



Food Loss & Waste Protocol

FUSIONS European Platform Meeting

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**Kai Robertson
Lead Advisor, Food Loss & Waste Protocol
World Resources Institute (WRI)**

BACKGROUND AND CONTEXT



Secretariat & Steering Committee

The origin



WORLD
RESOURCES
INSTITUTE



Working Paper

Installment 2 of "Creating a Sustainable Food Future"

REDUCING FOOD LOSS AND WASTE

BRIAN LIPINSKI, CRAIG HANSON, JAMES LOMAX, LISA KITINOJA, RICHARD WAITE AND TIM SEARCHINGER

SUMMARY

The Food and Agriculture Organization of the United Nations (FAO) estimates that 32 percent of all food produced in the world was lost or wasted in 2009. This estimate is based on weight. When converted into calories, global food loss and waste amounts to approximately 24 percent of all food produced. Essentially, one out of every four food calories intended for people is not ultimately consumed by them.

Food loss and waste have many negative economic and environmental impacts. Economically, they represent a wasted investment that can reduce farmers' incomes and increase consumers' expenses. Environmentally, food loss and waste inflict a host of impacts, including unnecessary greenhouse gas emissions and inefficiently used water and land, which in turn can lead to diminished natural ecosystems and the services they provide.

"Food loss and waste" refers to the edible parts of plants and animals that are produced or harvested for human consumption but that are not ultimately consumed by people. In particular, "food loss" refers to food that spills, spoils, incurs an abnormal reduction in quality such as bruising or wilting, or otherwise gets lost before it reaches the consumer. Food loss is the unintended result of an agricultural process or technical limitation in storage, infrastructure, packaging, or marketing. "Food waste" refers to food that is of good quality and fit for human consumption but that does not get consumed because it is discarded—either before or after it spoils. Food waste is the result of negligence or a conscious decision to throw food away.

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Disclaimer: Working Papers contain preliminary research, analysis, findings, and recommendations. They are circulated to stimulate timely discussion and critical feedback and to influence ongoing debate on emerging issues. Most working papers are eventually published in another form and their content may be revised.

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Recommendation 1: Develop a global "food loss and waste protocol"

