mDSR + FDP: Mechanized Rice Row Seeder with Deep Fertilizer Placement



Sow and fertilize rice in one pass.

Mechanized Direct Seeding with Fertilizer Deep Placement (mDSR-FDP) combines precise rice seeding and fertilizer placement in one tractor operation. It helps farms, cooperatives and mechanization service providers reduce establishment time and input use while covering approximately 0.3–1.6 hectares per hour, provided trained operators, suitable tractors and maintenance support are available.

International Rice Research Institute

CGIAR

International Rice Research Institute (IRRI)

Nguyen Van Hung

This technology is pre-validated.

8·7 Scaling readiness: idea maturity 8/9; level of use7/9

8750 USD	16000 USD	7250 USD	83 %
Cost per year	Revenue per year	Net income per year	ROI per year

IP

No formal IP rights

Problem

- **High costs:** Excessive inputs and operations reduce profits.
- **Slow establishment:** Separate activities require more time and machinery.
- **Uneven fields:** Inaccurate seeding affects yield and quality.
- **Limited capacity:** Providers cannot serve enough farmers during planting periods.

Solution

- **Use fewer inputs:** Reduce seed by 30–65% and fertilizer by 11–43%.
- **Combine operations:** Seed and place fertilizer in one pass.
- **Improve returns:** Pilot net profits increased by 26–79%.
- **Expand services:** Cover approximately 0.3–1.6 ha/hour.

Key points to design your business plan

Mechanized Rice Row Seeder with Deep Fertilizer Placement (mDSR + FDP) creates business opportunities in mechanized rice establishment, equipment supply, and after-sales support.

- **Mechanization providers:** Offer one-pass seeding and fertilizer placement and charge customers per hectare.
- **Cooperatives and rice enterprises:** Purchase or hire mDSR + FDP to serve aggregated production areas and standardize crop establishment.
- **Machinery businesses:** Manufacture, assemble, sell, maintain, and repair the equipment after confirming technical and commercial authorization.

Success requires sufficient hectares, viable pricing, suitable tractors, trained operators, maintenance, spare parts, and reliable equipment supply.

Inclusion assessment 4 3 5

Climate impact 7

Commodities

Rice, Maize

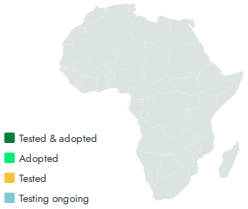
Sustainable Development Goals



Categories

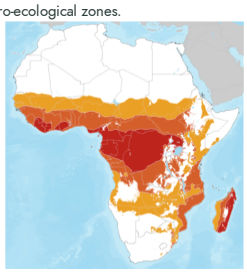
Production, Pre-production, Practices, Water management, Fertilizer management

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.



Target groups

Farmers, Seed companies, Cooperatives and Agribusinesses