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Post-harvest loss assessment in cowpea, maize and sorghum selected supply chains in Burkina Faso and recommended solutions and strategies

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Outline

- Context/rationale
- Study Aim/ Methodology
- Critical Loss Points (CLP)
- Results
- Recommendations

Context/rationale

- In Burkina Faso food insecurity affects about 30% of the population
- In order to improve this situation, most of programs have targeted the development of maize, sorghum and cowpea subsectors
- Project described below contributes to reduce post harvest losses in Burkina

- **Project title:** Mainstreaming food loss reduction initiatives for smallholders in food-deficit areas (RBA/GLO/001/SWI)
- **UN's agencies:** FAO, WFP, IFAD based in Rome
- **Financial partner:** Swiss Agency for Development and Cooperation (SDC)
- **Period of Study:** October 2015-April 2016
- **Reference policy:** Commitments taken by African Heads of State in Malabo, in 2014.
- **Study's regions:** Boucle du Mouhoun (sorghum); Hauts Bassins (maize) and Nord (cowpea)

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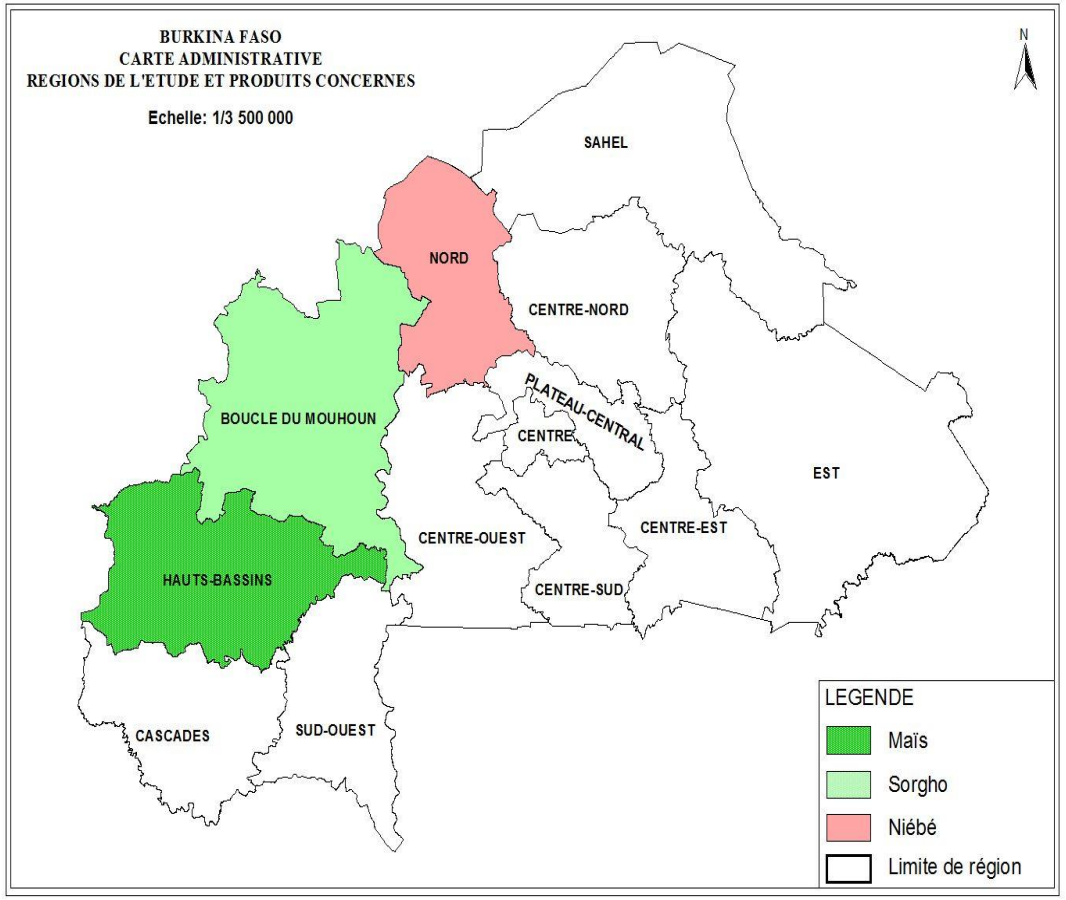
Aim of the study and methodology

