



Monitoring the Agri-food System in Myanmar

Mechanization Service Providers – July 2022 survey round

A phone survey was conducted in July 2022 to understand the effects of COVID-19 and political instability on Myanmar's mechanization service providers (MSPs), crucial to enabling smallholder farmers to undertake a range of power-intensive farm and post-harvest operations in a timely manner. This note reports on the results of this survey, the ninth in a series of phone surveys, as well as on trends from earlier surveys.

Key Findings

- The typical tractor service providers (TSPs) provided fewer land preparation services in the 2022 monsoon planting season than they did in 2020 or 2021 monsoon planting seasons. The average (median) TSP in our sample reduced the area operated on by 13 percent (20 percent).
- These declines appear to be both due to declining demand from farmers, and also the rising costs of services due to increasing prices of machines, equipment, fuels, repair services and operators, which led to more than 50 percent increase in nominal values of hiring fees between 2021 and 2022.
- For farmers who continue to rely on mechanization services, the significant increase in hiring charges directly reduce their incomes and potentially lower yield.
- Revenue prospects among MSPs, which were already poor in 2021, continue to remain dire in 2022. Increases in operating costs are also more commonly perceived among MSPs.

Recommended Actions

- Set up measures to extend loans at affordable rates, including those dedicated for supporting small-scale enterprises. Doing so can help some MSPs to remain in business during the ongoing crisis, and prevent the losses of critical mechanization service skills which can be hard to restore once lost.
- Reduce taxes and fees temporarily, including imported goods like fuels or equipment, to mitigate the increase in costs for mechanization services.
- Disruptions that affect the equipment supply-chain and mobility of MSPs should be minimized, or at least made consistent, to allow MSPs to operate freely. Keeping repair shops open can also partly alleviate MSPs' concerns on rising costs of repair work. These policies can also help MSPs who had suspended their businesses due to violence to resume their service provisions.
- Access to formal credit through the MADB or through microfinance institutions should be expanded to help ensure farmers' access to affordable mechanization services, as farmers are likely to continue facing significantly increased costs in the 2022 season. The rising fees of mechanized services and the growing inability of farmers to make payments will continue to reduce monsoon season production.

Background

Agricultural mechanization service providers (MSPs) are crucial to enabling smallholder farmers to undertake a range of power-intensive farm and post-harvest operations in a timely manner. These operations are important for food production and farm income. MSPs are capital-intensive operations. The economic viability of these businesses is highly sensitive to (1) capacity utilization, which generates the cash flow needed to repay equipment loans; (2) prices of imported capital goods, including machines, equipment, and fuels; and (3) availability of machine operators, among others. Hence, the operations of MSPs are sensitive to restrictions on mobility and trade.

This Research Note focuses on the impacts of the COVID-19 and the on-going political crisis on MSPs from the latest phone survey conducted in July 2022. This note primarily covers the activities of tractor service providers (TSPs) in the 2022 monsoon planting season, as well as combine harvester service providers (CHSPs) that completed harvesting from the dry season. The results of previous rounds were published in [Myanmar Strategy Support Program Research Notes 07](#), [12](#), [17](#), [39](#), [43](#), [59](#), [62](#), and [76](#). As MSP operations continue to be affected by market disruptions, an understanding of the situation on the ground is critical to support measures to ensure farmers' access to MSP services.

Sample Size and Location

In the ninth survey round, a total of 352 mechanized service providers (MSPs) were interviewed—277 tractor services providers (TSPs) and 75 combine harvester service providers (CHSPs). Among them, 312 (247 TSPs and 65 CHSPs) were also interviewed in the same season in 2021, and 192 TSPs were interviewed in 2020 (Table 1). This note focuses primarily on the panel samples of 192 TSPs and 65 CHSPs, while also providing insights from 247 TSPs where appropriate. While panel samples are sub-samples, their information can shed light on changes over time.¹

Table 1. Summary of MSPs in survey round 9, based on responses in previous rounds

Type of MSPs	Sample	Panel MSP (in 2021 and 2022)	Panel MSP (in 2020, 2021 and 2022)
All MSPs	355	312	192
TSPs	278	247	192
CHSPs	77	65	

Note: MSP=Mechanization service provider; CHSP=Combine harvester service provider; TSP=Tractor service provider.
Source: Mechanization Service Provider Phone Survey— Monsoon Planting Season 2020, 2021 and 2022.

Table 2 summarizes the regional distribution of interviewed panel MSPs. A majority of panel TSPs are from the Dry zone, including more than half from the Magway region. In contrast, a majority of panel CHSPs are from the Ayeyarwady region.

Table 2. Regional distribution of panel TSP and CHSP interviewed in round 9

	Ayeyarwady	Bago	Magway	Mandalay	Sagaing	Others	Total
TSPs (3-rounds panel)	22	14	125	12	18	1	192
TSPs (2-rounds panel)	44	28	142	12	19		247
CHSPs	52	4	3	1	4	1	65

Note: MSP=Mechanization service provider; CHSP=Combine harvester service provider; TSP=Tractor service provider.
Source: Mechanization Service Provider Phone Survey— Monsoon Planting Season 2020, 2021 and 2022.