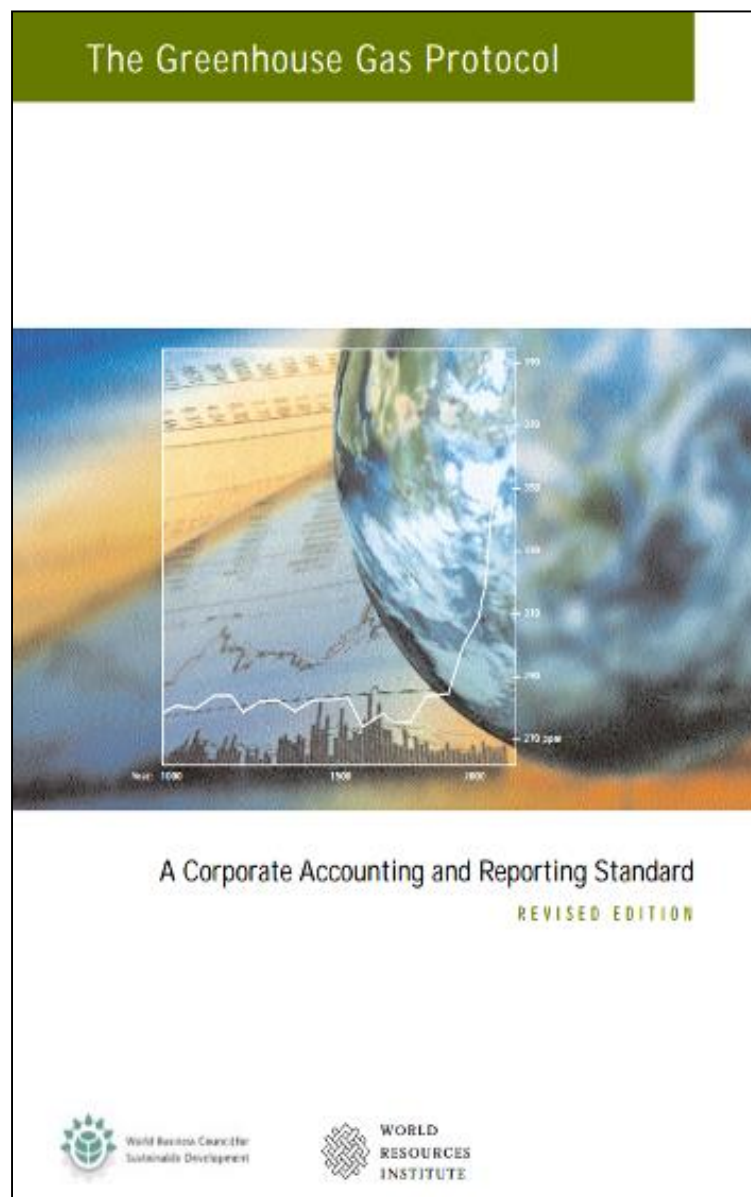


Several challenges

3D

- **Definitions**
- **Data**
- **Diverse methods**

A precedent – GHG Protocol



DETAILS ABOUT THE FLW PROTOCOL

About the Food Loss & Waste (FLW) Protocol

A multi-stakeholder effort to develop the global accounting and reporting standard for quantifying food as well as associated inedible parts removed from the food supply chain.

As shorthand for the purpose of the FLW Protocol we are using the term 'food loss/waste' or FLW to refer to 'food as well as associated inedible parts removed from the food supply chain.'

Food = any substance, whether processed, semi-processed or raw, which is intended for human consumption, and includes drink, chewing gum and any substance which has been used in the manufacture, preparation or treatment of "food."

From Codex Alimentarius Commission, Procedural Manual, 2013

Inedible parts = the components associated with a food that in a particular food supply chain are not intended to be consumed by humans.

*Adapted from FAO, Definitional Framework of Food Loss, 27 February 2014.
Inedible parts is equivalent to the term "non-food parts" used by FAO*



Goal: To enable a wide range of entities, including countries, companies and other organizations, to quantify in a credible, practical and consistent manner the extent of FLW and to identify where it occurs so as to avoid it.

Guiding principles

- Use multi-stakeholder process
- Build on existing initiatives
- Keep scope broad
- Meet user needs
- Avoid letting the “perfect become the enemy of the good”
- Be amenable to differences

Implications include...

Tiered methods.

- will propose “tiers” of recommended methods and data sources given differences in resources

Modular coverage.

- will provide guidance in a modular manner to accommodate the varying measurement objectives of users

Series of versions.

- will evolve over time reflecting advances in methods, data, and user needs

Key elements

- FLW Protocol is an **accounting and reporting standard**, not a performance standard.
 - It is intended to support preparing and reporting consistently and transparently the amount of FLW (also referred to as developing a 'FLW inventory.') The FLW Protocol standard is designed to be program or policy neutral though others may use it for their own accounting or reporting requirements.
- Goal is for the FLW Protocol to be “**firm yet flexible**.”
 - 'Firm' in that it defines clear disclosure requirements of an inventory's scope and provides globally consistent definitions of constituent parts
 - 'Flexible' in that it enables users to meet varying needs
- The FLW Protocol will not determine which processes or activities comprise “**loss and waste**.”
 - It will provide categories of what might be possible 'destinations,' or pathways for food and associated inedible parts that are removed from the food supply chain
 - Which combination of destinations constitute 'loss/waste' will be determined by factors external to the FLW Protocol
 - Independent from what might be considered waste according to local legislation or other external policies

As noted, as shorthand for the sake of simpler communication,
we are using the term '**food loss and waste (FLW)**'

More precise technically is to say the FLW Protocol is an “Accounting and reporting standard for food and associated inedible parts that are removed from the food supply chain.”

