



Monitoring the Agri-food System in Myanmar

Mechanization Service Providers – July 2023 survey round

A phone survey was conducted in July 2023 to understand the effects of political instability on Myanmar's mechanization service providers (MSPs) that are crucial for 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, which is the 11th in a series of phone surveys, as well as on trends from earlier surveys.

Key Findings

- The observed conditions on the ground in the 2023 monsoon planting season show signs of improvement and recovery of the sector, as well as continuing challenges for MSPs in Myanmar.
- The area prepared by MSPs in the 2022 monsoon seasons and harvested in the 2022 dry season increased compared to the two previous years.
- Despite the slow-down in price increases for fuel and repair services, rising prices of machines, parts, and operators (despite their improved availability) continue to raise the cost of mechanization services.
- There are signs of improved demand for services compared to 2022, potentially due to the rising price of paddy and falling prices of certain other inputs and crops, and most MSPs who stayed in business have reduced debts and saw improvement in their financial standings.
- Given the increased lack of agricultural credit, some MSPs are increasingly providing additional financial assistance to farmers as to fill this void.
- However, a significant share of MSPs also faced challenges in meeting demand due to supply-side cost shocks and/or left the business altogether.
- Persistent rises in costs, combined with political instability, remain a significant source of uncertainty for MSPs, which requires close monitoring for the remainder of the 2023 season.

Recommended Actions

- To mitigate the increase in costs for mechanization services, reduce taxes on imported equipment and fuel and fees temporarily, including on imported goods like fuels or equipment.
- Reduce bottlenecks in the movement of MSPs, through improved transparency in security checkpoints, permissions required, and repairing of rural roads.
- Provide training for machine operations to alleviate the shortage of machine operators.
- 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 2023 season. The rising fees of mechanized services for farmers can reduce monsoon season production.

Background

Agricultural mechanization service providers (MSPs) are crucial for enabling smallholder farmers to undertake a range of power-intensive farm and post-harvest operations in a timely manner. These operations are essential 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 ongoing political crisis on MSPs from the latest phone survey conducted in July 2023. This note primarily covers the activities of tractor service providers (TSPs) in the 2023 monsoon planting season and 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, 76, 84](#) and [94](#). As MSP operations continue to be affected by market disruptions, understanding the situation on the ground is critical to support measures to ensure farmers' access to MSP services.

Sample size and location

In the 11th survey round, which was carried out in the monsoon planting season of 2023, a total of 493 mechanized service providers (MSPs) were interviewed—308 tractor services providers (TSPs), 131 combine harvester service providers (CHSPs), as well as other MSPs that operated neither tractors nor combine harvesters in the monsoon planting season of 2023 (NSPs). Among these, 197 (160 TSPs and 37 CHSPs) were also interviewed in the same season in 2022 and operated the same types of MSP business in both rounds (Table 1). This note focuses primarily on the panel samples of 160 TSPs and 37 CHSPs. While both are sub-samples, their information can shed light on changes over time.¹

Table 1. Summary of MSPs in survey round 11, based on responses in previous rounds

Type of MSPs	Sample	Panel MSP (in 2022 and 2023)	Other MSP who had different businesses in MPS 2023 and MPS 2022, including newly interviewed MSP ^a
All MSPs	493	197	296
TSPs	308	160	148
CHSPs	131	37	94
NSPs	54	0	54

Note: MSP=Mechanization service provider; CHSP=Combine harvester service provider; TSP=Tractor service provider. NSP = Non-operating service providers. MPS = Monsoon Planting Season.

^aThey either did not operate MSP in 2022 or switched from TSP to CHSP or from CHSP to TSP between 2022 and 2023.

Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2020, 2021, 2022, and 2023.

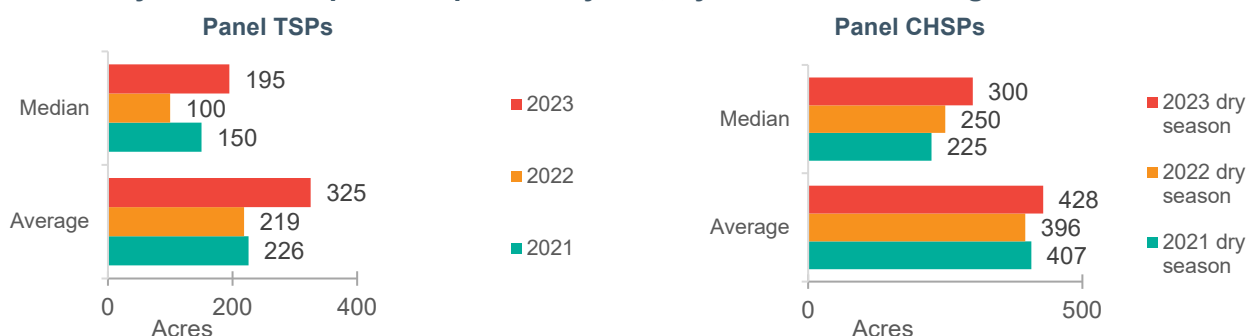
Acres prepared by tractors in 2023 monsoon planting season compared to 2022 or earlier years

