CHAMPIONS 12.3

GUIDANCE ON INTERPRETING SUSTAINABLE DEVELOPMENT GOAL TARGET 12.3

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

THE OPPORTUNITY

Food intended for human consumption that is lost or wasted is a challenge of epic proportions. According to the best available global estimates compiled by the Food and Agriculture Organization of the United Nations (FAO), approximately one-third of all food produced in the world in 2009 was lost or wasted (FAO 2011).[1] This huge level of inefficiency has substantial impacts. It results in roughly $940 billion in economic losses globally per year (FAO 2015). It contributes to food insecurity and hinders nutrition—in a world where one in nine people are undernourished (WFP 2017). In fact, food loss and waste results in a 24 percent reduction in available food calories—driven by grains—and an untold reduction in nutrients, particularly given that fruits and vegetables are the most frequently lost or wasted food group by weight (Lipinski et al. 2013). In addition, food that is harvested but ultimately lost or wasted consumes about one-quarter of all water used by agriculture each year, requires land area greater than the size of China, and generates about 8 percent of global greenhouse gas emissions annually (Kummu et al. 2012; FAO 2013; FAO 2015).

Reducing food loss and waste, therefore, can generate a "triple win." It can save money for farmers, companies, and households. It can help feed more people. And it can alleviate pressure on water, land, and climate.

Recognizing this potential, the United Nations General Assembly highlighted food loss and waste reduction as a priority for the global agenda. In September 2015, countries of the world formally adopted a set of 17 Sustainable Development Goals (SDGs)—global goals to end poverty, protect the planet, and ensure prosperity for all—as part of the 2030 Agenda for Sustainable Development (UN 2017). For these goals and targets to be achieved, everyone needs to do their part: governments, the private sector, and civil society. Although countries have the primary responsibility for follow-up and review of progress toward these goals, actions by the private sector and individuals also will be critical to achieving the SDGs.

ABOUT THIS PUBLICATION

This publication provides an interpretation of Sustainable Development Goal (SDG) Target 12.3—the one addressing food loss and waste—given some ambiguity about the target. It seeks to inform decision makers in government, business, and civil society about what should be considered a "best practice" understanding of SDG Target 12.3.

AUTHORS

This publication was prepared by **Craig Hanson** of the World Resources Institute with input by a sub-group of Champions 12.3 who have a specific interest in providing best practice guidance on interpreting SDG Target 12.3.

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Each goal has a set of targets to be achieved by 2030. SDG 12 seeks to "ensure sustainable consumption and production patterns." The third target under this goal, Target 12.3, states:

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

THE AMBIGUITY

However, conversations with many people indicate that, in several respects, the exact meaning of SDG Target 12.3 is somewhat ambiguous. In particular:

1. It is not explicit whether it covers the entire food supply chain, including sectors such as food manufacturing, hospitality, and food service.
2. Although it has a quantified target for "food waste," it does not have a quantified target for "food losses."
3. It is unclear whether the target covers only food or both food and its associated inedible parts (e.g., bones, rinds, pits/stones).
4. It is unclear which destinations (e.g., animal feed, composting, landfill, sewer) constitute "losses" and "waste."
5. The existing United Nations (UN) "indicator" for monitoring country progress[2] toward SDG Target 12.3—the Food Loss Index—only covers the food loss portion of the target, not the food waste portion (Tayyib and Golini 2016).[3]

This ambiguity has the potential to create uncertainty among governments, companies, and civil society about what they should be aspiring to achieve. Uncertainty can breed inaction. It can complicate measuring progress toward the target and comparing results. And it can hinder ambition, since entire sectors might think they are excluded, or entities might not consider certain destinations as "food loss and waste" and thus not take action where appropriate.

THE CLARIFICATION

In response to this ambiguity, this document proposes the following as an appropriately ambitious interpretation of the SDG target on food loss and waste. Clearly it is not possible to add to or change the actual wording of Target 12.3, since all the SDG targets were formally agreed upon in 2015 by member countries of the United Nations after a multiyear process. Nonetheless, the interpretation below could be considered "best practice" or a "north star" for how governments and companies should interpret SDG Target 12.3. This elaboration can guide governments (e.g., country, provincial, city), companies, and individuals as they set explicit food loss and waste reduction targets, measure progress, and take on-the-ground action.