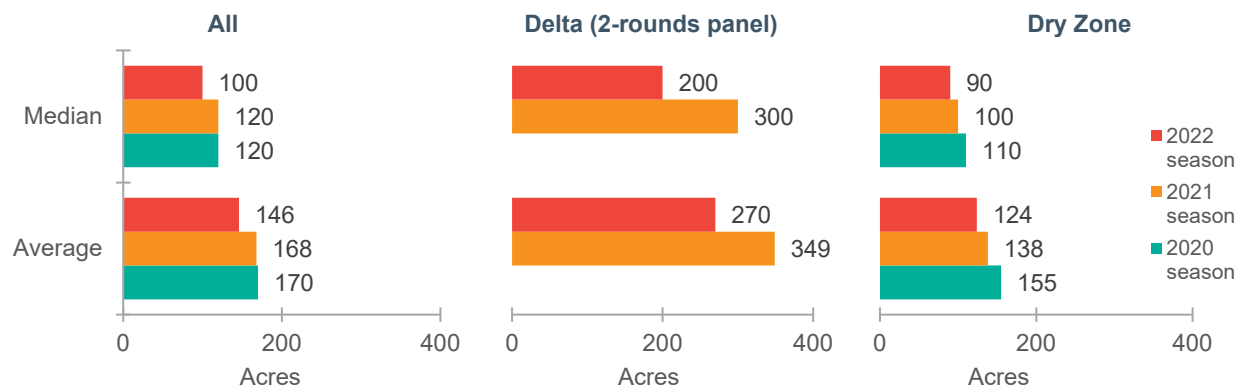
¹ The sample of MSPs is not representative at national or at state/region levels. However, we discuss heterogeneity, where appropriate, to highlight the potential importance of machine-specific or region/state-specific support measures. We highlight such heterogeneity where, given the sample sizes, differences across MSPs are statistically significant.

Acres prepared by tractors in 2022 monsoon planting season compared to 2020 or 2021 levels

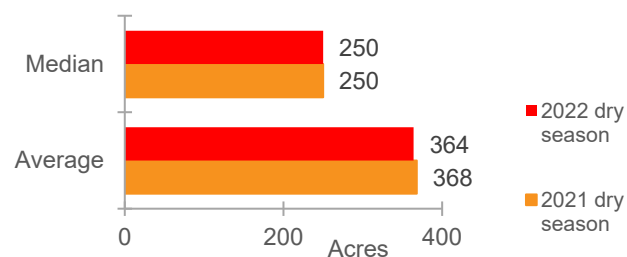
Figure 1 shows the areas prepared by TSPs in the current monsoon production season in 2022, and how the same TSPs did in 2020 and 2021. At the median, TSPs provided services to 100 acres, with those in the Delta covering more acres than those in the Dry Zone. Across both zones, the area served by TSPs in 2022 monsoon season is smaller than the area prepared in the monsoon seasons in 2020 or 2021, which were typically 120 ~ 130 acres per TSP. Between 2021 and 2022, the decline appears particularly large in the Delta, with approximately 100 fewer acres in 2022. Area harvested by CHSPs in 2022 dry season remained comparable to 2021 dry season. However, harvesting fees were considerably higher in 2022 dry season as discussed later.

Figure 1. Area prepared by TSPs in the 2022 monsoon seasons and harvested by CHSPs in the 2022 dry season compared to previous years, by median and average acres

TSP



CHSP



Note: TSP=Tractor service provider. CHSP = Combine harvester service providers.

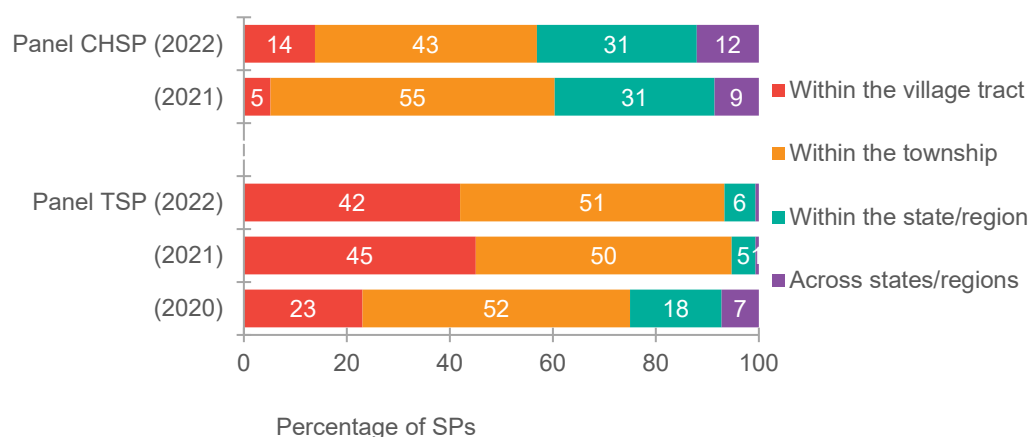
Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2020, 2021 and 2022.

Reported effects of crises on mechanization service providers

Most TSPs and CHSPs continue to feel restricted to operating solely within their village tracts or townships during the 2022 monsoon planting season, with relatively little improvement in their perceptions from 2021 season (Figure 2). The share of TSPs who feel their movement is confined to township increased from 75 percent in 2020 to 95 percent in 2021, and has remained largely unchanged in 2022. Since COVID-19 mobility restrictions have been greatly reduced, TSPs and CHSPs may be facing unofficial restrictions due to the persistent security situation, and/or having perceptions that these restrictions are broadly in place, even it remains unclear how movement restrictions are formally imposed. TSPs and CHSPs typically travel at night, reserving the daytime for servicing farms, and the security situation may not allow for safe night travel. Security checkpoints

throughout the country continue enforcing arbitrary rules such as curfews, and the threat of harassment, rent-seeking, and risk to personal safety may deter TSPs and CHSPs from traveling greater distances.²

Figure 2. MSPs that experienced restrictions on areas of operation, by season, by share

