



CSISA-MI is a five-year project led by the International Maize and Wheat Improvement Center (CIMMYT), in partnership with iDE and funded by the USAID Mission in Bangladesh under the Feed the Future (FtF) Initiative. It has transformed agriculture in southern Bangladesh by unlocking the potential productivity of the region's farmers through surface water irrigation, efficient agricultural machinery and local service provision.

In developing local agricultural service providers (LSPs) through agronomic and technical training, the project has transformed the agricultural mechanisation value chain and scaled-out agricultural machinery services to individual farmers at lower cost for improved yields. It has introduced Axial Flow Pump (AFP) for water conveyancing, Power Tiller Operated multi-crop Seeders (PTOS) for mechanized land preparation and seeding and Reapers for mechanized harvesting.

# CSISA-MI

Cereal Systems Initiative for South Asia – Mechanization and Irrigation project

**Intervention LOCATION** ↓ 20 districts & 105 upazillas in 3 rural hubs in southern Bangladesh



**Public Sector Engaged** Bangladesh Agricultural Research Institute (BARI), Department of Agricultural Extension (DAE) and Bangladesh Agricultural Development Corporation (BADC).

**Investment by Private Sector** CSISA-MI is working to commercialize and catalyse a broad availability of agricultural machines for LSPs in the FtF zone through partnerships with machinery manufacturers and importers such as; Advanced Chemical Industries (ACI), Rangpur Foundry Limited (RFL) Group, The Metal (Pvt.) Ltd., Chittagong Builders and Janata Engineering. These companies and their LSP clients have invested their own funds to purchase, import, distribute and market the equipment and the use of machinery services. This has assured available machinery, much of which was imported from abroad, for farmers in the FtF zone. Consequently, US\$ 2.3 million has been added to the value of the project.

**LSP Developed**  
1,843 service providers with 2,052 machines (AFP 888, PTOS 816, and Reaper 348)

**Land Covered**  
About 50,000 Hectares (AFP 17,529 ha, PTOS 25,775 ha, Reaper 6,681 ha)

**Farmers Reached**  
More than 105,000 (AFP 26,171, PTOS 62,133, Reaper 17,095)

**Training Provided**  
30,648; Farmers, LSPs, Mechanics, Dealers, Civil Society and GoB officials.

Evolution of farmers into LSPs as new business, some of whom have also become machinery dealers

Developed manufacturers, engineering works, local repair workshops and mechanics

Unlocked potential production on fallow land by introducing annual triple cropping such as, rice - maize/wheat/mung - jute

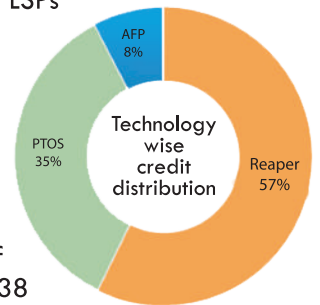
Raised mechanisation awareness along the entire value chain; Developed machinery learning villages

Established spare parts hubs; Transformed spare parts shops into machinery dealers

**BIG WINS**

## Connecting LSPs with Micro Finance Institutes (MFIs)

CSISA-MI established linkages between LSPs and MFIs to facilitate credit support. During year four of the project, 91 LSPs received US\$ 54,825 in credit to buy agricultural machinery. The majority of the credit went to reaper LSPs (40), a significant portion of credit was taken by 38 PTOS LSPs and a small proportion was used by 12 AFP LSPs. Eight national and local MFIs (ASA, BDS, GJUS, JCF, PBSS, SDC, TMSS and Wave Foundation) provided financial services to the LSPs.



## Research for Impact

**AFP** An improved prototype of AFP was developed in collaboration with local manufacturers, who have also been trained on fabrication, installation and its efficient operation. A pump test bed was installed at BARI. A booklet was published in Bengali for the LSPs to guide the proper installation and safe operation of AFPs. This and related research on surface water irrigation in Bangladesh has been published in an international peer-reviewed journal.



## PTOS



CSISA-MI has improved the precision of maize seed meters, developed an operators Calibration Key to replace the tedious calibration process, simplified dog clutch design, modified seed metering in brush type PTOS, developed improved rotary blades to allow strip-till seeding in moist clay soils and implemented numerous minor improvements based on the LSPs' needs. The project has introduced a direct drill maize seeder and fertilizer to increase efficiencies and also developed press wheels for wet soils for 4-wheeled tractor operated zero-till seeder. A "Tillage-cum-Seeding Laboratory" has been established at BARI which allows round the year advanced testing of farm machinery.

**Reaper** The 100 cm and 120 cm wide attachable reapers were modified for jute harvesting, especially for wet conditions. Developed sulky wheels to improve ergonomics of the self-propelled reaper operators during road transportation and field operation. Produced and distributed a simple language booklet to LSPs on operation, repair and maintenance of reapers.