1. **What sectors are covered?** One should interpret Target 12.3 as covering the *entire* food supply chain, from the point that crops and livestock are ready for harvest or slaughter through to the point that they are ready to be ingested by people (Figure 1). Entities should seek to reduce food loss and waste within the boundaries they control, and seek to help drive reductions up and down the supply chains where they have influence.
2. **What is the target for food losses?** If the world is to fully realize the economic, food security, and environmental benefits of reducing food loss and waste, one should apply the "halve per capita" in practice to food losses, as well, not just to food waste. Not having a quantitative target on the food loss portion risks reducing both ambition and focus on an issue (food losses) that is important for many regions of the world.
3. **What material types count?** One should interpret that "food loss and waste" applies to both "food" that is intended for human consumption[4] and its associated "inedible parts" which leave the human food supply chain because Target 12.3 comes under SDG 12 ("sustainable consumption and production") and not SDG 2 ("ending hunger"). It is thus

FIGURE 1. **The food supply chain**

PRODUCTION	HANDLING & STORAGE	PROCESSING & PACKAGING	DISTRIBUTION & MARKET	CONSUMPTION
During or immediately after harvesting on the farm (plant harvesting, livestock slaughter, fisheries catch)	*After leaving the farm for handling, storage, and transport (warehouses, silos, shipping containers)*	*During industrial or domestic processing, manufacturing, and packaging*	*During distribution to markets (including wholesale and retail markets)*	*In the home or business of the consumer (including restaurants, hotels, and caterers)*

Source: Adapted from FAO 2011.

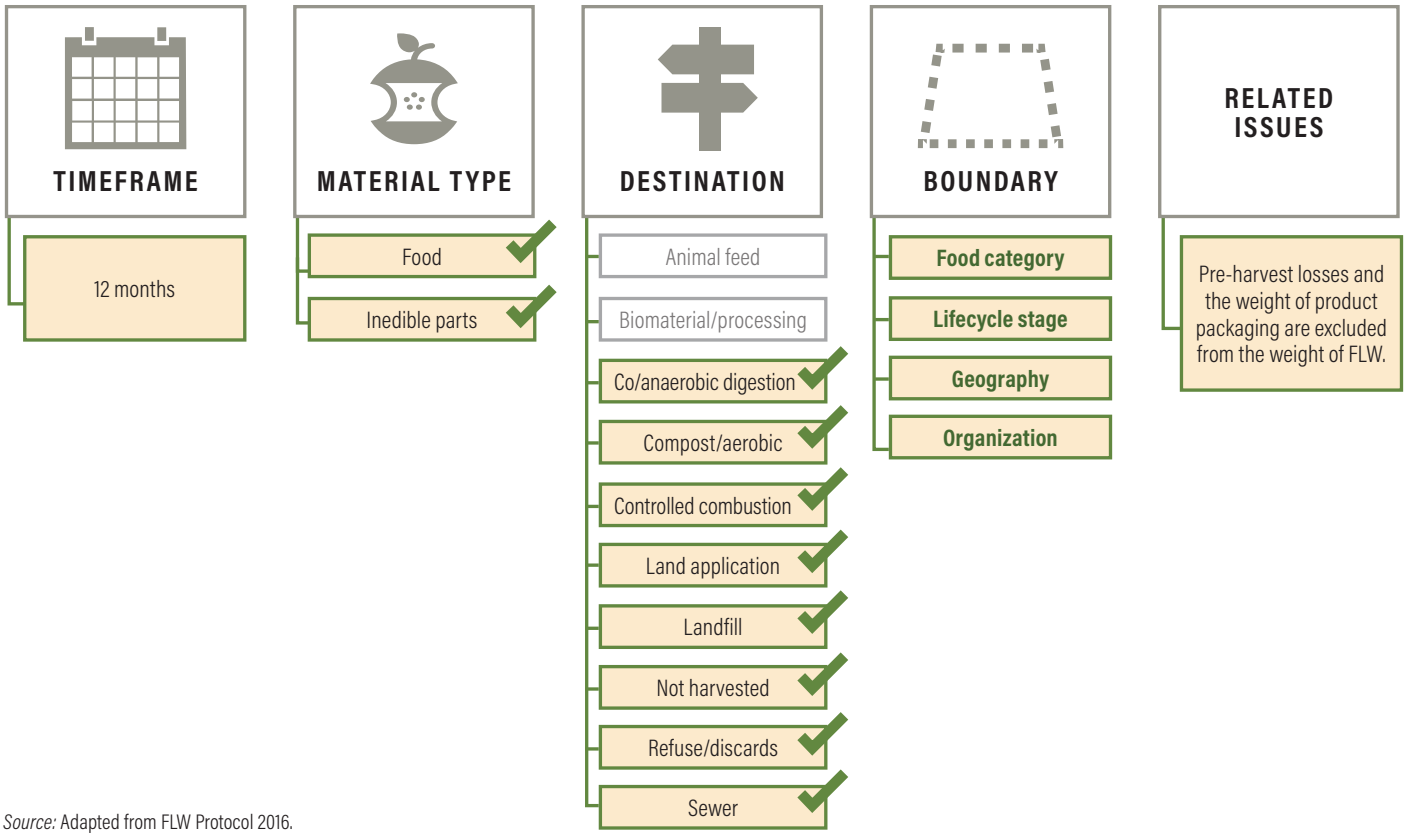
about food security *and* resource-use efficiency, and not just about food security alone. This recommendation is consistent with the draft scope proposed for country-level data being suggested by FAO and the European Commission.

