WELCOME
Current Status of Agricultural Mechanization in Bangladesh

Country Presentation

By

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# Background

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Cultivable land</td>
<td>8.2 million ha</td>
</tr>
<tr>
<td>Population</td>
<td>150 million</td>
</tr>
<tr>
<td>Annual food demand</td>
<td>30 million tons</td>
</tr>
<tr>
<td>Annual population adding</td>
<td>0.20 million</td>
</tr>
<tr>
<td>Annual reduction of land</td>
<td>0.80 million ha</td>
</tr>
<tr>
<td>Mechanized tillage</td>
<td>80%</td>
</tr>
<tr>
<td>Irrigated area</td>
<td>61%</td>
</tr>
<tr>
<td>Rice and wheat area</td>
<td>80%</td>
</tr>
</tbody>
</table>
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
- Lack of knowledge and skill of users, artisans and traders
- Tariff difference on machines and spare parts
- Lac of extension services
# Farm machinery

<table>
<thead>
<tr>
<th>Machines</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power tiller</td>
<td>3,50,000</td>
</tr>
<tr>
<td>Tractor</td>
<td>40,000</td>
</tr>
<tr>
<td>Seeder</td>
<td>2,000</td>
</tr>
<tr>
<td>Weeder</td>
<td>2,00,000</td>
</tr>
<tr>
<td>Sprayer</td>
<td>12,50,000</td>
</tr>
<tr>
<td>Reaper</td>
<td>50</td>
</tr>
<tr>
<td>Combine harvester</td>
<td>100</td>
</tr>
<tr>
<td>Power thresher</td>
<td>2,00,000</td>
</tr>
<tr>
<td>Maize sheller</td>
<td>2,000</td>
</tr>
<tr>
<td>Winnower</td>
<td>200</td>
</tr>
</tbody>
</table>
## Irrigation machinery

<table>
<thead>
<tr>
<th>Machine</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low lift pump</td>
<td>1,40,000</td>
</tr>
<tr>
<td>Deep tube well</td>
<td>31,300</td>
</tr>
<tr>
<td>Shallow tube well</td>
<td>13,05,000</td>
</tr>
</tbody>
</table>
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
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

Saves: Labour- 95%
Cost-73%

Price: Tk. 100,000/-
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)
Time save: 33%
Cost save: 22%

Potato digger in Operation

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

www.unapcaem.org
BARI Compost Separator

Price: Tk. 20,000/-
BARI Hybrid Dryer
Drying of jujube
Drip irrigation by solar pump for tomato
Discharge of Rahimafrooz owned solar pump