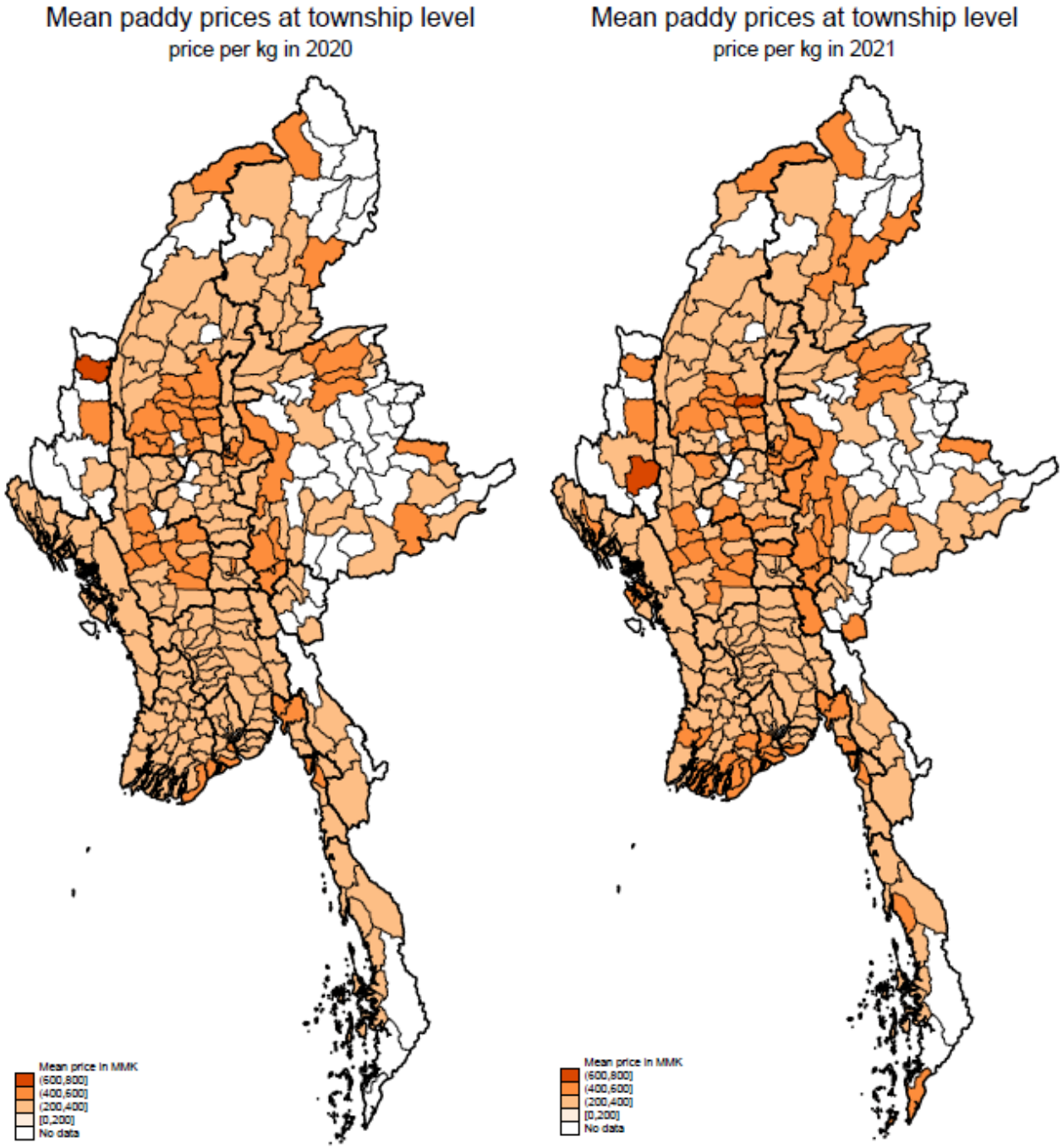
Table 5: Farmgate paddy prices and sales income paddy (MMK)

		2020	2021				
	Unit	National	National	Hills	Dry Zone	Delta	Coastal
Paddy price	Mean	351	380	401	401	362	347
	Median	335	359	360	383	340	335
Quantity sold	Mean	4761	4167	1244	2653	7818	3091
	Median	2232	1674	0	1045	5225	1306
Paddy sales income	Mean	1,649,916	1,570,856	470,568	1,157,964	2,825,547	1,051,577
	Median	800,000	600,750	-	350,000	1,760,000	500,000