Figure 1 shows the areas prepared by TSPs in the 2023 Monsoon Planting Season and the areas prepared by TSPs in earlier years. At the median, TSPs provided services to 195 acres in 2023. The area served by these TSPs in the 2023 Monsoon Planting Season is larger than those prepared in the monsoon seasons in 2022 or earlier years. Areas harvested by CHSPs in the 2023 pre-monsoon

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.

season are relatively larger than the 2021 or 2022 season. While the causes of these increases must be investigated more carefully, the rising price of paddy in the last year might have partly induced increased demand for MSPs.²

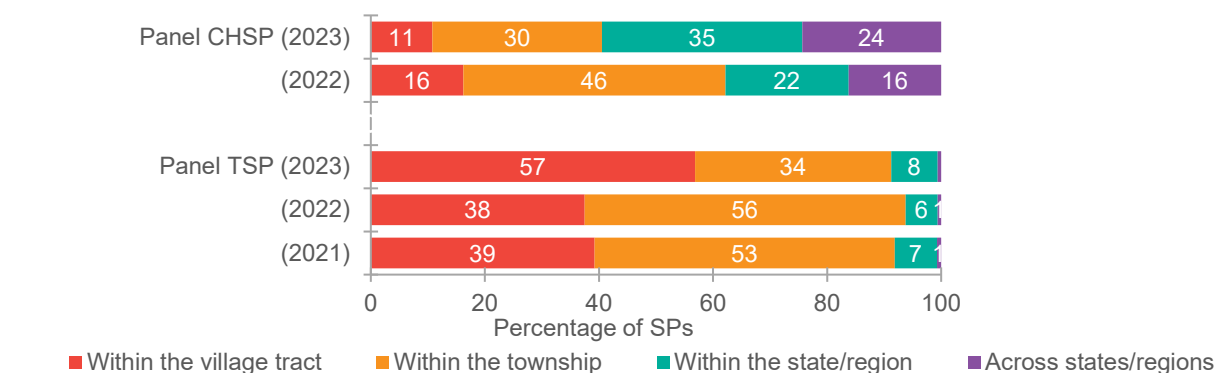
Figure 1. Area prepared by TSPs in the 2022 monsoon seasons and harvested by CHSPs in the 2022 dry season compared to previous years, by median and average acres



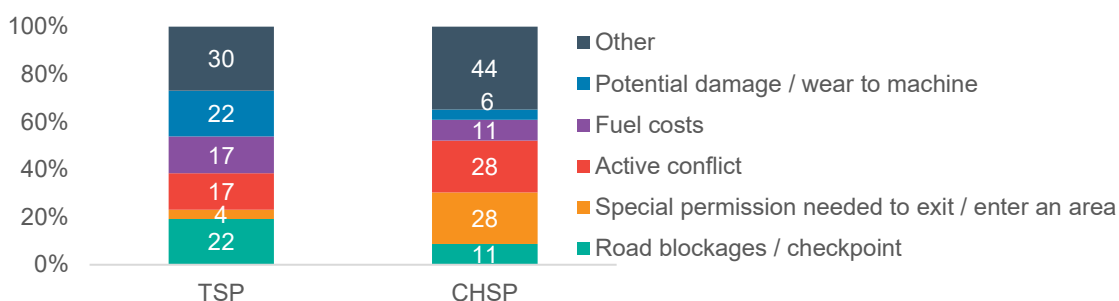
Note: TSP=Tractor service provider. CHSP = Combine harvester service providers.
Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2021, 2022 and 2023.

Reported effects of crises on mechanization service providers

Figure 2. MSPs’ geographic areas of operation compared to 2022



Major reasons for movement restrictions



Note: TSP = Tractor service providers; CHSP=Combine-harvester service providers.
Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2021, 2022 and 2023.

Significant shares of TSPs and CHSPs continue to feel restricted to operating solely within their village tracts or townships during the 2023 monsoon planting season (Figure 2). The share of TSPs who feel their movement is confined to village tracts increased from 38 percent in 2022 to 57 percent in 2023 (Top panel). Among CHSPs, while more of them (59 percent) are operating beyond the

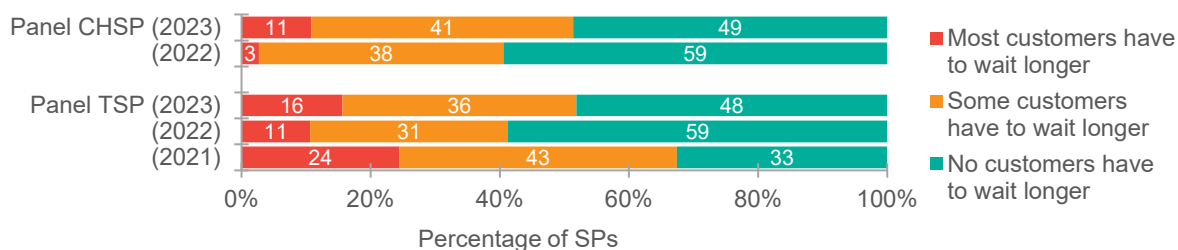
² For example, the wholesale price of “Emata” rice, a widely consumed quality in Myanmar, in Yangon, typically doubled within a year from about 500 Kyat per kg in January 2022 to almost 900 in January 2023 and from about 600 in May 2022 to 1,400 in May 2023 (<https://www.fao.org/giews/countrybrief/country.jsp?code=MMR&lang=FR>). These rates have exceeded the overall inflation rates in Myanmar during this period, which was generally less than 20 percent (<https://www.adb.org/countries/myanmar/economy>).

township, an increase from 38 percent in 2022, 41 percent are still operating within the township only. Among those who indicated operating in smaller areas than in 2022, CHSPs reported the need for special permission to exit/enter certain areas and active conflict as particularly constraining, while TSPs reported road blockages/checkpoints and concerns over machine damages as particularly constraining (bottom panel).

