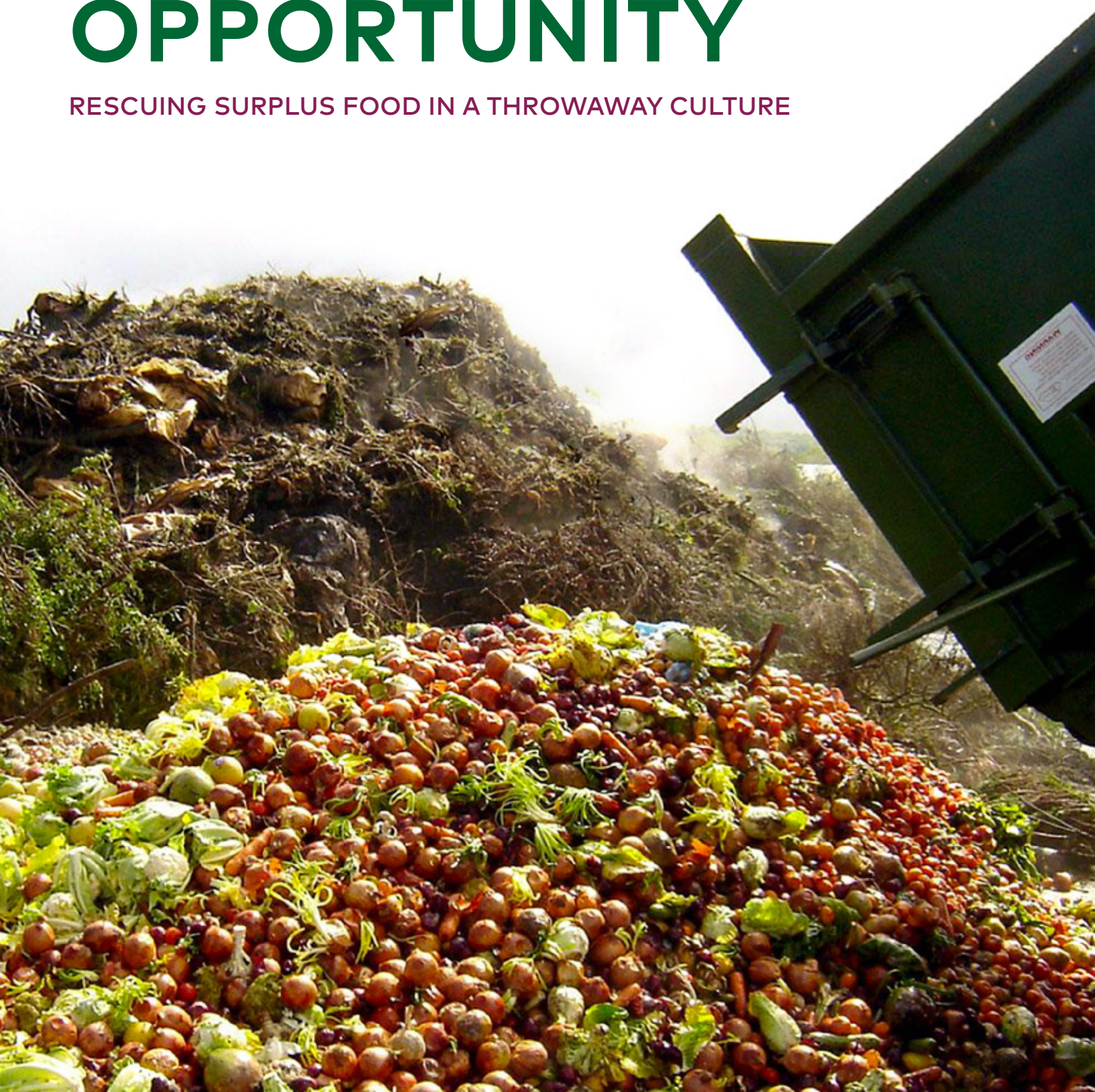




WASTED OPPORTUNITY

RESCUING SURPLUS FOOD IN A THROWAWAY CULTURE



acknowledgements

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Second Harvest is Canada's largest food rescue organization and an expert in perishable food recovery. Every year we are expanding our network to include more farms, manufacturers, distributors and retailers. We work with hundreds of businesses across the food supply chain, reducing the amount of edible food going to waste, which in turn stops millions of pounds of greenhouse gases from damaging

