

Millar, S., Parizeau, K., & Fraser, Evan D.G. (2020). “The limitations of using wasted food to feed hungry people.” *Journal of Hunger & Environmental Nutrition*, 15(4), 574-584. <https://doi.org/10.1080/19320248.2020.1730292>

Abstract

In this research brief, we report on findings from research on organizations that distribute recovered food in Metro Vancouver, Canada in the context of widespread food waste. Our findings suggest that there are challenges and costs associated with the redistribution of recovered food, and that there can be a stigma associated with using wasted food in food programming. We recommend further study of the large-scale diversion of uneaten food to food security programs, and we argue that food donation should be viewed as a limited, short-term and partial response to food waste crises, rather than a systemic fix.

Keywords: food waste; food security; food donation; Canada

Introduction

Food waste has recently become a high-profile issue. The United Nations Food and Agriculture Organization estimates that one-third of all food is wasted on a global scale; this is the equivalent of 1.3 billion tonnes of food annually at a cost of \$750 billion USD.¹ Food waste is often framed as an environmental issue (i.e. it a source of greenhouse gases, and uneaten food represents a waste of the land, water, and agricultural inputs that were used to produce it), as well as a social issue in light of widespread hunger and food insecurity.

There have been calls to reduce wasted food through the donation of surplus and rescued food to “feed hungry people” (as per the United States Environmental Protection Agency’s Food Recovery Hierarchy: USEPA 2017).² France and Italy have introduced regulations to impel or incent retailers to donate uneaten food to emergency food providers, while other high-income countries have initiated similarly motivated strategies and interventions.^{3,4,5} The positioning of food donation or rescue as solutions to food waste is common in academic literature as well.^{6,7,8}

In this research brief, we surveyed and interviewed food security organizations in Metro Vancouver, Canada, in order to learn about their experiences of using rescued or recovered food in their food provisioning programs. We document both the organizational value of using food that has been recovered or diverted from waste streams, as well as the challenges associated with this food provision model. We argue that food donation should be viewed as a limited, short-term, and partial response to food waste crises rather than a systemic fix, and we call for additional research on food donation as a food waste solution.

Case Study: Region of Metro Vancouver, Canada

In the Canadian context, the Commission for Environmental Cooperation estimated that the country generated 18.44 million tonnes of organic waste in 2012.⁹ The cost of food waste in Canada has been estimated at \$49.5 billion.¹⁰ Food insecurity is also a concern in Canada, although this is one of the wealthiest countries in the world. Based on available data, approximately 12% of Canadian households experienced some level of food insecurity in 2014.¹¹

In Metro Vancouver, British Columbia (BC), the vision for a socially just and environmentally conscious food system is promoted through various regional and municipal strategies.^{12,13,14} Conversely, severe income inequality in Metro Vancouver continues to challenge the successful enacting of these policies.¹⁵ Although the city of Vancouver has had a reputation as ‘the most livable city in the world,’ it is home to one of the poorest neighbourhoods in Canada: Vancouver’s Downtown Eastside. Despite the presence of the Metro Vancouver Food Strategy¹³, food insecurity is a trenchant concern in the Lower Mainland of BC.¹⁶ Emergency food and community food security initiatives, largely external to governmental programming, provide much needed support for marginalized communities throughout the region.¹⁷ Organizations like food banks, community kitchens, and food education programs

heavily rely on non-perishable food donations.¹⁸ While these contributions are essential, many organizations recognize the importance of access to fresh, healthy, and culturally appropriate food, and wish to provide this for their clients. The redirection of food waste and surplus food is one method employed by several food organizations in Metro-Vancouver to provide a low-cost access point to healthy, fresh produce.

The Region introduced the Metro-Vancouver Organics Disposal Ban in January 2015, banning all organic matter from entering the waste stream. This policy fined retailers and businesses if they disposed of garbage that was more than 25% organics. The goal of the policy was to reduce the amount of food waste sent to landfill in the Region, and to reduce the environmental impact of food waste more generally. At the same time, Metro Vancouver introduced a food scraps collection program for residents and businesses. In order for businesses to use the municipal garbage system, food scraps had to be separated from other waste to be collected for composting.¹⁹ This change in policy was accompanied by the promotion of the Food Donor Encouragement Act²⁰, which addresses liability issues surrounding food donations, as well as the promotion of food donation as a means of reducing food waste. While the government does not provide services for food reclamation, many organizations are well positioned to redirect this wasted food back into the food system. This study assesses the food recovery work of some of these organizations in Metro Vancouver, as well as their perceptions of the challenges and potential for increased food recovery in the new policy context.

