AGRICULTURAL MECHANIZATION
STATUS AND CONTEXT IN MYANMAR

BY KO KO MAUNG

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BRIEF INFORMATION OF MYANMAR

Location

Location

Latitude: 9°32' - 28°31'
Longitude: 92°10' - 101°11'

Land frontier:
- with Thailand: 2099 km
- with Laos: 235 km
- with China: 2227 km
- with Bangladesh: 2/2 km
- with India: 1453 km

Sea frontier:
- Rakhine coastline: 713 km
- Delta coastline: 438 km
- Tanintharyi coastline: 1078 km
Climate

Tropical, sub-tropical and temperate climates

- Rainy season  (Mid-May → Mid-October)
- Dry cold season (Mid-October → Mid-February)
- Hot dry season  (Mid-February → Mid-May)
Population


Growth rate - 1.29 %

Population Density - 87 per sq: km

Urban Population - 18.13 million

Rural population - 41 million
## Land Utilization

<table>
<thead>
<tr>
<th>Type of land</th>
<th>Area (000) ha</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net sown area of crop land</td>
<td>11980</td>
<td>17.70</td>
</tr>
<tr>
<td>Current fallow land</td>
<td>240</td>
<td>0.36</td>
</tr>
<tr>
<td>Cultivable waste land</td>
<td>5610</td>
<td>8.29</td>
</tr>
<tr>
<td>Reserved forests</td>
<td>16900</td>
<td>24.98</td>
</tr>
<tr>
<td>Other forest area</td>
<td>16250</td>
<td>24.02</td>
</tr>
<tr>
<td>Unclassified land</td>
<td>16680</td>
<td>24.65</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>67660</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
**STATUS OF MANUFACTURING FARM MACHINERY**

**Government Sector-Three Ministries:**
1. Ministry of Industry II,
2. Ministry of Agriculture & Irrigation
3. Ministry of Cooperatives

**1. Ministry of Industry II**

_Distribution of Farm Machineries by Ministry of Industry II_

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Farm Machinery</th>
<th>Quantity Distributed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Farm Tractor (50hp)</td>
<td>186</td>
</tr>
<tr>
<td>2</td>
<td>Power Tiller</td>
<td>315</td>
</tr>
<tr>
<td>3</td>
<td>Trailer (4Ton)</td>
<td>130</td>
</tr>
<tr>
<td>4</td>
<td>Trailer (2Ton)</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Trailer (1 Ton)</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>3-Disc Harrow</td>
<td>73</td>
</tr>
<tr>
<td>7</td>
<td>3-Disc Plough</td>
<td>72</td>
</tr>
<tr>
<td>8</td>
<td>3-Disc Plough</td>
<td>-</td>
</tr>
<tr>
<td>9</td>
<td>Water Pump (4&quot;)</td>
<td>714</td>
</tr>
</tbody>
</table>
2. Ministry of Agriculture & Irrigation

Agricultural Mechanization Department (AMD)

- Three farm machinery factories manufacture:

  Power tillers, threshers, cultivators, paddy reapers, mono wheel tractors, disc ploughs, disc harrows and farm implements

Farm Machinery Factory No(1), Yangon
## Distribution of farm machineries by AMD

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<tr>
<th>Sr. No</th>
<th>Farm Machinery</th>
<th>Quantity Distributed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power Tiller</td>
<td>5500, 5826, 4027, 3657, 5867, 6643, 4610, 4144, 5118, 3757, 457, 357, 338</td>
</tr>
<tr>
<td>2</td>
<td>Reaper</td>
<td>82, 42, 224, 155, 489, 581</td>
</tr>
<tr>
<td>3</td>
<td>Thresher</td>
<td>3757, 4610, 3757, 4144, 489, 581</td>
</tr>
<tr>
<td>4</td>
<td>Puddler</td>
<td>5118, 4027, 3657, 5867, 5826, 5500, 357, 338</td>
</tr>
</tbody>
</table>

Source: MOAI, Agricultural Mechanization Department.
TRACTOR HIRE SERVICE
For Operation and Maintenance of Farm Machinery

AMD provides Tractor Hire Service to farmers through 99 Tractor Stations.

Farmers can rent machinery & implements from the nearest Tractor Station.

Accomplish land preparation, land tilling, transplanting, harvesting, threshing by machine and operator of AMD.