Mechanization services provision

The timeliness of services remains a concern in the 2023 monsoon planting season (Figure 3). The shares of TSPs reporting that their customers had to wait longer for their services, compared to one year earlier, remain around 50 percent. Similar levels were observed for CHSPs too. Although this may be partly due to increased demand and area served in 2023 as shown in Figure 1, the persistent constraints in movement (Figure 2) may also explain the perceived concerns on timeliness.

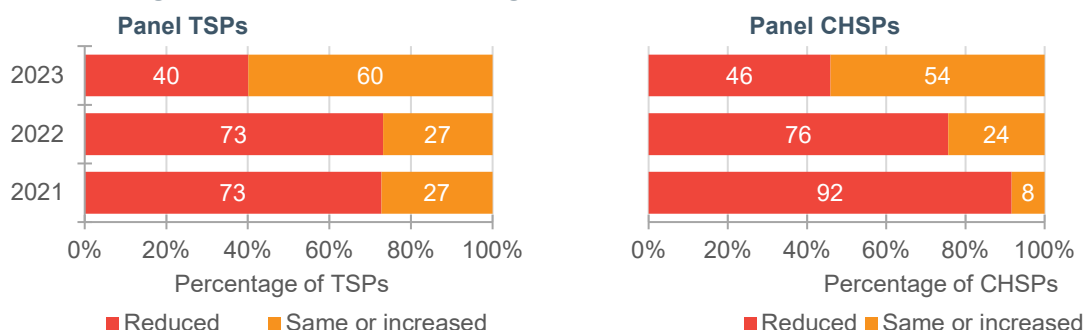
Figure 3. Percentage of MSPs reporting worsening service provision timeliness compared to the previous year, by machine type and survey round



Note: TSP = Tractor service providers; CHSP=Combine-harvester service providers.
Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2021, 2022 and 2023.

By 2023, a majority of TSPs perceive the demand for land preparation services to be at the same level as in 2019, although 40 percent of TSPs still perceive that demand is still lower than 2019 (Figure 4). Similarly, the share of CHSPs reporting the recovery of demand has increased. These patterns are consistent with greater areas served in Figure 1.

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

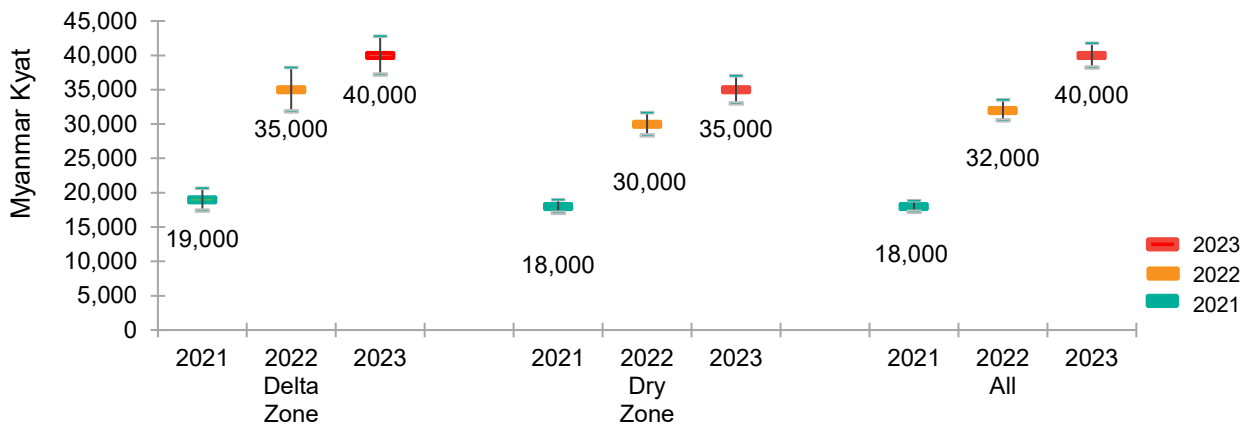


Note: TSP = Tractor service providers; CHSP=Combine-harvester service providers.
Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2021, 2022 and 2023.