4. **What destinations count?** One should interpret that "loss and waste" covers eight of the possible destinations for food and associated inedible parts that leave the human food supply chain (*see the appendix for definitions of possible destinations*). It excludes animal feed and bio-based materials/biochemical processing (where material is converted into industrial products) (Figure 2). This recommendation on defining "food loss and waste" is consistent with the approach proposed by FAO and the European Commission for country-level reporting, except that these two organizations also exclude "not harvested/plowed-in" due to data availability and regulatory constraints, respectively (Tayyib and Golini 2016; European Parliament 2014; European Parliament 2017).

   The challenge in collecting data on crops that are ready for harvest but are ultimately not harvested is real. However, including "not harvested/plowed-in" in the scope is important for inspiring interest in collecting this data, as well as for inspiring innovations that reduce this type of food loss. If countries currently do not collect this data, then there may be a role for the private sector when engaging suppliers on food loss and waste issues; that is, private sector data could complement government data. Moreover, not harvesting crops that are otherwise ready for harvest is a waste of numerous resources and is a loss of possible income. Best practice strategies do exist for minimizing the amount of food not harvested, such as gleaning and better food demand forecasting.

5. **What indicator should be used?** For monitoring of *country* progress toward SDG Target 12.3, the indicator ideally should also cover the food waste portion of the target, and not just food losses. The indicator therefore would be "food loss and waste per capita" (based on a country's population), measured in kilograms/person/year. This would be substantiated by two sub-indicators, one focusing on losses occurring from the farm up to (but excluding) the retail stage of the food value chain (the existing "Food Loss Index"), and the other focusing on waste from retail to the point of consumption (a to-be-developed "Food Waste Index"). This solution ensures full coverage of the food loss and waste issue and supports existing language of SDG Target 12.3, yet minimizes the reporting burden. FAO has been chosen to serve as custodian for the indicator.

FIGURE 2. **Recommended scope for interpreting SDG Target 12.3**



Source: Adapted from FLW Protocol 2016.

This interpretation means that SDG Target 12.3 is challenging the world to cut in half the amount of food and associated inedible parts per capita that is not eaten and goes to destinations other than animal feed or bio-based materials/ biochemical processing. This means that:

- Achieving the target involves preventing food and associated inedible parts from leaving the human food supply chain in the first place (e.g., avoiding excess food production, ensuring food makes it to market, donating or redistributing unsold food to those in need, converting inedible parts into food) and/or by shifting that which does leave the human food supply chain away from less-value-added destinations and instead toward animal feed or bio-based materials/ biochemical processing.

- The 50 percent reduction target applies to both food and associated inedible parts. However, if entities are able to measure and report on food and associated inedible parts separately, then they should be able to apply the 50 percent reduction target only to the food portion—although they should still take steps to reduce the amount of inedible parts as much as possible. This flexibility recognizes that for some entities a significant share of food loss and waste may be associated inedible parts. Yet halving the amount of inedible parts can be more difficult to achieve than halving the amount of food, since there can be physical, cultural, or regulatory limitations on inedible parts being converted into food, diverted to animal feed, and/or diverted to bio-based materials/ biochemical processing. This flexibility creates an incentive for entities to quantify food and associated inedible parts separately.

