Status of Testing & Evaluation of Farm Machinery in Sri Lanka

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Sri Lanka and her Agricultural Background

• Land area - 60,600 km²
• Population - 20.3 million
• Arable area - 30 % of the total land area
• Avg land holding size - 1.0 ha
• Main crops - Paddy, Maize, Vegetable, Fruits, Spices, Grain Legumes, oil crops and root crops
• Plantation crops - Tea, Coconut, Rubber, Sugarcane
Sri Lanka and her Agricultural Background……

• Temperature variation:
  Low country  : 24 $^\circ$C – 32 $^\circ$C
  Up country   : 18 $^\circ$C – 27 $^\circ$C

• Main Cultivation seasons:
  Two seasons: *Yala* and *Maha*

• Annual rainfall: 1600 – 1700 mm
Employed population by major industry group - 1992 - 2012
Situation of Farm Mechanization

• Labour shortage in peak demanding period
• Cultivated area increased
• Bulk to handle is increased with increased yield
• Timely cultivation is encouraged
• Consumer is more quality concerned
• With the limited resources Productivity improvement is identified as a priority

Solution  Mechanization
## Annual Sales of Major Farm Machinery in the Country

<table>
<thead>
<tr>
<th>Year</th>
<th>2 wheel Tractors</th>
<th>4 Wheel Tractors</th>
<th>Combine Harvesters</th>
<th>Sprayers</th>
<th>Trans planters</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td>14445</td>
<td>7184</td>
<td>2160</td>
<td>26093</td>
<td>n/a</td>
</tr>
<tr>
<td>12/13</td>
<td>9664</td>
<td>5141</td>
<td>1099</td>
<td>6240</td>
<td>23</td>
</tr>
<tr>
<td>13/14 Aug</td>
<td>2783</td>
<td>1479</td>
<td>N/A</td>
<td>N/A</td>
<td>87</td>
</tr>
</tbody>
</table>
Status of Mechanization

- Paddy Cultivation - Highly mechanized
- Vegetable cultivation - Low level
- Other field crops - Moderate mechanized
- Fruit sector - Low level
- Plantation crops - Low level
- Spices - Very low
# Status of Mechanization*

<table>
<thead>
<tr>
<th>Operation</th>
<th>Paddy</th>
<th>OFC</th>
<th>Vegetable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Preparation</td>
<td>98 %</td>
<td>98 %</td>
<td>55 %</td>
</tr>
<tr>
<td>Irrigation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation canals</td>
<td>45 %</td>
<td></td>
<td>65 %</td>
</tr>
<tr>
<td>Weed control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Majority apply herbicides</td>
<td>20 %</td>
<td></td>
<td>20 %</td>
</tr>
<tr>
<td>Pest control</td>
<td>100 %</td>
<td>100 %</td>
<td>100 %</td>
</tr>
<tr>
<td>Harvesting</td>
<td>85 %</td>
<td>0 %</td>
<td>0 %</td>
</tr>
<tr>
<td>Processing</td>
<td>98 %</td>
<td>0 %</td>
<td>0 %</td>
</tr>
</tbody>
</table>

* Approximate figures
Paddy Cultivation

• Most of the operations are mechanized
• Least mechanized areas
  - Land leveling
  - Bund cleaning and plastering
  - Plant establishment and weed management
  - Small scale seed paddy processing
  - Drying & Storage
Status of Machinery Supply

• Very few machinery are locally produced like water pumps, sprayers, seeders and hand tools
• Majority is imported
• However supply of machinery is not regulated
• Inferior quality machinery inflows to the country
• Local production also not supported by unfavorable trade policy and small local market
Status of Institutional Support

Ministry of Agriculture

Department of Agriculture

Engineering Division

Farm Mechanization Research Centre

Institute of Post Harvest Technology

- R & D on Post Harvest Technology

- R & D on Farm Machinery
- Testing & Evaluation of Farm Machinery
Farm Machinery Testing and Evaluation

• Types of testing at FMRC
  1. Verification of Specification
  2. Laboratory Testing
  3. Performance Testing
  4. Endurance Testing
Contents of FMRC Test Report

• MANUFACTURER’S DETAILS
• TEST METHOD AND PROCEDURE
• VERIFICATION OF SPECIFICATIONS
• RESULTS
  • PERFORMANCE TEST
  • ENDURANCE TEST
• CONCLUSION
• RECOMMENDATIONS
Status of Institutional Support

• Only State Institutions engaged in R & D of farm Machinery
• Private sector only doing propaganda to promote their products
• Certification of farm machinery is done by Farm Mechanization Research Centre
• Banks and lending agencies consider the test report when providing credit facilities
• State institutions also consider test certificate in their bulk purchases
Infrastructure Facilities

• Regularizing of farm machinery supply is a priority of the Government policy.
• Many farmers complain about the inferior quality and uncertainty of some farm machinery.
• There is already an established infrastructure faculty for testing & evaluation of farm machinery.
• Instrumentation facility is yet to be updated as same as with the capacity building of the staff.
Status of Machinery Testing Institute

• Only farm Mechanization Research Centre, Department of Agriculture is carrying out testing & evaluation of farm machinery activities in the country.

• It was established as Design and Testing Unit of farm machinery of the Department of Agriculture in 1969.

• Even before inception of RNAM this centre was engaged in testing activities and later adopted RNAM test codes and procedures.

• Certification is not mandatory requirement, most of the machinery suppliers get a certificate as a supportive document as a promotional tool.

• Specific machinery related to plantation sector are tested by the institutes responsible for research & development activities of the sector.
**Policy Matters**

- Need of a successful machinery regularization system is being discussed at the cabinet level for implementation.

- A proposal to issue an import permit for certified machinery (by any recognized Institute) has been forwarded for discussion and it was rejected.

- A new proposal to provide duty free import facility only for certified machinery is being prepared and will be forwarded for cabinet approval.

- A Farm Machinery act is being prepared covering all the aspects in view to protect all stake holders.
Suggestions

• Existence of harmonized test codes and procedures is very important
• Test certificate issued by National testing Institutes of other countries has to be recognized by each and every country keeping liberty to test the country specific parameters.
• CSAM should be able to convince the policy makers the role and responsibility of ANTAM
Thank You!