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Myanmar Agricultural Performance Survey (Q3 2022):

Farm commercialization

Key findings

This Research Note presents the results from an assessment of farm commercialization in Myanmar after the dry season of 2022, based on data from a phone survey – the Myanmar Agriculture Performance Survey (MAPS) – that was conducted with more than 5,000 crop farmers in all states/regions of the country, over the period August 2022 – September 2022. It is found that:

- Security issues are getting worse for farmers. 27 percent of the farmers reported feeling 'very insecure' or 'insecure' during that period, an increase by 9 percentage points compared to the beginning of the year. 25 percent of the farmers reported that they could not move around without serious concern for security while 8 percent reported that some agricultural fields could not be cultivated because of conflict in their area.
- Agricultural inputs were mostly available during the dry season period. Chemical fertilizers were reported to not be available for 7 percent of farmers. However, it was difficult to access labor for 18 percent of the farmers. Conflict-affected areas suffered substantially more from labor availability problems.
- Input prices during the dry season increased compared to the same period last year by 55 percent for urea, 25 percent for mechanization, and 16 and 14 percent for hired labor of men and women, respectively.
- Farmgate prices are also on the rise compared to a year earlier. Paddy, green gram, and black gram (three important crops grown during the dry season) prices were 42, 29, and 39 percent higher, respectively, at the time of the survey than a year earlier. The highest price increases were noted for sesame and groundnuts, likely due to the lower availability and higher prices of imported palm oil, a substitute for these local vegetable oils.
- The majority of farmers reported higher crop sales income this year compared to the last. Small farms and farms in insecure areas however saw lower crop sales income increases.

Recommended actions

- The increasing insecurity in the country is hampering the functioning of the agricultural sector (leading to lower availability of agricultural inputs and lower incomes). An improved security situation is called for.
- Small farmers are relatively worse off compared to other farmers. They would benefit from support to their agricultural operations, potentially through agricultural cash programs.

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Introduction

This Research Note presents the results from an assessment of farm commercialization in Myanmar after the dry season of 2022. The results are based on data from a phone survey – the Myanmar Agriculture Performance Survey (MAPS) – that was conducted with 5,021 crop farmers in all states/regions of the country in Q3 of 2022. This note assesses the perceived security situation of crop farmers, agricultural input availability and prices, prices of major crops at the farm level, changes in income from crop sales, and overall crop marketing challenges.

Data and method

The MAPS survey is a sub-sample of households interviewed during the third round of the Myanmar Household Welfare Survey (MHWS) (MAPSA 2022a), that was fielded in July and August 2022. In the MHWS, information was collected on the background of these households, welfare indicators, and livelihoods (MAPSA 2022b). In MHWS, 5,021 farmers were identified as crop farmers. The follow-up, MAPS, focused on the agricultural activities of these farmers, in particular during the dry season of 2022.[1] The survey was implemented from August 22nd until September 15th, 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 Round 2

