8th Regional Forum on Sustainable Agricultural Mechanization in Asia and the Pacific

Agriculture Beyond the Covid-19 Pandemic:
Building Back Better through Sustainable Agricultural Mechanization

Presented by
Chaitya Narayan Dangol
Senior Agricultural Engineer
Prime Minister Agriculture Modernization Project
Khumaltar, Lalitpur
Nepal
Nepal in Brief

Federal Democratic Republic of Nepal from 2007
- 3 tiers of Government
- Federal Government
- State Government – 7
- Local Government – 753
- Total Area: 147,181 km²
- Total Population: Approx. 30 millions

<table>
<thead>
<tr>
<th>Description</th>
<th>Area Coverage(%)</th>
<th>Population Density (%)</th>
<th>Altitude (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain</td>
<td>35</td>
<td>7</td>
<td>3500 - 8848</td>
</tr>
<tr>
<td>Hill</td>
<td>42</td>
<td>43</td>
<td>600 - 3500</td>
</tr>
<tr>
<td>Terai</td>
<td>23</td>
<td>50</td>
<td>70 - 600</td>
</tr>
</tbody>
</table>
Nepalese Agriculture in Brief

Sectoral Employment in Nepal

GDP growth rate at base price

Sectoral GDP Contribution, 2019/2020

Productivity of Major Crops

Agriculture Trade, billion

Irrigation

Source: Thaman P. Bastola, 2020
Source: Economic Survey, NRB, 2019/2020
Source: Agricultural Statistics of Nepal, 2018/2019
Source: Economic Survey, NRB, 2019/2020
Source: Agricultural Statistics of Nepal, 2018/2019
Source: Agricultural Statistics of Nepal, 2018/2019
Nepalese Agriculture in Brief

<table>
<thead>
<tr>
<th>Land Holdings</th>
<th>Average holding, ha/holding</th>
<th>Average no of parcel/holding</th>
<th>Average size of parcel, ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain</td>
<td>0.73</td>
<td>4.03</td>
<td>0.18</td>
</tr>
<tr>
<td>Hill</td>
<td>0.65</td>
<td>3.18</td>
<td>0.21</td>
</tr>
<tr>
<td>Terai</td>
<td>0.94</td>
<td>3.2</td>
<td>0.29</td>
</tr>
<tr>
<td>Nepal</td>
<td>0.79</td>
<td>3.27</td>
<td>0.24</td>
</tr>
</tbody>
</table>

Trend of Tractor/Power Tiller Registered
## Agricultural Machinery Import, 2016/17