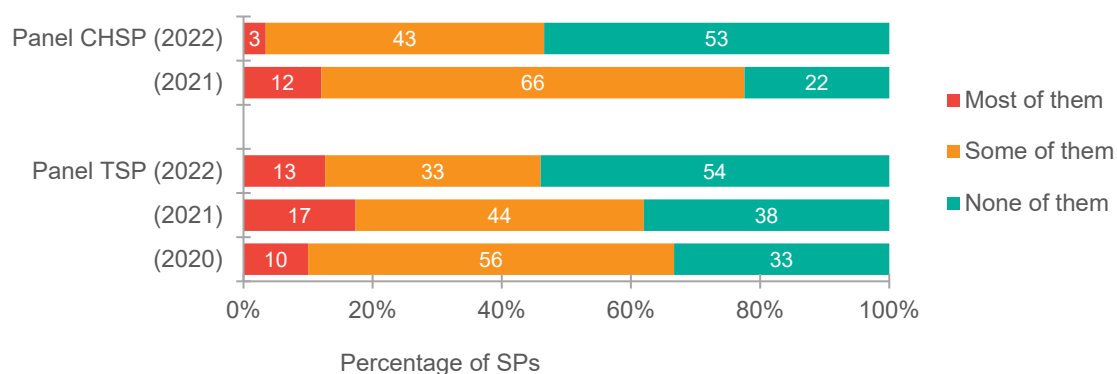


Note: TSP = Tractor service providers; CHSP=Combine-harvester service providers.
Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2020, 2021 and 2022.

Mechanization services provision compared to the same month in 2019

The declining acreage serviced by TSPs in 2022 (Figure 1), may be in part due to declining demand. For those still demanding the service, the timeliness of services somewhat improved in 2022 monsoon planting season compared to the previous years (Figure 3). The shares of TSPs reporting that their customers had to wait longer for their services, compared to one year earlier, decreased from 66 percent and 61 percent in 2020 and 2021 respectively, to 46 percent in 2022. Similar declines were observed for CHSPs too. However, for CHSPs, this appears to be weather related as they reported that the rainy season arrived late and that heavy rain at the end of the season delayed harvesting. However, as is shown subsequently, improved timeliness is likely to be due to declining demand.

Figure 3. Percentage of MSPs reporting worsening service provision timeliness compared to the previous year, by machine type and survey round



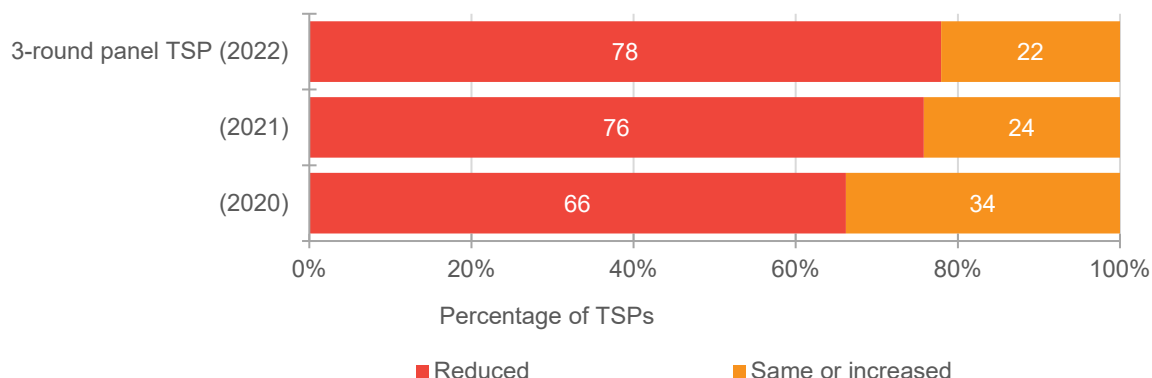
Note: TSP = Tractor service providers; CHSP=Combine-harvester service providers.
Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2020, 2021 and 2022.

Most (close to 80 percent of) TSPs still continue to perceive the demand for land preparation services to be weaker than in 2019 (Figure 4). While about 20 percent of TSPs continue to see the

² Frontier Myanmar. 2021. Anxiety, bribes, and bullies: A journey through post-coup Myanmar. Frontier Myanmar. May 31, 2021.

same or increased demands, this may reflect that some TSPs have discontinued the business during the previous few years, particularly since 2021, creating more demand for other TSPs in their area. As is described later, some MSPs left their businesses when their machines broke down and could not have affordable repairing services.

Figure 4. Percentage of panel TSPs reporting lower demand for services relative to 2019

