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Session 3:

Dynamics of Losses in Different Commodity Chains

Cameroon Food Loss Case Studies

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OUTLINE

1. Case studies in the field : why and how?
2. Cameroon Food loss case studies :
   Background
   Areas & Methodology
3. Findings
   3.1 Cassava
   3.2 Tomato
   3.3 Potato

Why case studies in the field?

- Numerous studies have been undertaken to assess food loss and waste in many countries of the world.
- Most of these studies were conducted at national level, and based on literature review and stakeholder interviews.
- The research revealed the knowledge gap

Why case studies in the field?

- ***The knowledge gap***
  - ✓ *Magnitude of food losses in food supply chains*
  - ✓ *Causes of food losses in food supply chains*
  - ✓ ***Importance of different causes ?***
  - ✓ ***Impact and feasibility of solutions ?***
  - ✓ *Beneficial effect of food loss reduction*
- Save Food Initiative has designed the 'food supply chain' case studies, for the most important food subsectors in developing countries.

Why case studies in the field?

- A case study is just a one-moment recording of what is happening in a specific food supply chain in a specific season;
- It is important that Save Food can undertake many case studies, so that the multitude of study results provide significant trends and solutions.
- Based on the results solutions to food loss reduction in developing countries will be implemented

How do we implement case studies ?

Guiding principles

Solutions to food loss :

- should be build on a ***Supply chain approach - Viable business case;***
- should not be more expensive than the food loss itself;
- should make more food available to the people that need it most;
- should be technically, economically, nutritionally socially and culturally acceptable.

How do we implement case studies ?
Methodology for the Case Studies in the Field

1 - Selection of countries and subsectors

- *Existing and on-going programmes*
- *Collaboration with partners*

Selected so far in Africa:

- *Kenya: maize, banana, dairy, fish*
- *Uganda: maize, oilseeds, beans*
- *Cameroon: tomato, cassava, potato*
- *Rwanda: maize, tomato, potato, milk*

Selected so far in Asia:

- *India: rice, beans, milk, fish*
- *Indonesia: soy, fish, mango, rice*

Methodology for the Case Studies in the Field

2 Identification of Consultants

- *Subsector Specialist, actor in the food supply chain*
- *Agricultural Economist*

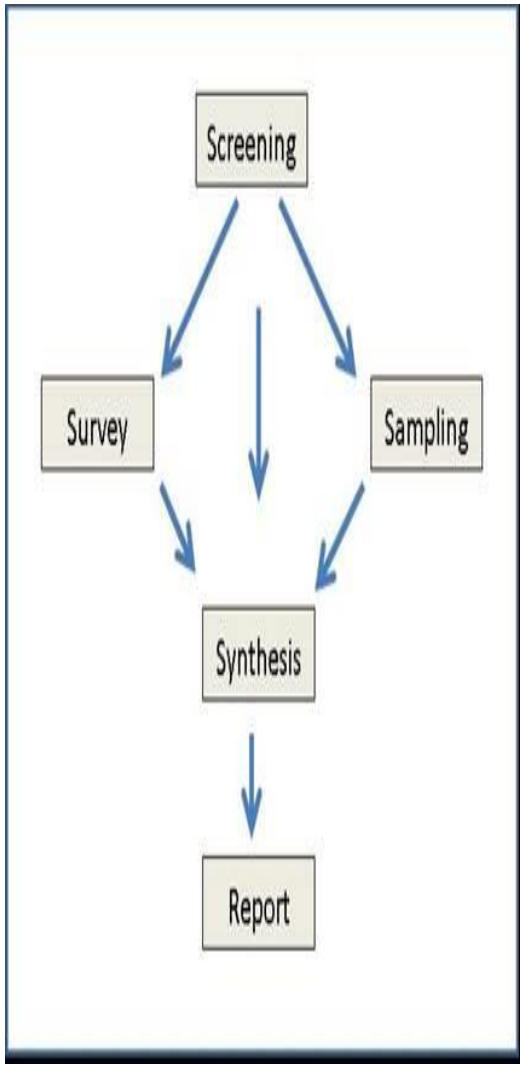
3 Selection of Food Supply Chains

- *Based on smallholder producers*
- *Significant scale of food production*
- *Preferably including agro-processing and urban market*

