

**Chloé Duguay**

**Managing Food Waste in Nova Scotia**

**Cobequid Educational Centre**

**Grade 12**

**April 20th, 2021**

## Executive summary

Food is a valuable resource. It is essential for life on earth and our collective well-being and health. Food's global importance as a resource is ever-increasing, as the global population rapidly grows. Resources are increasingly becoming more scarce, yet, much of our global food supply is being wasted. Food waste and its environmental implications are hidden and misunderstood environmental problems, but its consequences are serious. It is estimated that 8-10% of global greenhouse gas emissions are associated with food that is prepared, but not consumed (UNEP, 2021). The United Nations directly addressed food waste and its impacts on the environment in sustainable development goal 12.3. Sustainable development goal 12 focuses on responsible production and consumption, including the production and consumption of food. Goal 12.3 specifically aims to halve global food waste by 2030.

Food waste is best defined as food that is discarded, whether or not it is kept beyond its expiry date or left to spoil. It is any food removed from the food supply chain. (UNEP, 2021). The true cost of food loss is not universally understood. Loss is costly to individuals, retailers and the larger economy. In Canada alone, more than half of all food produced is wasted annually. This accumulates to be 35.5 million tonnes of lost food, of which one-third could be recovered and consumed (Second Harvest, 2019). This causes individual households, on average, to lose \$1,766 annually.

Nova Scotia is a leading province in efforts to reduce food waste. The main issue Nova Scotians face in combating excess food waste is at the retail and household level. The majority of the waste occurs in households, however, it is still present in catering events and retail stores.

## Managing Food Waste in Nova Scotia

Food waste is extremely detrimental to our planet. If food waste was a single country, its measurable pollution would rank third for greenhouse gas emissions, behind China and the United States respectively. There are many negative impacts of food waste. Significant amounts of wasted food ends up in a landfill, after being improperly disposed of. As the food decomposes in the landfill, it primarily releases methane gas into the atmosphere. The methane gas created from food finding itself in a landfill is extremely worrying, as methane gas is 25 times more potent than carbon dioxide (Second Harvest, 2019). To avoid the phenomenon, properly disposing of waste is essential. By properly composting food, it reduces methane gas, creates organic fertilizer that can be used instead of chemical fertilizer and helps revitalize and restore farmland. Composting food and turning it into fertilizer helps create healthy soil, an essential part in the continuation of mass food production (EPA, 2021).

Food waste occurs for a multitude of reasons. Food waste is a more severe problem in western and developed countries. The abundance of food within Canada causes consumers to become desensitized to throwing away unused products. Once food is purchased, it loses its initial value to the purchaser. Therefore, the purchaser feels little to no remorse in throwing away an unused product. Another cause for food waste is product dating. Many fresh and stored items have expiration dates with no relation to food safety concerns. Manufacturers implement dates earlier than the products true expiration, to uphold positive perceptions of the quality of their product from consumers. Ultimately, this causes consumers to throw out food that is still safe to eat. This habit extends itself to retailers, where daily fresh made products that go unsold, are disposed of. This food is still consumable, however, due to production and consumption habits, it finds itself wasted (Second Harvest, 2019).

The global problem is not food production: we currently can produce enough food to provide for our global population. Our collective problem is food and waste management. Millions do not have an adequate supply of food, whereas globally, there is accessible food being thrown away. The abundance of food that is being wasted annually also creates major economic losses. Our current food consumption mimics the trajectory of the linear economy. The linear economy follows the ideology of “take-make-dispose”, leading to waste and closed cycle. The model influences how we think about food waste, perceiving our waste to not have consequences. The vast majority of the population readily throws away food, without a second thought. Food waste is a manageable problem. To solve this wide-scale problem will require cooperation from consumers, governmental policies and a collective effort.

Food production is a very resource-intensive process. The process of cultivating livestock, growing fresh produce and grain exploits natural resources, contributing to a loss of natural biodiversity, further damaging our environment. For approximately 30% of global food produced annually to be wasted (UNEP, 2021), it causes enormous consequences for our environment beyond food decomposing in a landfill. The rapid mass production of produce is damaging fertile soil. Since the soil does not have sufficient time to recover between harvests, the condition severely degrades. If more food was composted and turned into nutrient rich fertilizer, it would help combat this issue. However, the best way to help keep farming soil healthy is to not rapidly mass produce food, with significant portions of the yield ending up wasted.

When examining how to manage food waste, it is best to follow the hierarchy of solutions to address food loss and waste. The first step the Canadian government prefers is to reduce the consumption of food. This is the single best way Nova Scotians can reduce our environmental

impact from the food we consume. Changing our purchasing and eating habits is a commendable goal, but will require a change in the way our society views food. Canadians and Americans have the largest fridges in the world, a factor that adds to our problem. The size of fridges in North America reflects our habits as consumers. It is visually appealing, and an indicator of wealth and options. North Americans are over-eating, and fridges are a reflection of this habit. Fridges run day and night, and use more energy than any other household appliance. Their sheer size and energy use have serious ramifications for our planet (Rees, 2013).

