

STRATEGY SUPPORT PROGRAM RESEARCH NOTE 76

### **FEBRUARY 2022**

# Monitoring the Agri-food System in Myanmar

## Mechanization Service Providers – January 2022 survey round

A phone survey was conducted in January 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 eighth in a series of phone surveys, as well as on trends from earlier surveys.

#### **Key Findings**

- Combine harvester service providers (CHSPs) provided harvesting services in the 2021 winter season on areas comparable to the same time in 2020.
- However, achieving this is likely to have been more costly in 2021, involving more costly coping methods against reduced demand, which many CHSPs still perceive as low compared to 2019. Timeliness of harvesting in 2021 may have been worse than in 2020.
- Farmers may be paying higher harvesting charges as they have few alternatives. The increase in hiring charges is therefore likely to directly reduce farmers' incomes.
- Higher prices and reduced availability of machines and spare parts/attachments continues to grow among MSPs.
- Business prospects among MSPs, which were already poor in June 2021, deteriorated by the end of 2021. Increases in operating costs contributed significantly to this negative trend.

#### **Recommended Actions**

- Disruptions to supply-chain logistics, transportation restrictions, and curfews enforced at multiple administrative levels are reducing the availability of machines, spare parts, and attachments and are impacting the supply of mechanized services. Travel restrictions should be removed, or at least made consistent, to allow MSPs to operate freely and to ensure the efficient functioning of the equipment supply-chain.
- Keeping repair shops open can also alleviate MSPs' need to move machines beyond local areas to undertake necessary repair work.
- Access to formal credit through the Myanmar Agricultural Development Bank (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.









### 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 January 2022. This note primarily covers the activities of combine harvester service providers (CHSPs) in the 2021 monsoon harvest season. The results of previous rounds were published in <u>Myanmar Strategy Support Program Research Notes</u> <u>07, 12, 17, 39, 43, 59, and 62</u>. 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 eighth survey round, a total of 312 mechanized service providers (MSPs) were interviewed– 153 combine harvester service providers (CHSPs) and 159 tractor services providers (TSPs). All MSPs were interviewed in at least one of the previous survey rounds, including 124 CHSPs who were interviewed in the 2020 monsoon harvest season (Table 1). This note focuses on the panel samples of 206 MSPs and 124 CHSPs. While panel samples are sub-samples, their information can shed light on changes over time.<sup>1</sup>

Table 1. Summary	of MSPs in survey	y round 8, based or	responses in	previous rounds

Type of MSPs	Sample	Panel CHSP (in harvest season in 2020 and 2021)	Panel MSP (in planting/harvest seasons in 2020 and 2021)
All MSPs	312		206
CHSPs	153	124	71
TSPs	159		135

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

Table 2 summarizes the regional distribution of interviewed panel MSPs. Approximately threefourths of the panel CHSPs and one-third of the panel MSPs are from the Ayeyarwady region. Approximately half of panel MSPs are from the Magway region, although relatively few CHSPs are from the Magway region.

### Table 2. Regional distribution of panel CHSP and MSP interviewed in round 8

	Ayeyarwady	Bago	Magway	Mandalay	Sagaing	Others	Total
CHSPs	90	15	6	5	4	4	124
MSPs	66	14	97	7	14	8	206

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

<sup>&</sup>lt;sup>1</sup> 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 harvested remain similar to 2020 levels

Figure 1 shows the areas harvested by CHSPs in the current production season by the time they were interviewed in survey round 8. At the median, CHSPs provided services to 300 acres, equally among those based in Ayeyarwady and other regions. Generally, at the median as well as at the 25<sup>th</sup> and 75<sup>th</sup> percentiles, the areas harvested by CHSPs in 2021 are similar to the same period in the 2020 season. However, median figures for CHSPs based outside Ayeyarwady are lower in 2021 (300 in 2021 vs. 350 in 2020) but the sample size is small and thus, the figures are only indicative. While acres harvested are comparable to the 2020 season, they are lower than the 2019 season when CHSPs harvested approximately 450 acres. Compared to 2019, CHSPs based in Ayeyarwady experienced a relatively greater reduction in harvested areas (600 acres in 2019 vs. 300 acres in 2021) while CHSPs operating outside Ayeyarwady remain similar to 2019 highlighting variations by region.<sup>2</sup>



### Figure 1. Area harvested by CHSPs in the 2021 seasons, by median acres

Note: CHSP=Combine harvester service provider.

Source: Mechanization Service Provider Phone Survey- Monsoon Harvest Season 2020 and 2021.