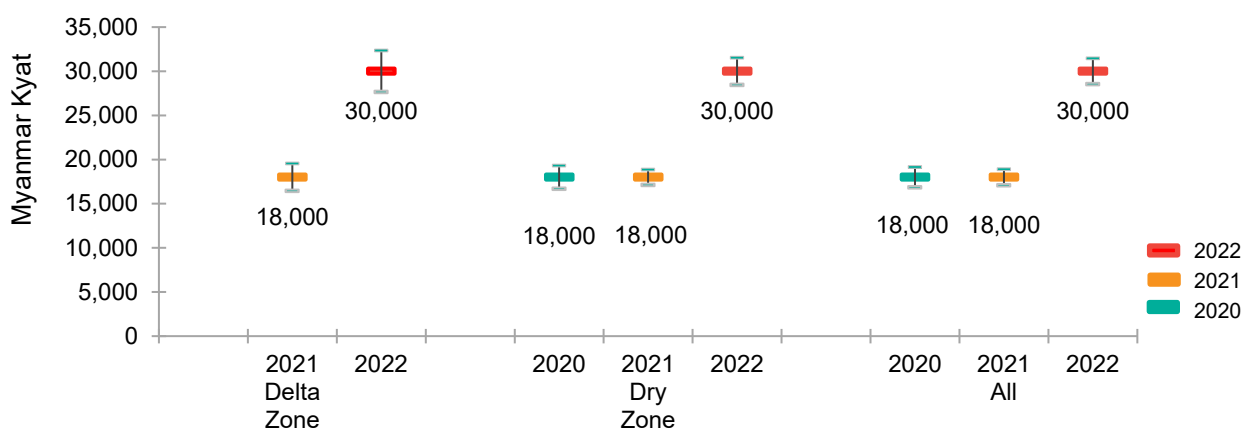


Note: TSP = Tractor service providers; CHSP=Combine-harvester service providers.
Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2020, 2021 and 2022.

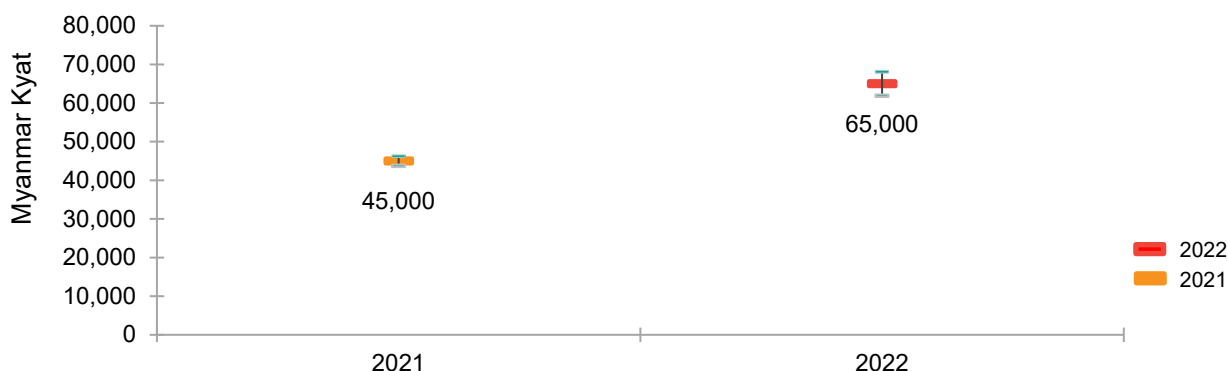
Hiring charges for TSPs in 2022 monsoon planting season were significantly higher than those in 2020 or 2021. At the median, hiring charges (per acre) for in 2022 were 30,000 MMK, about 50 percent higher than the 18,000 MMK charged at the same time in 2021 (Figure 5). These patterns are similar in Delta and Dry zones. Hiring-charge increases are likely due to significant depreciation in the Kyat since the early 2021, which has increased the costs of the imported goods including machines and fuels.

Figure 5. Median charges per acre for land preparation service among panel TSPs and CHSPs, by region

TSPs



CHSPs



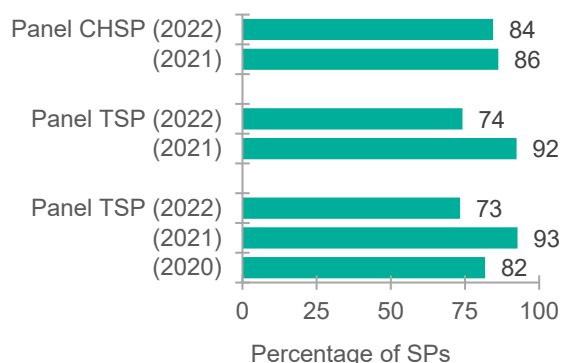
Note: TSP = Tractor service providers. CHSP=Combine-harvester service providers.

Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2020, 2021 and 2022.

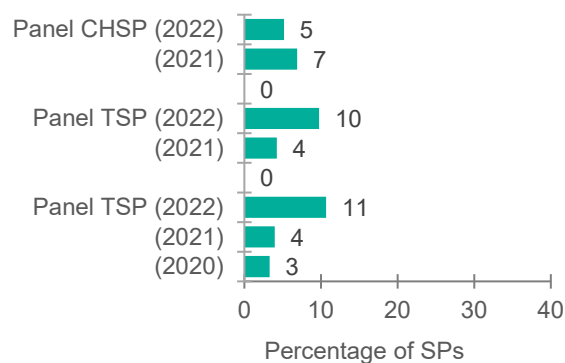
With increased hiring charges, a majority of MSPs continue to receive requests from farmers for late payment (Figure 6). The shares for TSPs receiving late payment requests somewhat decreased from 90 percent in 2021 to around 75 percent in 2022. This may, however, reflect that more farmers with financial stresses might have simply stopped hiring tractor services. In fact, the share of TSPs providing additional financial assistance to farmers increased from 4 percent in 2021 to about 10 percent in 2022.