Materials and Methods

This research was conducted in Metro Vancouver over a four-month period from June to September 2015. Vancouver, Burnaby, and Richmond were the primary locations for this research. The research began with an analysis of regional and municipal policy documents to

gain an understanding of governmental efforts towards food reclamation, waste management, and food security. Millar then compiled an inventory of food provisioning organizations in the region using internet searches and referrals from research participants. This research approach led to the successful identification of both formal, well-known programs and informal, unadvertised programs that use recovered food. However, it is likely that some small or informal food programs that did not have an online presence were not identified through this process. Another issue in identifying organizations that participate in food reclamation is that their mandates are often broad, and so they may not publicize food reclamation as a formal service. For example, in Vancouver's Downtown Eastside it is quite common for organizations with the primary goal of providing housing and addiction support to informally offer clients food as well.

The next phases of research involved a survey distributed to the food organizations in the inventory (either electronically or hard copy, depending on the preference of the organization). The survey inquired about the organization's mandate, their activities, their use of reclaimed or wasted food, and their perspectives on the then-recently enacted Organics Disposal Ban. Follow-up interviews were conducted with survey respondents who indicated that they used recovered food in their programming. Some interviewees opted to complete an interview instead of or before completing the survey due to limitations on their time. The interviews focused on an organization's operational use of reclaimed foods as well as the barriers and opportunities of utilizing reclaimed food in their programming. Millar conducted participant observation in conjunction with some of the interviews in order to gain first-hand experience of diverse food programs in various communities.

In total, 31 organizations completed the survey, 29 participated in interviews, and participant observation was conducted with 9 of the interviewed organizations. Participant observation was also undertaken at a public food waste reclamation event that took place during

the course of the research. Additionally, Millar interviewed 8 key informants, including 5 food donors (retailers, caterers, and produce distributors), a local government official, and two food security experts. Open-ended survey questions and interview transcripts were thematically coded using NVIVO software.

Results

Food Recovery in Metro Vancouver

Food recovery is often framed as both an environmental and a social benefit in the Metro Vancouver context. Many organizations mentioned environmental concerns around diverting waste from the landfills as a main motivation for engaging in food reclamation, and also noted that they economically depended on the use of reclaimed food to keep their programs running and feed their clients. Many of these participants also felt that they were providing valuable services to vulnerable populations who would otherwise not have access to food.²¹ For donors, addressing social and environmental concerns regarding food waste were the most common reasons for participating in food reclamation programs. The key informant from local government stated that redirecting food will help the city achieve their goal of 70% waste diversion by 2015, and simultaneously help to feed disadvantaged people in the area.

When asked about their activities, most of the surveyed organizations listed supporting food security, food provision, and community-building as part of their mandate. Only 35% said they distributed reclaimed food as part of their activities. We note that we allowed respondents to self-identify as users of “reclaimed” food; some may have considered any food donation to be an act of reclamation, whereas others may have used a narrower definition of reclamation as the collection of post-consumer food that had been designated as waste by the original users. When survey participants were asked where they receive wasted food from, the most common

responses were supermarkets, farms, individual donations, and other food provision programs. A small proportion reported that they gleaned food, and no organizations selected dumpsters as a source of food waste. Organizations who participated in follow-up interviews said that they received the majority of their perishable food donations from sources such as grocery stores, distributors, catering companies, processors, farmers' markets, and larger food banks.

Challenges associated with food recovery activities

Interviews with those organizations who said they reclaimed food revealed various concerns associated with this activity. Many of these concerns pertain to the management of donated food more broadly, and so some of our results are confirmatory of other studies of emergency food programming. For example, a number of organizations expressed concerns about the quality and types of food that they received, including low amounts of fresh produce and high amounts of sugar-rich and other carbohydrate-based foods.^{22, 23, 24}

Interview respondents noted that a reliance on recovered foods posed distinctive concerns as compared to other types of donations. Many of the interview participants remarked that using rescued produce as a primary source of food could make program planning difficult because they never knew what kind of food they would receive nor what condition it would be in. Some organizations that prepared cooked foods said that inconsistent amounts of food posed a larger problem. One organization said that they receive large pallets of produce that stores cannot sell because they are misshapen, or the colour is not to retail standards. While this produce ends up being a useful resource for their programs, participants noted that the same donations often contain many containers with mould in them. Participant observations revealed that large-scale wasting occurred when rescued products were nearing their best before dates. In particular, Millar observed a large garbage bin full of boxes of curry sauce that were past their best before date and was told that this food rescue organization did not have the volunteer resources to

remove the product from its packaging in order to compost it. Another organization offered yogurt that was close to its best before date to volunteers and staff and also offered excess food to Millar.

