

Solid Waste & Recycling

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2017 Looking Up for Waste Management & Recycling



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How to Measure Progress

Creating accurate data to solve a real problem

By / Paul van der Werf



Gustavsson et al. (2011) estimated that one third of the food produced for human consumption, or about 1.3 billion tons/year is lost or wasted annually, but because many assumptions had to be made to develop these estimates, they note that the results must be interpreted with great caution. They estimated that developed regions (Europe and North America) generate 95-115 kg/capita/year of food waste. Abdulla et al., (2013) using Statistics Canada and World Bank data (1961-2009), estimated that the amount of food waste in Canada averaged 40 per cent of food available for consumption, and that in 2009, approximately 7.3 million tonnes (217 kg/capita/year) was wasted in Canada. Agriculture and Agrifood Canada in 2015 reported there was approximately 6 million tonnes/year (172 kg/capita/year) of food waste from retail and household consumption.

In Canada it has been estimated that \$31 billion of food is wasted annually. This number has been repeated so many times, it is accepted as the truth. We don't ask or query how the estimate was developed. That said, whether the actual number is \$20 billion or \$40 billion doesn't really matter. We throw out lots of food.

However, this highlights one of the key issues with food waste and that is the inconsistency in terms of how it is being measured and reported. Quite frankly, it is all over the map. Measurement styles are divided between indirect (i.e. using datasets and inferring food waste) and direct (i.e. gathering, sorting, and weighing samples) methods. Data is presented side by side and it is difficult to determine if the resultant variability

is in fact variability or that it reflects the inconsistency of measurement methods. Policy makers are almost certainly making decisions using inaccurate data.

Langley et al., (2009) concluded that calculating and estimating the amount of food waste is a difficult issue due to a lack of real and meaningful data. The key issue with current food waste estimates is that most of them have been made indirectly. This entails estimating total food production and availability and applying "waste factors" per food type to estimate food waste. Parfitt et al., (2010) suggests there is no consensus on the amount of food waste due to data gaps and uncertainties. Furthermore, and compounding the problem, they note that many indirect estimates link back to the same data sets and waste factors. These data sets are largely compiled from data collected in the 1970s and 1980s. As an example, Abdulla et al., (2013), used reports published from Statistics Canada and the World Bank to calculate food waste from food available for consumption. Statistics Canada used waste factors provided by the USDA to develop their estimates.

So how does a nation, province, or city go about developing an accurate estimate of food waste so that goals can be set, interventions developed and implemented, and progress monitored?

The recently released Food Loss and Waste Accounting and Reporting Standard FLW Protocol (2016), developed by a number of groups such as the United Nations Environment Programme, World Resources Institute and the Waste and Resources Action

Programme (WRAP), tries to solve this issue through the presentation of a systematic approach to measure food waste.

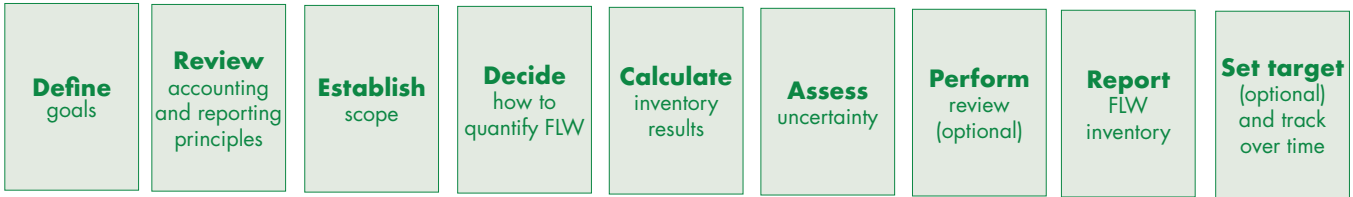
At its loftiest it is trying to set out an internationally recognized global standard that will be adopted by the spectrum of food waste generators as it measures the various inventories of food waste. More simply what is presented is data collection and reporting "101" framework that is scoped towards developing results that are accurate and actionable; comparable to future measurement iterations; and potentially comparable to others measuring the same thing.