- When accounting for and reporting a food loss and waste inventory to meet Target 12.3, entities should select a scope consistent with the material types and destinations outlined in Figure 2. The *Food Loss and Waste Accounting and Reporting Standard* can help companies, countries, cities, and others by providing common definitions and language to describe the scope, as well as by providing guidance on available quantification methods.[5] Of course, entities may elect to expand the scope (to cover more destinations) if doing so helps them meet other goals beyond SDG Target 12.3 (e.g., an industry association voluntary target). An efficient approach is to quantify data and record results separately per destination for all 10 destinations in Figure 2. Doing so empowers an entity to gain insights on all its food-related material flows and retain the ability to easily share or report results for multiple food loss and waste programs, including achieving SDG Target 12.3, that may have different scopes.

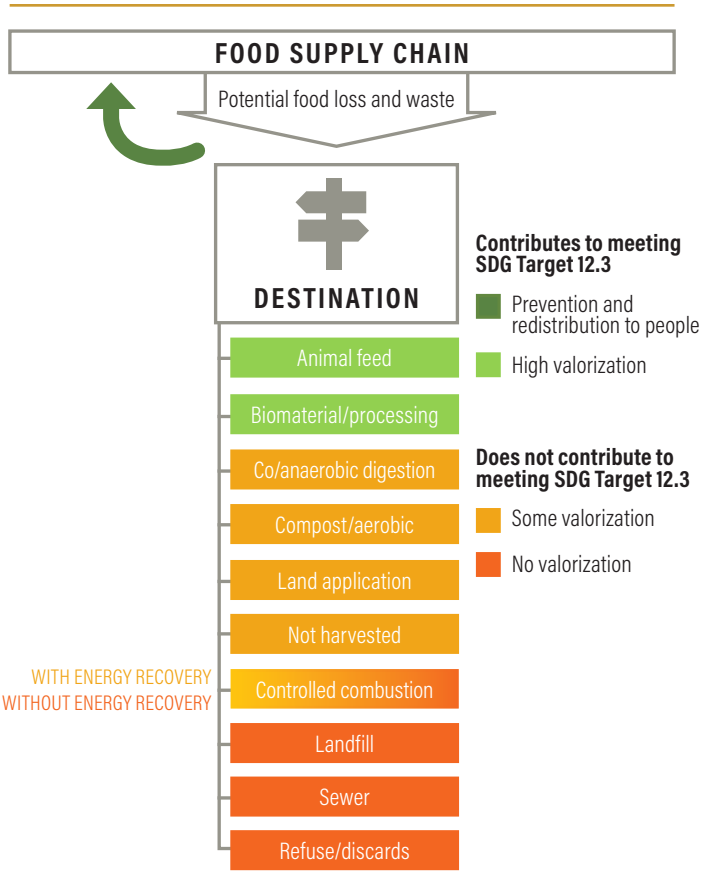
There already is a hierarchy among the suite of destinations in terms of which generate the most value for people and the planet. Although there are slight variations around the world, Figure 3 gives a perspective on this hierarchy.

THE ASPIRATION

These recommendations are designed to help governments and companies more effectively, confidently, and consistently set food loss and waste reduction targets and measure performance over time. They are designed to help governments and companies set their scopes when conducting food loss and waste inventories. In addition, they are designed to provide input into the ongoing process for developing and refining indicators for tracking the SDGs.

SDG Target 12.3 is a once-in-a-generation call to action. Governments and companies should adopt this target as their own, start measuring to manage, and boldly take action. If we all do this, we will take a big step toward a future that improves economic performance, achieves food security, strengthens social conditions, promotes resource-use efficiency, protects the planet, and contributes to prosperity for all.

FIGURE 3. **A hierarchy of destinations for achieving SDG Target 12.3**



APPENDIX

The following definitions are taken from the *FLW Standard.*

Definitions of "food" and "inedible parts"

"Food" is any substance—whether processed, semi-processed, or raw—that is intended for human consumption. Food includes drink and any substance that has been used in the manufacture, preparation, or treatment of food. Food also includes material that has spoiled and is therefore no longer fit for human consumption. It does not include cosmetics, tobacco, or substances used only as drugs. 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.