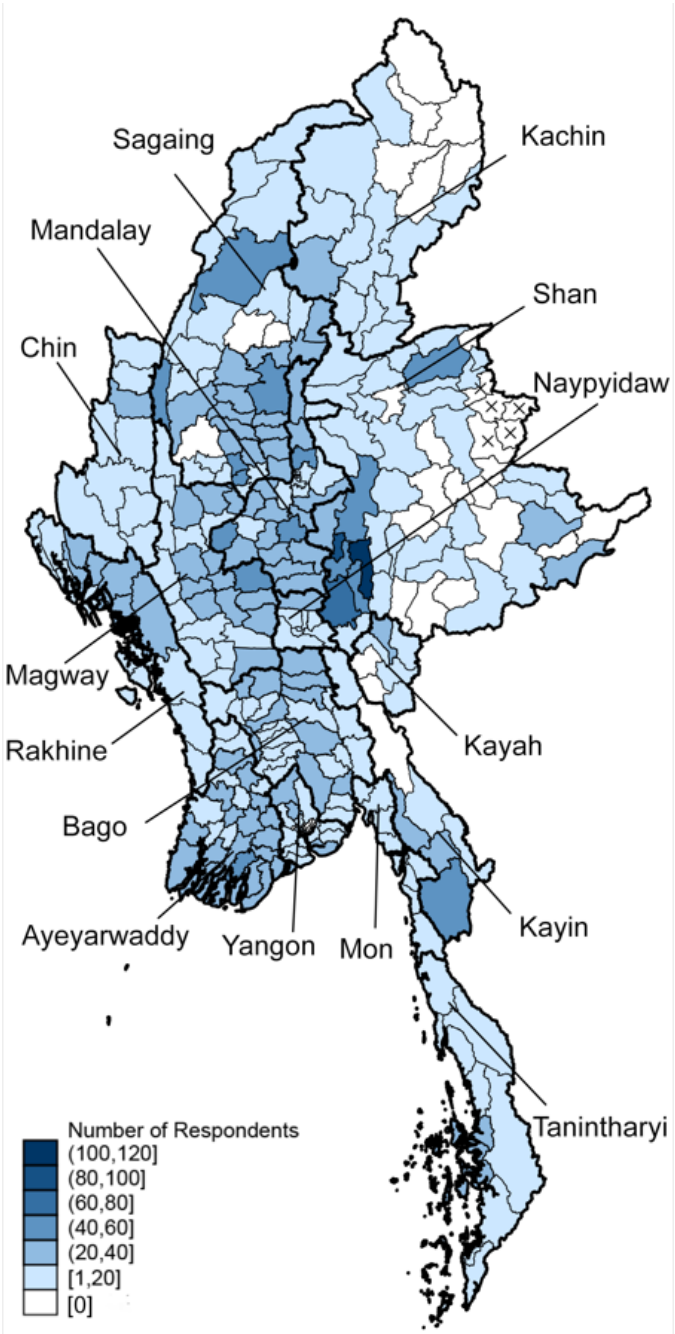
	MAPS R2
Ayeyawady	159
Bago	60
Chin	150
Kachin	95
Kayah	794
Kayin	101
Magway	487
Mandalay	511
Mon	609
Nay Pyi Taw	113
Rakhine	270
Sagaing	177
Shan	721
Tanintharyi	683
Yangon	91
Total	5,021

Source: Authors' calculations based on MAPS, round 2

[1] Covering the post- and pre-monsoon period, or winter and summer crops, typically crops that are harvested between February and July.

[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 Round 2



Source: Authors' calculations based on MAPS, round 2

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, security problems, input use and farm management practices, yields, sales, output prices, and marketing behavior. Table 2 provides background statistics on those surveyed farmers. We divide the country into four major agro-ecological zones that are commonly used in Myanmar and present our results at this level.[3]

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

During the 2022 dry season, 3,564 of the contacted farmers reported cultivating crops. The average cultivated area during the dry season of the interviewed farmers was 5.5 acres (the median was 4 acres). Nineteen percent of crop farmers in Myanmar grew paddy during the dry season of 2022. This is as high as 34 percent of the farmers in the Delta Zone. Other important crops grown during the dry season are green gram (14 percent of farmers), sesame (10 percent), black gram (10 percent) and groundnut (8 percent). In contrast to the monsoon, there was not a dominant crop grown during the dry season, indicating that there was a larger crop variety than during the monsoon. We also note that sesame was especially important in the Dry Zone where 26 percent of the farmers grew this crop. During the dry season, 23 percent of farmers in the Delta grew green and black gram, respectively.