Many of the smaller organizations interviewed noted a tension in the necessity of accepting unwanted donations in order to maintain connections with donors. They felt that there was an unequal power balance between retailers and smaller organizations, which often resulted in spoiled or unwanted food making its way into the flow of donations. The pressure to maintain good relationships with donors meant that many accepted donations even if they were not of the appropriate type, quality, or quantity (Tarasuk and Eakin 2005 implied similar dynamics in their analysis of food bank practices).¹¹ Larger food distribution organizations had an easier time creating and maintaining relationships that were focused on their needs, rather than their donors' needs. These larger non-profits were much more likely to negotiate with retailers about the types of donations they would not accept.

Most interview participants noted that a lack of infrastructure (including dry and cold storage, commercial kitchen space, appropriate transportation resources, and waste management infrastructure and services) contributed to their inability to effectively and efficiently deal with incoming food donations. This need has been discussed in other research of food non-profits, especially those dealing with fresh produce.^{22,10} Our research indicates that food-safety related infrastructure is of particular concern for organizations working with recovered food. If an organization receives food that is close to expiring, it must be cooked, frozen, or distributed as soon as possible to prevent its wastage. One organization stated that they needed good infrastructure in order to make "risky food" edible. A food donor noted that the availability of such infrastructure was a factor in who they chose to donate to. For most smaller organizations, the cost of new equipment was identified as a significant barrier to more efficiently recovering

food. Organizations also noted that there are costs associated with paying for a waste disposal system to deal with food that must be culled. The participant observations revealed organizations used different approaches to addressing these costs: in one organization, a volunteer brought organic waste home to use as garden compost, and another organization was in the midst of finding new solutions for their waste since they had decided not to renew the contract with their current waste hauler.

Many interview participants said they had to manage some combination of the following issues when dealing with reclaimed food: processing/sorting food donations, food storage, staff costs, volunteer training and management, and organizational reputation. Some of these organizations said that they would not be able to afford the cost of purchasing fresh produce, so using reclaimed fruits and vegetables allowed them to provide nutritionally appropriate foods in their programs. However, many participants also noted that using rescued food can be quite expensive, especially when it requires paid staff to process and cook it. This was a concern for some organizations, as it could be difficult to estimate how long it would take to process and prepare donations of inconsistent type and quality. One participant explained:

...if we are accepting free food that takes quite a bit of work to prepare, because I'm using paid employees, it ends up being more expensive than anticipated, so that's a challenge... you rarely go into a box of produce knowing what exactly, how many hours of labour it's going to take to make it useful... (Multi-Program Service Agency)

Given these cost concerns, many respondents saw volunteers as the only economically viable solution to their inconsistent labour needs (see also Tarasuk and Eakin 2005).¹¹ One participant shared that they often wondered what kind of programming their organization could accomplish if they did not have to allocate so much volunteer time to sorting food donations. In Canada, a new online platform called FoodRescue.ca²⁵ has been launched to help alleviate some of the coordination work associated with receiving donations of inconsistent and perishable foods.¹⁰

Impacts of Food Waste Ban on Food Recovery Organizations

When asked if they thought the then-new Metro Vancouver Organics Disposal Ban might affect their organization, 48% of survey respondents reported that they did not think it would, 42% worried that it would negatively impact their activities, and 10% were unsure. In follow-up interviews, most organizations explained they had not noticed a difference in donations since the implementation of the Organics Disposal Ban earlier in the year and were not sure what the impact of the ban would eventually be.

Some interview respondents and the food security key informants voiced concerns about the possibility that the ban might encourage businesses to dump unusable food onto organizations to reduce their own composting costs. Some smaller organizations pre-emptively created new composting strategies to cope with the possible influx of unusable produce donations, while some participants said that they changed their donation policies in response to the new policy as a proactive attempt to curb donations of unusable food. One organization said that they sent volunteers and staff members to a donor grocery store to pre-emptively sort out inedible produce donations. Another strategy aimed at deterring donors from dumping unusable food on organizations that a participant described involved only giving the donor a tax receipt for the edible amount of food that was donated. However, these types of negotiations were rare; most organizations felt that unequal power relationships with donors left them in a position where they could not voice their needs or otherwise take action to change donation processes.