Governance



Pilot Testers

Secretariat & Steering Committee

Technical Working Groups

External Review Group

Timeline

Activities	2013		2014				2015			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Announce FLW Protocol process, develop governance and overall structure										
Develop draft content* (Technical Working Groups)										
Pilot test draft, gather feedback and revise FLW Protocol										
Publish FLW Protocol version 1.0**										
Provide public updates on progress of FLW Protocol						Nov 19				

* Input may also be sought from stakeholders in the External Review Group throughout development of the draft content.

**Aspiration is to launch September 2015 to correspond with the annual UN General Assembly meeting.

Probable structure of the FLW Protocol standard

PART I: General Information

Introduction

PART II: Preparing to Quantify (Why and What)

- Setting objectives (goals)
- Establishing and disclosing the scope of a FLW inventory

PART III: Key Concepts for How to Quantify

- Data collection
- Calculation and analysis
- Managing tradeoffs
- Tracking data, target setting, assurance and reporting

PART IV: Upstream Technical Guidance

Key concepts applied to upstream data collection and calculation, by slice of the value chain



PART V: Downstream Technical Guidance

Key concepts applied to downstream data collection and calculation, by slice of the value chain



Appendices and Notes

- Abbreviations/Glossary
- Resources and Tools
- References
- Recognitions

DRAFT COMPONENTS OF THE FLW PROTOCOL (*AS OF OCTOBER 28, 2014*)

Focus of the FLW Protocol, version 1.0

1. Food and associated inedible parts removed from the food supply chain

- ‘*Food supply chain*’ as used above refers to the connected series of activities to produce, process, distribute and consume food¹
- ‘*Produce*’ (in the definition above) refers to when the raw materials for food are ready for harvest or slaughter, which means ready to enter the economic and technical system for food production or home-grown consumption²
- Specific examples for when the food supply chain starts will be included in the FLW Protocol drawing on FAO’s and FUSIONS’s Definitional Frameworks

2. It will not include provisions for how to quantify pre-harvest losses

- Understanding losses that take place pre-harvest is relevant to increasing availability of food
- Therefore, subsequent to version 1.0 of the FLW Protocol, a separate process might develop a pre-harvest standard
- The role of pre-harvest activities and impact on loss/waste will be acknowledged in the FLW Protocol’s recommendation to collect information about causes
- If an entity chooses to include pre-harvest losses in its FLW inventory (to meet its objectives), it is required to disclose the amount

¹ Source: FAO, *Definitional Framework of Food Loss*, 27 February 2014

² Source: Adapted from FUSIONS, *Definitional Framework for Food Waste*, 3 July 2014

Disclosure of inventory scope required (*proposed*)

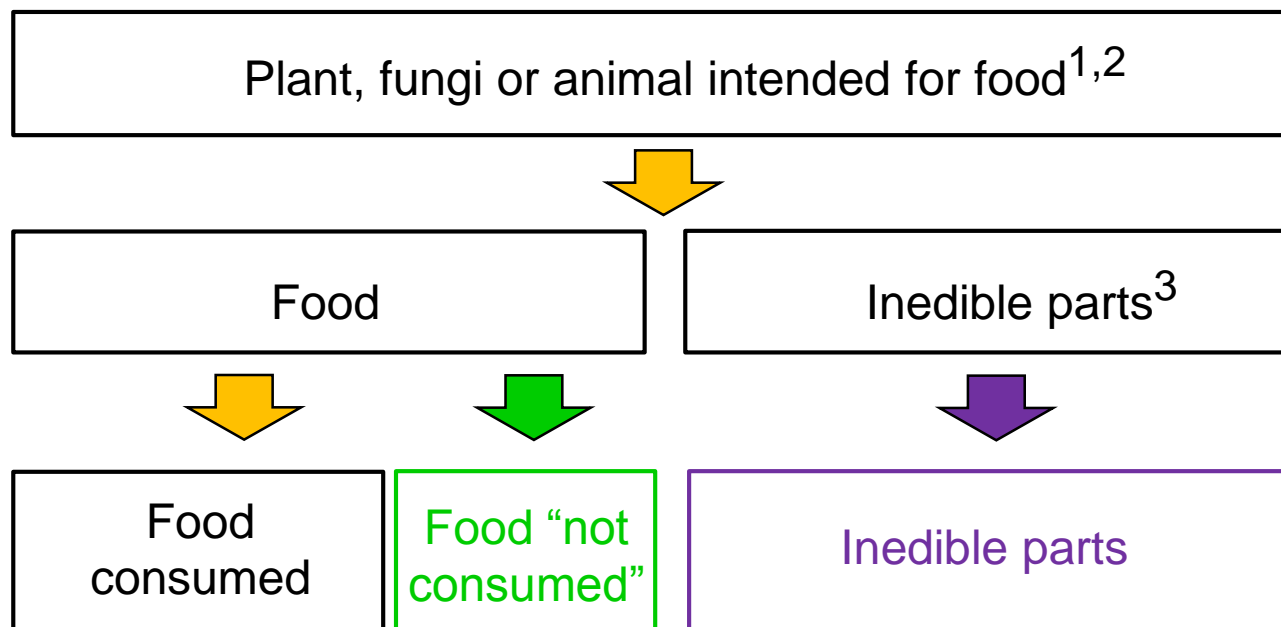
To be in conformance with the FLW Protocol, an inventory shall disclose:

- 1) Material type** (what is being measured)
- 2) Destinations** (where it's gone)
- 3) Boundaries** (4 dimensions)
 - i. Food category
 - ii. Organization
 - iii. Life-cycle stage (how many and which)
 - iv. Geography
- 4) Timeframe**

(1) Material type – visual depiction

Disclose what is being measured. Only ‘food’ or ‘food’ and ‘associated inedible parts’ or only ‘associated inedible parts’?

– i.e. *the green and/or purple box*



Source: Visual adapted from FAO, Definitional Framework of Food Loss, 27 February 2014

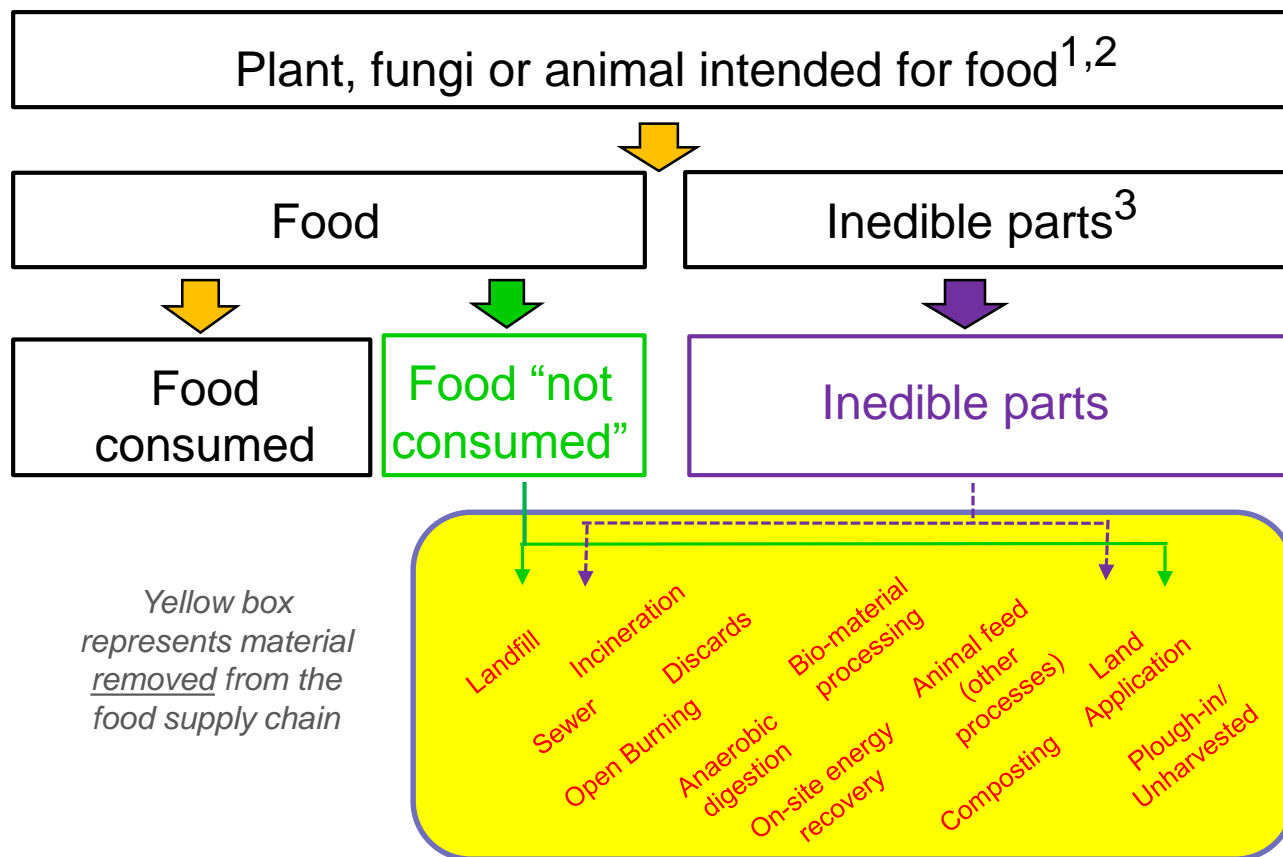
¹ "Plant, fungi or animal intended for food" refers to agricultural raw materials intended for food and thereby excludes that which is grown or used for purposes other than food.