Table 2: Descriptive crop farmers

	Unit	National	Hills	Dry	Delta	Coastal
Total number of farmers in sample	Number	3564	713	1439	1179	233
Area cultivated - acres	Mean	5.52	2.94	3.63	6.72	3.02
Area cultivated - acres	Median	4.00	2.00	3.00	5.00	1.50
Crops grown in post- /pre-monsoon 2022						
Rice	% of farmers	19.0	8.4	14.1	34.4	2.1
Groundnut	% of farmers	7.8	6.4	13.1	3.0	8.7
Sesame	% of farmers	10.1	1.0	25.7	2.6	0.5
Green gram	% of farmers	14.0	1.6	18.3	20.7	0.2
Black gram	% of farmers	9.6	0.7	3.4	23.4	0.5
Chickpeas	% of farmers	4.1	0.7	9.7	1.4	0.8
Betel leaves	% of farmers	5.4	0.2	6.4	8.1	3.2
Onion	% of farmers	5.7	10.9	9.1	0.4	0.0
Chili (Fresh)	% of farmers	4.7	3.1	4.2	3.4	17.0
Garlic	% of farmers	5.7	21.2	3.0	0.0	0.0
Tomato	% of farmers	4.3	11.2	2.7	0.9	7.2
Maize	% of farmers	2.6	6.1	2.1	0.8	2.6
Betel nut	% of farmers	3.5	0.2	0.2	5.4	18.7

Source: Authors' calculations based on MAPS, round 2

Insecurity and agriculture

Farmers were asked perceptions on insecurity in the area that they reside in. The question was asked in the beginning of the year - to crop farmers that cultivated during the monsoon period - as well as at the time of the second round of the MAPS survey, to crop farmers that cultivated during the dry season. At the national level, we see a substantial worsening in the perceptions of security by farmers over time. While 82 percent of the farmers indicated that they were living in a 'secure' or 'very secure' situation in the beginning of the year, that share declined to 72 percent of the farmers in August/September 2022 (Table 3). The share of farmers indicating that they were living in a 'very insecure' area increased, at the national level, from 4 to 10 percent. We see a worsening in all agro-ecological zones but the biggest increase in these perceptions of insecurity was noted in the Dry Zone and the Coastal areas where the share of farmers that indicated that they were residing in a 'secure' or 'very secure' area declined by 18 and 27 percentage points respectively (Table 3).

Table 3: Perceptions of insecurity in the area that the farmer resides in, share of farmers (%)

	Unit	National	Hills	Dry Zone	Delta	Coastal
August/September 2022						
very insecure	%	9.8	10.6	9.8	5.2	29.7
somewhat insecure	%	17.5	21.7	20.3	11.4	18.5
secure	%	35.3	35.2	30.9	39.9	35.6
very secure	%	36.5	32.0	38.1	41.9	16.1
prefer not to answer	%	0.9	0.6	1.0	1.5	0.0
Total	%	100.0	100.0	100.0	100.0	100.0
December 2021 - February 2022						
very insecure	%	3.7	4.8	3.5	2.1	6.6
somewhat insecure	%	14.2	19.2	11.9	11.3	20.4
secure	%	43.0	47.4	38.3	46.6	36.1
very secure	%	38.5	28.1	45.6	40.0	34.9
prefer not to answer	%	0.6	0.6	0.8	0.0	2.0
Total	%	100.0	100.0	100.0	100.0	100.0

Source: Authors' calculations based on MAPS, rounds 1 and 2

Feeling of insecurity might have important implications on farm activities as farmers might forego travelling to buy inputs or sell outputs or land cultivation all together. A quarter of the farmers indicated that they could not move around without serious concerns for security at the time of the survey, a 5-percentage point increase compared to half a year earlier, during round 1 of the MAPS (Table 4). Concerns on mobility were the highest in the Dry Zone and the Coastal areas. Farmers were also asked if fields were not cultivated or if fields were burnt or destroyed or not harvested because of conflict in their area. At the national level, 4 and 8 percent, respectively, of the farmers indicated that this was the case in their area. This was most often reported in the Dry Zone and Coastal areas.