Source: Authors' calculations based on MAPS

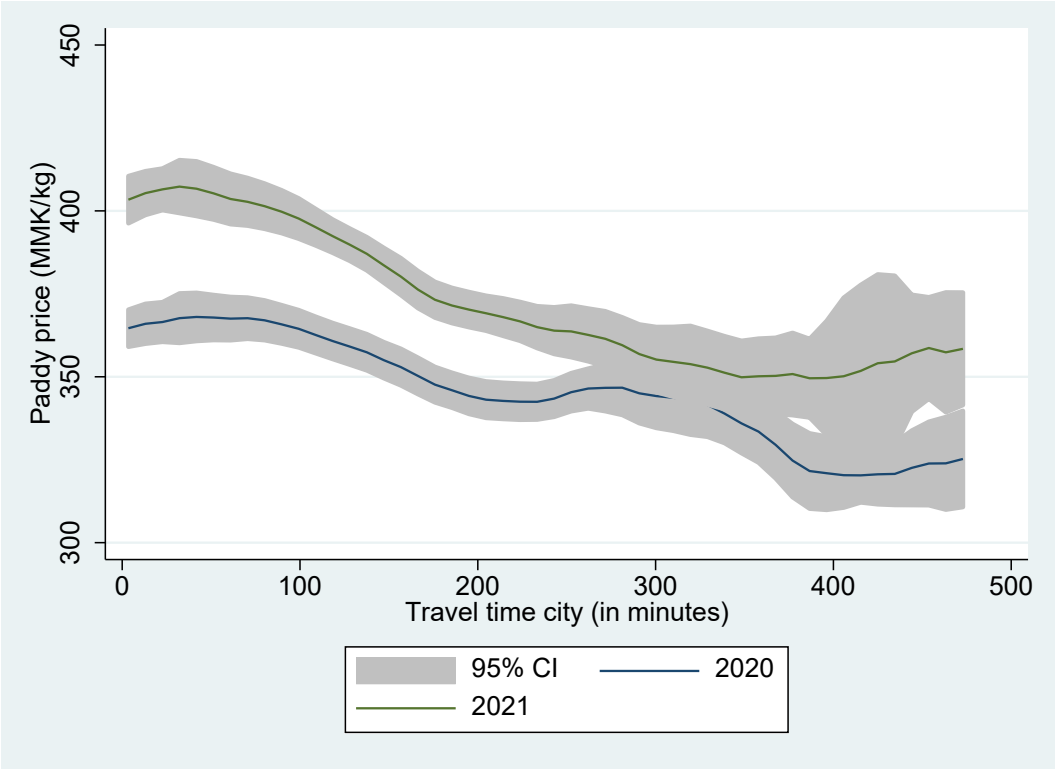
Figure 2 further shows the levels and changes in prices in different parts of the country. We see that prices are relatively higher close to the bigger cities – Yangon and Mandalay – in both years but prices are also higher in those areas where the higher value Pawsan/Meedone varieties are grown (e.g. around Shwebo). In Figure 3, we compare how paddy prices changed with respect to the distances that farmers are located in relation to a major city (defined as cities of 50,000 people or more), as paddy is often marketed to those nearby cities. The Figure shows that farmers that are located close to major cities have benefited more from the price increases of paddy over the two years while we see only small changes in prices for those farmers that are more remote, likely reflecting the increases in fuel and transportation costs in the country (MAPSA 2022c).

Figure 2: Average paddy prices, monsoon 2020 and 2021



Source: Authors' calculations based on MAPS

Figure 3: Average paddy prices, by remoteness from major cities



Source: Authors' calculations based on MAPS

Non-rice crops

Table 6 presents the share of farmers that grow non-rice crops and how they use the production. Few changes are noted over time. Similar crops have been grown as seen in previous years and, more so than rice, a large number of these crops are grown as a source of sales income rather than for own consumption.

Table 6: Commercialization of non-rice crops

	Monsoon 2020				Monsoon 2021			
	% of farms that cultivate	Mainly own consumption	Mainly sales	Equally important	% of farms that cultivate	Mainly own consumption	Mainly sales	Equally important
Maize	10%	3%	93%	4%	10%	3%	95%	2%
Sesame	12%	16%	57%	27%	12%	18%	60%	22%
Groundnut	12%	14%	53%	34%	11%	15%	55%	30%
Greengram	5%	1%	94%	4%	5%	0%	95%	5%
Pigeon pea	4%	3%	90%	7%	5%	1%	91%	8%
Betel leaves	5%	0%	95%	5%	5%	1%	95%	4%
Tomato	4%	1%	90%	9%	4%	3%	86%	11%

Source: Authors' calculations based on MAPS

We further assess how prices of these different non-rice crops have changed over the two seasons (Table 7). Those crops that are connected to export markets have shown higher price increases over the last year, seemingly linked with changes in international commodity markets and driven by the increasing depreciation of the MMK. The price of maize – exported mostly to Thailand – increased by 53 percent while the price of pigeon pea – exported to India – increased by 44 percent.