4 Implementing the following steps

Methodology for the Case Studies in the Field

- Preliminary screening of the sub-sector;
- Survey in selected FSC
- Load tracking and sampling from farm to markets;
- Monitoring and Solution Finding ('Synthesis')
- National multi-stakeholder validation workshop
- Development of an Investment program to reduce food losses



2. Cameroon Food loss case studies

Background

- The Govt of Cameroon has targeted to increase the energy consumption level from 2600 - 2700 kcal / person / day (2010) to 3100 kcal (2015) while the level of FLW in SSA equates 545 kcal / person / day (WRI, 2013).
- High level of food losses for perishable crops in Cameroon, such as roots and tubers, fruits and vegetables.
- Lack of recent studies on post-harvest losses to inform decision-making.

- The MA, has committed the current diagnosis study toward food losses reduction in three subsectors (cassava, potato and tomato) with FAO's support.

- A TCP project has been launched in 2012.

2. Cameroon Food loss case studies

- AREAS/

Production areas: Central and Northwest regions for cassava; West and Northwest regions for tomato and potato

Markets: Douala (Littoral); Yaounde (Centre); Bamenda (Northwest); and Bafoussam, Mbouda, Fumban and Dschang (West).

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3. Findings of the Cameroon Food Loss Case Studies (Cassava, Tomato and Potato)

Outline for each subsector :

- Situation of selected supply chain
- Flux diagram and critical loss points in the selected food supply chain(FSC)
- Quantitative and qualitative losses occurring in the FSC
- Solutions to food losses reduction
- Food losses reduction Strategy

3.1 Cassava

- September - October 2012
- Centre and North west regions
- Selected FSC :

- Gari
- Baton (Cassava stick)

3.1 Cassava

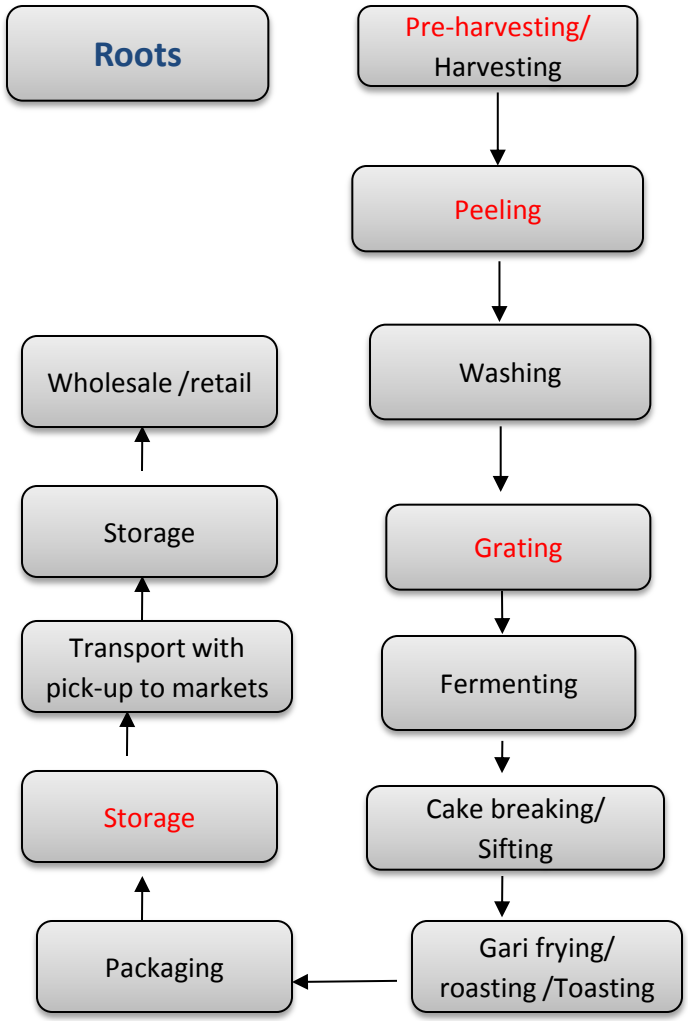
a) Situation of cassava food chain

- Production: 4 204 988 tonnes
- Turnover: 349 billion FCFA
- Farmers : 584 000
- Employment: 600 000 people
- Average area: 0.5 ha per farmer