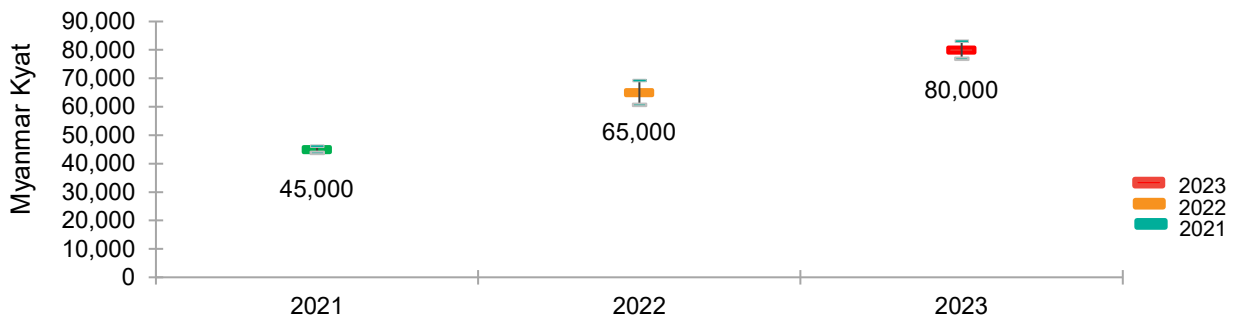
Nominal hiring charges for TSPs in the 2023 monsoon planting season were significantly higher than those in 2022. At the median, hiring charges (per acre) in 2023 were 40,000 MMK, about 20 percent higher than the 32,000 MMK charged at the same time in 2022 (Figure 5). Hiring charges have been slightly higher in Delta than in Dry zones in 2023 Monsoon Planting Season. Similarly, hiring charges for CHSPs in 2023 were about 20 percent higher at 80,000 MMK per acre compared to 65,000 MMK in 2022.

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

TSPs



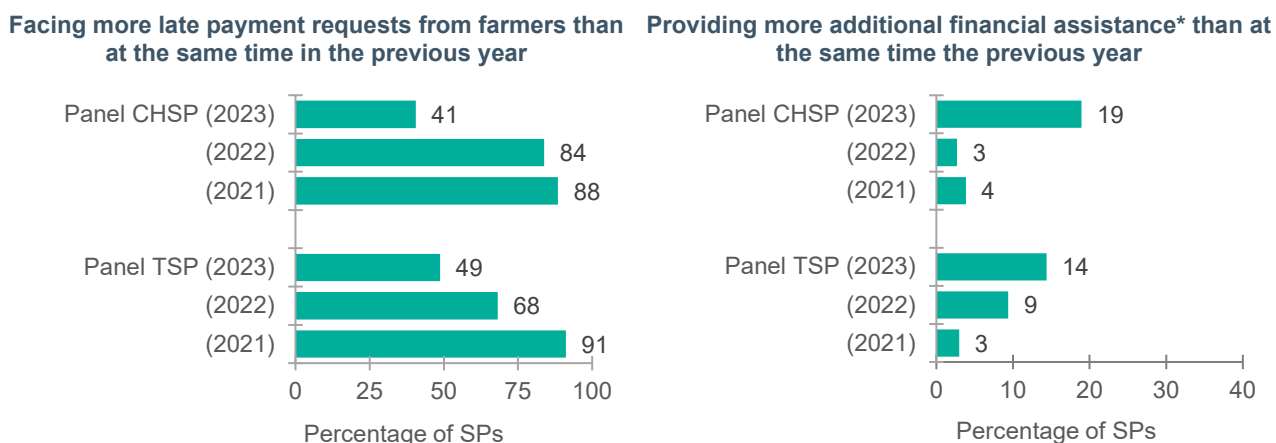
CHSPs



Note: TSP = Tractor service providers. CHSP=Combine-harvester service providers.
 Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2021, 2022 and 2023.

The share of MSPs receiving requests from farmers for late payment has declined somewhat in 2023 (Figure 6). The share for TSPs receiving late payment requests is 49 percent in 2023, which is still high but a decrease from 68 percent in 2022. Similarly, the share for CHSPs declined to 41 percent. This may be partly because more MSPs provided additional financial assistance to farmers in 2023 compared to 2022 (right panel), likely because of the lower availability of formal credit in rural Myanmar.

