NEPALESE PRACTICE ON HARVESTING AND POST-HARVESTING MACHINATION

Prepare by

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Nepal at a glance

- Total land area –147,181 sq. km, Only 0.1% of total land mass of earth
- 77 districts, 263 Municipalities, 3157 VDCs
- Population 28.98 millions, 10 religions
- 125 caste/ethnic groups, 123 languages spoken as mother tongue
- Predominantly an agrarian country
- 25.2 % people still below poverty line as of 2010
- Agriculture contributes 29.37 % to GDP, 66% employment
- 21% of the land is cultivable (47% rain-fed)
- Average land holding – 0.68 ha
- Major crops Paddy, Maize, Wheat and Horticulture
- Livestock: Cattles, Buffaloes, Sheep/Goat, Pigs and Poultry
# Post Harvest Loss of Different Cereal Grains (%) in Nepal

<table>
<thead>
<tr>
<th>Crop</th>
<th>Harvesting</th>
<th>Transportation</th>
<th>Threshing</th>
<th>Drying</th>
<th>Storing</th>
<th>Processing</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy</td>
<td>1.63</td>
<td>0.52</td>
<td>2.19</td>
<td>1.57</td>
<td>6.31</td>
<td>4.4</td>
<td><strong>16.6</strong></td>
</tr>
<tr>
<td>Wheat</td>
<td>2.21</td>
<td>1.22</td>
<td>3.07</td>
<td>2.07</td>
<td>7.76</td>
<td>2</td>
<td><strong>18.3</strong></td>
</tr>
<tr>
<td>Maize</td>
<td>3.33</td>
<td>1.04</td>
<td>2.85</td>
<td>2.5</td>
<td>7.44</td>
<td>2.3</td>
<td><strong>19.5</strong></td>
</tr>
</tbody>
</table>

Source: Moad Nepal
## Transportation Loss of Fruits and Vegetables in Nepal

<table>
<thead>
<tr>
<th>Crop</th>
<th>Loss %</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple</td>
<td>26-35</td>
<td>ABPMDD 2000</td>
</tr>
<tr>
<td>Cabbage</td>
<td>6-19</td>
<td>ABPMDD 2000, Werner 1991</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>4.48-18.75</td>
<td>ABPMDD 2000, Werner 1991</td>
</tr>
<tr>
<td>Mangoes</td>
<td>36.36</td>
<td>ABPMDD 2000</td>
</tr>
<tr>
<td>Radish</td>
<td>3.48</td>
<td>ABPMDD 2000</td>
</tr>
<tr>
<td>Oranges</td>
<td>2.02-8.2 50</td>
<td>Thapa and Shrestha 2002, ABTRACO 2003 (Bangladesh, Tibet)</td>
</tr>
</tbody>
</table>
Harvesting Practices in Nepal

- Almost 99% percentage of harvesting is done manually except rice and wheat.
- Reaper: Tractor, power tiller and minitiller reaper are highly growing last few years for rice and wheat crop.
- Reaper binder: Few Reaper binders are being use for harvesting wheat and rice.
- Combine: Number of combine is growing each year. Almost 350 Number.
Reaper Growing Trends of Nepal

Source: Cimmyt Nepal
Post-Harvesting Practice in Nepal

Threshing

Traditional Threshing
- Beating bundle on stick and stone (Rice, Wheat and Millet)
- Using animals feet. (Pulse, Rice, Millet)

Using Thresher
- Paddle Thresher: Use in threshing paddy in upper hills and mountain.
- Electric thresher: Use for Paddy wheat and maize
- PTO Thresher: Paddy, wheat, maize and multicrops
Storage

Traditional Storage
- Bhakari
- Jute bag

Modern storage
- Storage bin: made of tin and wood
- Hermetic Bag & cocoons: use to store seed grains
- Cellar storage: Storage of orange
- Storage/Warehouse: Use by miller, rice and wheat trader and seed trader.
- Cold storage: Vegetable trader and rental business
Transportation

- Manual: People carry bag of grain on their back
- Animals Drawn: use direct animal to carry food grain and use draft animals to drawn cart.
- Power: tractor, pickup are common mean of transport.
Post-Harvesting Practice in Nepal cont..