3.1 Cassava

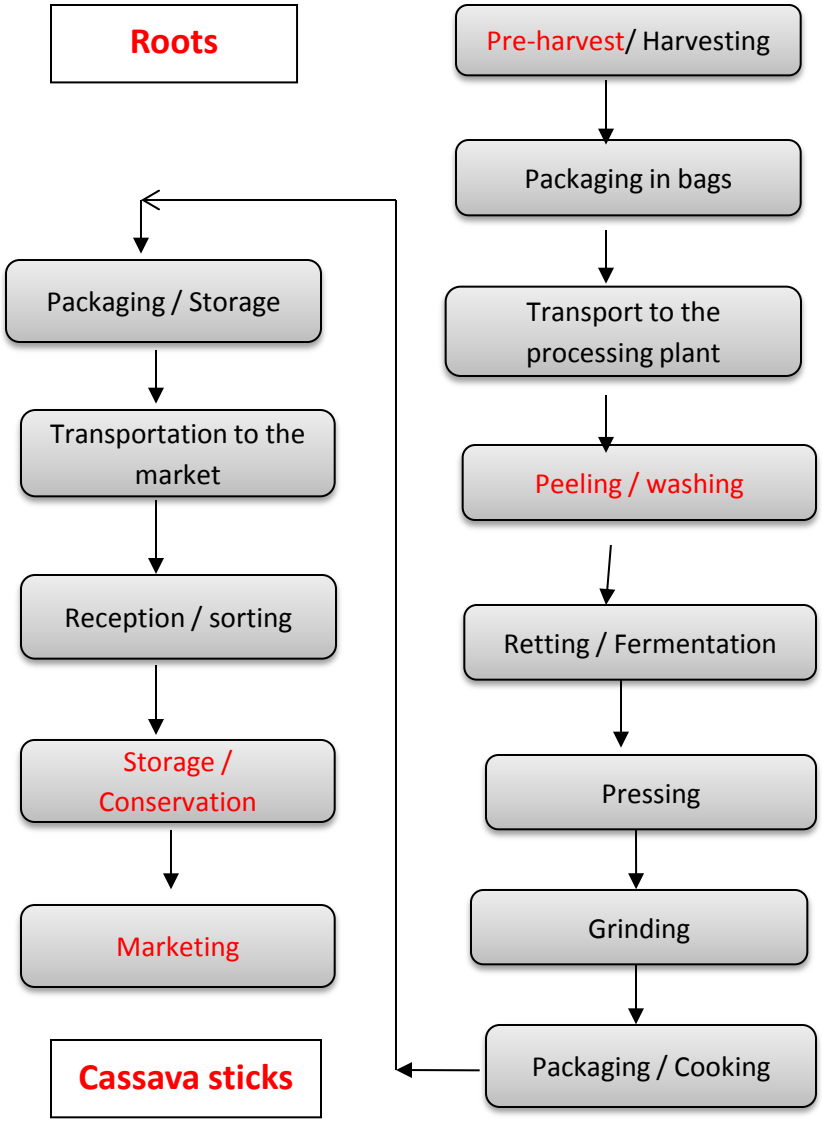
b) Flux diagram and critical loss points in the cassava supply chain

Gari



3.1 Cassava

Cassava sticks



3.1 Cassava

c) Quantitative and qualitative losses occurring in the gari supply chain

Point in the FSC	Quality reduction %	Quantitative losses %			Causes
		Harvested (t)	% losses/ in FSC pt	% losses/ Harvested	
Pre-harvest /harvest	-	23 158	30	**30**	Poor seeds, delay and poor harvesting and handling practices
Peeling	1	-	8	5,6	Poor peeling practices, equipement, quality control
Grating	2	-	5	3,5	Poor grating pratices, lack of appropriate grater (stainless steel grating drum/blades), regular cleaning and maintenance, no quality control
Storage	15	-	5	1,3	High moisture content, poor packaging bags and storage, handling, Fungi, rodents
Total				**40,4**	

3.1 Cassava

d) Quantitative and qualitative losses occurring in the cassava stick supply chain