Figure 6. Percentage of MSPs receiving late payments requests from farmers and providing additional financial assistance

Facing more late payment requests from farmers than at the same time in the previous year



Providing additional financial assistance* during the same time the previous year

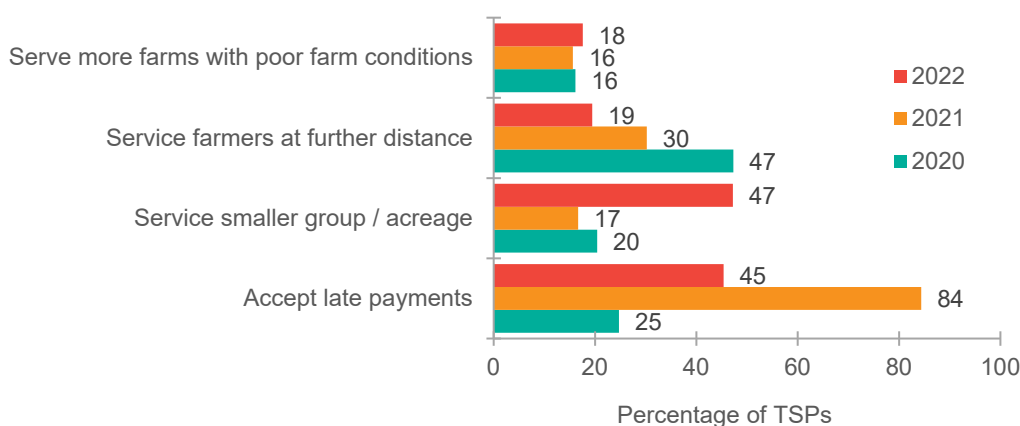


Note: *Beyond acceptance of late payments. TSP = Tractor service providers; CHSP=Combine-harvester service providers.

Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2020, 2021 and 2022.

To mitigate the perceived lower demand, an increasing share of TSPs are coping by servicing smaller groups of farmers or plots (increase from around 20 percent in 2020-2021 to 47 percent in 2022) (Figure 7). This may reflect that some of larger groups of farms or farmers with larger plots stopped hiring tractor services. This coping measure is likely to further raise the costs of TSP operations per plot area. In contrast, a smaller share of TSPs opt to expand their service to farmers at further distance, possibly because of lingering mobility restrictions and rising fuel costs for travel.

Figure 7. Percentage of panel TSPs using coping methods to mitigate perceived lower demand

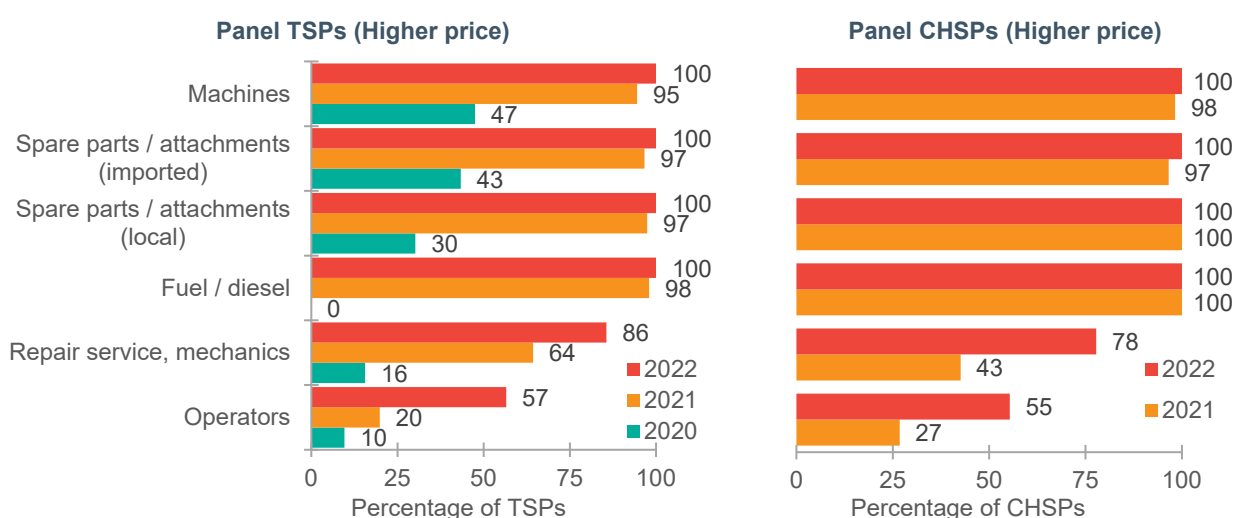


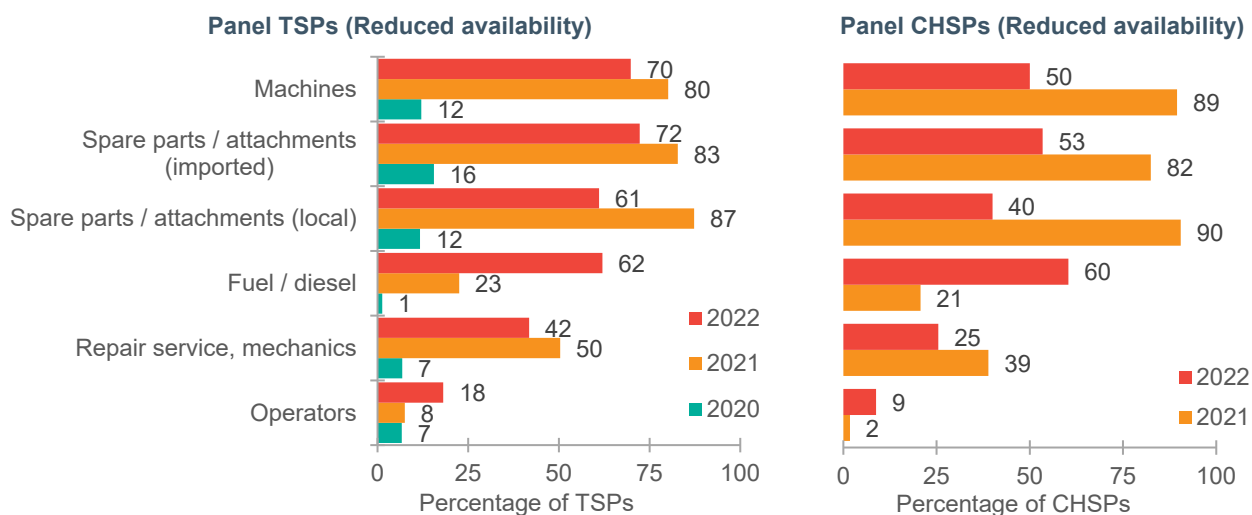
Note: *Beyond acceptance of late payments. TSP = Tractor service providers; CHSP=Combine-harvester service providers.
Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2020, 2021 and 2022.