The protocol sets out a generic approach on how to measure food waste, that could be adopted by a nation or a restaurateur. Considerable detail is presented on how to go about measuring a food waste inventory. Figure 1 highlights the series of steps that should be taken. In essence it is about uniform organization, but, also importantly about the extent of rigour (i.e. boxes 2-4) that will be imparted into any given study. Rigour is further imparted by the overarching principles of relevance, completeness, consistency, transparency and accuracy and by the more specific principles of defining timeframes (when is it measured?), material types (what part of food is measured?), destination (where does the food waste end up?), boundary (where does its measurement stop and start?). The point is that the protocol is flexible so long as everything is clearly and transparently laid out.

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Figure 1 Overview of Steps in Food Waste Measurement and Reporting

(adapted from page 25 of document http://www.wri.org/sites/default/files/FLW_Standard_final_2016.pdf)



While the generic and flexible approach taken by this protocol is its strength it is also its most critical weakness. While it presents a spectrum of approaches to quantify food waste, and makes some noises about direct measurement, it is essentially agnostic about the measurement approach an entity would take. While the protocol comes with an Excel tool to help entities decide what measurement approach they should take it is too hands off and not prescriptive enough. It does not steer us far enough away from the mish mash of data we now have. While this may well be my own bias I think that any protocol should be built on the direct measurement of food waste at the inflection point where food is considered a waste.

The other quibble I have with the protocol, and this is subtler, is its focus on food waste destination (e.g. landfill, composting etc.). This means that the protocol is focused on waste not food. This is literally correct but subliminally wrong. Food follows a path and at some point crosses what I call the green line between food as food and food as waste. We need to measure food waste within the context of determining how to prevent it from reaching those destinations. We want to measure food waste as the food it should have been

not the waste that it has become.

This protocol is good and necessary and everyone involved in preventing or least reducing food from becoming waste should read it. The authors call this “Version 1” and recognize that this is an important first step in the evolution of developing accurate and more actionable food waste data. ●●

References

Abdulla, M., Martin, R. C., Gooch, M., & Jovel, E. (2013). The importance of quantifying food waste in Canada. *J. Agric., Food Syst., Community Dev.*, 3 (2), 137–151.

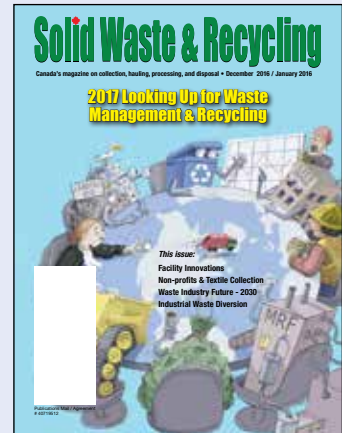
FLW Protocol. (2016). *Food Loss and Waste Accounting and Reporting Standard, Version 1*. Retrieved from http://www.wri.org/sites/default/files/REP_FLW_Standard.pdf

Gustavsson, J., Cederberg, C., Sonesson, U., Van Otterdijk, R., & Meybeck, A. (2011). *Global food losses and food waste: extent, causes and prevention*. Retrieved from Food and Agriculture Organization of the United Nations, Rome.: <http://www.fao.org/docrep/014/mb060e/mb060e.pdf>

Langley, J., Yoxall, A., Manson, G., Lewis, W., Waterhouse, A., Thelwall,

D., . . . Leech, B. (2009). The use of uncertainty analysis as a food waste estimation tool. *Waste Management and Research*, 27(3), 199-206. doi:10.1177/0734242X08095231

Parfitt, J., Barthel, M., & MacNaughton, S. (2010). Food waste within food supply chains: Quantification and potential for change to 2050. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 365(1554), 3065-3081. doi:10.1098/rstb.2010.0126.



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Paul van der Werf, M.Sc.
519-645-7733

@2cg @allfoodisfood
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