Non-export crops showed much smaller increases (sesame: +15 percent; groundnut: +15 percent; tomato: +7 percent).[5]

Table 7: Prices for main non-rice crops, monsoon 2020 and 2021

	Unit	2020	2021	T-test		% Change
				T-score	T-value	
Maize	Mean	301	461	-21.97	0.00	53
	Median	281	482			71
Sesame	Mean	1975	2268	-5.09	0.00	15
	Median	1837	2041			11
Groundnut	Mean	1168	1341	-5.17	0.00	15
	Median	1053	1184			13
Green gram	Mean	1184	1240	-2.31	0.02	5
	Median	1223	1223			0
Pigeon pea	Mean	848	1220	-17.75	0.00	44
	Median	765	1223			60
Betel leaves	Mean	2553	3030	-3.97	0.00	19
	Median	2454	2914			19
Tomato	Mean	414	442	-0.67	0.50	7
	Median	307	368			20

Source: Authors' calculations based on MAPS

Crop marketing and challenges

Table 8 presents the share of farmers that tried to sell crops during the monsoon of 2020 and 2021, the type of crops they wanted to sell, and the challenges encountered during marketing.

The large majority of farmers tried to sell their monsoon crops (91 percent in 2020 and 88 percent in 2021) and we only see a slight change in the share of farmers that wanted to sell between those two years overall. When we assess the sales orientation by remoteness, as measured by the time required that farmers would need to travel to a city of at least 50,000 people, we note two main patterns (Figure 4). First, farmers further away are less likely to participate in crop markets. Second, a drop over time in farmers wanting to sell is especially large for those that are located far from a major city. It might be that the increasing transportation costs, and possibly insecurity, have become prohibitive for more remote farmers to participate in commercial crop markets.

As expected, the main crop that farmers wanted to sell after the monsoon was rice (Table 8). In 2020, 47 percent of farmers considered rice the main crop that they wanted to sell compared to 46 percent in 2021. Rice was the most important main sales crop in the monsoon of 2021 in the Delta (68 percent of the farmers). Rice was relatively much less important in the Hills where only 23 percent of the crop farmers reported that this was the main crop that they tried to sell. In contrast, 32 percent of the crop farmers in the Hills and Mountain region reported that maize was their main crop for sales. Pulses were relatively important in the Dry Zone.

Farmers were further asked if they had faced challenges selling crops and if so, what types of challenges they faced during the monsoon of 2020 and 2021. In 2020, 20 percent of farmers indicated that they had faced challenges marketing crops whereas 21 percent had difficulty following the 2021 monsoon. Low prices for crops were mentioned as a major challenge by 80 percent of farmers for the last monsoon. During the most recent monsoon, this had declined to 72 percent, possibly an indication of the increasing farmgate prices for some crops. However, "low prices" are still the main challenge mentioned. This might be due to the much higher price increases seen in agricultural input markets, most importantly for fertilizers and mechanization. The second main

[5] The exception are betel leaves that showed high average price increases. However, there might have been a measurement problem as median price change have been small.

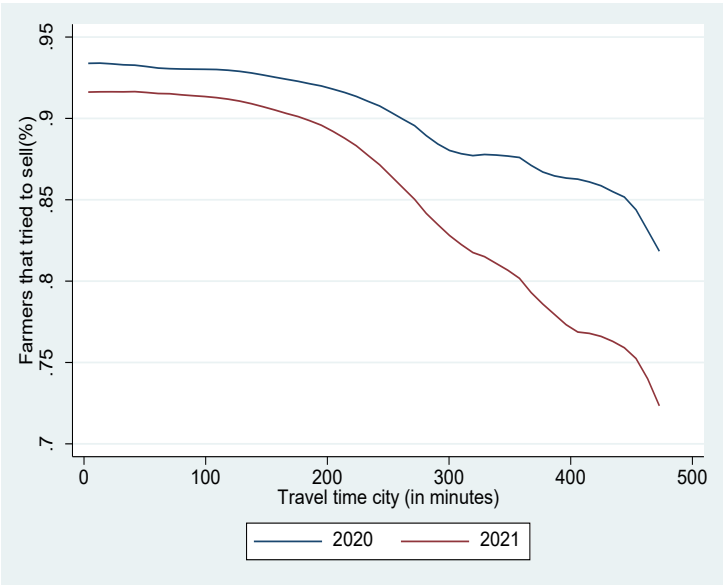
challenge mentioned was high prices of fuel and transportation costs, complicating the transport of crops. An increasing problem is also the lower number of traders or accessing them.