Supply-side factors

On the supply-side, almost all MSPs continue to experience increased prices of machines, spare parts, attachments (either imported or locally manufactured), and fuel compared to the previous year (Figure 8). The rising prices are also becoming more common for repair services and operators. These supply-side challenges increase the cost of providing mechanization services and are expected to continue affecting farm production costs in 2022. The shares of MSPs reporting reduced availability of these machines and services declined somewhat in 2022 compared to 2021, but these may partly reflect the overall declining demand for MSPs in general, and do not seem to significantly mitigate rising prices that are caused more by the supply-side shocks.

Figure 8. Share of TSPs and CHSPs reporting higher price or reduced availability compared to one year earlier, by survey round



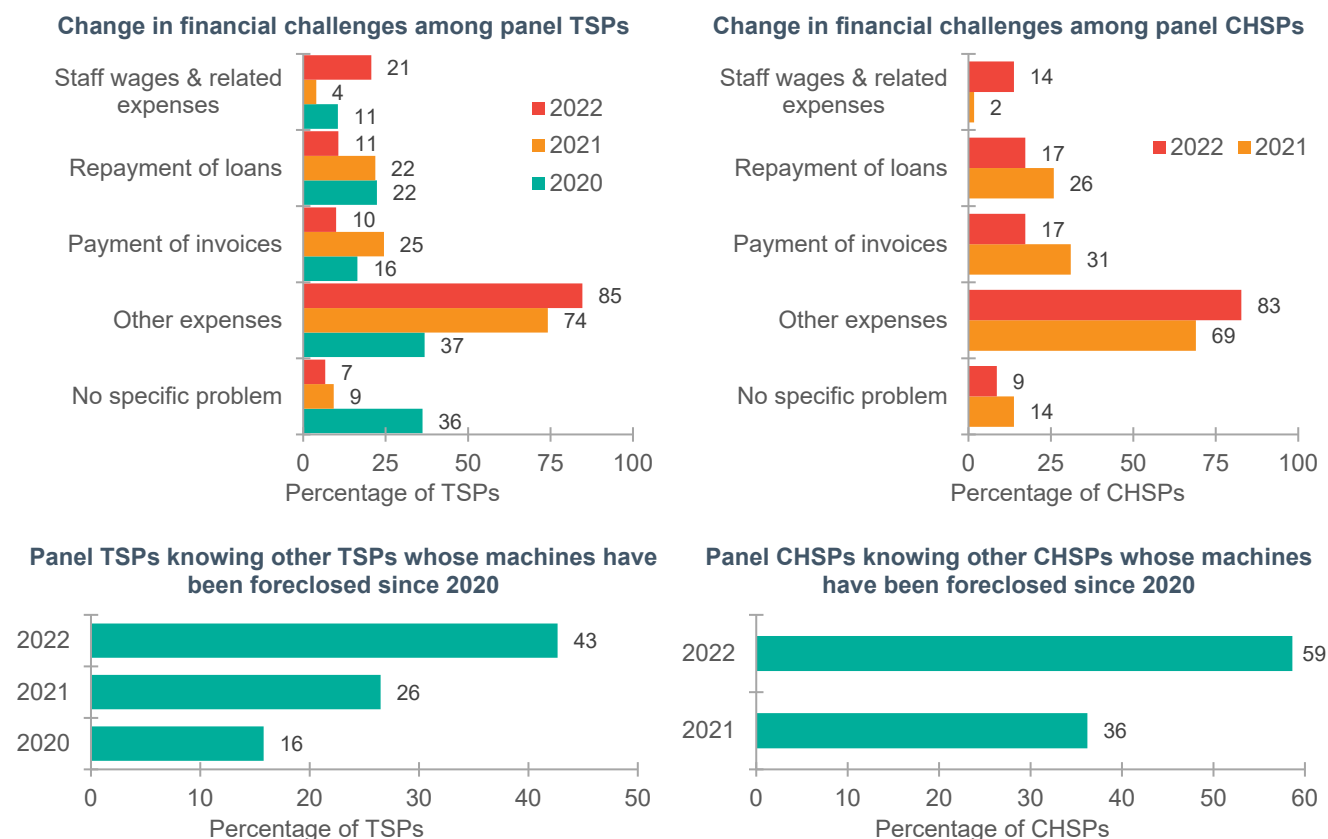


Note: *Beyond acceptance of late payments. TSP = Tractor service providers; CHSP=Combine-harvester service providers.
Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2020, 2021 and 2022.

Financial effects on business

A significant share of MSPs continue to experience financial challenges due to the impacts of COVID-19 and political unrest (Figure 9, top charts). Both TSPs and CHSPs continue to be concerned about various financial requirements, including rising staff wage, and other expenses associated with the operation of service provision. The shares of TSPs and CHSPs who report no financial challenges declined further in 2022 to 7 percent and 9 percent, respectively. Repossession of equipment continues to grow more common (Figure 9, bottom charts). In July 2021, 26 percent and 36 percent of TSPs and CHSPs reported knowing other MSPs whose machines had been repossessed since the beginning of the COVID-19 outbreak. These shares increased to 43 percent and 59 percent in 2022, respectively.