² "Food" means any substance, whether processed, semi-processed or raw, which is intended for human consumption, and includes drink, chewing gum and any substance which has been used in the manufacture, preparation or treatment of 'food.' "Food" does not include cosmetics or tobacco or substances used only as drugs. Furthermore, it does not include processing agents used along the food supply chain, for example, water to clean or cook raw materials in factories or at home.

³ "Inedible parts" refers to the components associated with a food that in a particular food supply chain are not intended to be consumed by humans. This mirrors definition used for "non-food parts" by FAO's SaveFood initiative.

(1) Material types & (2) Destinations – DRAFT

Destinations represent possible paths of material removed from the food supply chain. Disclose destination of food and/or associated inedible parts.



Source: Visual adapted from FAO, Definitional Framework of Food Loss, 27 February 2014

¹ "Plant, fungi or animal intended for food" refers to agricultural raw materials intended for food and thereby excludes that which is grown or used for purposes other than food.


² "Food" means any substance, whether processed, semi-processed or raw, which is intended for human consumption, and includes drink, chewing gum and any substance which has been used in the manufacture, preparation or treatment of 'food.' "Food" does not include cosmetics or tobacco or substances used only as drugs. Furthermore, it does not include processing agents used along the food supply chain, for example, water to clean or cook raw materials in factories or at home.

³ "Inedible parts" refers to the components associated with a food that in a particular food supply chain are not intended to be consumed by humans. This mirrors definition used for "non-food parts" by FAO's SaveFood initiative.

(3) Boundaries (*details to be refined & developed further*)

The following table presents a sampling of illustrative examples:

In **orange** is an example of one user (= a manufacturer measuring loss and waste of carrots across the full life cycle globally); in **green** is an example of another user (=retailers and manufacturers measuring loss/waste across all food categories in their direct operations in the US)

Boundary Dimensions (w/illustrative examples)	Narrow				Broad
a. Food Category Specific food(s) being measured	Carrots	Fruits & Vegetables	Perishables		All Food Categories
b. Organization Entity being measured. Smallest unit could be field, store, factory, home	Foodmaker Plant #1234 OR A household	Foodmaker Inc. OR A cluster of households	All Food Manufacturers OR All single-family homes		All Industry (Manufacturers/ Retailers) OR All Households
c. Life Cycle Stage* How many and which stages are being measured	Direct Operations OR Harvest (= one stage)	Direct Operations plus Tier 1 Supplier OR Harvest – Milling (= 2 stages)	All Suppliers		End to End (full set of life cycle stages)
d. Geographic Geographic borders on which measurement is focused	Municipality	State	National		Global

(In)edible fractions – *proposed requirements*

Users of the FLW Protocol standard:

1. may report data on food and associated inedible parts combined or either material type separately. This will be based on their measurement objective.
2. shall clearly state which material type is included in their inventory.