Processing and packing:

Cleaning:
Traditional: Washing with water and sun drying.
Now a day: Winnowing with fan

Milling:
Traditional: jatho (Stone mill), dhiki, (wooden Hammer Mill), ghatta (Water mill)
Now a day: huller, seller mill.

Sorting
Sieve, Grading machine.
Stone mill

Water Mill

Wooden Hammer mill
Post-Harvesting Practice in Nepal cont.

Market

- Weekly market in rural area.
- Agricultural wholesale market.
- Agri mart.
Harvesting (so far and ongoing)

- **Demonstration** of harvesting Machinery like reaper, Reaper binder combine harvester in collaboration with local stakeholder and private sector.
- Government has **compelled** to use binder while using combine.
- **Upton 85% Subsidy** on harvesting machinery for Individual farmer, farmer group, cooperative and private firm.
- **up to 50% Subsidy on** Community custom hiring center Equip with harvesting machinery.

Harvesting (upcoming)

- Custom hiring service provider Equip with harvesting machinery.
- Establishment of Agricultural machinery factory.
Government Step on Post-Harvesting Practice

**Threshing (so far and ongoing)**

- **Demonstration** of threshing machinery.
- **Research, test and technology handover** to local manufacture (paddle thresher, Millet thresher).
- **Upton 85% Subsidy** on Threshing machinery (maize Sheller, paddy, wheat and multicrops Thresher) for Individual farmer, farmer group, cooperative and private firm.
- **up to 50% Subsidy on** Community custom hiring center Equip with Threshing machinery.

**Threshing (upcoming)**

- Custom hiring service provider Equip with threshing machinery.
- Establishment of Agricultural machinery factory.
Government Step on Post-Harvesting Practice

Storage (Done so Far)

- **100% Subsidy on** metal bin for grains storage (198-262)kg (148-196)kg (75-148)kg.
- **100% Subsidy on** Hermetic bags & Cocoons for storage of grains and seeds.
- **Up to 85% Subsidy** on Rustic, Zero Energy, Cellar storage for potato, orange and others Fruits and vegetables.
- **Up to 85% Subsidy** on Post Harvest Service Center with Proper Threshing floor, transit shad, Drying and Storage.
Government Step on Post-Harvesting Practice

Storage (on Going program)

- **Up to 85% Subsidy on** Seed bank (at 9 Place) with proper Threshing Floor, transits shad, drying and Storage for seed Storage.

- **Interest Subsidy on** Storage House for Cereals Of total Capacity 62,200 Mt.

- **Interest Subsidy On** Cold-Storage for vegetable fruits and meat and honey of total Capacity 48,000 MT.

- **Up to 70 % Subsidy on** Infrastructure development of Cold- Storage for vegetable fruits and meat and honey of total Capacity 5,000*13=65,000 MT.
Government Step on Post-Harvesting Practice

**Storage (Upcoming program)**

- To construct 1,00,000 Mt storage house (Silo Type structure) in each 7 Province.
- To construct Rustic storage, cellar storage and cold storage base on local commodity in Province local level.
Government Step on Post-Harvesting Practice

Transportation (so far and ongoing)

- Upto 50% Subsidy on Tractor attached with the Trailer.
- Upto Custom subsidy on pickup truck for transportation of vegetable, fruit, milk and meat.
- Upto 75% subsidy on Transportation charge for meat and fish.
Government Step on Post-Harvesting Practice

Processing and packing:

- **Upto 85% Subsidy** on packing House equip with cleaning shorting grading and weighing and packing facility. For Fruits and high value crop like ginger, Coffee Tea etc.
- **Upto 50% Subsidy** on Grading and milling machine on Post harvest service Center.
- **Upto 50% Subsidy** on Grading on Seed bank for seed grading.
Ginger Processing
**Government Step on Post-Harvesting Practice**

**Market**

- **Up to 85% Subsidy** on Construction of Agriculture whole sale market.
- **Up to 85% Subsidy** on Slaugter house and meat shop.
- **Up to 50% subsidy** on AgriMart.
Way Forward

- Wasted food in Productive use.
- Study on post-harvest lost on transportation in fruits and its means of reduction.
- Post harvest lost in vegetable specially in Processing so search for better processing ways to be search.
- Post harvest lost in cereals in most in storing process so need to study on minimizing lost in storing.
- Data Collection in the new structure of Nepal.
Thank You