

# Assessing postharvest losses in Sub-Saharan food systems: The case of Ivorian mango

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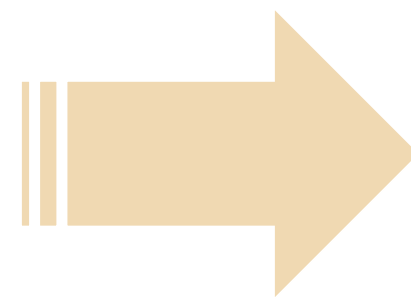
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## Need for more crop-context-specific research to estimate PHL across the different stages of food chains

- Fruits and vegetables (F&V) are known as the most affected crops by post-harvest losses (PHL) given their high perishability and vulnerability to climate patterns and biotic aggressions.
- Estimates of F&V PHL in Sub-saharan Africa are both particularly high and imprecise ranging from 30% to 80%.



Study conducted in Côte d'Ivoire to assess the levels of mango PHL along value chains.

- Quantitative loss (QTL) : fruits which are thrown away
- Qualitative loss (QLL) : fruits which are sold at lower price or given for human consumption or feed due to quality defects

## Two original and complementary approaches to assess quantitative and qualitative PHL

### Mapping of mango flows

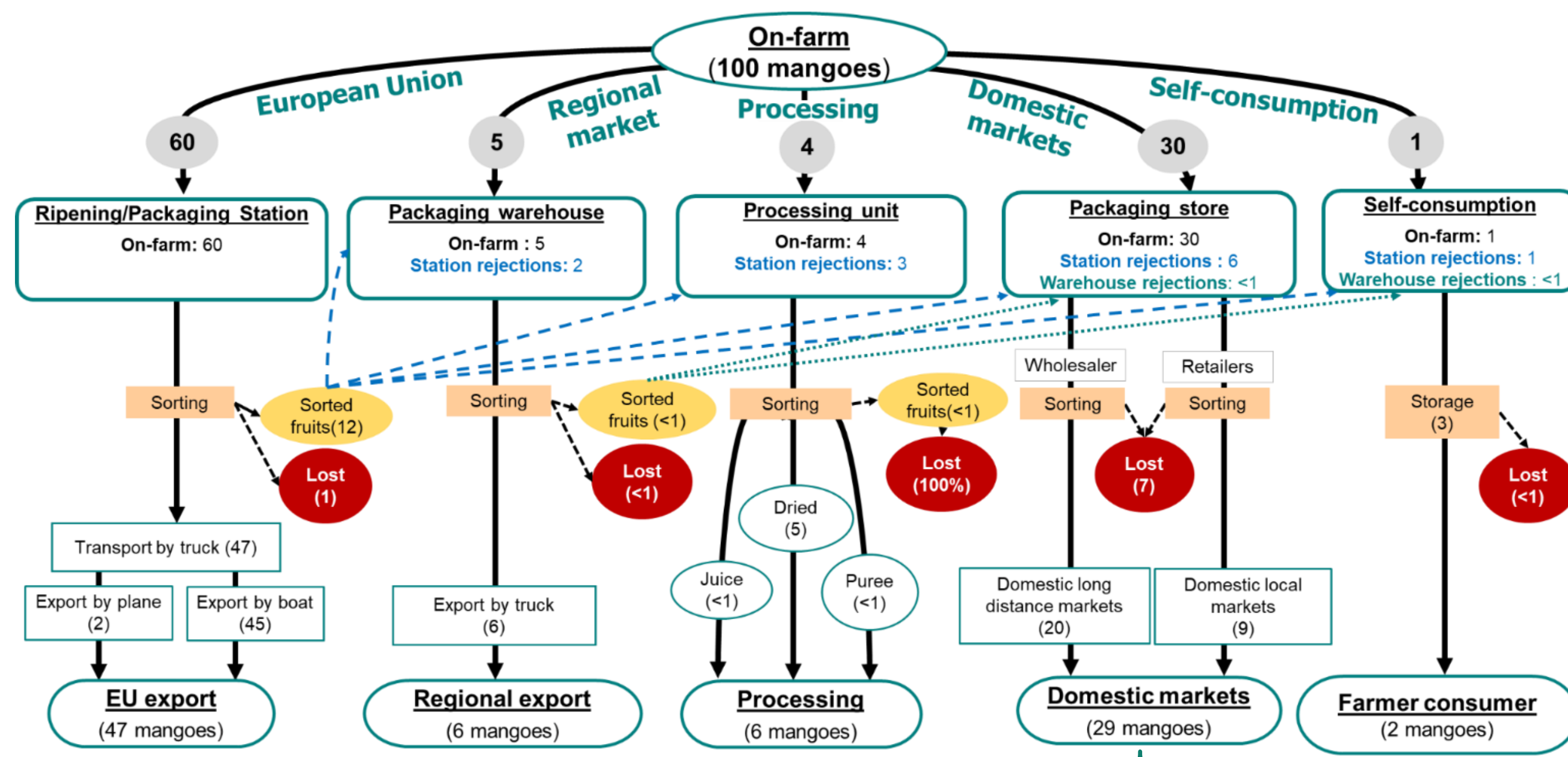
- From main production basins to wholesalers;
- Fresh and processed mangoes, export and domestic consumption;
- 90 semi-structured interviews with key stakeholders;
- PHL = rates of losses referred to the total production estimations.



### Ascending supply chain analysis

- From two precarious neighborhoods in Abidjan and Yamoussoukro to wholesalers supplying these neighborhoods;
- Only fresh mangoes, only domestic consumption;
- Screening all retail points ⇒ multilevel sampling of 98 retailers and 59 wholesalers ⇒ Survey with structured questionnaires;
- PHL = Average of all the individuals rates of QTL and QLL.