Provide agriculture machinery operation, maintenance to local farmers.
AGRICULTURAL MACHINERY REPAIR

(2) Base workshops & (8) Medium workshops under AMD

- Provide tractor repair service for tractors from the Tractor Stations in the respected region
- Also provide repair service for farm machineries such as Power tillers, Threshers, Cultivators, Water Pumps, etc. owned by farmers
- Conduct trainings on operation, maintenance and repair for mechanics from the Tractor Stations.
- Disseminate technical know-how to private industries and local farmers
3. Ministry of Cooperative

* Cooperative Industries around Myanmar, manufacture: power threshers, water pumps, seeders, cultivators, oil expeller, threshing equipment
* Distribution to farmers from retail outlet.

**Distribution of farm machineries by Ministry of Cooperative**

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Farm Machinery</th>
<th>Quantity Distributed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power Thresher</td>
<td>80</td>
</tr>
<tr>
<td>2</td>
<td>Thresher</td>
<td>88</td>
</tr>
<tr>
<td>3</td>
<td>Water Pump(4&quot;)</td>
<td>211</td>
</tr>
<tr>
<td>4</td>
<td>Seeder</td>
<td>368</td>
</tr>
<tr>
<td>5</td>
<td>Cultivator</td>
<td>350</td>
</tr>
<tr>
<td>6</td>
<td>Edible Oil Extractor</td>
<td>42</td>
</tr>
</tbody>
</table>
Private Sector

# Private companies and industries import agri-machineries from abroad

# Distributes to local farmers at their retail outlets or sale centers throughout Myanmar.

# Some private industries produce certain spare parts and assemble with imported engines and other precision parts such as injection pumps and nozzles.

# Import and Distribution of farm machinery by private companies during 2011

Power tillers = 20000 units
Tractors = 200 units
* Nowadays, some farmers enable to operate tractors, power tillers, threshers, cultivators, weeders, trailers, and farm trucks
* They repair their farm machineries at the nearest workshops located at village tract or townships
* Farmers have lack of proper maintenance practices.
* Need to disseminate advance technical know how to farmers
## Utilization Status of Farm Machinery in Myanmar

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Type of Machine</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tractor</td>
<td>11,479</td>
</tr>
<tr>
<td>2</td>
<td>Power Tiller (Hand Tractor)</td>
<td>19,9668</td>
</tr>
<tr>
<td>3</td>
<td>Power Thresher</td>
<td>3,7678</td>
</tr>
<tr>
<td>4</td>
<td>Manual Thresher</td>
<td>2,147</td>
</tr>
<tr>
<td>5</td>
<td>Inter-cultivator</td>
<td>15,5487</td>
</tr>
<tr>
<td>6</td>
<td>Seeder</td>
<td>4,0314</td>
</tr>
<tr>
<td>7</td>
<td>Reaper</td>
<td>1,441</td>
</tr>
<tr>
<td>8</td>
<td>Water pump</td>
<td>17,7032</td>
</tr>
<tr>
<td>9</td>
<td>Sprayer</td>
<td>13,0545</td>
</tr>
</tbody>
</table>
Farm Machineries Widely Used in Myanmar

Farm machineries mostly used in Myanmar for:

- Land preparation works
- Harvesting and threshing works.
- Locally manufactured from the government factories and private industries
- Imported farm machineries from the neighboring countries China, Thailand, India.
Land Preparation Machinery

ZWE Tractor (50 HP)
Local Manufactured

SH-50 Tractor (50 HP)
imported From CHINA

SH-654 Tractor (65 HP)
imported From CHINA

JOHN DEERE-2800 Tractor (100 HP)
imported from CHECKOSLOVAKIA

TN-800 Tractor (80 HP)
imported from CHINA

Zetor-7011 Tractor (70 HP)
imported from CHECKOSLOVAKIA
Ly-16 Power Tiller (16 HP)
Local Manufactured

Ly-22 Power Tiller (22 HP)
Local Manufactured

Iron Buffalo Power Tiller (8 HP)
import from Thailand

Mono Wheel Tiller (6 HP)
Local Manufactured

Cultivating Roller Boat (6 HP)
Local Manufactured

Gongnong (16 HP)
imported from CHINA

Sifang Power Tiller (16 HP)
imported from CHINA

Iron Buffalo Power Tiller (8 HP)
import from Thailand

Dongfeng Power Tiller (16 HP)
imported from CHINA

Gongnong (16 HP)
imported from CHINA

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Gongnong (16 HP)
imported from CHINA