our environment. The food Second Harvest recovers is redirected to social service organizations and schools, ensuring people have access to the good food they need to be healthy and strong. Second Harvest is a global leader in preventing food loss and waste, and continually innovates processes and shares methods to help create a better future for everyone.

www.secondharvest.ca



Value Chain Management International (VCMI) has authored/co-authored several publications on food loss and waste and is a leading public and industry voice in bringing awareness to the opportunities and solutions surrounding food waste reduction, traceability, and the environment. VCMI measures waste within the overall analysis of food systems to create pragmatic and sustainable solutions for businesses and

industry organizations along the value chain. VCMI applies specialized value chain diagnostic tools to detect where waste occurs and to determine how to eliminate it. VCMI then participates in the implementation of new practices to solve the issues and ensure successful outcomes.

www.VCM-International.com

about the research

Second Harvest commissions research to better understand problems within Canada's food system in an effort to develop collaborative workable solutions.

Wasted Opportunity (2022) is our third report in a series that began with *The Avoidable Crisis of Food Waste* (2019), a roadmap showing how almost 9 million metric tonnes of food is lost or wasted by the industry each year¹. Our second report, *Canada's Invisible Food Network* (2021), quantified the disjointed network of more than 61,000 charities and community groups across Canada² that distribute food to people in need and the amount of food they need to support their communities.

In this new report we take a deeper dive into the food loss and waste issue. The results come at a critical time in our history, when supply chains are under duress and food prices are increasing at a higher rate than ever before.

Wasted Opportunity identifies how much surplus edible food is being wasted by the food industry. The research drills down into what types of surplus edible food is wasted and where it comes from. It also seeks to understand why so much of the surplus edible food is not being rescued for human consumption. Lastly, it proposes solutions that turn edible food waste into opportunity for everyone involved.

All three Second Harvest reports can be downloaded from:

secondharvest.ca/research



why we did the research

To quantify the amount of surplus edible food produced and wasted by the food industry. Food that could be redirected to charitable food support programs across the country.

This research is the first in Canada to quantify:

1. The 3.2 million tonnes of surplus edible food produced by Canada's food industry each year
2. The 96 percent of surplus edible food that is NOT rescued and redistributed for human consumption
3. The 127,177 businesses that are potential donors of surplus edible food within Canada's food industry
4. The 45 percent of these businesses that believe they have surplus edible food
5. The regions that are more likely to have surplus edible food
6. The industry sectors that say they have surplus edible food, and the percentage that each sector donates
7. The types of surplus edible food produced in Canada's food industry
8. The extent to which businesses DO NOT measure and monitor surplus edible food, and the reasons why



what we discovered

Canada's food system wastes almost all of the surplus edible food it produces³, when it could be rescued and redistributed to people experiencing hunger.

Our findings show that **only about four percent of Canada's surplus edible food is redistributed to the charitable food network**. Ninety-six percent of the surplus within our food system is either thrown away or diverted to an alternate use such as animal feed or biofuel⁴.

Of the 3.2 million tonnes of surplus edible food accounted for within the system, a conservative estimate of 3.1 million tonnes goes to destinations, including landfill, instead of being rescued and donated⁵.

This is happening because the key players in Canada's food industry believe it's more cost efficient and/or less risky than donating it⁶.