Table 4: Insecurity, mobility and agriculture, share of farmers (%)

	Unit	National	Hills	Dry Zone	Delta	Coastal
Cannot move around without serious concern for security						
March 2022	%	20.3	22.0	23.4	16.7	14.7
August-September 2022	%	24.8	20.9	31.1	15.7	47.2
Crops or field were burnt or destroyed or not harvested because of conflict in the farmers' area						
August-September 2022	%	3.6	2.2	6.5	1.0	5.9
Fields were not cultivated in my area because of conflict						
August-September 2022	%	7.8	8.7	10.9	1.4	19.7

Source: Authors' calculations based on MAPS, rounds 1 and 2

Agricultural input availability and prices

We next explore to what extent there were problems in the country related to the availability of different agricultural inputs used during the dry season. Farmers were asked if they could not find any or enough of a number of agricultural inputs. No large problems of availability were reported nationally and in most of the country, agricultural inputs were readily available (Table 5). At the national level, 7 percent of the farmers reported that they could not find - or there was not enough - chemical fertilizers. There were fewer problems of availability reported for seeds, pesticides, and mechanization. However, availability of labor was a larger issue. Eighteen percent of farmers reported having problems finding enough laborers. Input availability problems were overall larger in Coastal areas compared to the rest of the country.

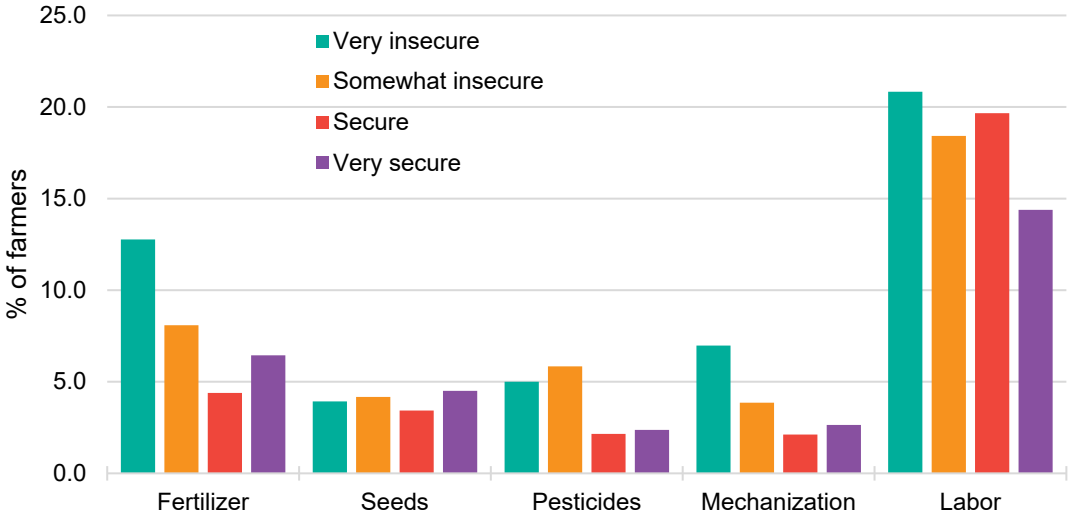
Table 5: Reported problems of unavailability of agricultural inputs – Dry Season 2022

	Unit	National	Hills	Dry Zone	Delta	Coastal
Chemical fertilizer	%	6.6	5.6	5.0	7.4	13.7
Seeds	%	4.1	6.1	2.6	4.1	4.9
Pesticides	%	3.2	4.3	2.6	3.0	3.4
Mechanization	%	3.1	2.4	2.2	3.5	7.0
Labor	%	17.6	17.7	13.7	20.4	21.4

Source: Authors' calculations based on MAPS, round 2

Problems with availability of inputs were significantly worse in insecure areas. While 13 percent of farmers in 'very insecure' areas lacked access to chemical fertilizer, this was only 6 percent for the most secure areas (Figure 2). The biggest differences of all inputs between these insecurity categories are seen in the case of labor. While 21 percent of the farmers reported lack of labor in very insecure areas, this was only 14 percent in the very secure areas. As laborers are less willing to work in these areas - and are requiring higher wages as well as to be compensated for the additional risk (MAPSA 2022c) - there is a significant shortage of laborers, likely impacting agricultural productivity there.

