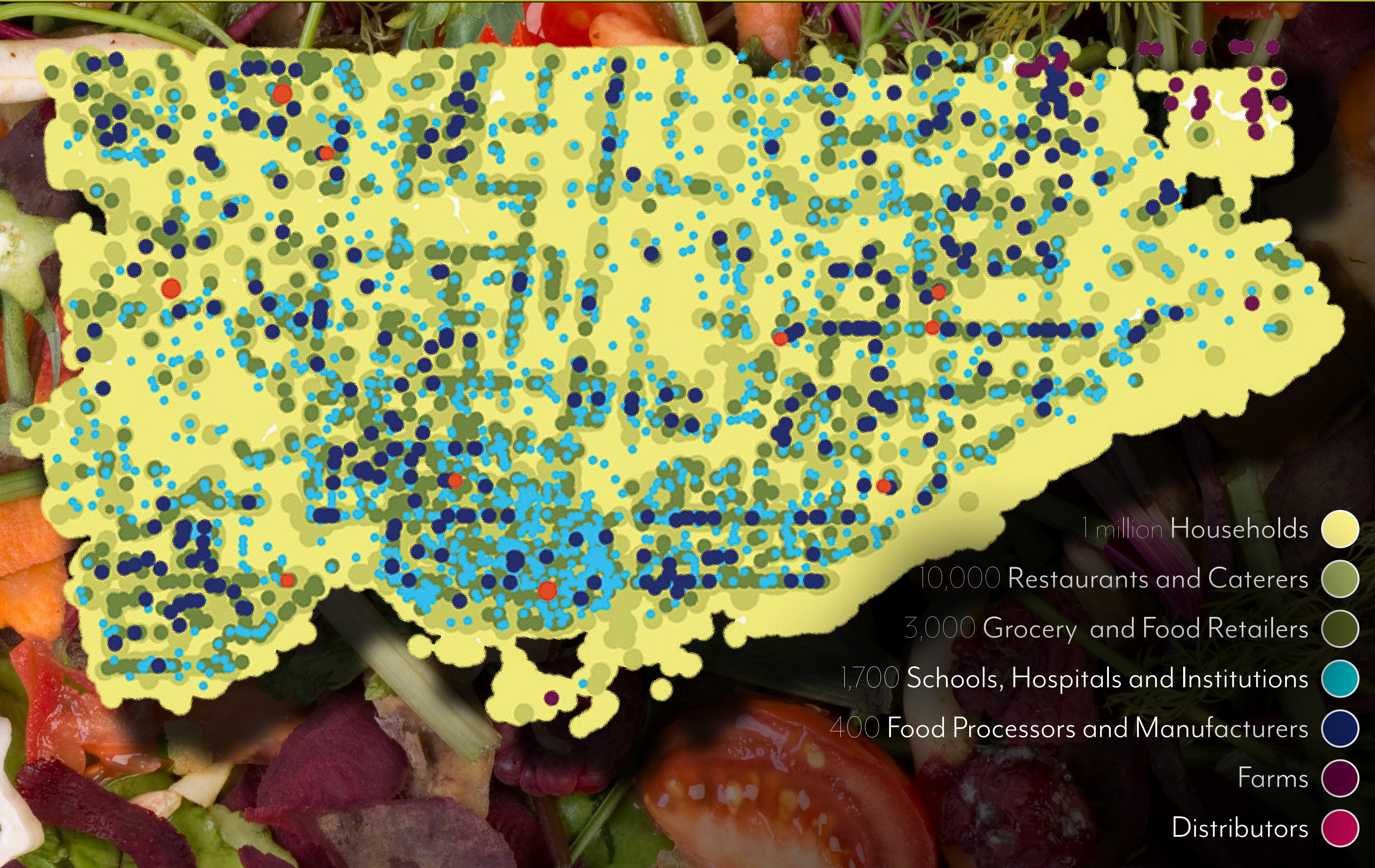


CLOSING THE LOOP ON FOOD WASTE IN TORONTO



Currently in Canada almost 40% of our food goes to waste.¹ Only 3% gets recycled.² The rest ends up in landfill where it produces methane, a green house gas 25 times more potent than CO₂. All this while 364,000 households in Toronto experience food insecurity.³ It's time to take action on food waste. And here's how.

| | |
|---------------|---------|
| Households | page 4 |
| Producers | page 6 |
| Food Retail | page 8 |
| Farms | page 10 |
| Distributors | page 10 |
| Restaurants | page 12 |
| Institutions | page 16 |
| Policy | page 18 |
| Organizations | page 20 |



WHERE FOOD IS BEING WASTED & WHAT WE CAN DO ABOUT IT

CLOSING THE LOOP ON FOOD WASTE IN TORONTO

“Food is nurturing, and in our traditional teaching, food is medicine.”

-Melanie Goodchild, Anishinaabe Indigenous Advisor to the Food Systems Lab

This report was researched, prepared, and designed by Kelsey Carriere for the Food Systems Lab, 2017. With thanks to all of the Food Systems Lab participants for their input and to all of the good people featured here who took the time to share their work, innovations and stories.

Carriere, K. (2017). Closing the loop on food waste in Toronto: Where food is being wasted and what we can do about it. Food Systems Lab Report, Toronto, ON.

