



Food Balance Sheets (FBS)

FBS component: Loss

Learning objectives

At the end of this session, the audience will know:

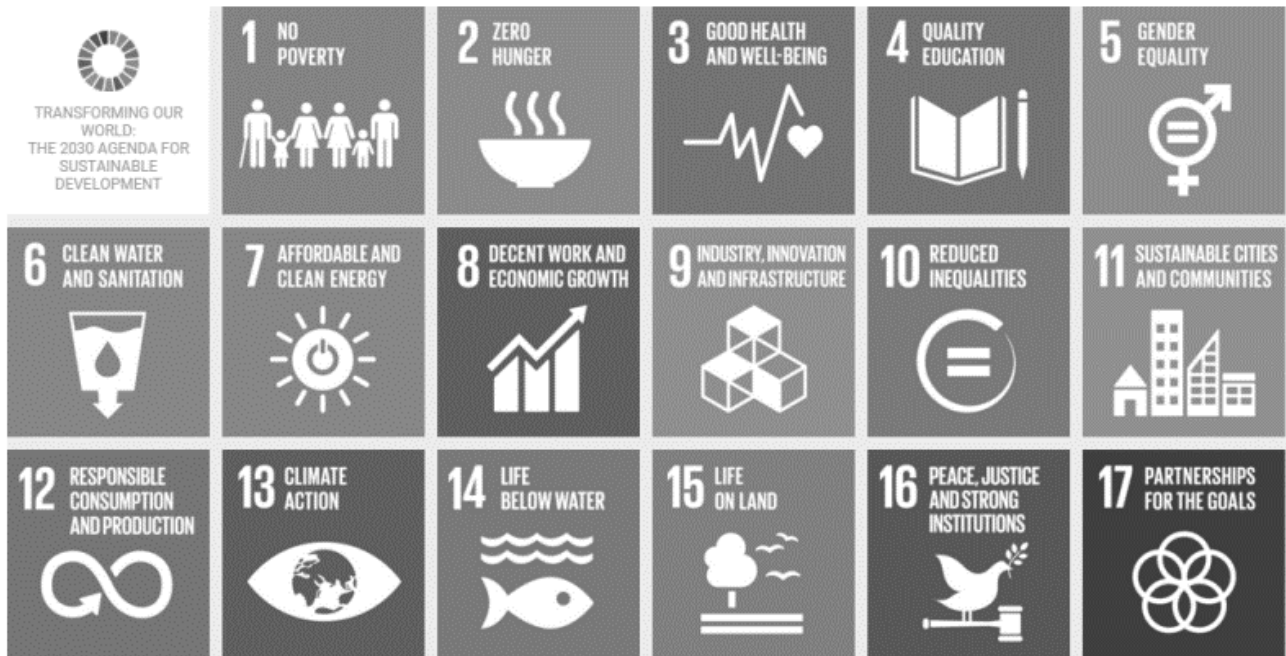
- a) The differences between food loss and waste
- b) How loss and waste are linked to SDGs
- c) What's their role in FBS
- d) Official and alternative sources of information

Outline

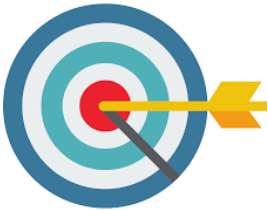
1. Concept of Loss in the FBS setting
2. Data sources:
 - 2.1 Official data sources
 - 2.2 Alternative data sources
3. Imputation and Estimation
 - 3.1 Recommended Approach
 - 3.2 Alternative Approach

1. Concept of Loss

Concept of “Loss” in SDGs



SDG 12 Target 3



“By 2030, halve per capita global **food waste** at the retail and consumer levels and reduce **food Loss** along production and supply chains, including post-harvest **Loss.**”

Concept of “Loss” in FBS

Food* losses are all the crop and livestock human-edible commodity quantities that, directly or indirectly, completely exit the post-harvest/slaughter production/supply chain by being discarded, incinerated or otherwise, and do not re-enter in any other utilization (such as animal feed, industrial use, etc.), up to, and excluding, the retail level. Losses that occur during storage, transportation and processing, also of imported quantities, are therefore all included.