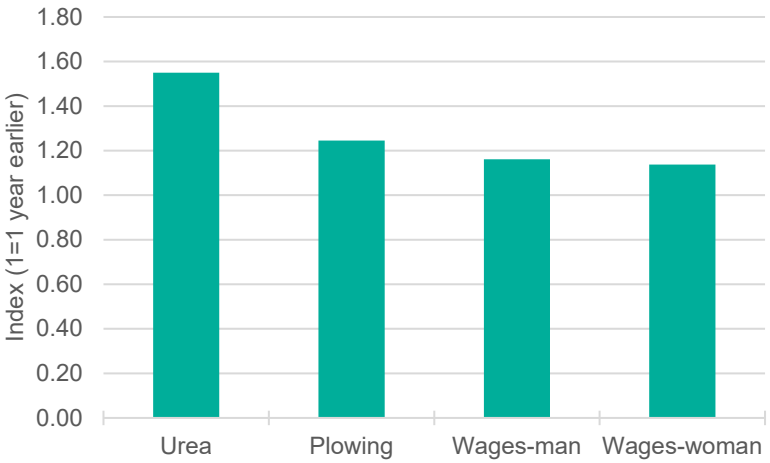
Figure 2: Availability of agricultural inputs and perceived insecurity



Source: Authors' calculations based on MAPS, round 2

Farmers were also asked about the prices of agricultural inputs and how they evolved over the last year (comparing dry season periods). We note substantial increases in these input costs over the last 12 months. Prices of urea – the most important fertilizer used in the country – increased by 55 percent (Figure 3). This high price increase reflects the depreciation of the local currency as well as international price increases. It is to be noted that the effects of the war in Ukraine were not yet seen in these reported prices, as purchases of chemical fertilizer for the dry season had mostly been done by farmers by the time that the war started (in the beginning of February). Because of the war, prices have increased substantially since its start (MAPSA 2022f). We also see major increases in the price of mechanized plowing (+25 percent), mostly driven by fuel price increases. Wages of casual laborers increased least of all inputs, by 16 and 14 percent for men and women respectively.

Figure 3: Price changes of agricultural inputs in the pre-/post-monsoon of 2022



Source: Authors' calculations based on MAPS, round 2

Crop prices

The survey requested information about farmgate prices at the time of the survey and at the same period a year earlier. Table 6 shows that average paddy prices increased by 43 percent while median prices increased by 45 percent. These paddy price increases are in line with price increases of paddy and rice noted at the retail and wholesale level (MAPSA 2022c,d). We also see substantial price increases for all non-paddy crops. Large increases are seen for sesame (+68 percent) and groundnut (+64 percent). As palm oil has become rationed in the country (MAPSA 2022e), prices of local vegetable oils, often processed from sesame and groundnut, have increased rapidly as local oils are a substitute for palm oil. Prices of pulses – mostly exported to India – have also risen substantially. They increased by 39 percent for black gram, 29 percent for green gram, and 45 percent for chickpea. We also see large price increases for vegetables with the price of garlic increasing by 57 percent and onions by a high of 301 percent.