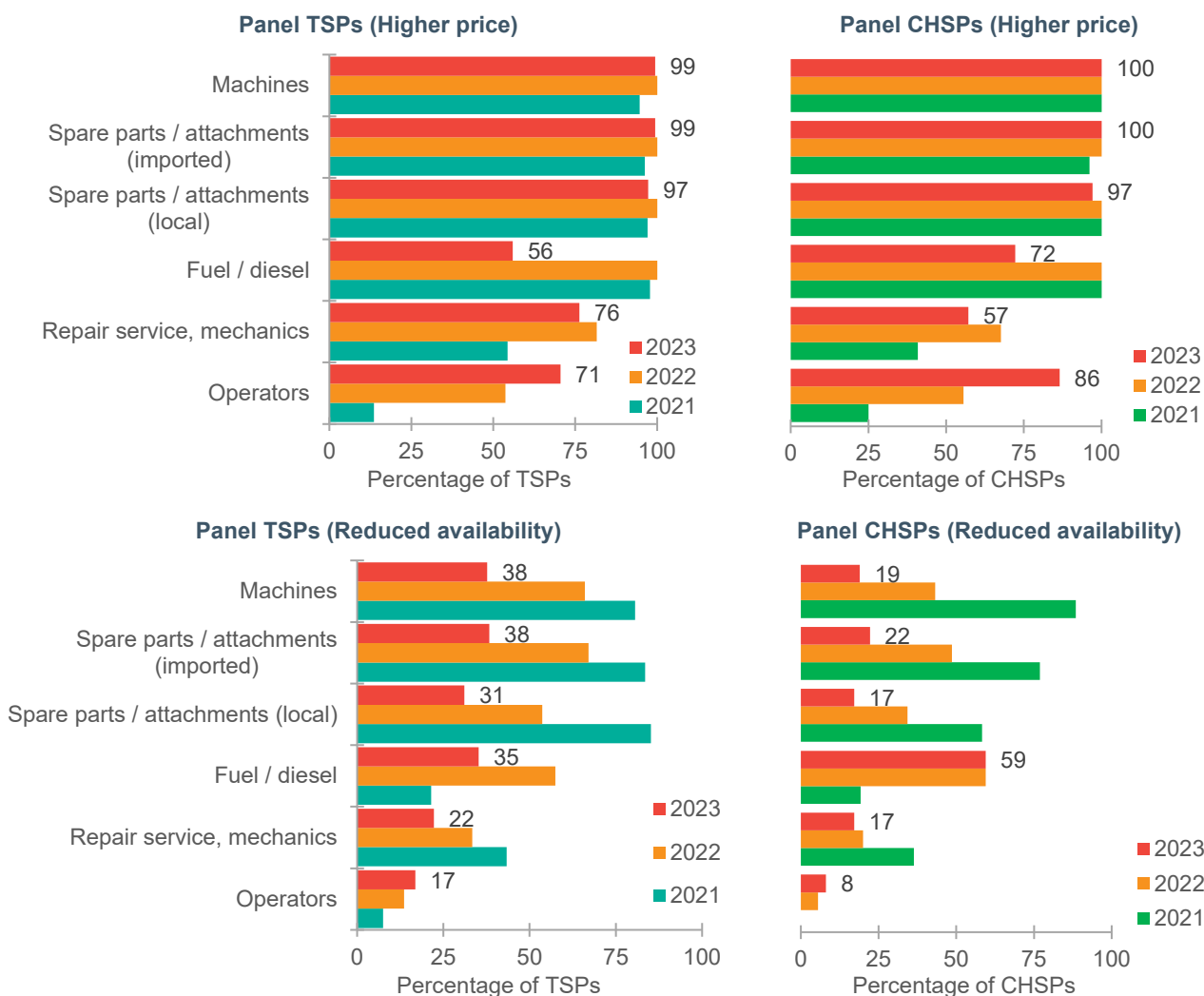
Figure 6. Percentage of MSPs receiving late payments requests from farmers and providing additional financial assistance



Note: *Beyond acceptance of late payments. TSP = Tractor service providers; CHSP=Combine-harvester service providers. Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2021, 2022 and 2023.

Supply-side factors

Figure 7. Share of TSPs and CHSPs reporting higher price or reduced availability compared to one year earlier, by survey round



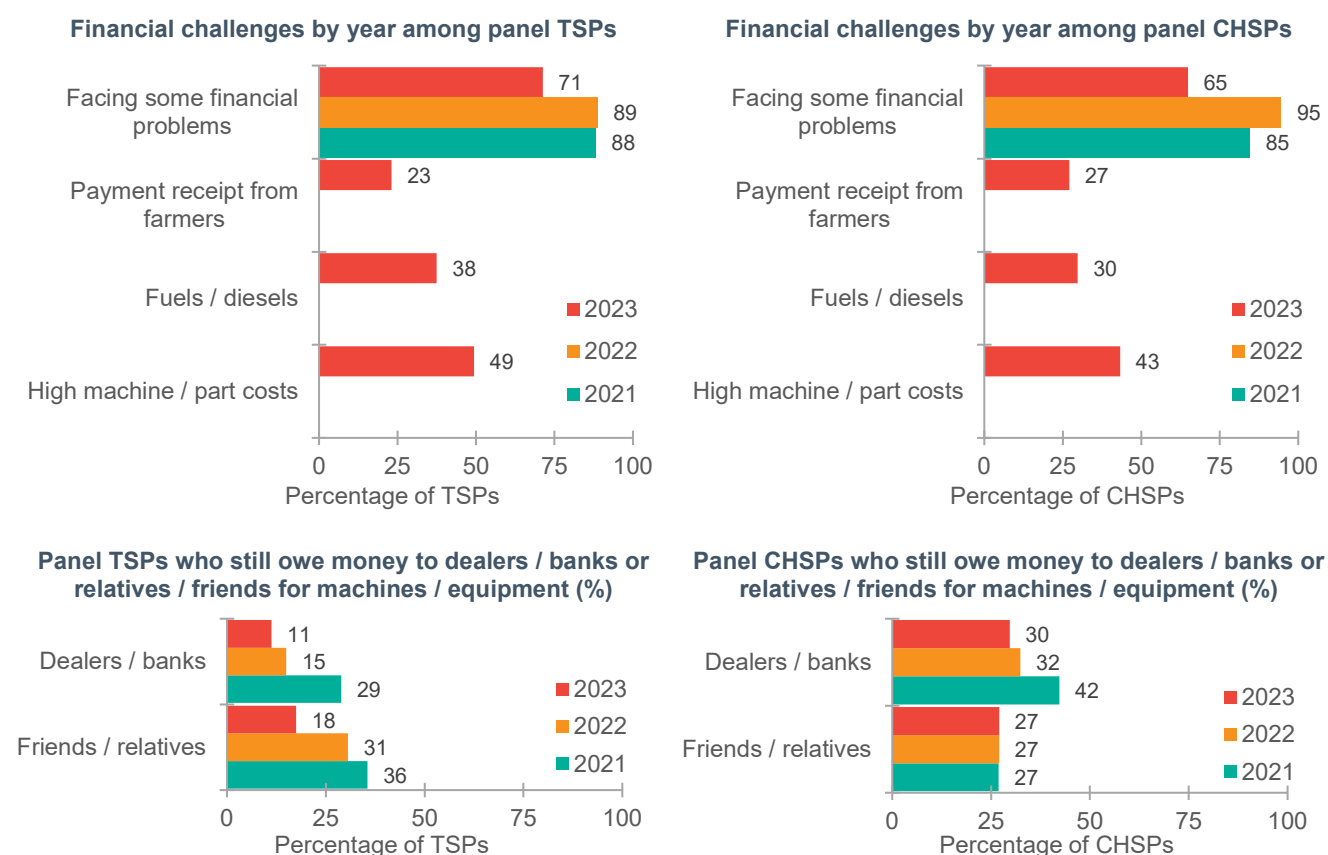
Note: *Beyond acceptance of late payments. TSP = Tractor service providers; CHSP=Combine-harvester service providers. Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2021, 2022 and 2023.