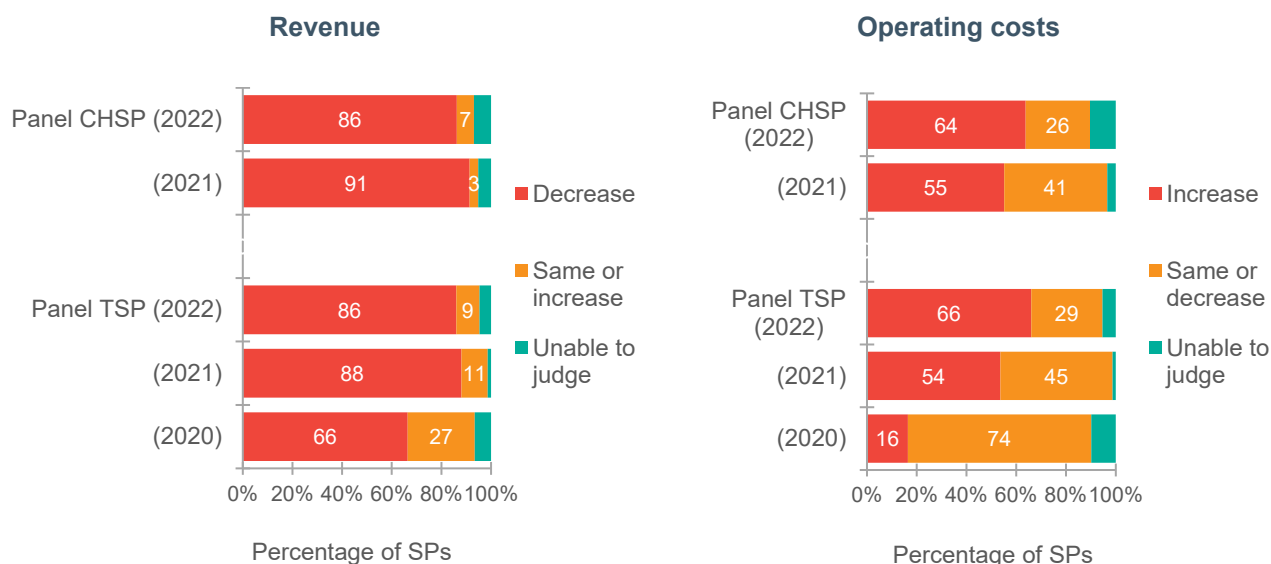
Figure 9. Percentage share of TSPs reporting financial challenges due to restrictions



Note: *Beyond acceptance of late payments. TSP = Tractor service providers; CHSP=Combine-harvester service providers.
Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2020, 2021 and 2022.

MSPs' perceptions of financial prospects toward the end of the year, which were already pessimistic in 2020 and in 2021, continued to be bleak in 2022 (Figure 10). Close to 90 percent of TSPs and CHSPs continue to expect their revenues to be lower than the previous year. Furthermore, 66 percent and 64 percent of TSPs and CHSPs expect their operating costs to further increase in 2022, compared with 54 percent and 55 percent in 2021. The negative overall perception at the end of the 2022 monsoon planting, demonstrates the need to continue closely monitoring how these MSPs can survive financially through the remainder of the 2022 season.

Figure 10. Service providers expectations of revenues and operating costs relative to pre-previous season⁹, by percentage share

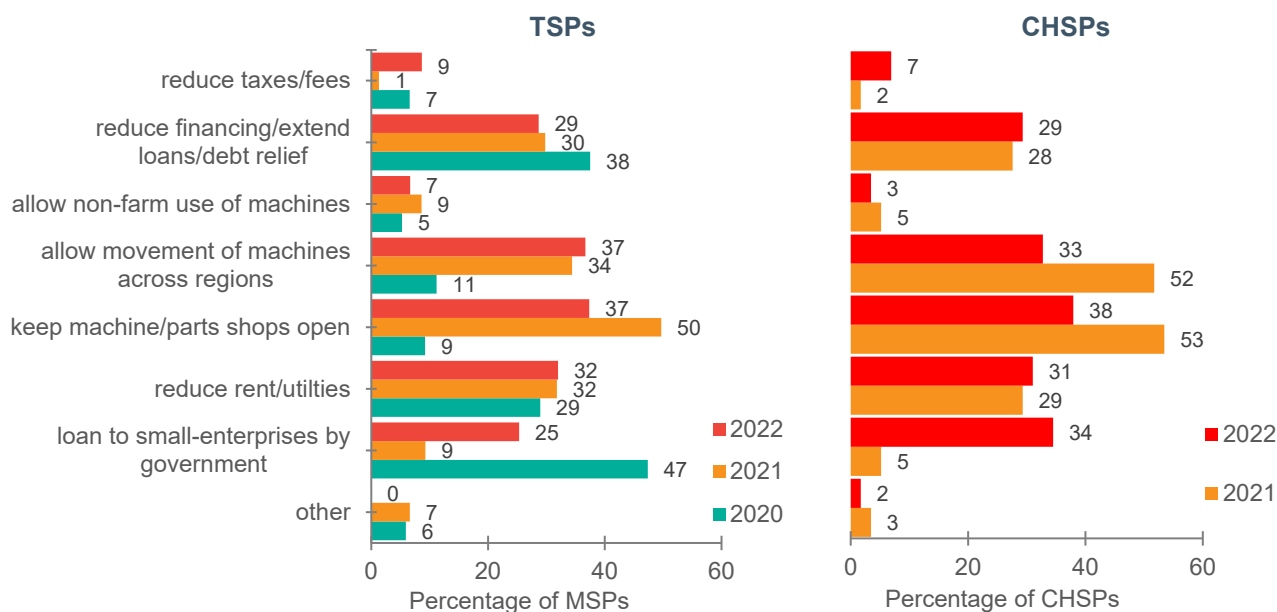


Note: *Beyond acceptance of late payments. TSP = Tractor service providers; CHSP=Combine-harvester service providers.
Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2020, 2021 and 2022.

