Machinery Learning
Translating Assessment into Adaptation toward Scale in Agriculture Mechanization & Beyond
Objectives
Sustainably transform agriculture in Southern Bangladesh through broad-based access to mechanization services

Technologies
- Power-tiller operated seeder
- Reapers (SP & PTO)
- Axial flow pump

Project Approach
- Market systems devt.
- Facilitation focus
- Microenterprise networking
- Human-centered design

Results
- ~3,000 rural entrepreneurs
- 191,000 farmers
- 92,000 ha
- $3.6+ million of private-sector co-investment from 5 lead firms

‘Missing Middle’ in service provision
Cost of machinery and lack of credit requires fee-for-service model

Barriers to high yields
- Salinity, extreme weather, late crop est., climate and drought risks, low input use efficiency

Low crop intensity
- 50% of 13 mil. Farmers grow only 1 crop, Land

Limited irrigation
- Abundant water resources, few pumps
Assess & Adapt
CSISA-MI Scaling + Adaptive Mgmt.
Tactics

Assessing for Scale | Adapting toward Scale
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1. Prioritize early-stage field-based user feedback | A. Rapid Human-Centered Design prototyping & testing of modified tech
2. Build feedback loops between lead firm manufacturers, importers & govt. research institutes | B. Restructure firm agreements from MoUs to Joint Venture format & add local ver. for dealers
3. Aggressively scope financial incentive structures in mkt. | C. Shift promotion toward demand-driven crops (garlic & onion) first
4. Continually observe how the market uses the technologies & zonal tipping points | D. Prioritize lead firm financial incentives to dealers
5. Build early adopter persona from initial sales | E. Shift smart subsidies from machinery to spare parts over time
6. Periodic evaluation of firms’ Will/Skill mindset | F. Iterative private partner recruitment process based on current partner dynamics
7. Watch for spontaneous diffusion of tech & peer-to-peer learning | G. Build support package for ‘copycat’ users & add networking interventions to project
Scaling Success
Expanding success from project to portfolio

Lessons Learned & Recs
- Invest enough time & resources for low-friction strategy b/w implementing partners
- Balance systems devt. & deployment: sprint & iterate!
- Limits to validity of zonal tipping-point scaling methodology

Unresolved Challenges
- Initial low quality depresses market demand (AFP)
- Building critical supporting systems (spare parts) in time
- Motivating more impact in high impact/low perceived reward crops/practices (cereals & CA)
- Women's integration as LSPs

iDE's Forward Strategy
- Further expansion of CSISA-MI adaptive mgmt. systems to all iDE projects
- Refinement of best practice into scale- and performance-focused implementation "business model"

595,792 Active Farmer Clients
23,832 Active Model Farms and Gardens
3,556 Active Farm Business Advisors
734 Active Commercial Pockets

Knowing the Market through Human-Centered Market Assessment

Resource-Smart Technology supply through TechPath

Last Mile Delivery at scale through our Farm Business Advisor Network

Continual Improvement through Adaptive Management & Learning

Inclusive Market Access through Commercial Pockets

"Smarter" Productivity for sale and consumption through Model Farms and Gardens Approach

Urban Markets (Formal Economy)
Rural Markets (Informal Economy)

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