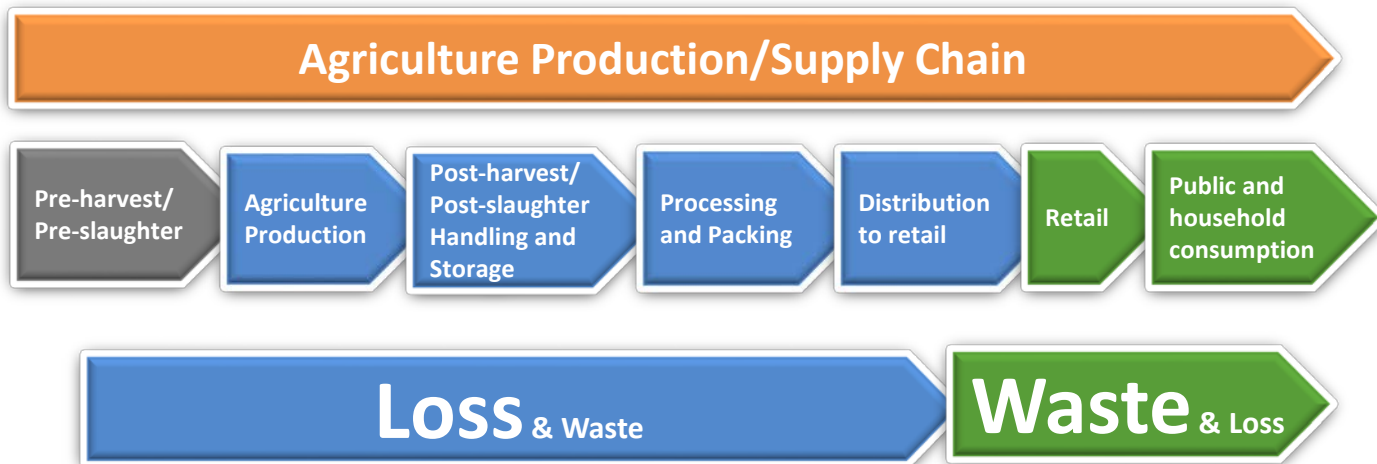
In	Out
Commodity as whole with its non-edible parts	Out-graded quantities that re-enter the supply chain Pre-harvest/Pre-slaughter and harvest/slaughter losses
	Waste/Loss that occurs at the retail and consumer levels

***Food** refers to any substance, whether raw, processed or semi-processed (including drinks), that can be consumed.

Concept of “Loss” in FBS

- For the purposes of the food balance sheet, “loss” most closely aligns with “post-harvest/post-slaughter loss”
 - representing quantities of food that leave the production/supply chain at any stage from post-harvest up to the retail level
- The accurate measurement or imputation of Loss is important
 - effect on the balance of food available for consumption
 - means to help countries identify problems in production/particular supply chains to underpin policy efforts seeking to maximize resource efficiency.

Concept of “Loss” in FBS



Loss is the result of unintended actions, decisions or situations.

Waste results from some elements of a discretionary process.

2. Data sources

2.1. Official data sources

- Attempting to measure or estimate Loss as part of their overall agricultural statistical programs
- Recommended to use targeted surveys to measure Loss
 - surveying Loss in on-farm operations and storage, Loss in warehouses or collection points, Loss in transportation, and Loss in public storage
 - including a module on Loss in annual production surveys at the farm level (to reduce the cost)
 - methodological Report on the measurement of post-harvest Loss of grains and is planning to publish Guidelines on this topic in 2017 (Global Strategy)
- Countries holding large public food stocks (particularly of cereals)
 - access to data on the Loss from these storage facilities is essential to accurate estimation of overall Loss

2.2. Alternative data sources

- Some data on Loss in specific segments of the supply chain available outside of official sources
 - encouraged to consult warehouse managers and transportation firms or associations
 - seek out case study investigations that may contain loss estimates for particular sectors

- Consider the statistical validity of the data, particularly its representativeness of the target population

3. Imputation and estimation

3.1. Imputation and estimation

Recommended approach

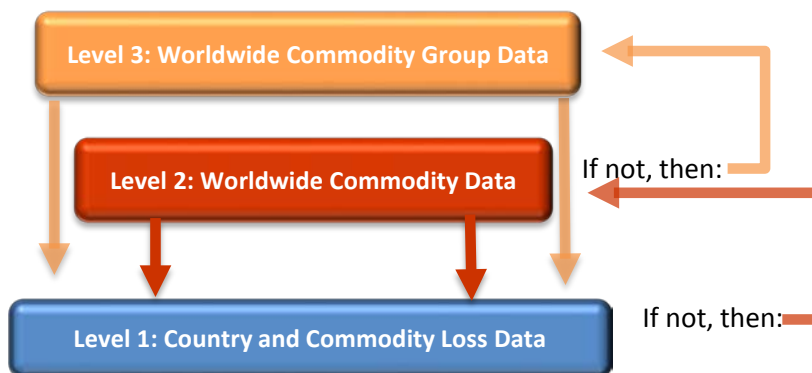
- Regression approach in cases where some historic data is available
- Assess particular situation on Loss:
 - identifying critical loss segments in each supply chain
 - determine whether or not their imputation would improve through the usage of such an approach.
- Scour any relevant available information that might inform an estimate of Loss if no historical data.

*Quantity of Loss = Quantity of Production * Estimated % Loss*

3.2. Imputation and estimation

Alternative approach

- **Hierarchical linear model** in the case where no local information is available



References

- *Guidelines for the compilation of Food Balance Sheets* (FAO, 2017), chapter 3.5, section 3.5.10 (Global Strategy & FBS Team)
- *The FAO source book for the compilation of Food Balance Sheets* (FAO, 2016) (Global Strategy & FBS Team)
- *The FAO approach to food loss concepts and estimation in the context of SDG 12 Target 3*, Tayyib, Golini, 2016.



THANK YOU!

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