Table 6: Prices for main non-rice crops, August/September 2022 compared to one year earlier (MMK/kg)

	Unit	2021	2022	% change
Paddy	Mean	329	468	42.2
	Median	330	478	44.9
Green gram	Mean	1,190	1,529	28.6
	Median	1,223	1,468	20.0
Black gram	Mean	1,291	1,790	38.6
	Median	1,223	1,835	50.0
Sesame	Mean	1,841	3,086	67.7
	Median	1,837	3,061	66.7
Groundnut	Mean	1,079	1,773	64.4
	Median	1,053	1,754	66.7
Chickpea	Mean	1,155	1,675	45.0
	Median	1,182	1,693	43.2
Betel leaves	Mean	1,685	2,441	44.8
	Median	1,836	2,454	33.7
Garlic	Mean	1,055	1,655	56.8
	Median	951	1,718	80.6
Onion	Mean	375	1,500	300.6
	Median	307	1,840	500.0

Source: Authors' calculations based on MAPS, round 2

Crop marketing and challenges

Table 7 presents the share of farmers that tried to sell crops during the post-and pre-monsoon of 2022 and 2021, the main crop they wanted to sell, and the challenges encountered during marketing. The large majority of farmers tried to sell their dry season crops and we see no difference over the last two years (89 percent in 2022 as well as 2021). Despite its lower importance in dry season compared to the monsoon, rice was still the top crop that farmers wanted to sell – 17 percent of the farmers indicated that this was their main sales crop. Other main crops mentioned were pulses and oilseeds, the most important being black gram (8 percent) and green gram (9 percent).

We see substantial variation over agro-ecological zones. Rice was the most important main sales crop in the dry season of 2022 in the Delta (as reported by 32 percent of the farmers). Green and black gram were also very important in the Delta (13 and 19 percent respectively). Rice was relatively much less important in the Hills where only 5 percent of the crop farmers reported that this was the main crop that they tried to sell. Sesame was the most important sales crop in the Dry Zone (16 percent of the farmers). In the Coastal region, chili was the most widely marketed crop. Overall, we see a wide diversity of crops being mentioned as main sales crop.

Farmers were further asked if they had faced challenges selling crops after the dry season of 2021 and 2022 and if so, what type of challenges. In 2021, 17 percent of farmers indicated that they had faced challenges marketing crops whereas 18 percent had difficulty following the 2022 dry season. Farmers in Coastal areas reported the most challenges of all agro-ecological zones (27 percent of farmers). Low prices for crops were mentioned as a major challenge by 71 percent of farmers for the last season, less than the year before (76 percent). However, a main challenge this year was high prices of fuel and transportation costs, complicating the marketing of crops. Sixty-five percent of the farmers reported that as an important challenge this year compared to only 36 percent last year. That challenge was especially mentioned by farmers in the Dry Zone and the Hills.

Table 7: Sales of crops and challenges, share of farmers (%)

	Unit	2021	2022				
		National (%)	National (%)	Hills (%)	Dry (%)	Delta (%)	Coastal (%)
Tried to sell crop of pre-/post monsoon harvest	% yes	89.3	88.9	85.4	84.5	95.5	89.4
Main crop that they tried to sell							
Rice	%	16.6	16.7	4.9	10.2	32.1	1.1
Groundnut	%	5.6	5.3	5.1	8.7	1.7	8.2
Sesame	%	5.3	6.0	0.8	15.9	1.4	0.5
Green gram	%	8.4	8.7	1.8	10.5	12.9	0.0
Black gram	%	7.7	8.0	0.4	2.3	18.8	0.2
Chick pea	%	2.8	2.1	0.2	5.0	1.0	0.2
Betel leaves	%	4.5	4.2	0.1	5.6	5.7	2.8
Onion	%	2.9	2.6	2.8	6.0	0.1	0.0
Chili (fresh)	%	2.3	2.8	1.2	2.5	2.1	12.2
Garlic	%	5.0	4.8	19.2	2.2	0.0	0.0
Tomato	%	1.7	2.4	5.6	1.8	0.4	5.9
Maize	%	2.5	1.4	3.8	1.1	0.5	0.8
Betel nut	%	1.2	1.4	0.0	0.0	2.0	7.5
Other crops	%	33.5	33.6	53.9	28.2	21.2	60.7
Challenges faced during marketing	% yes	17.0	17.6	21.6	16.1	14.8	26.6
Type of challenges							
low prices for crops	% yes	76.1	71.0	82.5	58.0	73.4	72.4
high price of fuel / high transportation cost	% yes	35.7	64.5	72.5	68.3	62.6	42.2
payment problems	% yes	16.5	23.7	37.7	14.2	23.1	18.7
have to sell crops on credit	% yes	23.0	28.5	40.9	23.4	27.6	16.9
markets are closed	% yes	25.9	25.9	26.3	24.7	28.9	20.3
not many traders	% yes	47.7	46.0	62.5	41.6	33.9	53.7
buyers or traders cannot reach the farm or I cannot reach them	% yes	42.3	50.1	53.1	52.1	43.2	56.6
insecurity during travel	% yes	26.4	32.5	25.4	48.2	15.9	52.2