Point in the FSC	Quality reduction %	Quantitative losses %			Causes
		Harvested (t)	% losses/ in FSC pt	% losses/ Handled	
Pre-harvest /harvest	-	57 762	30	**30**	Poor seeds, delay and poor harvesting and handling practices
Peeling	3	-	10	7	Poor peeling practices, equipement, quality control
Storage	12		1	0,33	High moisture content, poor packaging, storage and handling, Fungi and rodents attacks
Marketing	10		1	0,33	Poor exposure at retailing (Sun, rain, lack of sheds)
Total				**37,7**	

3.1 Cassava

d) Solutions to food losses reduction in the cassava FSC

Critical loss point	Economic loss ($ USD)	Intervention to reduce loss	Loss reduction	Cost of intervention ($USD)
Pre-harvest /harvest	3 768 877	- Support Capacity development with focus on production (production practices, planning and marketing, access to inputs) - Strengthen FO to improve production planning and marketing	High	600 000
Processing (Peeling, grating)	703524	- Facilitate access to appropriate peeling and grating machines, and packaging materials - Develop skills in GMP, GHP, use and maintenance of machinery ,	Average	250 000
Storage	905 893	- Improve storage techniques and infrastructures and management	High	400 000
Wholesale/ retail	931 555	- Improve product handling and exposure in the market	Average	500 000




3.1 Cassava

e) Food loss reduction Strategy in the cassava food chain

1. Support **Capacity development of both public and private sector** in formulating and implementing food loss reduction solutions (training, regulation**,** enabling environment…)
2. Improve processing practices : GMP & GHP, skills in use and maintenance of machinery
3. Strengthen FO to improve **production practices, planning and marketing**
4. Foster **Value-addition and diversification in cassava FSC** by specialized SMAEs, and **market development**.
5. Improve access to **appropriate technology and equipment** for small stakeholders (peeling and grating machines, packaging materials, etc.)
6. Develop a **M&E mechanism** of food losses reduction programs and activities

3.2 Tomato

- September - October 2013
- West region
- 2 Selected FSC :

