WUR exchange session DFS project

Value chain analyses – onion, mango and beef
17 May 2021 – Vera Vernooij, Bob Castelein, Bas Hetterscheid, Melanie Kok, Seyam Mohammed, Kulsum Chowdhury
Content

- Value chain analyses
  - Product selection
  - Procedure
  - Results
- Opportunities
- Recommendations
- Next steps
Overall goal: Increase food security in DMA

Goal of value chain analyses:
- Analysis of value chains to reveal points for improvement;
- Generate information for ‘Market Access and FNS’ training;
- Draft a strategic action agenda for Dhaka Metropolitan Area (DMA)
  City corporations > interventions

Goal interventions: Decrease Food Loss and Waste (FLW) with 5%
1.4 - Value chain selection

- Use of our food databases
- Multi-criteria selection

<table>
<thead>
<tr>
<th>Input phase</th>
<th>Item</th>
<th>Trend</th>
<th>FLW</th>
<th>H2O</th>
<th>Diet</th>
<th>W. score</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Onions, dry</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Mangoes, mangosteens, guavas</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Vegetable, freshness</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Milk, whole fresh goat</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>no data</td>
</tr>
<tr>
<td>5</td>
<td>Rice, paddy</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>
Value chain analyses: products

Onions
- Design value chain survey
- Data collection
- Data interpretation & reporting
- Draft report
- Final input and revisions
- Final report

Mango
- Design value chain survey
- Data collection
- Data interpretation & reporting
- Draft report
- Final input and revisions
- Final report

Red meat
- Design value chain survey
- Data collection
- Data interpretation & reporting
- Draft report
- Final input and revisions
- Final report

Gender analysis
Value chain analyses: data collection

- 350+ structured interviews of value chain actors per value chain with:
  - Producers
  - Intermediaries
  - Wholesalers
  - Retailers
  - Transporters
  - Mobile vendors
  - Institutional users

Dhaka food systems Project
Van Berkum et al. 2018
Results onion

- FLW hotspots at producers, retailers and mobile vendors
- Landfill and consumption

<table>
<thead>
<tr>
<th>Reasons for FLW</th>
<th>Producers</th>
<th>Intermediaries</th>
<th>Wholesalers</th>
<th>Retailers</th>
<th>Mobile vendors</th>
<th>Institutional users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvest: Immature, perished or damaged product</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Post harvest: Rough handling, no market, no (proper) curing, lack of storage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Transport: Damaged due to road conditions and packing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Sorting: Caused earlier in supply chain</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage: No proper curing after harvest, no cooled facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Market: No market on time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>
Results mango

- FLW hotspots at retailers and institutional users, landfill, animal feed, given away

<table>
<thead>
<tr>
<th>Reasons for FLW</th>
<th>Producers</th>
<th>Intermediaries</th>
<th>Wholesalers</th>
<th>Retailers</th>
<th>Mobile vendors</th>
<th>Institutional users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damaged, perished, infected, diseased fruits, or impossible to harvest</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post harvest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposure to sun, rough handling, damages during the activities</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damages due to road conditions and packaging</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sorting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caused earlier in supply chain, purchase bad quality fruits</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Rough handling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No proper storage facility with temperature quality</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Bad quality fruits already before storage</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Handling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut off bad parts, peeling losses</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No market on time</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results beef

- Live cattle mainly slaughtered at wholesale stage
- Mortality rates at producers (7%) and intermediaries (4.4%)
- Amount of beef lost is less than 5%
- Reasons:
  - Suboptimal work accuracy of butchers
  - Poor quality meat/lack of costumers
Opportunities

- Increase domestic production and storage capacity for onions > widely consumed
- Producer support

- Currently low fruit intake > mango
- Export and branding opportunities for mango > high end markets

- Anticipate cattle surplus and growing urban population > higher demand
- Cattle production byproducts
Value chain analyses: generic recommendations

- Reduce trade dependencies
- Improve production & storage
- Social structures for collaboration
  - Machinery & labour
- Enforce regulations
- Invest in enabling environment & business services
- Capacity development
Next steps

- Final concept reports, to be specified to city corporations
  - Responsibilities/mandates?
  - Role of private sector and national government?
- Recommend three interventions based on value chain reports
- Product selection for two more value chain analyses
Any questions?

- Which products to select for other VCs?
- Advise on how to do the other two value chain analysis with smaller budget available?
- How to approach intervention selection?

To explore the potential of nature to improve the quality of life
Recommendations – fruits, vegetables and meat

Overall goal: Increase food security in DMA

- Provide technical support to improve the yield and quality of produce
- Production, harvest and post-harvest handling, incentives to use machinery (rent)
- Create business links between the farmers and high value markets for direct selling (e.g. through cooperatives)
- Increase incentives to invest and access credit with low interest
- Regular market monitoring, act against market syndicates
- Improve communication and information systems e.g. about ag. production and product prices
- Improve transportation system > reduce bribes, allow for smoother passage
- Release pressure from main urban areas, stimulate rural development
Main recommendations onions

- Examine feasibility of alternative import sources such as China, Egypt, Malaysia, Myanmar, Pakistan, Turkey, and Vietnam
- Decrease price fluctuations, but not too much price reduction
- Increasing domestic production and storage capacity, reduce dependency on imports
- Improve quality of onions at production to reduce FLW in rest of SC (e.g. onion rots)
Main recommendations mangoes

- Improve the quality of the mangoes at the production level
  - Effective extension systems to facilitate and educate farmers on production, harvest and post-harvest handling

- Investigate whether branding with respect to food safety is an option to increase demand (and price) in medium and high-end markets in urban areas
  - Opportunity: fruit intake is far below the advised quantity for a healthy diet

- Explore ways to support export: trust needs to be restored
  - Training and trade support (e.g. on EU requirements)
Main recommendations beef (1)

- Improve cattle feed availability
  - Lowering the feed costs e.g. through increased feed production and Preservation
  - Make use of circular flows
- Improve utilization of by-products and cow dung
- Invest in cold storage facilities for prepared meat
- Actively implement and regulate food safety standards for beef
- Create awareness for buying safe and good quality meat
- Provide supervision by veterinary doctors and Huzur in slaughterhouses
- Increase number of slaughterhouses in urban areas
Main recommendations beef (2)

- Anticipate on the coming **cattle surplus** and **increasing urban population**
  - Both trends require high-level supply chains with respect to food safety, traceability and added value (packaging, frozen - and assorted meat)
  - Opportunities for export