If users do **separate** ‘food’ from ‘associated inedible parts,’ they:

1. shall disclose the amounts categorized as ‘food’ versus ‘inedible parts’
2. shall explain the framework and assumptions used to designate material as ‘food’ (i.e. intended for human consumption) versus ‘inedible’
3. shall clearly state the source and methods used for applying any conversion factors to the data. (Of note: the conversion factors are designed to be applied to individual types of food, not mixed waste streams.)

The FLW Protocol document will provide guidance on credible sources and methods for such calculations.

Disclosure of quantification elements required (*preliminary*)

To be in conformance with the FLW Protocol, an inventory shall disclose:

- The **geographical and temporal details** of the fieldwork.
- Details of the **measurement methods**
- **Sampling** used in sufficient detail to allow them to be replicated and, where sampling has been undertaken, information on the **representativeness** of the sample to the whole population
- How results were **scaled** to the 'population'
- Details of any **conversion** within the results: e.g. how inedible fractions have been estimated
- An estimate of the **uncertainty** in the results including sampling uncertainty
- Details of the **review process** or **quality assurance**

Thank you!

***Please be in touch if you are interested in shaping
the FLW Protocol standard.
We invite your participation and welcome all input!***

***Kai Robertson, robertson.kai@gmail.com
Lead Advisor, Food Loss & Waste Protocol
World Resources Institute (WRI)***

Appendix

SUMMARY OF DEFINITIONS AND FRAMEWORK ELEMENTS (AS OF AUGUST 22, 2014) – MAY BE UPDATED FOLLOWING NEXT SC MEETING

Definitions based on Steering Committee discussions*

The following are definitions of key terms for the purpose of the FLW Protocol.

1. Food

Food means any substance, whether processed, semi-processed or raw, which is intended for human consumption, and includes drink, chewing gum and any substance which has been used in the manufacture, preparation or treatment of "food."¹

"Food" does not include cosmetics or tobacco or substances used only as drugs.² Furthermore, it does not include processing agents used along the food supply chain, for example, water to clean or cook raw materials in factories or at home.

2. Food supply chain (FSC)

Food supply chain refers to the connected series of activities to produce³, process, distribute and consume food.⁴

3. Intended and consumption Supplementary definitions of terms that are part of the above definition of "food":

a. Intended refers to the original purpose for a substance in the food supply chain (FSC). Whether plants, animals or their parts are intended for human consumption depends on the FSC, the food system, and its geographical and cultural context.⁵

We acknowledge that in some cases it may not be known from the outset whether a substance will be destined for food or not* and that intention may change as a substance proceeds along the food supply chain. This definition recognizes that 'intended to be consumed' includes that which is "reasonably expected to be eaten by humans."

* Additional text in the document will provide guidance on what to do in those cases.

b. Consumption refers to the ingestion of food by the final consumer.

4. Inedible parts

Inedible parts refers to the components associated with a food that in a particular food supply chain are not intended to be consumed by humans.⁷

The FLW Protocol will state that "inedible parts" is equivalent to the term "non-food parts" used by FAO (in its Save Food definitions documentation)* but will use "inedible parts" thereafter.

The FLW Protocol will acknowledge that what is considered inedible may vary among users, may change over time, and is influenced by a range of variables including culture, social-economic factors, availability, price, technological advances, international trade, and geography.

*Note: The definition above merges the following two articulations of "non-food parts" in the FAO document:

1. "Non-food parts of food plants and animals: The parts of food plants and animals (FPA) which are not intended to be consumed by humans."
2. Taken from the supplementary notes to the definitions: "Non-food parts of FPA are parts which are inedible, or could be edible, but in the specific FSC are not destined to be consumed."