On the supply side, almost all MSPs continued to experience increased prices of machines, spare parts, and attachments (either imported or locally manufactured) (Figure 7). The rising prices are also becoming more common for operators. However, the prices for fuels/diesel, repair services/mechanics might have leveled out. Furthermore, the shares of MSPs reporting reduced availability of these machines and services continued to decline in 2023 compared to 2021 and 2022. The improved availability might have contributed to lowering transaction costs for accessing machines, parts, and services, even though their prices remain high.

Financial effects on business

While a significant share of MSPs continue to experience financial challenges, the number has declined slightly in 2023 (Figure 8, top charts). Both TSPs and CHSPs continue to be concerned about various financial requirements, including high machine/part costs, fuels/diesel, or timely payment receipts from farmers. But the shares of TSPs and CHSPs who report any financial challenges declined in 2023 to 60 and 70 percent, respectively, both from about 90 percent, indicating some fractions of MSPs have started facing fewer financial difficulties. The share of MSPs who still owe loans for their machines/equipment has declined in 2023 (Figure 8, bottom charts). While the causes of these changes should be assessed more carefully, increased demand, improved machine and service availability, and perhaps accumulated earnings over the years might have helped improve MSPs' financial status.

Figure 8. Percentage share of TSPs reporting financial challenges

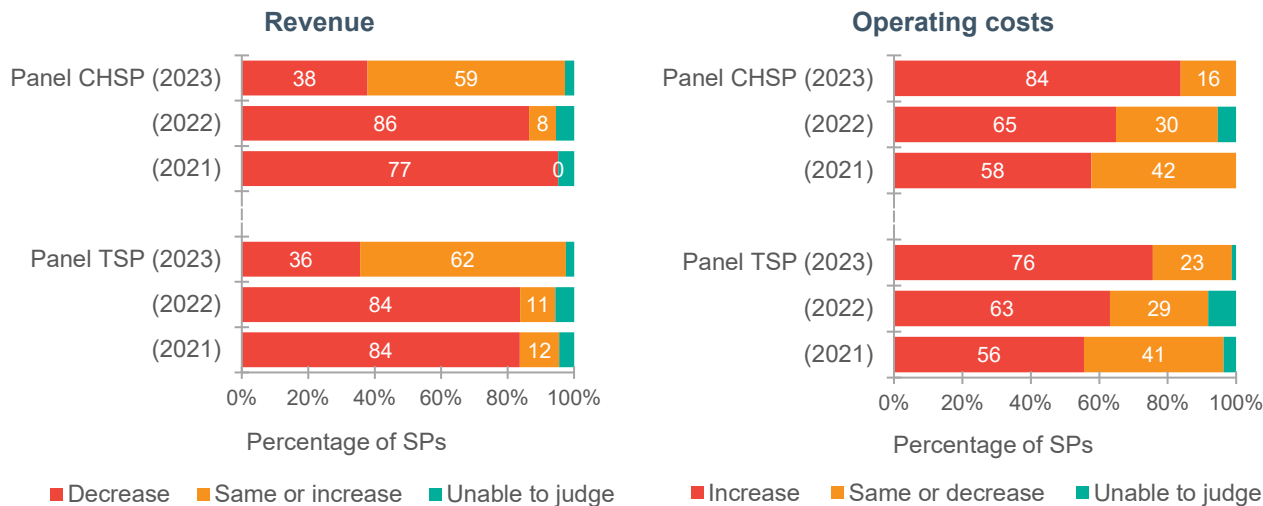


Note: TSP = Tractor service providers; CHSP=Combine-harvester service providers.
 Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2020, 2021 and 2022.

MSPs' perceptions of financial prospects toward the end of the year were somewhat mixed (Figure 9). In 2022, only about 10 percent of TSPs and CHSPs expected their revenues to be similar to or better than the previous year's. These shares rose to about 60 percent in 2023. At the same

time, 76 percent and 84 percent of TSPs and CHSPs expect their operating costs to increase in 2023, compared with 63 percent and 65 percent in 2022. There is a need to continue monitoring the trends in the operating costs and revenues of MSPs.