- **Mbouda**-Bafoussam-Douala
- **Foumbot**-Bafoussam, Douala

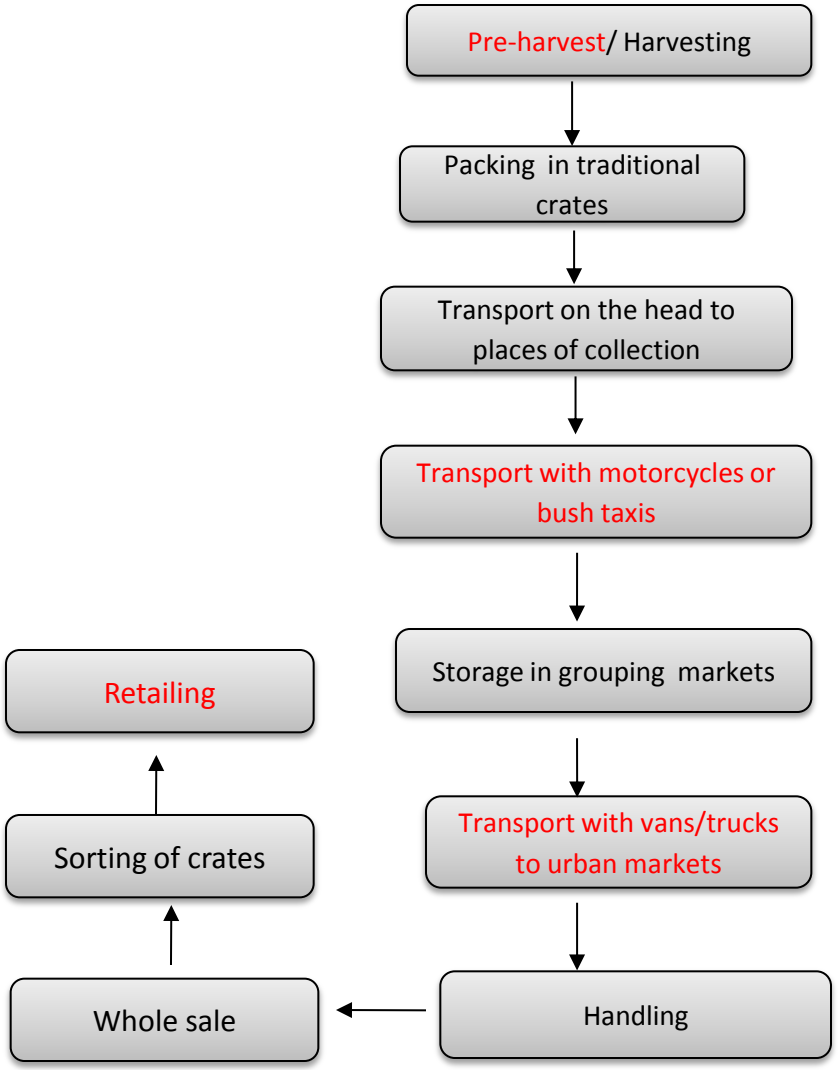
3.2 Tomato

a) Importance of the Tomato subsector

- Production: 932 530 tonnes
- Average annual growth rate: 9,3 %
- Turnover: 228,9 billions FCFA
- 35% of vegetables consumed in Cameroun;
- 2% self-consumed output et 98% marketed
- Farmers : 329 033
- Employment: 1 645 165
- Average: 0.25 hectare

3.2 Tomato

b) Flux diagram and critical loss points in the fresh tomato supply chain



3.2 Tomato

c) Quantitative and qualitative losses occurring in the 2 selected FSC

Point in the FSC	Average Quality reduction %	Average Quantitative losses %			Causes
		Harvested (tons)		% losses/ Harvested	
Pre-harvest /harvest	-	146 934		**28,3**	Poor inputs and pratices (seeds, fertilisers, pesticide), weather, lack of *«tuteurage»*; late harvesting (over repining) and poor connexion with market…
Transport to grouping markets	5,15			0,5	Poor handling, overloading, bad road, poor packaging material and practices, etc.
Transport to urban markets	25,85			5,0	
Retail sale	18,30			-	Poor exposure at retailing (Sun, rain, lack of sheds)
Total				**33,8**	

3.2 Tomato

Critical loss point	Economic loss ($ USD)	Intervention to reduce loss	Loss reduction	Cost of intervention ($USD)
Pre-harvest /harvest	4 234 088	**- Improve access to inputs** **- Develop the farmers' capacities**	High	600 000
Transport to grouping markets	2 004 118	- Conduct **RD to improve traditionnal containers** - Improve **marketing infrastructure** - Facilitate **access to innovative packaging and handling techniques** - **Develop the FSC actors' capacities**	High	980 000
Transport to urban markets	1 730 586		Average	1 000 000
Retail sale	1 707 668	- Improve product handling and exposure in the market	High	500 000

3.2 Tomato

e) Food loss reduction strategy in the tomato food chain

1. **Improve access to inputs** (quantity, cost, regulation, certification, etc.) and adequate knowledge on their use.
2. Conduct an inclusive **research development** action to improve traditionnal containers used for tomato;
3. **Develop farmers' capacities** in Good Production and farm management practices, and market access
4. Improve **marketing infrastructure** (transport means, roads, warehouses, handling and exposure in the market, etc.) ;
5. Facilitate access to **innovative packaging and handling techniques**;
6. Develop a **M&E mechanism** of food losses reduction programs and activities

3.3 Potato

- September - October 2013
- West region
- 1 Selected FSC :
- **Babadjou** (Babadjou-Mbouda-Douala)

