



Figure 2 Postharvest service process flow in modern agricultural service centers (Photoed by Xinfeng Ren)

This matters because transaction costs in agriculture are often hidden. Farmers do not only “pay for operations.” They spend time finding operators, matching timing, arranging inputs, watching weather, securing drying space, and handling breakdowns. When these transactions are fragmented, production risk remains high even if one or two operations are mechanized. Full-process trusteeship reduces these coordination costs by organizing production as a service package rather than a scattered set of purchases (Li et al., 2024).

The literature supports this interpretation. Agricultural socialized services have been shown to improve rice producers’ technical efficiency not only through machinery access, but through systemic support at different production links (Cai et al., 2024). Studies on grain production behavior also show that socialized service adoption can promote grain cultivation by improving machinery use, encouraging more connected land operation, and increasing the operational attractiveness of grain production for households that might otherwise shift away from it (Li et al., 2024).

Mashan’s “1+8” system fits this trusteeship logic well. Even if not every farmer purchases the entire package, the center is clearly structured to make that possible. The practical value of the model lies in continuity. It reduces the chance that a farmer will solve one production bottleneck only to get stuck at the next. In rice farming, where delays compound quickly, that continuity is one of the strongest arguments for the service-center model.

4.3 Agricultural machinery scheduling and cross-regional operation model

Machinery scheduling is often treated as an administrative detail, but in real rice production it is one of the decisive elements of service performance. The usefulness of machinery depends not only on ownership, but on where it can go, when it can get there, how quickly it can be maintained, and whether dispatch can respond to narrow crop windows and bad weather. A modern service center therefore operates as a scheduling hub as much as a machinery owner.

This is especially true in regions like eastern China, where production calendars are dense, weather volatility can compress operation windows, and service demand peaks sharply. Cross-regional operation helps solve a classic utilization problem. A machine that is underused in one village but urgently needed in another becomes much more valuable when it can be moved efficiently across the service area. Research on machinery-based services and land productivity in China suggests that such services can significantly improve land productivity, but with different effects depending on crop conditions, scale, and local context (Yang and Li, 2022).

The policy environment in Shangyu also points in this direction. The district’s 2024 early-rice machine-transplanting subsidy scheme relied on an administrative mechanism designed around actual machine operations, implying that service performance is increasingly tied to measurable operation capacity rather than