Yet more than four million Canadians experienced hunger and food insecurity in 2021⁷ — a number that has grown as the pandemic has lingered. In January 2022, almost 60% of Canadians reported having difficulty feeding their families due to financial hardship⁸. This waste of edible food is problematic at a time when soaring inflation rates are pushing food prices higher and supply chains are threatened due to the pandemic crisis⁹.

Consider the vulnerability of our country's food system as a result of recent disruptions that have impacted the food supply. Extreme weather, labour shortages, the COVID-19 pandemic, global conflict. How much more can our overly stressed system handle before it collapses into chaos¹⁰?

One obvious solution is to rescue more of the edible food being wasted and divert it to charities and non-profits supporting people. However, this requires changing how things are done along the supply chain, and how surplus food is viewed within the industry.

We must redefine the value of surplus edible food and consider the ethical implications of throwing it away when the social and environmental costs are so high.

We must not waste the opportunity to support Canadians with good healthy food by better using the surplus edible food that already exists in Canada's food system.



96%

of surplus edible food is being wasted instead of rescued and redistributed⁴.

unpacking Canada's surplus edible food

Food that is good to eat but is extra to industry requirements, or food that is not consumed before reaching its “best before” date, is deemed *surplus edible food*.

For example, food becomes surplus when a farmer's crop is bigger than expected and there is excess produce beyond their contracted amounts with distributors. This food is often not sell-able due to exclusive agreements made with distributors in advance of harvest. Yet a surplus apple is still edible, with the same nutritional value as the apples on the supermarket shelf¹¹.

Previous research from Second Harvest identified that Canada's food system (excluding households) generates 8.79 million tonnes of avoidable and potentially edible food loss and waste every year¹². What we didn't know then was what proportion of that amount was fit for human consumption.

Now, through this research, we have estimated how much of this lost and wasted food represents a wasted opportunity, because it could be used to feed people experiencing hunger.

Scoping out the size of the opportunity

Our research identified a total of 127,177 businesses that could be potential donors of surplus edible food within Canada's food industry¹³. This group includes farmers, food processors, wholesalers, retailers, hotels, restaurants and catering services.

Our research surveyed a representative sample of these businesses across Canada to answer key questions around surplus edible food:

How much surplus edible food is there?

Our survey of a representative sample of these businesses found that 45% believed they have surplus edible food. Within the group that claims to have surplus edible food, 15% estimate they have over one tonne a month of surplus edible food, compared to 85% which produce less than one tonne a month. From there, we estimate that 3.2 million metric tonnes (MT) of surplus edible food exists nationally.

How much is being wasted?

Of the 3.2 million tonnes of surplus edible food in the food system, respondents stated that just four percent (120,000 MT) is rescued for human consumption.

These numbers are conservative estimates based on what our survey respondents BELIEVE is edible surplus that they might donate, versus food that is ACTUALLY edible and they are not inclined to donate. It is highly likely that even more surplus edible food exists within the food system.

Businesses are often reluctant to quantify surplus amounts and avoid donating due to food safety and public liability concerns, along with financial considerations.

How much fresh, healthy food is being thrown away from the available surplus?