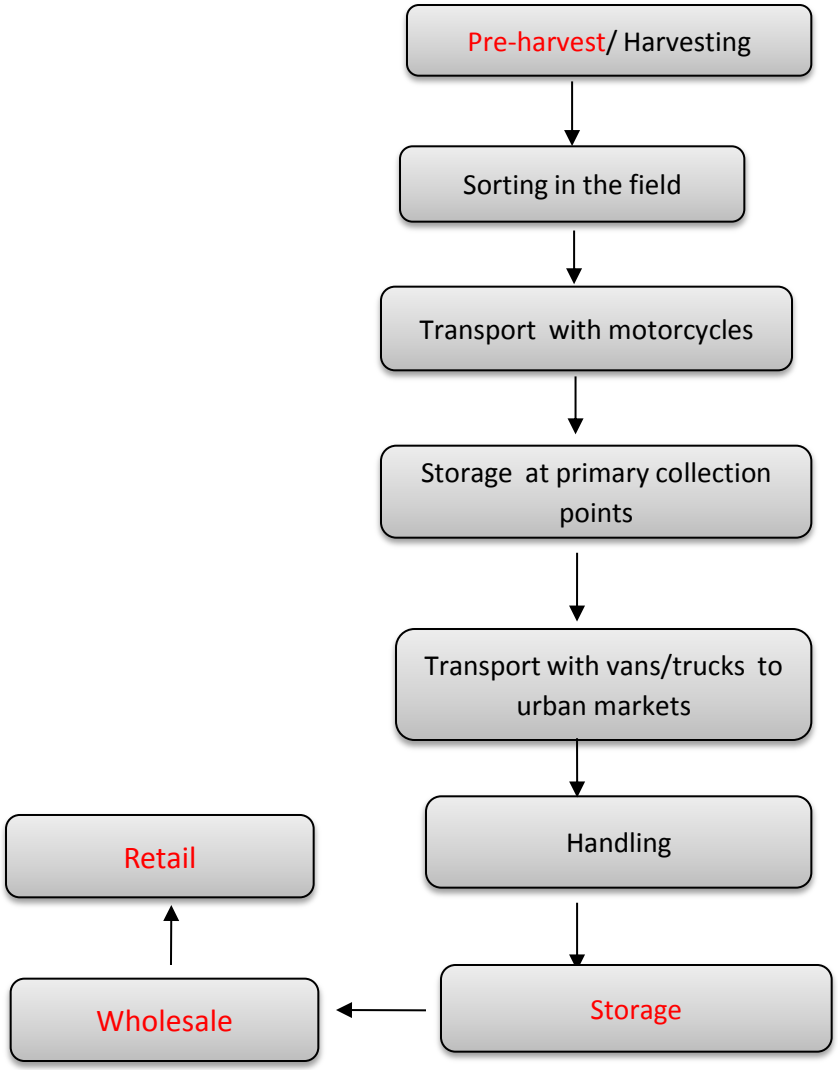
3.3 Potato

a) Importance of the Potato subsector

- Production: 200 000 tonnes
- Average annual rate: 4,09%
- Average annual consumption rate: 4,9%
- Farmers: 280 000
- Employment: 300 000
- Average: 0.5 hectare
- Turnover: 23,4 billion FCFA
- 15% self-consumed output et 65% marketed

3.3 Potato

b) Flux diagram and critical loss points in the fresh potato supply chain



3.3 Potato

c) Quantitative and qualitative losses occurring in the potato supply chain

Point in the FSC	Quality reduction %	Quantitative losses %			Causes
		Harvested (tonnes)	% losses/ in FSC pt	% losses/ Harvested	
Pre-harvest /harvest	-	6 188	34	34	Poor seeds Agric inputs Best practices
Storage	25		14, 00	9,10	Sun; rain Temperature; air Fungi ; bacteria Handling; improper storage of bags in stores; Quality of bags; rodents
Retail sale	10		5,00	2,80	Sun; rain; physical shocks Sheds for sale Makeshift stalls
Total				45,90	

3- Food Loss Assessment

d) Solutions to food losses reduction in the potato food chain

Critical loss point	Economic loss ($ USD)	Intervention to reduce loss	Loss reduction	Cost of intervention ($USD)
Pre-harvest /harvest	10 274 528	- Facilitate access to seeds and agricultural inputs - Develop the farmers' capacities	High	2 000 000
Storage	2 749 947	Support the establishment and management of warehouses	High	1 000 000
Retail	2 834 935	Implement a regional/national network of potato chain actors	High	500 000

3.3 Potato

e) Food loss reduction strategy in the potato food chain

1. **Pest/ disease management** plan
2. **Training / capacity building** in management and marketing, especially for farmer organisations, to better manage supply markets;
3. Training of farmers in issues **of standards of protection the** health of producers/consumers ;
4. Facilitate in collaboration with local councils, access new **packaging techniques** and good practices;
5. Facilitate access to **marketing infrastructures** ;
6. Implement a **regional/national network** of potato chain actors ;
7. Develop a **M&E mechanism** of food losses reduction programs and activities