Table 8: Sales of crops and challenges

		2020		2021			
	Unit (%)	National (%)	National (%)	Hills (%)	Dry Zone (%)	Delta (%)	Coastal (%)
Tried to sell crop of monsoon harvest	yes	91	88	84	86	95	86
Main crop that they tried to sell							
Rice	yes	47	46	23	38	68	62
Maize	yes	7	7	32	2	0	0
Groundnut	yes	7	6	1	14	1	1
Sesame	yes	6	5	4	8	1	1
Pulses	yes	6	8	3	14	5	1
Betel leaves	yes	3	4	0	3	7	4
Other crops	yes	24	24	37	21	17	31
Challenges faced during marketing	yes	20	21	23	20	18	24
Type of challenges							
“low prices for crops”	yes	80	72	72	74	63	88
“high price of fuel / high transportation cost”	yes	45	57	53	57	54	72
“payment problems”	yes	24	23	30	17	22	37
“have to sell crops on credit”	yes	30	31	33	23	42	34
“markets are closed”	yes	28	31	36	33	25	35
“not many traders”	yes	43	50	48	55	42	65
“buyers or traders cannot reach the farm or I cannot reach them”	yes	42	44	44	50	37	43
“insecurity during travel”	yes	15	27	27	35	16	19

Source: Authors’ calculations based on MAPS

Figure 4: Farmers trying to sell crops by remoteness, monsoon 2020 and 2021



Source: Authors’ calculations based on MAPS

Finally, we asked farmers to estimate how the overall sales income from crop farming at the time of the survey compared to the same time a year earlier (Table 9). Strong heterogeneity is seen in the stated evolution of crop sales income. Surprisingly, 36 percent of the crop farmers reported lower

sales incomes compared to a year earlier while 35 percent indicated higher crop sales incomes. There are no strong regional patterns in these responses, indicating that some farmers in each region/state were doing better while others were not.

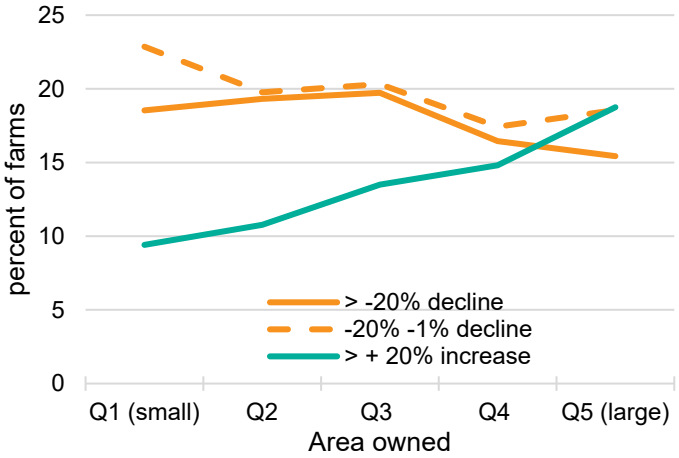
Table 9: Stated evolution of sales income from crop farming

	Unit	National	Hills	Dry	Delta	Coastal
Much lower now (by 20% or more)	%	17%	18%	18%	17%	12%
Somehow lower now (between 20% and 1% lower)	%	19%	16%	19%	20%	22%
About the same now	%	24%	24%	22%	26%	25%
Somehow higher now	%	23%	23%	20%	23%	33%
Much higher now	%	12%	11%	15%	10%	6%
Do not know	%	6%	8%	5%	4%	3%

Source: Authors' calculations based on MAPS

To better understand this differential change in income for different groups of crop farmers, we look at three possible explanations i.e., farm size, type of crop grown, and perceived physical insecurity levels. First, smaller farms report more negative income changes than larger farms. Figure 5 shows how answers to income changes differ by quintiles of farm sizes (q1 are the smallest farms while q5 are the biggest ones). Approximately 41 percent of the smallest farms report lower sales incomes while only 34 percent of the largest farms reporting lower sales. On the other hand, 9 percent of the smallest farms reported an increase in farm income of 20 percent or more. That percentage goes up to 19 percent for the biggest farms.