### Reported effects of crises on mechanization service providers

Most CHSPs and MSPs have remained restricted to operating solely within their village tracts or townships during the 2021 monsoon harvest season (Figure 2). While the share of CHSPs operating outside townships has increased slightly from the same time in 2020 (46 percent vs. 36 percent), the increase is modest. COVID-19 mobility restrictions have been greatly reduced so CHSPs may be facing unofficial restrictions due to the current security situation. 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 are enforcing arbitrary rules such as curfews, and the threat of harassment, rent-seeking, and risk to personal safety may deter CHSPs from traveling greater distances.<sup>3</sup>

<sup>&</sup>lt;sup>2</sup> Takeshima, Hiroyuki; Zone, Phoo Pye; Win, Myat Thida; and Masias, Ian. 2021. Monitoring the impact of COVID-19 in Myanmar: Mechanization service providers-December 2020 survey round. Myanmar SSP Policy Note 43. Washington, DC: International Food Policy Research Institute (IFPRI). https://doi.org/10.2499/p15738coll2.134246

<sup>&</sup>lt;sup>3</sup> Frontier Myanmar. 2021. Anxiety, bribes, and bullies: A journey through post-coup Myanmar. Frontier Myanmar. May 31, 2021.

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



Note: CHSP=Combine-harvester service providers; MSP=Mechanization service provider. MPS=Monsoon planting season. MHS = Monsoon harvest season.

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

### Mechanization services provision compared to the same month in 2019

While CHSPs have managed to harvest comparable areas as in 2020 (Figure 1), the timeliness of service provision appears to have worsened in the 2021 monsoon harvest season compared to earlier seasons (Figure 3). The share of CHSPs reporting that most of their customers had to wait longer for their service, compared to one year earlier, increased from 15 percent in 2020 to 23 percent in 2021. Overall, close to 70 percent of MSPs continue to perceive that some of their customers had to wait longer for their services than in the previous year. However, this appears to be weather related as CHSPs reported that the rainy season arrived late and that heavy rain at the end of the season delayed harvesting.

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



Note: CHSP=Combine-harvester service providers; MSP=Mechanization service provider. MPS=Monsoon planting season. MHS=Monsoon Harvest Season.

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

Similarly, although CHSPs managed to harvest comparable areas in 2021 as in 2020, most CHSPs still continue to perceive the demand for combine-harvesting services to be weaker than in 2019 (Figure 4). These patterns may reflect the changing nature of demand to which CHSPs are adjusting.

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



Source: Mechanization Service Provider Phone Survey–Monsoon Harvest Season 2020 & 2021

Hiring charges for CHSPs were significantly higher in 2021 than in 2020. At the median, hiring charges (per acre) for harvesting in 2021 were 55,000 MMK, more than 20 percent higher than the 45,000 MMK charged at the same time in 2020 (Figure 5). These patterns are similar in Ayeyarwady and other states. Hiring-charge increases are likely due to supply-side factors such as fuel costs, which have almost doubled nationally between December 2020 and December 2021.<sup>4</sup>





Note: MHS = Monsoon harvest season

Source: Mechanization Service Provider Phone Survey-Monsoon Harvest Season 2020 & 2021.

The survey results indicate that farmers largely hired mechanization services to the same extent in 2021 as they did in 2020 despite having to pay higher charges. This suggests that farmers may not have an alternative to combine-harvesting services even at higher charges (possibly because manual labor is still more expensive). Thus, factors that raise mechanization costs directly reduce farmers' profits though this needs to be more formally assessed in future rounds.

Increased hiring charges are associated with greater requests from farmers for late payment (Figure 6). The share of CHSPs receiving late payment requests increased from 60 percent in 2020 to 80 percent in 2021. The share also remains persistently high for other MSPs without any clear sign of reduction. Farmer's ability to pay for services may be exacerbated by cash shortages in the country and, because 99 percent of MSPs report only accepting cash payment for their services, fewer MSPs are able to provide financial assistance to farmers.

<sup>&</sup>lt;sup>4</sup> Myanmar Agriculture Policy Support Activity (MAPSA). 2022. Monitoring the agri-food system in Myanmar: Food vendors - December 2021 survey round. Myanmar SSP Research Note 72. Washington, DC: International Food Policy Research Institute (IFPRI). https://doi.org/10.2499/p15738coll2.134954

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



Note: \*Beyond acceptance of late payments. CHSP=Combine harvester service provider; MSP= Mechanization service provider; MPS=Monsoon planting season. MHS = Monsoon harvest season. Source: Mechanization Service Provider Phone Survey–Monsoon Planting Season 2020 and 2021, and Monsoon Harvest Season 2020

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

To mitigate the perceived lower demand, an increasing share of CHSPs are coping by servicing farms with less suitable conditions for combine harvesters, serving farmers at further distances, and/or serving smaller groups of farmers or plots (Figure 7). These coping measures are likely to raise the costs of CHSP operations as they increase risk of damage to machines, fuel costs to travel, and/or opportunity costs.

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



Note: CHSP=Combine-harvester service provider. MHS=Monsoon harvest season. Source: Mechanization Service Provider Phone Survey–Monsoon Harvest Season 2020 and 2021.