3.1 million tonnes

which is equivalent to

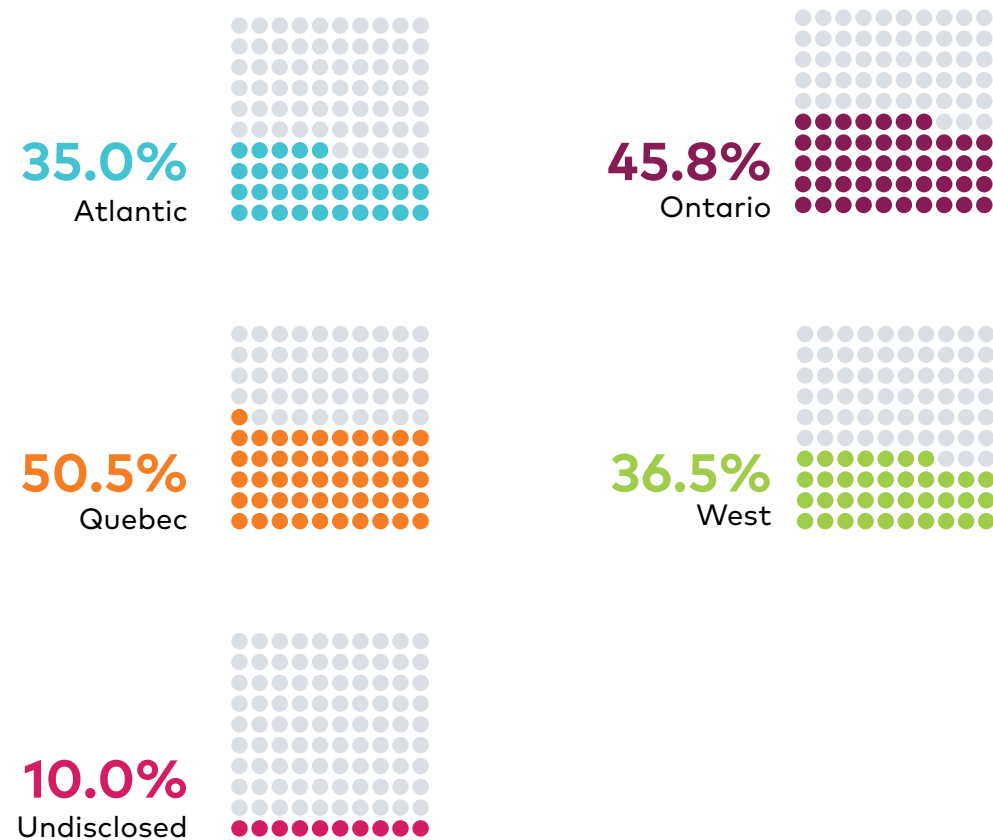
124,000 tractor truckloads

of surplus edible food is being wasted each year¹⁴.

where is the waste happening?

We found that businesses in Quebec and Ontario are more likely to have surplus edible food (SEF) than those in the Atlantic and Western regions*:

Businesses with surplus edible food by region



*Percentage of total respondents from each region who have surplus edible food

No waste. No hunger.



Surplus edible food is being wasted throughout the food system

In terms of industry sector, retailers are most likely to say that they have surplus edible food (61% of retail respondents), followed by processors/manufacturers and hotels/restaurants/ (46% and 43% of respondents respectively). Approximately one-third of farm/greenhouse and distributor/wholesale respondents identified having surplus edible food¹⁵.

We found a correlation between the types of food handled and the respondents' likelihood to say they have surplus food that is or could be donated.

Reviewing the number of responses and where businesses operate in the supply chain, it seems that those who handle fresh produce (fruits and vegetables) are more likely to say they have surplus food (42%). This includes retailers, hotels/restaurants/institutions, and mainline distributors as well as farmers and wholesalers.¹⁶

The sector with the most available surplus food is hotels/restaurants/institutions – but this is also where 94% of respondents have less than one tonne of surplus food per month. Notably, this sector donates the lowest percentage (0.38%) of its available surplus food. (That number is zero for the six percent of businesses with more than one tonne of surplus food each month.)¹⁷

In the distribution/wholesale sector just under one percent of available surplus food is donated – whether respondents had more or less than one tonne. Similarly, farms and greenhouses currently donate a fraction (4%) of their available surplus in either respondent category. And despite a comparatively higher percentage of surplus food being donated in the retail and processing/manufacturing sectors, there is considerable room for improvement.



Surplus edible food by industry



Highly nutritious, perishable foods are being wasted, when they could be rescued

Food was grouped into five categories: grain, dairy, protein, produce, and "all" ("all" was applied to responses from hotels/restaurants/institutions and retailers) where food types could not easily be separated due to the nature of the business.¹⁸

Least likely to report having surplus food are businesses operating in the grains industry (30%) and protein industry (31%). While 45% of dairy industry respondents say they have surplus edible food, the willingness of farmers to donate surplus milk, for example, is affected by having to process and package it into consumer goods as well as the restrictive marketing board system of supply management¹⁹.