1. From Codex Alimentarius Commission, Procedural Manual, 2013
2. From Codex Alimentarius Commission, Procedural Manual, 2013
3. For the purpose of the FLW Protocol, "produce" refers to ready for harvest or slaughter.
4. FAO, Definitional Framework of Food Loss, 27 February 2014
5. FAO, Definitional Framework of Food Loss, 27 February 2014
6. FAO, Definitional Framework of Food Loss, 27 February 2014
7. Adapted from FAO, Definitional Framework of Food Loss, 27 February 2014

Important Framing Elements for FLW Protocol focus (1)

Framework. The following aspects are important to share in describing the scope of the FLW Protocol.

Describing potential separation of food from that of associated inedible parts: The measurement objectives of the user (which might be defined by a company policy, industry initiative, government policy, global target, etc.) will dictate whether users gather and record data on loss/waste for food only or for both food and associated inedible parts. The FLW Protocol will give guidance on what users should measure in light of their objectives.

If the user starts with data that has food and associated inedible parts combined and then applies conversion factors or other estimates to separate the food from inedible parts, the FLW Protocol will require users identify the source of these calculations as well as the methods. The FLW Protocol will provide guidance on credible sources and methods for such calculations. The FLW Protocol will also include an explanation about the value of recording data on loss/waste of food separate from associated inedible parts.

Defining 'loss and waste': The FLW Protocol will not determine which processes or activities comprise "food loss and waste." Rather, it will give a globally applicable definition of what might be possible destinations for food and associated inedible parts removed from the food supply chain, and guidance on how to measure flows to those destinations. Which combination of these destinations constitute 'loss and waste' will be determined by factors external to the FLW Protocol (e.g., industry association commitments, national regulation, UN targets.) What the FLW Protocol calls 'destinations' merely represents the possible pathways for loss and waste and is independent from what might be considered waste according to local legislation or other external policies.

Relevance to agricultural raw materials not grown for food: The FLW Protocol may be relevant to agricultural raw materials grown or used for purposes other than food (e.g., as animal feed, tobacco, bio-fuels, cosmetics). However, it will not be developed with these purposes in mind nor will these uses be tested during the development process. In situations where the user does not know the actual intended use of agricultural raw materials, the FLW Protocol will provide guidance on what to do

Important Framing Elements for FLW Protocol focus (2)

Packaging that may also be part of loss/waste streams: The FLW Protocol will require that users exclude the amount of packaging waste from their measurements and inventories. It will provide guidance for measuring or estimating the amount of packaging so it can be separated and excluded from the loss/waste measurement. It will require that users disclose the calculations used .

Focus on physical loss/waste: The FLW Protocol will focus on measuring physical loss and waste (expressed as weight). Since some users may want to measure the implications in economic, environmental, or nutritional terms, the FLW Protocol will provide guidance where possible on how to convert from weight to these other values (e.g., recommend existing conversion tools). It will also provide guidance on converting volume-based measurements to weight. Development of missing conversion tools will likely occur after Version 1.0 and might be conducted by other organizations.

Recording causes of loss/waste: The FLW Protocol will recommend that users collect and record the cause(s) of the losses and waste and will provide guidance on how to do so.

How donations fit within the FLW Protocol: The FLW Protocol recognizes donation/redistribution to food banks and other charities as an important channel for food still fit for human consumption. We will provide guidance in an appendix about measurement of donations given its importance as a waste avoidance measure. It is important to also note that when food and associated inedible parts at food banks/charities are removed from the food supply chain, these entities should also use the FLW protocol standard to measure their loss/waste.

Terminology to be used in the standard: Mimicking the outputs of the GHG Protocol, the FLW Protocol will similarly use precise language to indicate which provisions of the standard are requirements, which are recommendations, and which provisions are permissible or allowable that users may choose to follow.

The FLW Protocol will use the terminology of “shall,” “should,” and “may,” which mean the following:

“Shall” = what is required for an inventory (i.e., what is being measured) to be in conformance with the FLW Protocol standard

“Should” = indicates a recommendation, but not a requirement

“May” = a provision that is permissible or allowable