EPA Food Loss and Waste Measurement Protocol

FOR THE FOOD AND DRINK MANUFACTURING SECTOR

THE CIRCULAR ECONOMY PROGRAMME

The Driving Force for Ireland's Move to a Circular Economy

epa Environmental Protection Agency

Rialtas na hÉireann
Government of Ireland

The environmental and economic impacts associated with food waste have become more and more apparent in recent years. The extent of the issue, and the need to act on it, is reflected in **Sustainable Development Goal 12.3** which sets an ambitious challenge to countries and the food supply chain to reduce food waste. Ireland, in response to this challenge, established the Food Waste Charter, which asks businesses to Pledge, Measure, Reduce and Report on food waste.

A key part of this process is to commit to measurement and reporting of food waste in a clear and consistent manner. Based on the internationally recognised WRI Protocol (also called **FLW Accounting and Reporting Standard**), the following approach aims to support businesses to use their existing available data to identify and quantify their main food waste streams, regardless of sector or business type. This will then lay the foundations for mapping out actions to reduce food waste in line with realistic, measurable targets.

This national measurement protocol will also be crucial for businesses that are actively addressing climate change. Reducing food waste, which has a significant carbon impact, will help reduce Scope 3 supply chain emissions and will help on the pathway to net zero.

Get Involved
If you would like to get involved, and benefit from of the support and assistance provided, the first step is to pledge to adopt the objectives and goals of the Food Waste Charter. Sign up on foodwastecharter.ie

Before Measuring

Industrial food and drink production sites can be complex with multiple food waste related flows.

Some of these flows may not be thought of as "food waste" or may not be currently measurable.

However, in order to ensure consistency, the following steps should be considered before gathering your data.

STEP 1
Identify all potential food waste and related flows

See the supporting 'Food Wastes Flow Checklist' on the page and identify the ones that apply to your site.

STEP 2
Establish the scope of what is included

In order to make clear what you are measuring identify the timeframe used, material flow/ types(s), destination(s), and the boundary geography, sites, processes.

Our Protocol Measurement Template will help gather and collate relevant data to help estimate your food waste flows. Download on foodwastecharter.ie.

STEP 3
Identify available information for each flow

For all the food waste flows relevant to you, identify what information is available, what has already been established/ measured and where there are gaps in the information.

Measure and report

Every site will be different in the food wastes it generates as well as the information that it has readily available for each of these.

The measuring and reporting of food waste should be viewed as an ongoing process that will improve over time as information on the different food waste and related flows improves.

STEP 7
Report data for your first year

By working through these steps you will produce a food waste estimate based on best available information. Do not worry if your first attempt is uncertain: future improvements can be introduced to adjust this estimate.

STEP 6
Assess data uncertainty

In order to improve your information, identify and document sources of uncertainty and areas for improvement in the calculation of food waste/ surplus/ by-product.

STEP 5
Calculate the annual quantity of food waste

Once the data has been gathered and checked, compile the records to calculate food waste/ food surplus/ by-product that you included from Steps 1 & 2. Feed these annual data into the Protocol Measurement Template.

STEP 4
Gather and check records/ data available to your organisation

Begin by assembling the data that you have available within your organisation that covers the last 12 months. Identify and fill any gaps. Query returns from waste contractors that look odd. Ask questions about composition of mixed waste. Fill gaps in missing records or sites by estimating the likely amount.

Setting targets, reducing food waste and tracking progress

Now that you have established your food waste estimate it is time to formalise your commitment by setting targets and reducing food waste.

To achieve this, a more detailed approach is required that provides more process-specific data that will inform food waste reduction decisions.

STEP 8
Set targets and identify actions

Use the food waste data reported in the first year to establish targets and identify key actions to improve your data and/or tackle priority food waste flows.

STEP 9
Take action: working on food waste reduction

Depending on the actions identified, many will be sector specific. These will likely involve initial targeted food waste mapping and detailed measurements before implementing actions.

STEP 10
Track progress over time

The measurement protocol established in year 1 through steps 1-7 should be continued during year 2 and used to refine the data used and track progress against targets and actions.

This is an ongoing process

Know all flows from your food production facilities

By building a complete picture of flows related to your food production facilities you may be able to reduce costs, create value added income and reduce the carbon footprint associated with your business. This can be achieved by identifying innovative ways to reduce the generation of "wasted" food materials and by exploring ways of shifting the remaining flows up the food waste hierarchy.

Canteen food wastes
Food waste from staff kitchens/canteen areas areas should be managed using a brown bin or similar service. For more on this see the Food Service Pathway.

THE CIRCULAR ECONOMY PROGRAMME

Process related food flows	Descriptor	Destinations	Hierarchy Rating	Could this be improved? Yes? No? Maybe?
Food surplus	Food that was destined for sale but due to different reasons (e.g. product returns, off spec, packaging issues) didn't reach the intended customer	Food surplus donated to charities	★★★★★	
		Animal feed	★★★★	
Processing by-product	Materials that were never destined for sale to customers but are managed separately as a non-waste stream destined for a particular end market (e.g. fish heads, crusts, salad trims)*	Industrial Uses, Rendering & Bio-refining	★★★	
		Other _____		
Food surplus and processing by-product are often managed through the same material channels so the destinations can be similar.				
Food wastes	Materials that became a waste during the process or as final product that cannot be used as a food surplus (e.g. trims off the floor, debris from cleaning processes, damaged/ unsafe final product or returns)*	Anaerobic Digestion (AD)	★★½	
		Composting	★★	
		Land spreading	★½	
		Energy from waste	★	
		Landfill	☆	
		Other _____		
Liquid wastes	Food can often be removed from production lines or around the site through different cleaning practices. Depending on your set up this will be managed in your waste water treatment plant or go to municipal waste water discharge	**WWTP Sludges**		
		Anaerobic Digestion (AD)	★★½	
		Land spreading	★½	
		Municipal Sewer		
		Limits set by trade effluent licence	☆	
General waste	General waste from around a site (processing area, offices, etc.) can often contain quantities of food waste	Energy from waste	★	
		Landfill	☆	

*** These can include materials under the animal by-products legislation (e.g. category 3).**

MOST FAVOURED

LEAST FAVOURED

FOOD WASTE HIERARCHY

Prevention at source
Avoid generating food waste
★★★★★

Feed People
Redistribute surplus food
★★★★★

Feed Livestock
Use excess food, unsuitable for human consumption, as animal feed
★★★★

Industrial Uses, Rendering & Bio-refining
Convert usable food processing flows into value added products.
★★★

Anaerobic Digestion, Composting and Land Spreading
Recycle unavoidable food waste for low value-added uses
★★

Disposal
Energy from waste is a last resort for food waste. Landfill of biodegradable waste is being reduced by law over time, as well as the use of landfills in general
☆