Current Status of Agricultural Mechanization in Bangladesh

Country Presentation

By

Dr Md Abdul Wohab

Background

Cultivable land	8.2 million ha
Population	150 million
Annual food demand	30 million tons
Annual population adding	0.20 million
Annual reduction of land	0.80 million ha
Mechanized tillage	80%
Irrigated area	61%
Rice and wheat area	80%

Mechanization Demand

- **Rice transplanter**
- **Mechanical harvester**
- **Dryer**

Supply Issues

- Agricultural machinery testing
- Quality control of agricultural machinery
- Capacity building of manufacturers
- Review and rationalization of current tariff rates

Policy and Institutional aspect of Mechanization

- Technological challenges and gaps (New machines)
- Man power for field extension
- Agricultural machinery testing
- Skill development of researchers
- Capacity building of manufacturers
- Inadequate farm credit
- Linkage development

- **Formation of strong farmers group**
- **Strengthening custom-hire services of agri-machinery**
- **Establishment of a National Centre for Agricultural Machinery**
- **Special fund for machinery research**
- **Reactivation of National Standardization Committee**
- **Review and rationalization of current tariff rates**

Problems in Mechanization

- Fragmented lands
- Poor buying capacity of farmers
- Lack of quality machines
- Lac of knowledge and skill of users, artisans and traders
- Tariff difference on machines and spare parts
- Lac of extension services

Farm machinery

Machines	Quantity
Power tiller	3,50,000
Tractor	40,000
Seeder	2,000
Weeder	2,00,000
Sprayer	12,50,000
Reaper	50
Combine harvester	100
Power thresher	2,00,000
Maize sheller	2,000
Winnower	200

Irrigation machinery

Machine	Quantity
Low lift pump	1,40,000
Deep tube well	31,300
Shallow tube well	13,05,000

Sustainable Agril. Mechanization

- Promote appropriate machinery for farmers
- Maintaining quality of machines
- Linkage development among the beneficiaries
- Encouraging local manufacturers and dealers
- Provide credit to the beneficiaries
- Skill development of manufacturers and users
- Establishment of regional cooperation for standardization of machines

BARI High-speed rotary tiller

ONION

- Fuel save, l/ha : 20
- Labour save: 32%
- Cost save: 30%

Yield increase: 18%

Price: Tk 30,000

Puddling by HSRT

BARI Power Tiller Operated Inclined Plate Planter

- **Crops: wheat, maize, pulses, and oil seeds**
- **Capacity (ha/h) : 0.14-0.20** **Price: Tk 22,000 (wopt)**

Saves 80% labour

33% cost

Maize planted by IPP

Earthing up of maize by IPP

Soybean

Traditional

Seed rate: 65 kg/ha

IPP

Seed rate: 59 kg/ha

Power Tiller Operated Seeder in Operation

Power Tiller Operated Seeder

- Seeding operation done in a single pass
- Reduce turn around time (8-12 days)
- Save seed (20%)
- Multicrops use (wheat, rice, pulses, jute, onion etc)

Power Tiller Operated Bed Planter

Development of USG applicator

Weight 9 kg

Cost Tk 3500

Parts of new model

Applicator under operation

Applicator fabrication in BMTF, Gazipur


www.unapcaem.org

Zero tillage planter for upland crops

- Seed sowing and fertilizer application at a time

- Field capacity 0.12 ha/h

Zero tillage mungbean

Mungbean after wheat

Seed rate : 25 kg/ha

Variety : BARI Mung-6

Dry land Weeder

Capacity (ha/h) : 0.02

Price: Tk 800

Weeding Cost (Tk/ha):

3,100 (weeder)

5,800 (Manual)

Self-propelled Reaper

Capacity:: 0.20 ha/h

Price: Tk. 100,000 /-

Saves: Labour- 95%

Cost-73%

Paddy Harvesting

Wheat Harvesting

Combine in field operation (Refresh)

Combine in field operation (New)

Multi-Crop Power Thresher

- **Power required: 12 hp (engine/motor)**
- **Capacity (kg/h): 730 (rice) 340 (wheat)**
- **Price: Tk 36,000 (woe)**

Threshing cost (Tk/ton): 80 (rice) 218 (wheat)

Power Operated Maize Sheller (small)

- Capacity (ton/h): 1.50
- Price: Tk 21,000
- Shelling cost (Tk/ton): 42

Power Maize Sheller (Large)

- **Capacity (ton/h): 3**
- **Price: Tk 32,000 (woe)**
- **Shelling cost (Tk/ton): 25**

Power operated winnower

- Capacity:

  Paddy (kg/h) : 800

  Wheat (kg/h) : 1,000

- Price: Tk 15,000
- Cleaning cost (Tk/ton) :

  19 (wheat)

  24 (paddy)

Power Tiller Operated Potato Digger

- Capacity (ha/h): 0.05
- Price: Tk 11,000
- Harvesting cost (Tk/ton):

  2,160 (digger)

  2,700 (manual)

Potato digger in Operation

Time save: 33%

Cost save: 22%

Hand picking of potato

Potato grader

- Capacity (ton/h) : 1.6
- Price: Tk 18,000
- Grading cost (Tk/ton):

  45 (grader)

  130 (Traditional)

A Photographic View of the Grader in Operation

Grader in Operation

BARI Compost Separator

Capacity: 1.5 ton/hr (Vermi)
1.0 ton/hr (Trico)

Suitable for Vermi and Trico Compost

Three (3) Operator Require

BARI Compost Separator

Price: Tk. 20,000/-

BARI Hybrid Dryer

Drying of jujube

Drip irrigation by solar pump for tomato

Rahimafrooz owned solar pump

Discharge of Rahimafrooz owned solar pump


www.unapcaem.org
Thanks