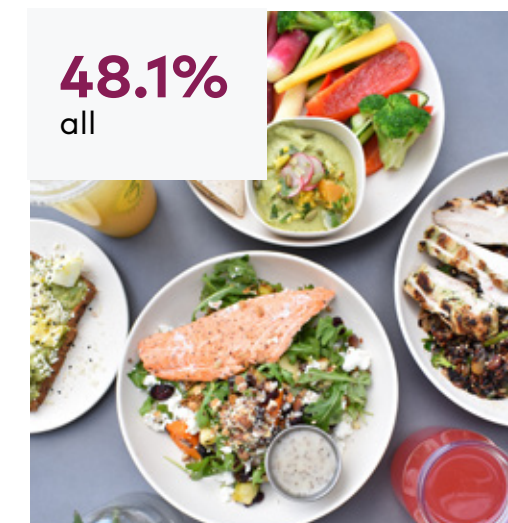
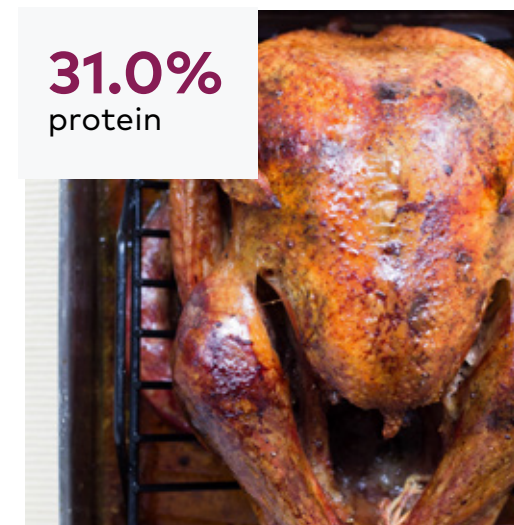
While exact regulations differ by commodity and jurisdiction, marketing boards control products' destination, along with purchasing and remuneration arrangements. Canada has 120 agricultural marketing boards that operate at either the provincial or federal level (or both). Examples include The Canadian Wheat Board and The Dairy Farmers²⁰ of Ontario.

These boards control and regulate agricultural production and marketing within Canada and abroad in order to enhance producers' prices and incomes, while reducing price variability. Boards are empowered to license processors and handlers of the product they regulate, and enforce compliance with their rules²¹.

Food prices and supply are controlled by these agricultural marketing boards through product quotas, backed up by tariffs on imports. The rules limit entry of new producers and restrict the amount of the product produced or marketed, which contribute to increased food prices, high quota values, and economic inefficiencies in production and marketing²².



Surplus edible food by food type





turning waste into opportunity

No
Canadian
left
behind.

There are business reasons behind the food industry's reluctance to acknowledge the existence of surplus edible food and donate it. Our research uncovered the following five factors that have the greatest impact on the willingness of businesses to donate surplus food:

1. **Lack of tangible financial benefit**
2. **Legal liability**
3. **Policies that discourage or prevent donation**
4. **Ineffective communication or coordination with food rescue organizations**
5. **Perceived complexity to donate versus alternative disposal²³**

Viewpoints differ among food industry players and the impact of these factors varies by industry. However, these are artificial barriers based on false beliefs that businesses have about legal liability and opportunity cost for donating instead of disposing.

To overcome these constraints and limitations, solutions must first be tested and validated through pilot programs before being rolled out on a large scale.

Issue #1: Lack of tangible financial benefit

Canada's food industry makes profits (and pays wages) from the production, distribution, and sale of food. It is natural for industry stakeholders to view the donation of surplus food as less important to their commercial interests.

