As we get better at collating and analysing the data, we’re seeing claims emerge about food-waste or food-loss being the largest component in the waste stream to focus on reducing.

The United Nations Food and Agriculture Organisation recently released figures that claim one third of all food produced for human consumption is lost or wasted. This also has a major climate impact being equivalent to 4.4 Giga-tonnes of greenhouse gas emissions per year and is almost equivalent to the amount of emissions produced by all road transport.

Food Related Greenhouse Emissions

Food Loss and Waste related greenhouse emissions can come from:

- On farm energy and fertiliser used to produce the food,
- Rejected farm food – due to vegetables being bruised or wrong shape, size or colour
- In factory electricity and materials used to package and process the food
- The fuel and transport emissions it takes to get the food from paddock to plate
- Poor transport, handling or packaging failures (and the waste of packaging materials)
- Food storage losses due to insects, mould, deterioration, shrinkage or spoilage
- Disposal from retail outlets due to passing best-use-by dates
- Food waste from restaurants and food outlets
- Household food waste
- Landfill emissions from decaying food

Food waste or loss per family in the USA is estimated at US$1,600 per year per family, or £700 in the UK and $1,036 in Australia. (The latter represents AUD$8 billion per year!)

So reducing food loss and waste is good for the climate and good for the economy.

No wonder the UN has specifically targeted food loss and waste in its Sustainable Development goals to halve food waste by 2030.

France first to make food destruction illegal

France has recently taken the lead by becoming the first country to pass a law that makes it illegal to destroy edible food, and requires supermarkets to establish partnerships with food bank and not-for-profit food recovery organisations. MPs united in rare cross party consensus to battle the “epidemic” of wasted food and highlighted the divide between giant food firms and the masses of underprivileged people below the food poverty line. In France the organisation representing big supermarkets claim that of the food wasted each year, 67% is binned by consumers, 15% by restaurants and only 11% by shops. Yet there is still some supermarkets that douse binned food in bleach to prevent potential food poisoning by eating food from bins.

UK Food Waste Footprint Factors

In the UK the Government only has a voluntary agreement with the Grocery and Retail Sector, but corporate giants such as UK’s largest supermarket chain Tesco is under increasing pressure to drop “multi-buy” discount promotion deals that result in binge buying and subsequent food wastage increase.
Tesco is working with WRAP to now track and reveal an overall food waste footprint for each of its top 25 selling items to the public, and correspondingly dropping some of its related food promotions. Many supermarkets in the UK are now working with food banks run by charities such as FareShare and Trussell Trust.

Using Technology to Reduce Waste
Spoiler Alert is the first company in the USA (produced by two Sloan MIT graduates: Emily Malina and Ricky Ashenfelter) to come up with a technical solution to connect business to business in this realm using an iPhone app. Others like Rubicon in the USA are suggesting an Uber style trash-taxi booking system as an emerging way to deal with the logistical problems of economical local pickup and delivery. Increasing regulations in the USA in Massachusetts and soon in New York City (which has a new Commercial Food Waste Ban) will effectively make Food Waste destruction illegal.

Other companies like Pulpmaster in Sydney are introducing technology into chefs kitchens that can reprocess foodwaste and send container full alerts when ready for collection.

Australian Food Rescue, Recovery, Reuse Programs
In Australia, according to the NSW EPA website www.lovefoodhatewaste.nsw.gov.au, NSW businesses donate some 6,500 tonnes of food to charity each year, yet 800,000 tonnes of edible food are still thrown away by NSW households each year.

According to www.foodwise.com.au Australians discard up to 20% of the food we purchase and if you add up all the food Australia wastes each year it’s enough to fill 450,000 garbage trucks.

Educating the consumer is a big part of the prevention process, as well as supporting and participating with those organisations trying to “Do Something” about resolving the problems.

The major food retailers here in Australia, Coles, Woolies and Aldi already have collaborative collection agreements in place with not for profit organisations like secondbite.org and ozharvest.org

"In a recent 2015 survey done for WasteMINZ by WasteNot Consulting, over 50% of the household foodwaste was attributed to fresh vegetables and fruit."