Figure 5: Change in sales income, by quintile of land owned



Source: Authors' calculations based on MAPS

Second, with the exception of rice, farmers that grow crops linked to export markets report higher income increases. A large share of farmers growing pulses and maize report that their incomes this year were substantially higher than last year, seemingly benefiting from the higher prices in export markets (Table 10). On the other hand, a small share of rice farmers indicate that incomes have gone up by more than 20 percent. Smaller price increases and lower quantities sold are likely to explain this lower number compared to most other crops.

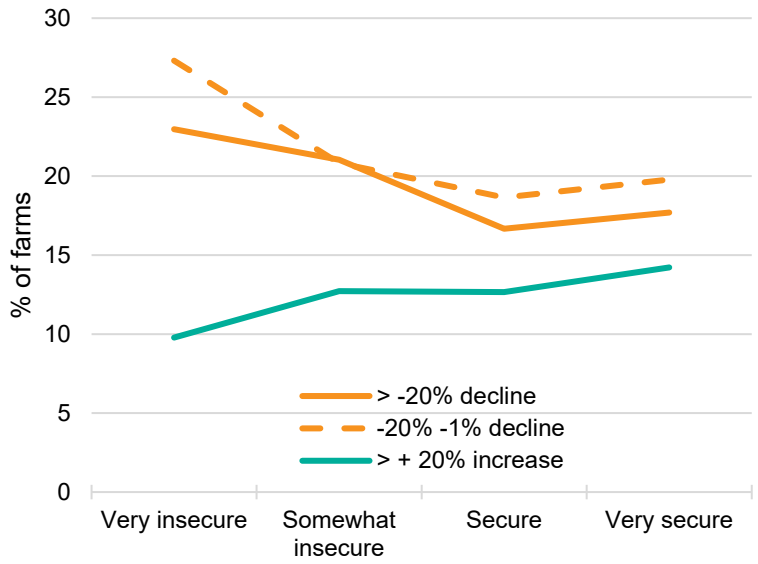
Table 10: Income evolutions of the monsoon 2022 compared to 2021, by crop grown

		Major crop sold						
Income change	Overall	Paddy	Maize	Pulses	Oilseeds	Fruits	Other trees	Vegetables
> 20% decline	18%	18%	9%	12%	19%	14%	15%	22%
20% to 1% decline	20%	24%	11%	17%	19%	17%	15%	21%
The same	25%	25%	26%	17%	18%	40%	27%	27%
1% to 20% increase	24%	24%	37%	26%	29%	19%	24%	22%
> 20% increase	13%	9%	17%	29%	16%	11%	18%	9%
Total	100%	100%	100%	100%	100%	100%	100%	100%
No of observations	3,395	1,615	241	233	385	74	253	356

Source: Authors' calculations based on MAPS

Third, farmers in insecure areas have experienced greater declines in crop sales income. Farmers were asked to describe the overall level of physical security in their area, going from very insecure to very secure. In the survey, three percent crop farmers judged the areas that they lived in to be 'very insecure' and 14 percent said 'somewhat insecure'. The remaining 82 percent judged their area 'secure' (42 percent) or 'very secure' (40 percent). Figure 6 shows that higher levels of security are associated with higher crop sales income.

Figure 6: Change in sales income, by reported level of physical security



Source: Authors' calculations based on MAPS

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ACKNOWLEDGMENTS

This work was undertaken as part of the Feed the Future Myanmar Agricultural Policy Support Activity (MAPSA) led by the International Food Policy Research Institute (IFPRI) in partnership with Michigan State University (MSU). This study was made possible by the support of the American people through the United States Agency of International Development (USAID), under the terms of Award No. AID-482-IO-21-000x. Additional funding support for this study was provided by the CGIAR Research Program on Policies, Institutions, and Markets (PIM) and the Livelihoods and Food Security Fund (LIFT). This publication has not gone through IFPRI’s standard peer-review procedure. The opinions expressed here belong to the authors, and do not necessarily reflect the views of USAID, IFPRI, MSU, CGIAR, PIM, LIFT, or the United States Government.

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The Myanmar Strategy Support Program (Myanmar SSP) is led by the International Food Policy Research Institute (IFPRI) in partnership with Michigan State University (MSU). Funding support for Myanmar SSP is provided by the CGIAR Research Program on Policies, Institutions, and Markets; the Livelihoods and Food Security Fund (LIFT); and the United States Agency for International Development (USAID). This publication has been prepared as an output of Myanmar SSP. It has not been independently peer reviewed. Any opinions expressed here belong to the author(s) and do not necessarily reflect those of IFPRI, MSU, LIFT, USAID, or CGIAR.