<table>
<thead>
<tr>
<th>HS Code</th>
<th>Description</th>
<th>Unit</th>
<th>Quantity</th>
<th>Value in NPR '000</th>
<th>Source Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>87011010</td>
<td>Tractor including Power Tiller</td>
<td>PCS</td>
<td>38,896</td>
<td>11,451,192</td>
<td>India, China</td>
</tr>
<tr>
<td>87011090</td>
<td>Ploughs</td>
<td>PCS</td>
<td>18,946</td>
<td>20,386</td>
<td>India, China</td>
</tr>
<tr>
<td>87011900</td>
<td>Disc harrows</td>
<td>PCS</td>
<td>4,595</td>
<td>35,125</td>
<td>India, UK</td>
</tr>
<tr>
<td>87012100</td>
<td>Harrows (excl disc harrows), scarifiers, cultivators, weeders, hoes including Mini Tiller</td>
<td>PCS</td>
<td>221,151</td>
<td>1,070,647</td>
<td>India, China, Indonesia</td>
</tr>
<tr>
<td>84321000</td>
<td>Seeders, planters and transplanters</td>
<td>PCS</td>
<td>2,763</td>
<td>20,042</td>
<td>India, China</td>
</tr>
<tr>
<td>84328000</td>
<td>Soil preparation/cultivation machinery; lawn/sports-ground rollers</td>
<td>PCS</td>
<td>38,068</td>
<td>143,689</td>
<td>India, China</td>
</tr>
<tr>
<td>84332000</td>
<td>Mowers (including cutter bars for tractor mounting)</td>
<td>PCS</td>
<td>1,129</td>
<td>26,899</td>
<td>India, China, Australia</td>
</tr>
<tr>
<td>84334000</td>
<td>Straw or fodder balers (including pick-up balers)</td>
<td>PCS</td>
<td>677</td>
<td>9,095</td>
<td>India, China</td>
</tr>
<tr>
<td>84335100</td>
<td>Combine harvester-threshers</td>
<td>PCS</td>
<td>1,930</td>
<td>353,761</td>
<td>India, China, Japan</td>
</tr>
<tr>
<td>84335200</td>
<td>Threshing machinery for agricultural produce</td>
<td>PCS</td>
<td>21,933</td>
<td>654,189</td>
<td>India, China, New Zealand, Turkey</td>
</tr>
<tr>
<td>84335300</td>
<td>Root or tuber harvesting machines</td>
<td>PCS</td>
<td>2,711</td>
<td>23,855</td>
<td>India, China</td>
</tr>
<tr>
<td>84335900</td>
<td>Harvesting machinery</td>
<td>PCS</td>
<td>17,802</td>
<td>58,737</td>
<td>India, China, Japan</td>
</tr>
<tr>
<td>84361000</td>
<td>Machinery for preparing animal feeding stuffs</td>
<td>PCS</td>
<td>176,638</td>
<td>697,678</td>
<td>India, China, Netherlands, Germany, Republic of Korea</td>
</tr>
<tr>
<td>84362100</td>
<td>Poultry incubators and brooders</td>
<td>PCS</td>
<td>844,222</td>
<td>219,934</td>
<td>India, China, UK, Malaysia</td>
</tr>
<tr>
<td>84371000</td>
<td>Machines for cleaning/sorting/grading seed grain or dried vegetables</td>
<td>PCS</td>
<td>10,666</td>
<td>508,893</td>
<td>India, China, Germany, Republic of Korea</td>
</tr>
</tbody>
</table>

Covid-19 Scenario in Nepal

• First Case in Nepal: 24 January 2020
• Lockdown Period: March 24 to June 14, 2020
• 15-20% infected rate based on number of PCR Test
Impact of Covid-19 in Agriculture

- Delays on land preparation and planting for vegetable production, spring rice and maize.
- Disruption of markets
- Disruption on the agricultural inputs (seed, fertilizer, feed, pesticides)
- Shortages of labour for agricultural operation
- Delays in the harvest of wheat, lentils and vegetables
- Loss of produce and income
Social and Environmental Impact of Covid-19

- Vulnerable people suffered from hunger
- Clean Environment
- Millions of people lost jobs
- Mental health problem due to loss of job and economic recession
- Disruption of import and export of food and industrial product
- Suffered Tourism Sector
- Huge no of migrant returned back to country
- Severe impact in Economy
  GDP Growth Rate (7.5 to 2.5%)
Govt. Initiatives to Revive Agriculture

Five Pillars

- Increased Technical Services
- Agricultural Insurance
- Subsidy in Agricultural Inputs
- Access to low interest loan
- Guarantee on minimum savings for smallholder farmers

Agriculture Development Plan
Policy Measures to Promote Sustainable Agricultural Mechanization

**Input**
- Custom Hiring Services with Full Mechanization
- Collective Processing Storage Facilities for Cereal Crops
- Collective Cold Store Facilities for Vegetables

**Output**
- Production of Marketable Volume for Competitive Price
- Increase in Productivity due to Timeliness Operation
- Low Cost of Cultivation due to reduced cost of inputs and mechanization

**Outcome**
- Increased Income

Collective farming of mono crop in each season of cropping calendar managed by Cooperatives
Enabling Environment for Sustainable Agricultural Mechanization

Institute for Training & Testing of Agricultural Machineries

1. Training on Repair and Maintenance
2. Training on Selection and Operation

1. Testing of Agricultural Machineries in terms of Capacity, Specification and Quality

1. Registration of Agricultural Machineries prior to Import
Thank you