The Stigma of Food Waste

The majority of survey participants (71%) felt that there was stigma attached to food waste. In the follow-up interviews, most organizations explained that this stigma can be misguided, however. Many respondents said that it did not make sense to throw away food when communities have so many hungry people in them. When asked to define the food used in their

programing, many organizations preferred to refer to donations as reclaimed or rescued food, with one participant saying:

...it's been a bit of a touchy point because sometimes the language isn't consistent within the organization or even out among other agencies, they call it food waste and...who wants to eat food waste. So, um, even though it is food, good food, that has been recovered from the waste stream, it is not food waste. It is food that was...misdirected as far as I'm concerned. (Food Donation Redistributor)

Many others struggled to answer questions related to definitions and labels used for donated food and hesitated to identify the food in their programs as coming from the waste stream. They felt that describing the donated food as “waste” devalues the food and contributes to the stigma of people who consume it.

Some groups in Vancouver have been attempting to change the stigma associated with eating wasted food, primarily by engaging more affluent individuals about the environmental aspects of food waste. For example, a public food rescue event in Vancouver provided a free meal made from entirely rescued food and cooked by a local chef. This provided an opportunity to change public perceptions of what is considered food and what is waste. However, a key informant described their interactions with the event organizer:

So they were looking for donations of food and, um, and looking for volunteers for the...event...but they specifically said... [they] don't advertise it to people on the Downtown Eastside because that's not the kind of crowd... [they] are looking for. (Food Security Key Informant)

Discussion

This research has documented several concerns that may be associated with the increased reliance on food rescue and recovery as a means for addressing widespread food waste. Food security organizations in Metro Vancouver face logistic constraints that are amplified when receiving and processing rescued and recovered foods. Such activities require food safety and

storage infrastructure and may require additional transportation and waste management services as well. The inconsistency of the labour associated with food reclamation can make it difficult for organizations to anticipate their staffing needs, and sometimes draw on volunteer labour as a more contingent and flexible workforce. Reclaimed food is therefore not a free or even low-cost resource. Many of the expenses associated with reclaimed food are hidden and may be under-recognized by donors and policymakers. However, in an Input-Output analysis of a food rescue activities in Australia, Reynolds et al.²⁶ suggest that the costs associated with rescuing food are less than the expense of buying food at market value. We recommend further research to quantitatively and qualitatively assess the impact of food waste mediation strategies and policies on the food security sector.

There is also a stigma associated with reclaimed food that can attach itself to the users of that food. Diverse food rescue activities can help to reframe and revalue wasted food as a valuable and potentially edible resource.^{27, 28, 21} However, many vulnerable communities do not have the choice to consume or not consume recovered food. It is therefore important that re-framing initiatives are designed to challenge not just the environmental messaging around food waste, but also the socio-economic stigma associated with feeding reclaimed food to low-income people.

Rescued and recovered food can be an important short-term resource for income insecure people. Some have noted that addressing systemic food security is a long-term project, and “in the meantime”, the diversion of surplus and rescued food to emergency food providers can provide valuable short-term food welfare and care.^{29,30} However, it is important to acknowledge that emergency food aid does not constitute food security, and so the diversion of edible food waste to food organizations will not address the root causes of food security (which, in affluent countries, are income insecurity and inequality). Similarly, diverting wasted food to food

security organizations does not address the root causes of food waste. As argued by Riches (2018):

Food waste and domestic hunger are two critical but separate structural issues, the former a symptom of a dysfunctional global food system and the latter a consequence of income poverty and inequality, broken social safety nets, pro-rich income redistribution and neglected human rights. Neither are solutions to the other (p.68).³¹

A strong policy and regulatory focus on the prevention of food waste should be pursued first³, followed by diversion of food to secondary uses, and then recycling food for the recovery of energy and nutrients. We suggest that rather than seeking to “feed hungry people” with recovered food, edible food that currently goes to waste should be eaten by all of us in order to prevent food waste.

Declaration of Interest Statement

No potential conflict of interest was reported by the authors.

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