Dongfeng Power Tiller (16 HP)
imported from CHINA
Planting Machinery

- **Drum Seeder**
  - Local Manufactured

- **YAMAR Transplanter**
  - imported from Japan

- **Kuje Transplanter**
  - imported from Korea

Harvesting & Threshing Machinery

- **4GL Power Reaper**
  - Import From CHINA

- **AMR 95-4 Power Reaper**
  - Local Manufactured

- **CH-1200 Combine Harvester**
  - Local Manufactured

- **Thresher TH-60-U**
  - Local Manufactured
Farm Transport Machinery

Farm Truck

Farm Trailer

Farm Trailer
POLICY AND INSTITUTIONAL ASPECTS

Basic Principles of the Union

Article 29:

The Union shall provide inputs, such as technology, investments, machinery, raw materials, so forth, for changeover from manual to mechanized agriculture.

Article 35:

The economic system of the Union is market economy system.
POLICY AND INSTITUTIONAL ASPECTS (Continued)……

Government Encouragement to Agricultural Mechanization Development

- Selling the farm machinery to the farmers on credit and installment payment systems
- Distributing farm machinery on agricultural loan from the Myanmar Agricultural Development Bank under the Ministry of Agriculture & Irrigation
- Custom duty and commercial tax exemption on agricultural machinery import.
1. Technical inefficiencies
   - Farmers' lack of proper knowledge for agricultural mechanization

2. Low adoption of proven facilities
   - Many farmers still using cattle for land preparation,
     - threshing
   - Manual transplanting, harvesting and processing
     - such as cleaning and drying
CONSTRAINTS

3. Inadequacy of capital of farmers

- Many farmers just started to transform from self-sufficiency to commercial farming

- A few rice specialization companies and contract farmers grow rice for commercial production

- Low investment leads to low income and low capital investment and inputs

- Due to inadequacy of loans and credits, farmers can not afford to buy appropriate agricultural machinery and implements
 CONSTRAINTS

4. Insufficient extension activities

- Government agency (MOAI) provides extension service to village level by performance of extension workers

- Number of extension workers and facilities are limited due to governmental budget

- Extension activities cannot cover entire change of agricultural production

- Still need private sector participation in this regard
5. Weak Information Systems

- Lack of delivery of information: new technologies, prices of machinery and implements, commodity prices, etc,

- Not accessible to farmers directly

- Only rely on government services & medias

- Public journals contain a few extent of agricultural information
CONSTRAINTS

6. Small Land Holding Size

- Most of farm holding size are small scales

- Narrow; irregular shape; fragmented plots

- No accessible farm road; lack of drainage systems

- Need to carry out land development by land consolidation to reform mechanized farms
BEST PRACTICES

1. Realization of benefits of practicing agricultural mechanization by farmers themselves
   - Dissemination of technical know how to farmers
   - Demonstration on usage of farm machinery and implements in fields by technical agencies
   - Setting up accessible network for operation, repair and maintenance of machineries

www.unapcaem.org
2. Land Development works to reform mechanized farm

- Organizing neighboring farmers to cooperate land consolidation works
- Carrying out land development initially by government services, then participation by private sector
- Field demonstrations for expansion
- Provision of subsidies and long term loans to farmers for land development by themselves
3. Technical Cooperation among ASEAN, ESCAP members countries

- Exchange expertise, consultants and skill workers

- Technical cooperation programs: Training, Study tour, visit to outstanding adoptable areas

- Establish regional network for agricultural mechanization development like ANTAM
CONCLUSION

- Proper capacity building on agriculture machinery operation, maintenance and repair is critically needed for development of farm mechanization.

- The present capacity of the Government’s departments are limited.

- Myanmar's growing private sector needs exposure to the latest technological development.

- Enhancing the capacity of both sectors and public-private partnership will assist to mechanize the agricultural sector.

- Collaboration among various sustainable agricultural mechanization (SAM) stakeholders will strengthen and ensure the sustainable development contributing toward national and regional food security.

THANK YOU.