In the hope of "capturing cents on the dollar," most businesses retain food until it gets close to its best-before date and then dispose of it at the cheapest possible cost.

An unknown percentage of surplus food is sold for manufacture into animal feed or biofuel (quantifying that amount is out of the scope of our research). Businesses can capture monetary value this way, so it is often a preferable option compared to donating food for redistribution.

Surplus edible food is considered a budget item and businesses assume that the donation of food will be more costly than its disposal at landfill. Farmers and produce distributors, for example, believe their cost of donation is three times that of alternative options such as landfill disposal²⁴.

Businesses within the food system must feel that it is beneficial to donate surplus food.

Opportunity

During the early part of the COVID-19 pandemic, Canada's federal government created a Surplus Food Rescue Program that provided \$50 million in funding for national non-profit organizations to purchase and redistribute surplus food. But when the program ended, so did the willingness of many of those businesses to donate. Without the financial incentive they became more wary of potential legal or social liabilities and transactional costs²⁵.

This amounts to proof that financial incentives (via public money and government sponsorship) encourage more businesses to donate surplus edible food.

Issue #2: Legal liability

In Canada, many businesses are concerned about legal liabilities surrounding the donation of food, particularly perishable food.

Yet there is no documented case in Canada of a business that donated surplus food being sued for negligence. So there is no precedent for legal liability — even if the food is perishable.

Opportunity

Awareness and education is required to alleviate concerns surrounding legal liabilities and the donation of food.

When food is donated in good faith by a donor that follows appropriate safety protocols, such as proper refrigeration and safe handling, **they are protected against legal liability by "Good Samaritan" and "Food Donation" acts of legislation.** In every part of Canada, the law protects companies and individuals who donate food rather than throwing it away. The various laws are worded differently, but they all provide food donors with a strong defense if a consumer sues because of illness caused by donated food²⁶.

Issue #3: Policies that discourage or prevent donation

Our research shows that corporate policies preventing donation exist which are based on incorrect perceptions. Such policies are not regulations — they are seen across the supply chain as "the cost of doing business" and adopted because there is no accountability for reducing food waste within the industry²⁷.

Opportunity:

Create regulations that stipulate and encourage businesses to donate a larger percentage of surplus edible food to local charities, in exchange for tax breaks or other financial incentives. Those who do not meet the regulatory requirements are held accountable.

Issue #4: Ineffective communication or coordination with food rescue organizations

The charitable food sector has limited financial resources and is often reliant on volunteers. This can present challenges around communication and workflow for businesses that want to donate to food rescue groups.

Opportunity:

Use technology like the Food Rescue App to facilitate communication between businesses that have surplus food, and organizations like Second Harvest that can coordinate food rescue.

Issue #5: Perceived complexity to donate versus alternative disposal

Operational constraints across the food system make change difficult. Production lines are continuous, high volume, and one-way. Lines cannot be reversed, interrupted for small runs, or have different products introduced part-way along.

Regulatory compliance for safe food handling is critical. Storage capacity, particularly for frozen or refrigerated foods, is limited and costly.

Businesses operate on tight margins, too. They need to account for all costs, including process, labour, energy, and packaging materials. Less tangible factors, such as brand protection, are complex issues — particularly for co-packers.

Meanwhile, the charitable food sector has limited financial and logistical resources to quickly and efficiently support the rescue and redistribution of surplus edible food.

Opportunity:

Funding to support a reliable, effective and efficient transportation solution **would encourage businesses to review whether a proportion of what is incorrectly deemed organic waste is actually surplus edible food that could be donated and redistributed.**

putting solutions on the table

The rescue of surplus edible food can help address social and environmental issues important to key business stakeholders.

Reducing food waste is a systemic challenge that requires collaboration across the supply chain. Second Harvest is recommending solutions that encourage more businesses to rescue and donate their surplus edible food to reduce waste from farm to fork. The approach depends on the type of business and whether or not they already donate surplus edible food.