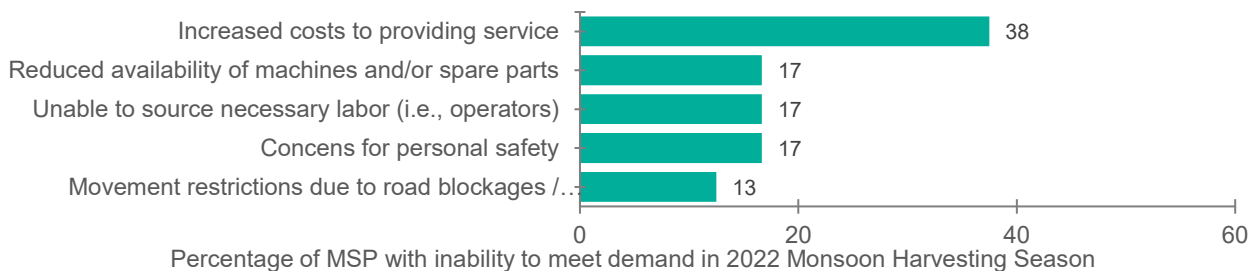
Figure 9. Service providers expectations of revenues and operating costs relative to previous season, by percentage share



Note: *Beyond acceptance of late payments. TSP = Tractor service providers; CHSP=Combine-harvester service providers. Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2021, 2022 and 2023.

The persistent increase in costs of service provision has been reported for the 2023 pre-monsoon harvesting season. Most of the CHSPs, as well as about 1/3 of TSPs, operated combine-harvesting services in the 2023 pre-monsoon harvesting season. More than 10 percent of them reported being unable to meet the demand. Among them, a significant majority reported high costs as the primary reasons.

Figure 10. Key reasons for inability to meet the demand in 2023 pre-monsoon harvesting season

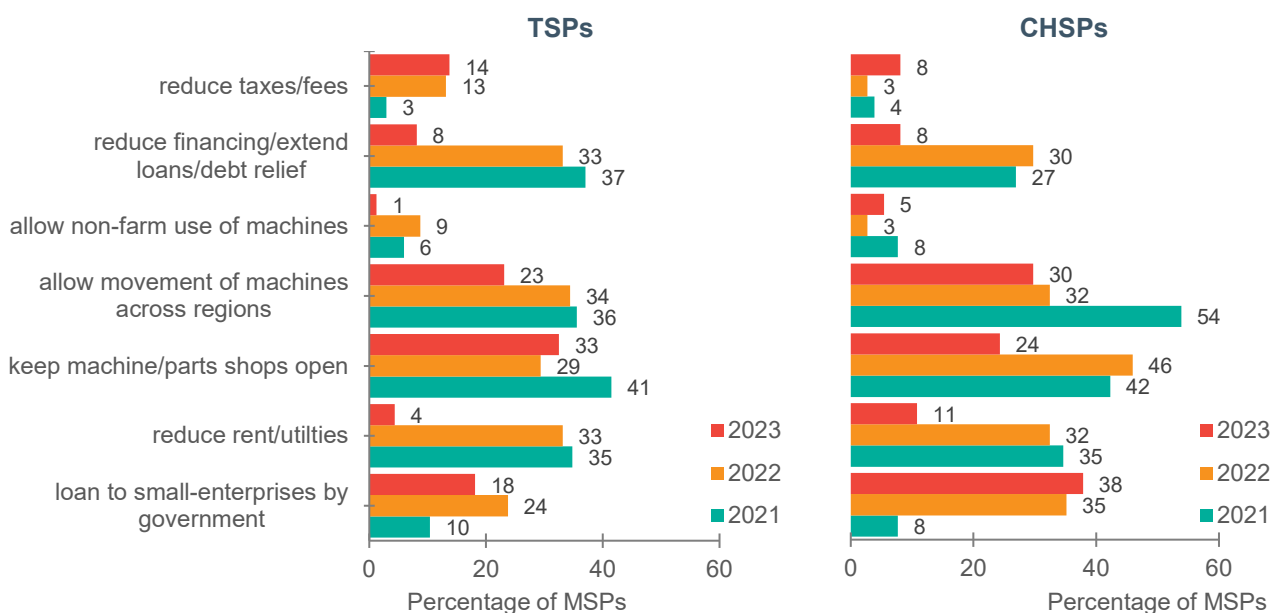


Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2023.

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 political crises (Figure 11). Respondents were asked to list up to two options.

Figure 11. MSP perceptions on effective measures to reduce the adverse impacts of 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.