Source: Authors' calculations based on MAPS, round 2

We asked farmers to estimate their overall sales income from crop farming at the time of the survey compared to the same time a year earlier (Table 8). Strong heterogeneity is seen in the stated evolution of crop sales income. The majority (59 percent) of the farmers indicated that they had higher sales income this year compared to the same period last year. Twenty-nine percent of crop farmers reported an income that was "much higher" (more than 20 percent) while 32 percent indicated a higher income (between 1 and 20 percent). On the other hand, 20 percent of the farmers reported a lower income compared to last year while 20 percent indicated no change. The share of farmers indicating significantly higher incomes is especially high in the Dry Zone, likely reflecting the relatively higher importance of sesame and groundnuts in crop sales in this area (because of significant price increases over the last year).

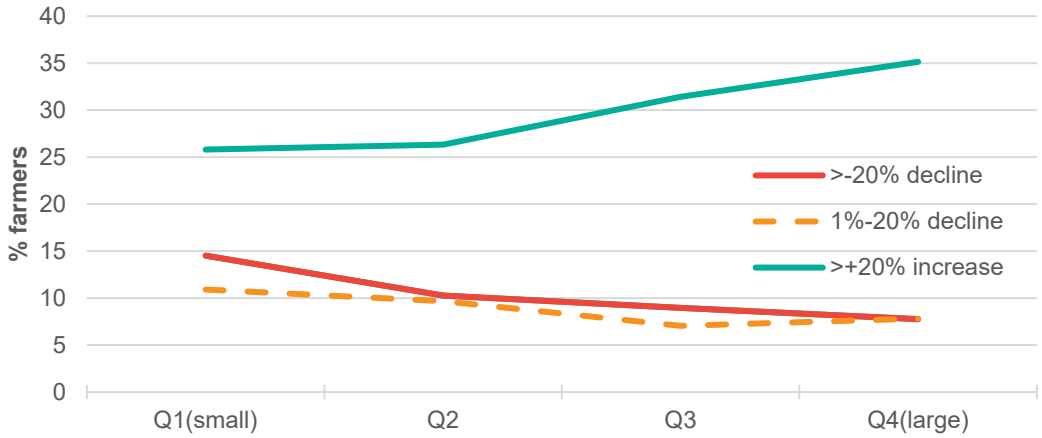
Table 8: Stated evolution of sales income from crop farming, share of farmers (%)

	Unit	National (%)	Hills (%)	Dry (%)	Delta (%)	Coastal (%)
Much lower now (by 20% or more)	%	10.9	10.6	13.8	8.8	11.2
Somehow lower now (between 20% and 1% lower)	%	9.1	11.7	7.0	8.0	17.6
About the same now	%	19.6	18.4	18.8	19.9	25.3
Somehow higher now	%	31.5	34.6	24.2	35.3	32.2
Much higher now	%	28.9	24.8	36.3	28.0	13.7
Total	%	100.0	100.0	100.0	100.0	100.0