Our research shows the greatest immediate opportunities to rescue more food lie in the hotel/restaurant/institution sector, processing/manufacturing, and fruit and vegetable farmers (including packers/shippers and distributors). In the retail sector, more businesses already donate surplus food than in other sectors, but there are still large volumes that can be rescued — including foods that are in highest demand from non-profit organizations.

A business case for redefining food value

The food industry views waste as a cost of doing business, which is absorbed into the pricing structure so that consumers end up paying for it.

But there are other costs that need to be accounted for when food is wasted. These include the environmental costs of greenhouse gas emissions and the social costs of food insecurity — both of which can be addressed by donating surplus edible food.

An immediate financial benefit that businesses can gain when donating food versus sending it to landfill is the elimination of disposal fees. If landfill costs increase, so do the financial benefits associated with donation. Businesses can also benefit from common standardized processes for rescuing surplus food that lead to reduced transaction costs²⁸.

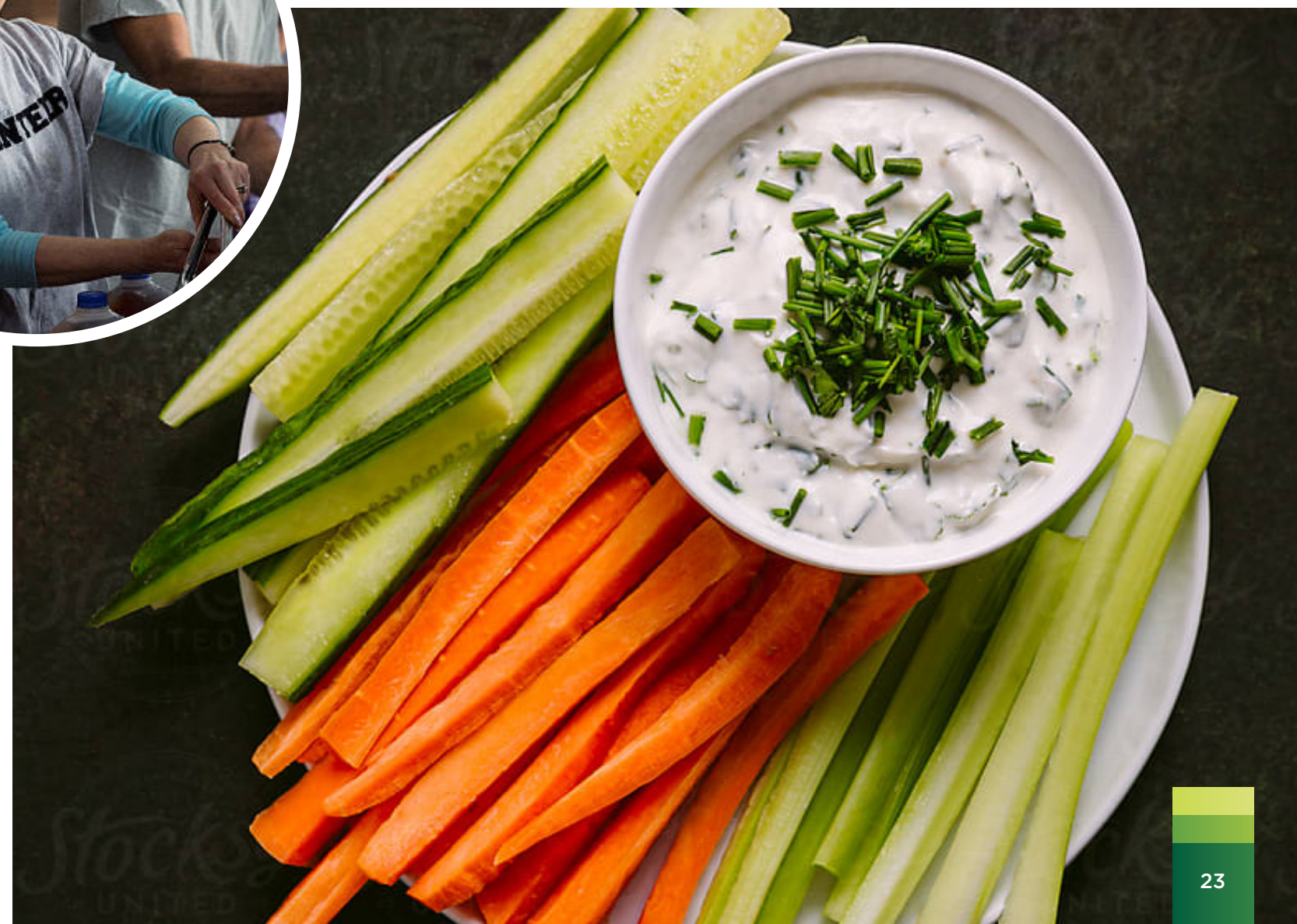
Reducing greenhouse gas emissions is a key element of corporate social responsibility metrics²⁹, which are important to institutional and private investors. In turn, this impacts share prices and consumer purchasing habits³⁰.