Portion sizes and plates have also increasingly become larger. A larger plate encourages people to eat more than they need. This is part of the over-consumption cycle that is difficult to break. A solution that can help take on this issue of overeating that leads to great amounts of food waste, is reducing plate sizes and removing trays from cafeterias. By doing this, people are taking the correct portion size. This avoids endlessly piling food onto a tray, till it appears full. By pre-portioning food in buffet style settings, people can still take what they wish, with little to no food going uneaten. A secondary positive of plate size reduction, and the removal of trays from buffets is the reduction in people over eating. A consequence of having disposable food and low prices, is that people are over eating. Obesity is a concerning problem in North America, with a strong correlation to the over purchasing and consumption of food.

Consumers need to be encouraged to purchase less. A change in mindset is the first step that individuals can take in doing their part to reduce food waste. Small changes in mindset are the first steps individuals can take to reduce their independent food waste. The FAO has created fifteen simple actions to reduce waste. The list includes solutions such as making a grocery list, avoiding purchasing unnecessary products. Choosing the “ugly” produce so that it does not rot on a shelf. They recommend cooking smaller portion sizes or ordering a large portion from a

restaurant and sharing it with a group (FAO,2020). The main aim of the FAO recommendations is to demonstrate how easy and effective small changes to daily routines can make a big difference. A habit of purchasers that adds to food waste is the purchasing of products of sale, accumulating a surplus of food, then having to throw it out because the food has spoiled. Becoming a conscientious shopper will drastically change independent household waste.

A solution for managing food waste that is created from prepared food is by connecting those who need food, with those who need to get rid of excess food. On a small scale, this has the potential to make a big difference in communities, while reducing waste. Connecting catering companies with homeless shelters or soup kitchens gives those who need food quality meals. This can be done through cellular applications, where organizations can post either their need to obtain or dispose of food. This is effective because food banks do not accept prepared food. Buffet-style catering has unfinished or untouched food that gets discarded. This would see that it is discarded in a positive social and environmental way.

Relocating food to those in need is one way that food can be reused, to avoid the last level in the hierarchy of food waste disposal. An additional way to reuse food is by providing waste to farmers to feed livestock. This works best when done on a large scale. Grocery stores could donate produce that has gone unpurchased. The farmers could then decide rather to feed it to their livestock, or convert the food into fertilizer for their crops (EPA, 2021).

A more complex solution to reduce the impact of food that is wasted is converting the waste into energy. As resources become increasingly scarce and limited, this is an opportune strategy to manage food loss. Processing organic waste in an effective manner such as converting it into biofuel is a great way to reduce it decomposing in a landfill, releasing methane gas, but also diverting from non-renewable energy resources. Biofuel is a sustainable energy source with

great potential to fuel Nova Scotia (Government Canada, 2020). It will help sustain our current lifestyles while helping reduce our negative impact on the environment.

To achieve the global goal of limiting global warming to no more than 1.5 °C by 2030, serious action needs to be taken to reduce food waste. To avoid waste falling into the final level of the hierarchy of food waste, the first step Nova Scotians can take is by single handedly changing their mindset on food purchasing and consumption. By informing Nova Scotians of the severity of the issue, we can begin to comprehend how small inactions lead to widespread food loss. Although it is easier to throw away excess food into the trash, individuals need to take initiative to avoid this by understanding the alternative options. To achieve UN sustainable development 12.3, it will take a colossal global effort. However, it is possible. By investing in biofuel infrastructure, it can make a big difference in the amount of waste found in landfills, but also shifts Nova Scotia energy towards renewable sources. Food waste is an avoidable problem, it only takes individual and governmental efforts to see that it stops.

## Works Cited

Canada, E. and C. C. (2020, December 14). *Government of Canada*. Canada.ca. <https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/food-loss-waste.html>.

Canada, N. R. (2020, March 31). *Government of Canada*. Natural Resources Canada. <https://www.nrcan.gc.ca/science-data/funding-partnerships/funding-opportunities/current-investments/urban-waste-electricity-demonstration/4963>.

EPA. (2021, April 14). *Reducing the Impact of Wasted Food by Feeding the Soil and Composting*. EPA. <https://www.epa.gov/sustainable-management-food/reducing-impact-wasted-food-feeding-soil-and-composting#benefits>.

Forbes, H., Quedstedt, T., & O'Connor, C. (2021). (rep.). *Food Waste Index Report 2021* (pp. 1–100). Nairobi, Kenya: United Nations Environment Program. Retrieved from <https://www.unep.org/resources/report/unep-food-waste-index-report-2021>

MacDonald, A. J. (2019). *Minimizing Terminal Food Waste Within The Food Supply Chain* (dissertation). Dalhousie Library, Halifax, NS. Retrieved from <https://dalspace.library.dal.ca/bitstream/handle/10222/75925/MacDonald-Ashley-MSc-AGRI-May-2019.DalSpaceFinal.pdf?sequence=12>

Nikkel, L., Maguire, M., Gooch, M., Bucknell, D., LaPlain, D., Dent, B., Whitehead, P., Felfel, A. (2019). *The Avoidable Crisis of Food Waste: Roadmap; Second Harvest and Value Chain Management International; Ontario, Canada*. <https://www.SecondHarvest.ca/Research>

Rees, J. (2013, November 5). *The Huge Chill: Why Are American Refrigerators So Big?* The Atlantic. <https://www.theatlantic.com/technology/archive/2013/10/the-huge-chill-why-are-american-refrigerators-so-big/280275/>.

United Nations, F. A. O. (2020, September 29). *15 quick tips for reducing food waste and becoming a Food hero*. Food and Agriculture Organization of the United Nations. <http://www.fao.org/fao-stories/article/en/c/1309609/>.