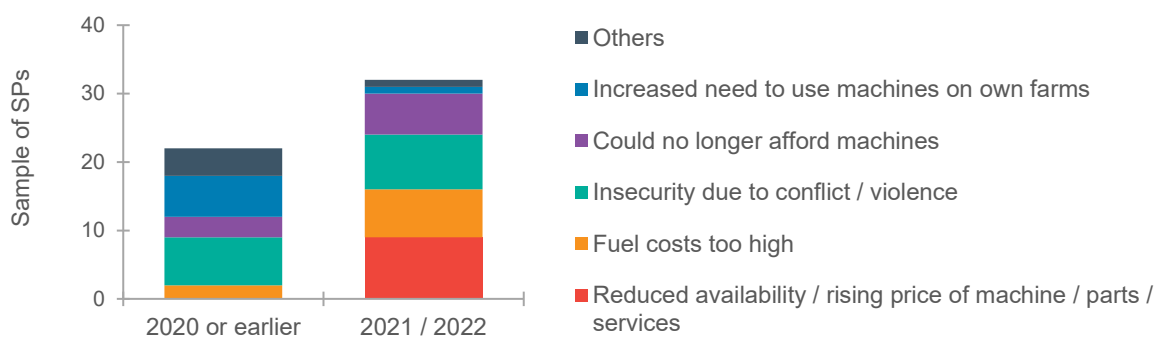
Compared to previous years, relatively high shares of both TSPs and CHSPs reported that policies to extend new loans, including those for small enterprises, reduce taxes/fees, keep machine/parts shops open, and allow movement of machines across greater geographical regions remain commonly preferred. Preferences for debt relief relatively declined, consistent with earlier results that fewer MSPs are still indebted.

Measures to support resumption of MSPs

Strengthening MSPs requires not only supporting those currently in business but also those who temporarily suspended their business due to the crisis since 2020 but are willing to resume their business. To gain insights, this survey round also traced 54 MSPs (41 TSPs and 13 CHSPs) who have suspended their business since 2019, whom we could still contact by phone. Although the sample is small, some important patterns are worth noting.

About half of them lastly operated business in 2021 or 2022. Those who suspended business after 2020 typically did so due to insecurity associated with conflict and violence but also due to the increased need to use their machines on their own farms (Figure 12). In contrast, those who suspended business after 2021/2022 did so due to reduced availability / rising prices of machines, parts, and repair services, fuel costs, and insecurity. Thus, supply-side cost increases pushed many MSPs out of business after 2021/2022.

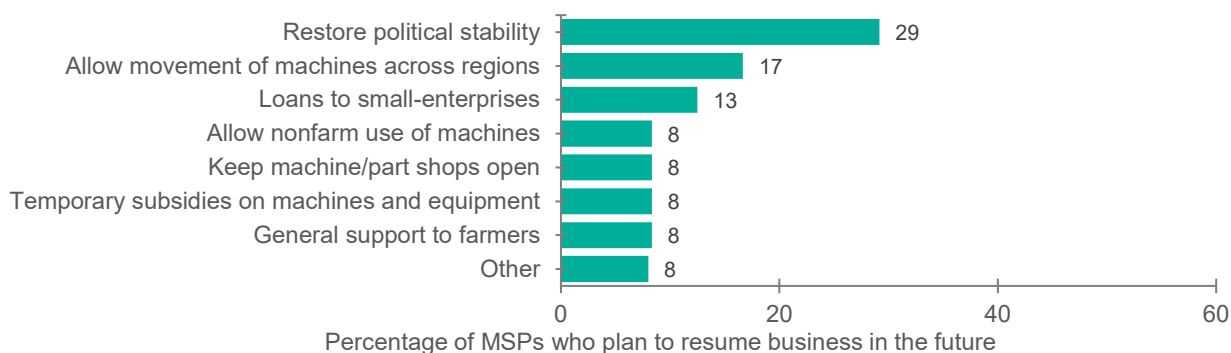
Figure 12. MSP (both TSPs and CHSPs) who suspended business due to various reasons, by years of last operation



Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2023.

Close to half (24 out of 54) still own machines, and 10 indicate planning to resume business within five years. Among these 24 MSPs, the primary government support needed is the restoration of political stability, which can also facilitate machine movement across larger geographical areas (Figure 13).

Figure 13. Preferred support for MSPs to resume business in the future



Source: Mechanization Service Provider Phone Survey– Monsoon Planting Season 2023.

Discussion

The observed conditions on the ground in the 2023 monsoon planting season show signs of improvement and recovery, but also continuing challenges for MSPs in Myanmar. The rising prices of machines, parts, and operators (despite their improved availability) continue to raise the cost of mechanization services, despite the slow price increase for fuels and repair services. There is some sign of enhanced demand for services compared to 2022, and most MSPs who stayed in business have reduced debts and saw improvement in their financial standings. However, a significant share of MSPs also faced challenges in meeting demand due to supply-side cost shocks and/or left the business altogether. Persistent rises in costs, combined with political instability, remain a significant source of uncertainty for MSPs, which require close monitoring for the remainder of the 2023 season.

At the same time, albeit with declining demand, many farmers still hire mechanization services. The increasing cost of tractor services adds additional strain on farmers already facing increasing input prices³ and marketing challenges⁴ and could result in lower productivity due to the inability to

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>.

use required amount of inputs. The potential scarcity of 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:

- Reduce taxes and fees temporarily, including on imported goods like fuels or equipment, to mitigate the increase in costs for mechanization services.
- Reduce bottlenecks in the movement of MSPs, through improved transparency in security checkpoints, fewer? permissions required, and repairing of rural roads.
- Provide training for machine operations to alleviate the shortage of machine operators.
- 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 2023 season. The rising fees of mechanized services for farmers could reduce monsoon season production.

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