### Supply-side factors

On the supply-side, a rapidly growing share of MSPs experienced increased prices and reduced availability of machines, spare parts, attachments (either imported or locally manufactured), and fuel compared to 2020 (Figure 8). Generally, higher prices and reduced availability of machines and equipment were common in all regions. These supply-side challenges increase the cost of providing mechanization services and are expected to continue affecting farm production costs in 2022.

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



Note: CHSP=Combine harvester service provider; MSP= Mechanization service provider; MPS=Monsoon planting season. MHS=Monsoon harvest season.

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

### **Financial effects on business**

An increasing share of MSPs, including CHSPs, continue to experience financial challenges due to the impacts of COVID-19 and political unrest (Figure 9, top charts). MSPs, including CHSPs, continue to be concerned about various financial requirements, including loan repayments for their equipment and other expenses associated with the operation of service provision. The shares of CHSPs who report no financial challenges declined from 34 percent in 2020 to 13 percent in 2021. Repossession of equipment remains relevant (Figure 9, bottom charts). In July 2020, 21 percent of MSPs reported knowing other MSPs whose machines had been repossessed since the beginning of the COVID-19 outbreak. This share increased to 30 percent in 2021. Among CHSPs, the share increased from 28 percent in 2020 to 38 percent in 2021.

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

Change in financial challenges among panel MSPs



Change in financial challenges among panel CHSPs



Panel MSPs knowing other MSPs whose machines have been foreclosed since COVID-19 outbreak





Note: CHSP=Combine harvester service provider; MSP=Mechanization service provider; MPS=Monsoon planting season. MHS=Monsoon harvest season.

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

MSPs' perceptions of financial prospects, which were already pessimistic in 2020 and in July 2021, continued to be bleak at the end of 2021 (Figure 10). Close to 70 percent of CHSPs and MSPs continue to expect their revenues to be lower than in 2019. Ninety-four percent of CHSPs and 97 percent of MSPs expect their operating costs to increase in 2022, compared with 37 percent of CHSPs in December 2020 and 70 percent of MSPs in July 2021. With perception negative overall as the 2022 production season starts, how MSPs can survive financially during the 2022 production season must continue to be monitored closely.

### Figure 10. Service providers expectations of revenues and operating costs relative to pre-COVID season of 2019, by percentage share



Note: CHSP=Combine harvester service provider; MSP=Mechanization service provider; MPS=Monsoon planting season. MHS=Monsoon harvest season.

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

### **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: CHSP=Combine harvester service provider; MSP=Mechanization service provider; MPS=Monsoon planting season; MHS=Monsoon harvest season.

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

Compared to previous rounds, including summer 2021, a significantly higher share of both MSPs and CHSPs reported that policies keeping machine/parts shops open and policies allowing

movement of machines across greater geographical regions are critically important. These perceptions are consistent with the significantly increased prices and reduced availability of machines and spare parts. Financial aid such as loans, either new or relief for old ones, remains less preferred in December 2021. To cope with these financial challenges at the same time in 2020, many CHSPs reported selling assets, diverting other income to their businesses, and obtaining loans from private individuals. This may suggest that CHSPs have exhausted borrowing options through the prolonged crises and prefer to focus on earning income directly through active service provisions.

### Discussion

The observed conditions on the ground in December 2021 continue to show the deteriorating situation for MSPs in Myanmar due to the ongoing political situation and COVID-19 pandemic. Disruptions to the supply-chain are impacting both the cost and availably of fuel and spare parts and are being universally felt by MSPs. These additional costs are contributing to higher prices for mechanized services and a potential 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 repossessions increase as coping methods are exhausted.

Moreover, it is important to note that while the acreage harvested in 2021 continues to be the same as in 2020, the findings provide more evidence of potential declines in production in the 2021 monsoon season. The increasing cost of mechanized services (11 percent in July 2021 for land preparation and 20 percent in December 2021 for harvesting) add additional strain on farmers already facing increasing input prices<sup>5</sup> and marketing challenges<sup>6</sup> and are likely to result in lower yields. Lower yields can also raise harvesting costs per output. The potential lack of cheaper alternatives (hired labor) demonstrates the need to address the challenges facing MSPs into the next planting season.

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

- Disruptions to supply-chain logistics, transportation restrictions, and curfews enforced at multiple administrative levels are reducing the availability of machines, spare parts, and attachments and are impacting the supply of mechanized services. Travel restrictions should be removed, or at least made consistent, to allow MSPs to operate freely to ensure the efficient functioning of the equipment supply-chain.
- Keeping repair shops open can also alleviate MSPs' need to move machines beyond local areas to undertake necessary 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.

<sup>&</sup>lt;sup>5</sup> 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.

<sup>&</sup>lt;sup>6</sup> 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.

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