"Inedible parts" are components associated with a food that, in a particular food supply chain, are not intended to be consumed by humans. Examples of inedible parts associated with food could include bones, rinds, and pits/stones. Inedible parts do not include packaging. What is considered inedible varies among users (e.g., chicken feet are consumed in some food supply chains but not in others), changes over time, and is influenced by a range of variables, including culture, socioeconomic factors, availability, price, technological advances, international trade, and geography (FLW Protocol 2016).

Definitions of destinations

"Destinations" are where food and/or associated inedible parts that leave the human food supply chain go. The destinations in Table A1 are presented in alphabetical order and are focused on the processes used to convert material exiting the food supply chain rather than on the ultimate output (e.g., fuel, soil amendment). See Chapter 6 of the *FLW Standard* for additional detail (FLW Protocol 2016).

TABLE A1. **Definitions of destinations**

DESTINATION	DEFINITION
Animal feed	Diverting material from the food supply chain[a] (directly or after processing) to animals.
Bio-based materials/ biochemical processing	Converting material into industrial products. Examples include creating fibers for packaging material, creating bioplastics (e.g., polylactic acid), making "traditional" materials such as leather or feathers (e.g., for pillows), and rendering fat, oil, or grease into a raw material to make products such as soaps, biodiesel, or cosmetics. "Biochemical processing" does not refer to anaerobic digestion or production of bioethanol through fermentation.
Codigestion/ anaerobic digestion	Breaking down material via bacteria in the absence of oxygen. This process generates biogas and nutrient-rich matter. Codigestion refers to the simultaneous anaerobic digestion of FLW and other organic material in one digester. This destination includes fermentation (converting carbohydrates—such as glucose, fructose, and sucrose—via microbes into alcohols in the absence of oxygen to create products such as biofuels).
Composting/aerobic processes	Breaking down material via bacteria in oxygen-rich environments. Composting refers to the production of organic material (via aerobic processes) that can be used as a soil amendment.
Controlled combustion	Sending material to a facility that is specifically designed for combustion in a controlled manner, which may include some form of energy recovery (this may also be referred to as incineration).
Land application	Spreading, spraying, injecting, or incorporating organic material onto or below the surface of the land to enhance soil quality.
Landfill	Sending material to an area of land or an excavated site that is specifically designed and built to receive wastes.
Not harvested/ plowed-in	Leaving crops that were ready for harvest in the field or tilling them into the soil.
Refuse/discards/ litter	Abandoning material on land or disposing of it in the sea. This includes open dumps (i.e., uncovered, unlined), open burn (i.e., not in a controlled facility), the portion of harvested crops eaten by pests, and fish discards (the portion of total catch that is thrown away or slipped).
Sewer/wastewater treatment	Sending material down the sewer (with or without prior treatment), including that which may go to a facility designed to treat wastewater.
Other	Sending material to a destination that is different from the ten listed above. This destination should be described.

[a] Excludes crops intentionally grown for bioenergy, animal feed, seed, or industrial use.

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ENDNOTES

1. One-third as measured by weight.

2. The United Nations does not track province, city, or company progress toward the Sustainable Development Goals. *The Food Loss and Waste Accounting and Reporting Standard* provides a common set of requirements and guidance for provinces, cities, and companies (as well as countries) for transparent food loss and waste accounting and reporting.

3. This gap is recognized by the Food and Agriculture Organization of the United Nations (FAO), which has stated, "The food waste component of target SDG 12.3 is not covered at all by this indicator," and that there is "the need to have an additional indicator for the SDG 12.3 that will focus on monitoring the food waste component."

4. "Food" does not include crops grown with the intention of becoming animal feed, biofuels, or other non-food uses.

5. How to select a quantification method for a food loss and waste inventory is described in chapter 7 of *The Food Loss and Waste Accounting and Reporting Standard* (2016). A companion document, *Guidance on FLW Quantification Methods*, provides an overview of ten ways in which an entity may obtain, quantify, record, and analyze data for an FLW inventory.

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ABOUT CHAMPIONS 12.3

Champions 12.3 is a unique coalition of more than three dozen leaders from around the world dedicated to inspiring ambition, mobilizing action, and accelerating progress toward achieving SDG Target 12.3.

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