

Food Waste

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Food production is a resource intensive process. Conventional agriculture requires large land areas and significant volumes of water; two resources that are already at risk. Exploiting land leads to soil degradation and water pollution, while an increase in overfishing has put several species at risk. It is estimated that one third of global food produced is lost or wasted somewhere along the food supply chain. While many people would be familiar with food waste at the retailer or consumer end, a significant amount of waste can also happen at the start of the food chain – with the primary producer.

For this reason, Dr Jennifer Attard and Dr Tracey O'Connor, from the CircBio Research Group (Shannon ABC, MTU Kerry) have, in collaboration with UCD, quantified food loss and waste from all of primary production in Ireland. This data has been used to help understand where these food losses occur, in the agriculture, fishing and aquaculture sectors. This work was part of the EPA-funded project, Efficient Food. The team found that significant food loss was especially common in the horticulture sector. The reasons for this were quite varied but can be boiled down to two major issues – environmental pressures and supply chain pressures.

Environmental pressures can impact waste through the production of food that came to be inedible due to pests and diseases or severe weather conditions that destroy the produce. The latter can sometimes occur when there is not enough time or enough workers available to harvest the produce before a storm arrived. These issues are inherent to farming and therefore cannot be completely avoided. However, the issues can be somewhat mitigated by more holistic farming methods that might naturally control pests and diseases (to some extent), or by having smaller farms that are more manageable.

Supply chain pressures can also provide for significant impact in the production of food waste in horticulture. Supermarkets have the ability to control what size or shape the produce must be to be deemed saleable, leading to significant wastage of over/under

specification produce that is perfectly edible. Prices can also be decided by supermarkets, which sometimes means that they can put certain produce, such as broccoli, on offer, resulting in other similar produce, such as cauliflower not being sold as much. If cauliflower is not selling, they may cancel their orders from farmers, leaving them with large amounts of edible produce and no market for it.

When unsold produce is edible, there is still the possibility to make sure that it ends up on someone's plate. The CircBio Research Group has therefore teamed up with FoodCloud to pilot and investigate an idea where farmers' costs are covered, allowing them to donate this food to FoodCloud, who will then redistribute it to those suffering from food poverty across Ireland. This 10-month project is funded by The Department of Agriculture, Food and the Marine.

The CircBio team is also looking at solutions that can address the redistribution of power in the food supply chain. The Horizon 2020 funded agroBRIDGES project is a 3-year European project looking to empower farmers by supporting Short Food Supply Chains (SFSCs). SFSCs are those where there is as a maximum of one intermediary between the food producer and the food consumer, or where there is a short geographical distance between where the food is produced and where it is consumed. Examples of SFSCs include farmers markets, farm shops, vegetable box schemes and community supported agriculture. Increasing the number of SFSCs in Ireland requires a strong educational drive for all of producers, consumers, retailers and policy makers, as well as skills training for producers in marketing and other digital skills. It will lead to more communication between producers and consumers as the two come face-to-face at the point of sale. This will naturally lead to further learning for consumers about sustainable food production directly from the producer; the producers will also learn about marketing, pricing and consumers' needs, through their own experience with direct sales to consumers.

Whether through a short-term, relatively quick to implement solution such as surplus food donations, or a long-term, total value chain approach such as shortening food supply chains, or a combination of these and other approaches, change is definitely on the way. Food waste is not only an environmental issue, but also a social and public health issue. It has been encouraging to see a significant increase in funding in this area, and it is expected that the resulting data will lead to effective food waste prevention policies in Ireland.