- Assess the levels of food losses
- Identify critical points along the selected food supply chains (FSCs)
- Analyze major causes of these losses
- Propose appropriate and feasible solutions and strategies in order to reduce food losses



Methodology:

FAO methodology “Food Loss Analysis: Causes and Solutions, Case Studies in the Small-scale Agriculture and Fisheries Subsectors”

- ✓ Screening
- ✓ Load tracking and sampling assessment
- ✓ Survey
- ✓ Synthesis

Aim of the study and methodology

Mix focus group identifying CLP

Evaluation of crops losses in the field

Load tracking

Sampling during the storage

Results (1/3)

- ❖ Two FSCs have been selected by region
- ❖ The CLPs have been identified based on the discussions with FSC actors.

- For sorghum, CLPs are the steps of harvesting, transportation of the panicles to homestead, threshing, transport and storage at the wholesaler's
- For maize, CLPs are the stages of harvesting, drying, shelling, storage at the producer's warehouse, transport to the wholesaler and milling (flour and semolina)
- For cowpea, CLPs are harvesting, drying, manual threshing/ pounding and storage.

Results (2/3)

Level of quantitative losses assessed on the ground

- **For sorghum**: **5.4%** at harvesting, **0.47%** during threshing/winnowing, **0.3%** during transportation and **0.02%** during farm storage (after five months)

- **For maize**: **3.5%** at harvesting, **5.6%** during shelling, **2.7%** after five months' storage at the producers' and **0.3%** during the transportation to the wholesalers'. Losses have been estimated at **20%** during processing of maize into flour; it mainly occurs during dehusking

- **For cowpea**: **8.7%** at harvesting, **1.1%** during threshing/winnowing, and **35%** after a five-month storage period for producers who do not use hermetic storage equipment

Results (3/3)

Qualitative analysis

- Sorghum is well preserved in the form of panicles up to two or three years in clay granaries.
- The indicative levels of losses observed at threshing and transport are very low. However, they are perceived as CLPs by the actors.
- These stages are exhausting and the producers use inadequate equipment, which are loss risk factors.
- Maize is very sensitive to the storage duration (increasing grain quality deterioration and high insect infestation).

Quantitative evaluation of food losses

- Based on the indicative data on losses resulting from the study, the estimated economic losses along the studied supply chains are significant.
- For sorghum in the Boucle du Mouhoun region, annual losses are estimated at **16 500 tons**, which is equivalent to about **USD 3.5 million.**
- For maize in the Hauts-Bassins region, food losses are estimated at **71 500 tons** per year, which is equivalent to an economic loss of about **USD 20 million.**
- In the Northern region, cowpea losses are estimated at **47 500 tons** per year, which is equivalent to a value of **USD 26 million.**

Recommendations (1/2)

- Promotion of hermetic storage equipment and the other feasible solutions recommended, avoiding free distributions (only recommended for demonstration phases)
- Awareness raising on the importance of losses (in quantity and economic value) at all levels, their causes and impact on revenue and food availability
- Training on good harvesting and post-harvest practices
- The development of the selected value chains by supporting actors' capacity to assess the feasibility and profitability of different possible solutions in their contexts, supporting microfinance and credit institutions to facilitate access to efficient equipment and facilities
- Conducting advocacy at national level for quality control of all post-harvest management equipment, including polypropylene woven bags

Recommendations (2/2)

Economic data of recommended technologies at farmer's level

Equipment	Unit Cost (USD)	Lifespan (years)	Quantity	Yearly cost of Investment (USD)	Yearly cost of Operation (USD)	Total yearly cost (USD)	Benefit per year (USD)
Tarpaulin 25 m^2	45	3	3	45	4.5	49.5	-
Hermetic Bag 100 kg	3	3	10	10	1	11	12,7
Metallic silo 500 kg	107	20	1	5.4	0.5	5.9	15 (Maize) 30.5 (cowpea)

THANK YOU

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