## Limited PHL by selling mangoes to other circuits



### Mapping of mango flows

65% of national mango production goes to export (EU and regional market).

35% goes to local fresh market, processing or self-consumption due to non-compliance with export quality standards (fruit fly suspicion, caliber, maturity, etc.).

Around 15% of pre-harvest losses.

10% harvest and post-harvest losses.

### Ascending supply chain analysis

#### Main causes of PHL (reported by distribution actors)

- Mechanical damage (e.g. crushing) (cited by 94% of respondents)
- Biological contamination (75%)
- Fruit too ripe (72%)
- Insect damage (66%)
- Fruit too immature (60%)

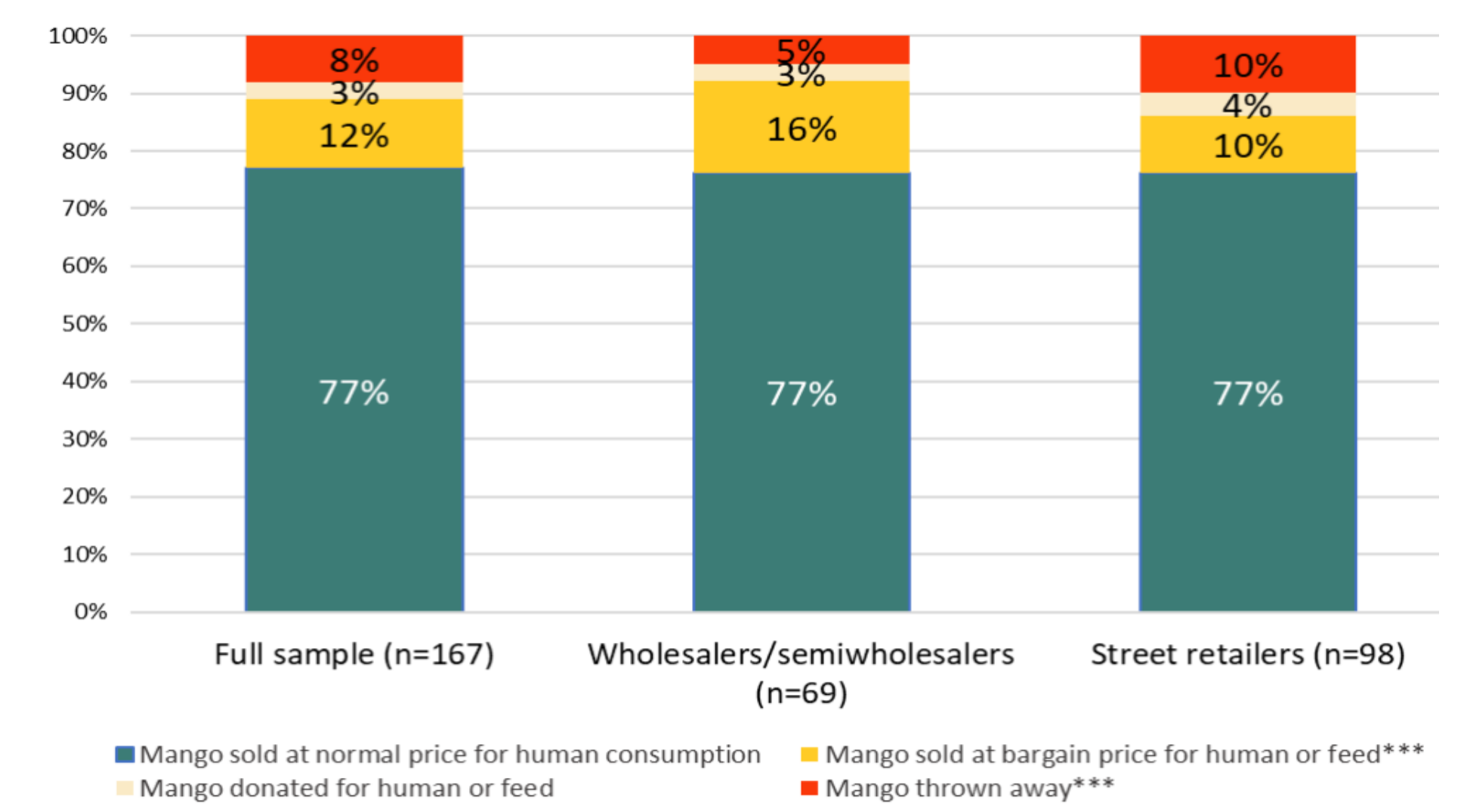
#### Average QLL are greater than average QTL

- Average QTL = 8% of fruits marketed
- Average QLL = 15% of fruits marketed

#### Statistically differences between actors

- QTL:** Retailers and wholesaler respectively discard on average 10% and 5% of the fruits
- QLL:** 14% and 19% of mangoes are sold off or given at retail and wholesale stages due to low quality

#### Average individual rates of mango sold/lost per actor



\*\*\*: statistical differences between the mean at 5%

## Key messages

1

Results find **lower rates** of PHL compared to figures commonly reported in the literature and contributes to the debate on the approaches to measure PHL.

2

The **producers** and **retailers** are those who **endure** the most **the cost** of food losses, with more quantitative PHL compared to wholesalers.

3

Despite quality defects and value loss, **quantitative PHL are minimized** thanks to the **reincorporation of lower quality fruits** in domestic subchains or thanks to **cut-price sales**.

4

**Domestic markets and less-paid (largely informal) chains are key to find alternative uses for mangoes originally intended for export.**

**This contributes to the resilience of the mango value chain and poor consumers nutrition**

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