Measures to Support MSPs

As in earlier survey rounds, respondents were asked for their opinions on what measures would be most beneficial for their businesses to continue during the COVID-19 and political crises (Figure 11).

Figure 11. MSP perceptions on effective measures to reduce the adverse impacts of the COVID-19 and political crises on their businesses



Note: *Beyond acceptance of late payments. TSP = Tractor service providers; CHSP=Combine-harvester service providers.
Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2020, 2021 and 2022.

Compared to previous years (particularly 2021), a significantly higher share of both TSPs and CHSPs reported that policies to extend new loans, including those for small-enterprises, are preferred. While a minority, the preference for policies to reduce taxes/fees also increased since 2021. Other policies keeping machine/parts shops open and allowing movement of machines across

greater geographical regions remain commonly preferred, albeit to a lesser extent than in 2021. These perceptions are consistent with perceptions of reduced demand for mechanization services.

Measures to Support Resumption of MSPs

Strengthening MSPs requires not only supporting those who are currently in business, but also those who temporarily suspended the business due to the crisis since 2020, but are willing to resume the business. To gain insights, this survey round also traced 16 MSPs who have suspended their business recently since 2020, whom we could still contact by phone. Although the sample is small, some important patterns are worth noting.

Out of 16, 5 MSPs still kept their machines, while the other 11 had sold their machines. We found that the former MSPs had suspended their business typically because of increased violence and reduced security and rising fuel prices, while the latter 11 suspended their businesses due to rising price/reduced availability of machines / equipment / repair services. Most of the former types of MSPs indicated their willingness to resume their business within one or two years. Therefore, targeting support to MSPs who have kept their machines without selling may be particularly effective in restoring the MSP sector once the demand for MSPs re-emerges.

Extending support to these MSPs may also be important because, as we found, relatively few of them may have alternative income generating businesses or options to recover investments in machines. A majority of these MSPs (13 out of 16) have reverted back to farming as primary income earning activities, instead of any off-farm activities that are potentially more profitable. Those who have sold their machines, could do so typically at 20 percent lower prices than they would have desired, suggesting that re-selling their machines may not be an attractive alternative to MSPs which would typically bring higher returns to machine investments.

To support these MSPs, particularly those who are willing to resume their businesses, we asked their preferred policies. Similar to Figure 11, these MSPs particularly prefer policies that keep machine shops/repair shops open (indirectly by containing conflict / violence), allow greater movement of machines across regions, as well as provide general support to farmers that could further enhance their effective demands for MSP.

Discussion

The observed conditions on the ground in 2022 monsoon planting season continue to show the deteriorating situation for MSPs in Myanmar. Combined with the global increases in the cost of fuels, disruptions to the supply-chain are significantly raising the cost of mechanization services. These factors are contributing to a significant decline in demand for services. As MSPs are sensitive to capacity utilization, which generates the cash flow needed to repay equipment loans, we may continue to see the rate of repossession or the discontinuation of business by MSPs increase as coping methods are exhausted.

At the same time, albeit with declining demand, a significant share of farmers still hire mechanization services. The increasing cost of tractor services (50 percent or more in nominal terms between 2021 and 2022) add additional strain on farmers already facing increasing input prices³ and marketing challenges⁴ and could result in lower cultivated areas and yields. The potential scarcity of

³ Myanmar Agriculture Policy Support Activity (MAPSA). 2021. Monitoring the agri-food system in Myanmar: Agricultural input retailers–September 2021 survey round. Myanmar SSP Research Note 66. Washington, DC: International Food Policy Research Institute (IFPRI). <https://doi.org/10.2499/p15738coll2.134693>.

⁴ Myanmar Agriculture Policy Support Activity (MAPSA). 2021. Monitoring the agri-food system in Myanmar: Agricultural commodity traders–May 2021 survey round. Myanmar SSP Research Note 58. Washington, DC: International Food Policy Research Institute (IFPRI). <https://doi.org/10.2499/p15738coll2.134462>.

cheaper alternatives (hired labor or draft animals) demonstrates the need to address the challenges facing MSPs into the rest of the production season.

The following measures are recommended to ensure the long-term availability of mechanized services to farmers:

- Set up measures to extend new loans at affordable rates, including those dedicated for supporting small-scale enterprises. Doing so can help some MSPs to remain in business during the ongoing crisis, and prevent the losses of critical mechanization service skills which can be hard to restore once lost
- Reduce taxes and fees temporarily, including imported goods like fuels or equipment, to mitigate the increase in costs for mechanization services
- Disruptions that affect equipment supply-chain and mobility of MSPs should be minimized, or at least made consistent, to allow MSPs to operate freely.
- Keeping repair shops open can also partly alleviate MSPs' concerns on rising costs of repair work.
- Access to formal credit through the MADB or through microfinance institutions should be expanded to help ensure farmers' access to affordable mechanization services, as farmers are likely to continue facing significantly increased costs in the 2022 season. The rising fees of mechanized services and the growing inability of farmers to make payments will continue to reduce monsoon season production.

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