Businesses capture returns on investment when they donate instead of dispose. Studies show that redistributing surplus edible food improves food-related greenhouse gas emissions seven-fold, compared to sending it to landfill³¹.

On average, the rescue and redistribution of surplus edible food equates to a reduction of 3.82 tonnes of greenhouse gas emissions for each tonne of food.

Also, the donation of surplus food is socially responsible from the perspective of improving the health and well-being of vulnerable populations, and society as a whole³². Based on our research into the true costs of food insecurity, a conservative estimate is that food insecurity costs the Canadian economy \$26 billion annually.

Addressing food insecurity would significantly reduce this burden and create long-term economic growth³³.



Solutions to create positive change

There is a need to incentivize businesses to donate more surplus edible food because of the obvious public good. Solutions need to happen quickly and should be implemented via pilot programs within the food industry. These include:

1. Government policy changes that include tax relief grants tied to food donation and increased landfill costs.

Business need incentives to donate surplus edible food because of the resulting financial good. The United States has successfully used tax relief measures that are tied to food donation. If landfill costs increase, so do the financial benefits associated with donation.

2. Establishing common standardized food rescue and redistribution processes and procedures.

This includes optimizing current practices, addressing perceived complexities and cost concerns, providing easy-to-implement processes and procedures, and encouraging businesses to quantify how much surplus food is edible. It also involves better information about best-before dates and legal liabilities around food spoilage to assure donors that food is safe to donate. Changing perspectives will relax corporate policies that prevent the donation of edible food — especially perishable items such as dairy, meat and seafood.

3. Validate surplus edible food by establishing a business case for donation.

Looking at surplus edible food donation as a sound financial decision rather than a cost — plus a way to acquire social capital and increase employee engagement — will encourage more food industry businesses to explore how much surplus edible food they have and to donate more.

4. Formalized repurposing operations, such as repackaging bulk items and branded packages.

This will reduce concerns around brand-image and increase willingness to donate foods not being shared for contractual reasons.

5. Coordinated logistics (along with information, support and capacity development services).

A localized safe food collection hub and services, like the Second Harvest food rescue app, to connect smaller donors such as hotels/restaurants/institutions, or to farmers within specific geographic areas, will increase donation by reducing the need for businesses to provide storage, labour and transport costs. Also, unsold foods that typically get returned to vendors or distributors can be intercepted from the cycle that sends them to landfill by having them transported directly to a rescue/redistribution hub or non-profit organization.

The benefits that food industry businesses and society as a whole can gain from rescuing and redistributing surplus edible food cannot be summed up in a financial spreadsheet. It is time to take action and make changes to Canada's food system. Through smarter management and better insights across the food supply chain, we can reduce food insecurity and our carbon footprint at the same time.



This is how we turn a
wasted opportunity into
a win for all Canadians.



Resources

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