Source: Authors' calculations based on MAPS, round 2

To better understand this differential change in sales income for different groups of crop farmers, we cross-tabulate with two important factors, i.e., farm size and perceived physical insecurity levels. First, smaller farms report relatively more negative income changes than larger farms. Figure 4 shows how income changes differ by quartiles of farm sizes (Q1 are the smallest farms while Q4 are the biggest ones). Approximately 25 percent of the smallest farms report lower sales incomes while only 16 percent of the largest farms reporting lower sales. On the other hand, 26 percent of the smallest farms reported an increase in farm income of 20 percent or more. That percentage goes up to 35 percent for the biggest farms.

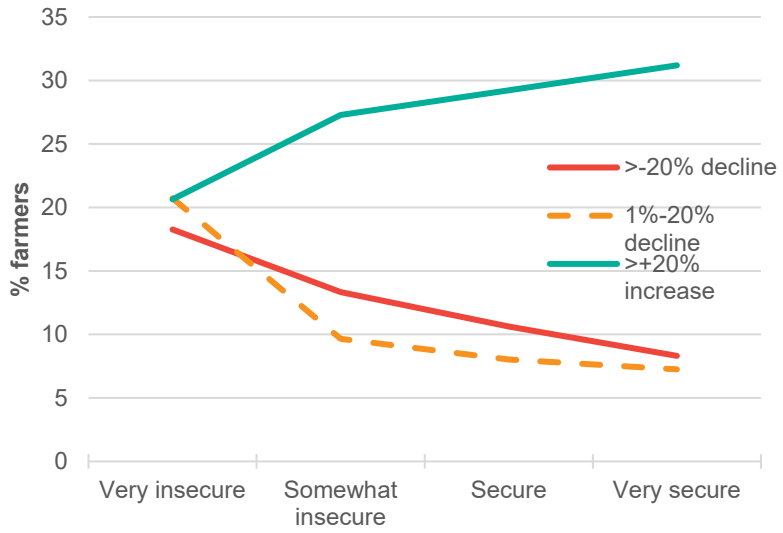
Figure 4: Change in sales income, by quartile of land owned =



Source: Authors' calculations based on MAPS, round 2

Second, farmers in insecure areas have experienced more declines in crop sales income. Better security is associated with higher increases in crop sales income (Figure 5). While 31 percent of the secure areas reported a substantial increase in sales income (larger than 20 percent), only 21 percent did so in the most insecure areas. On the other hand, 18 percent of the most insecure farmers saw a decline of crop sales income by 20 percent or more. This was 8 percent for the most secure farmers.

Figure 5: Change in sales income, by reported level of physical security



Source: Authors' calculations based on MAPS, round 2

Conclusions

Insecurity is affecting agriculture as shown through a substantial number of farmers feeling insecure and reporting to not be able to move around to buy input or sell outputs without serious concerns for security. However, agricultural inputs were mostly available during the dry season but there is increasing scarcity of agricultural labor – seemingly linked to increasing migration and insecurity. We also note large price increases for agricultural inputs but also for crop prices. While the majority of farmers report higher sales incomes compared to the last dry season, small farms and farms in insecure areas saw lower crop sales income increases.

The findings in this research note lead to a number of implications. First, the increasing insecurity in the country is hampering the functioning of the agricultural sector (leading to lower availability of agricultural inputs and lower incomes in insecure areas). An improved security situation is therefore called for. Second, small farmers are relatively worse off compared to other farmers. They would benefit from support to their agricultural operations, potentially through agricultural cash programs. Third, labor scarcity is an important constraint for a substantial number of farmers. Targeting of laborers in aid programs would therefore be useful. For example, expanded cash-for-work programs used in agriculture would assure reliable incomes for these often-vulnerable laborers as well as address shortages of rural labor. Given this labor scarcity, a well-functioning mechanization service sector is required as well.

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