NZ Food Waste Percentage variances
In a recent 2015 survey done for WasteMINZ by WasteNot Consulting, over 50% of the household foodwaste was attributed to fresh vegetables and fruit. The study showed New Zealand has a higher proportion of fresh fruit and meat and fish waste than in the UK or Victoria. Victoria has a higher proportion of bakery and dairy waste than in the UK or New Zealand. The UK has a higher proportion of drink waste.
USA Haulers and Bodymakers Pushback
In a November-2015 Waste360 article, it was pointed out that waste truck and body manufacturers were faced with increasing concerns on the handling of segregated food waste given “...whenever you try to run a packer panel or push-out blade or anything through that kind of payload, it goes everywhere, squishes out, comes around, gets in the cylinders, it’s hard to seal these things. Extra plates need to be added to control the slop from getting out of the truck”. Food waste is acidic, and that can lead to changes in the containers from corrosion, and lifting systems to cope with the extra weight. “Trying to make an existing truck into an organics truck isn’t a good fit.”

Other concerns relate to heavier weight of food waste, requiring change to lifting systems, and less compaction needed before truck legal weight is reached. Differing socio-economic districts will also produce different participation rates and payloads — so harder to balance routes to weight capacity.

The more specialized the truck systems, the more the assets cost, and adding an additional truck to residential runs for segregated food waste just adds more emissions and transport costs, while truckers baulk at the thought of picking up “a few pounds of lettuce trimmings and chicken bones” every few households, making it more expensive to collect food waste than MSW.

The challenge is seen to be how quickly the changing government and environmental regulations will scale up the requirement for technology evolution of related containers and specialized truck systems.

Increasing USA Corporate Climate-Conscience
The need to be seen by its customers and shareholders as good climate-conscious corporate citizens has also prompted large companies like Starbucks to pledge donation of all of its unused food items to the needy within 5 years.

The coffee retail giant’s “FoodShare” program will use refrigerated vans to pick up unsold food from its 7,600 U.S. company-operated stores and distribute it through food banks. Starbucks claims the initiative will deliver almost 50 million meals by 2021 and help divert food waste from landfills. The main complexity here to solve is how to connect the retail collection points with refrigerated vehicles that can retain what little food-life is left in the goods till it can get to local food-banks and non-profit food recovery organisations to facilitate delivery to the needy.

Coffee Culture Capsule Consumption
Paradoxically, the popularity of a barista made coffee-to-go in a portable plastic lined cardboard cup with a PBA-content plastic lid to suck through could be the next big health and plastic disposal problem to focus on — not to mention the plastic pods proliferation from home expresso machines.
Plastics becoming part of the food chain?

(Fish with Plastic Chips?)

Plastics are coming more and more under focus in the microscope as we hear stories emerging about microbeads in make-up products like facial and body scrubs. Microbeads are minute pieces of plastic defined as 0.1 to 0.5 millimetres in size, used to give beauty products a grainy texture for exfoliation. These get washed down drains but are too small to be filtered by our sewage systems, then are ingested by marine life because they resemble fish eggs (so far more dangerous than a plastic drink bottle).

A recent ABC Catalyst TV documentary programme showcased how a CSIRO research team spearheading the Marine Debris Survey, is showing a considerable amount of microscopic plastic threads are getting through greywater filtering systems in ocean outfalls. This seemed to be even more prevalent than the microbeads and was traced back to the filtering systems on washing machines being inadequate to sift out the fibres being shed from the growing percentage of synthetic clothing now on the market.

“Researchers are worried not only about the physical impact of consuming a chunk of plastic, but also about potential chemical contaminant hangers-on.”

Researchers are worried not only about the physical impact of consuming a chunk of plastic, but also about potential chemical contaminant hangers-on. The contaminants that are bound to that plastic can still come off during the digestion process and include a group of chemicals known as ‘persistent organic pollutants’ or POPs. These are very high on the list of dangerous environmental toxins, as they don’t break down and accumulate in the bodies of animals all the way up the food chain. Many are known to impact the health of large numbers of species, including humans.

According to a report just published from the World Economic Forum, if we keep going at the current rate, oceans will contain more plastic than fish by 2050. Alarming, but perhaps not surprising given that a reported 8 million tonnes of plastic ends up in the ocean every year.