THE FOOD SYSTEMS LAB TEAM

Lab Secretariat:

Tammara Soma, Project Manager

Belinda Li, Lead Facilitator

Dave Kranenburg, Social Innovation Lab Advisor

Research Team:

Kelsey Carriere, Research and Policy Coordinator

Michelle Coyne, Research Fellow

Clarissa Cremin-Endes, Research Assistant

Omar Elsharkawy, Research Fellow

Rafaela Gutierrez, Research Fellow

Daniela Spagnuolo, Policy Coordinator

ACKNOWLEDGEMENTS

We gratefully acknowledge that the Food Systems Lab has been held on the sacred land on which the University of Toronto now operates. It has been a site of human activity for 15,000 years. This land is the territory of the Huron-Wendat and Petun First Nations, the Seneca, and most recently, the Mississaugas of the Credit River. The territory was the subject of the Dish With One Spoon Wampum Belt Covenant, an agreement between the Iroquois Confederacy and Confederacy of the Ojibwe and allied nations to peaceably share and care for the resources around the Great Lakes. Today, the meeting place of Toronto/Tkaronto is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work in the community, and on this territory.

We would also like to thank the following sponsors and partners for supporting our work:



Entrepreneurship



Towards a Food System where everyone is fed and nothing is wasted

At the foundation of our work is a deep respect and acknowledgement of the importance of reconciliation in the process of developing a sustainable and just food system in Canada. The paradox of food waste, estimated to have an annual cost of \$31 billion, amid food insecurity affecting close to one million Canadians, cannot be separated from the system that severed Indigenous community members from their traditional food, land, spirituality, language and culture. Harmful food production and wasting practices are based on unequal social relations. We view the Food Systems Lab as a platform to develop equitable relationships between diverse stakeholders to strive for balance in our food system.

The Food Systems Lab, under a Pierre Elliot Trudeau Foundation grant has dedicated a year to using the [Social Innovation Lab](#) model to bring together leaders from across sectors including food in policy-makers, food service and retail providers, schools, community food centres, Indigenous leaders, faith leaders, organizers, academics, growers, composters, food rescuers and consumers to explore how we can redesign our food system to ensure that everyone has access to healthy, affordable, culturally appropriate food—and that this valuable resource is not squandered.

This work requires a change in consciousness about how we value food in our society and in our homes.

There is no one solution to food waste. Tackling this issue will be an amalgam of hundreds and hundreds on conscious efforts on behalf of our policy-makers, our food executives, our school curriculum leaders, restaurateurs, and purchasers—and each and every one of us in the grocery store and in our kitchens.

As we continue to raise awareness of the wastefulness of our current food system and draw more decision-makers in to address the issue, innovations are being made, great ideas are being scaled up, and collaborations are knitting together hundreds of vital efforts to reshape the role of food in our cities, our economy, our schools, and our homes.

This publication celebrates current efforts across our food system—from farm to processing to purchase to table—exploring how food waste is being tackled. It shares the stories of individuals and organizations who are closing the loop on food waste in and around Toronto/Tkaronto, and shows us where so much more can be done.

over 1 million
households

REDUCING
FOOD
WASTE

AT HOME

Did you know?

- By value, almost half of the food wasted in Canada happens in our home kitchens ¹
- 62% of what Torontonians throw in the green bin was perfectly edible before we let it go to waste ²
- This waste amounts to roughly \$1500 worth of groceries trashed every year in every Canadian household ³

It's time we got organized on food waste!

What we can do:

The secret to reducing food waste at home is
planning, creativity & how we value food

Plan your meals. Whether deciding on tonight's dinner over breakfast, or dedicating one night a week to preparing meals to freeze, meal planning and shopping with meals in mind saves money, reduces waste, and makes a for a fun household activity.

Buy only what you need. Sales and bulk purchases can be tempting, but if it doesn't get eaten, savings go out with the compost! Have plans to preserve bulk quantities through freezing or canning.

Don't let the date decide its fate! Best before dates are required for manufacturing, but your senses are a better judge of freshness. A sniff, a taste, or cutting off a bad part can keep good food from going to waste. Keeping your fridge /freezer organized avoids food getting forgotten and wasted.

Throw out the cook book, not the leftovers! Every sauce, soup, stew or stirfry can handle a little surprise! Let the expiring ingredients in your fridge inspire your next meal.

Stock your pantry for experimentation. Keep supplied with onions, garlic or your favorite spices—your staples for transforming near-forgotten veggies and leftovers into omelettes, wraps, soups and sauces.

Blend it. Smoothies, sauces and soups can accommodate all kinds of edgy veggies and fruits.

Leftovers are pre-prepped ingredients. Leftovers are already cooked—making you that much closer to a new meal. With flash in the pan and some sauce or spice, lastnight's discards become today's delight.

Reducing waste depends on how much we value our food. Find ways to express this in your household. Whether investing in more local or healthy choices, calculating your food waste, thinking of those who have to go without, saying grace, or putting a sign on your fridge, change starts with remembering that every action makes a difference.

Treat food waste as a resource. Learn to compost or vermicompost at home or a community garden. Compost creates valuable nutrients for growing food, creating a circular system.

Don't let your green bin breed complacency. Using your green bin is certainly better than landfill, but there are still water and resources that go into producing food and getting it to you.



“If your body is your temple,
and food your best medicine,
how could you throw it away?”

Raised by her grandmother, who grew up under Polish martial law, where growing your own vegetables and butchering your own animals was part of life—and survival, Maria Flavia Litwin just can't bring herself to throw food out. “In Poland, when you got married,” she recounts, “as part of the ceremony you are given bread and salt, and you kiss it. Bread is God.” She recalls breakfasts with her grandfather of stale bread soaked in milk—or water when times were really tough—but generally it was her grandmother's ingenuity that made it feel like they were never going without. The desire to share her grandmother's cooking skills led to a book called “Cook Like a Grandma.” The book flaunts no recipes, special ingredients, or measurements, but rather a series of lessons for making meals out of what is on hand, including leftovers. “I like to think of leftovers as pre-prepped ingredients,” Maria says, “the trick is to change the texture, and add flavour.” By adding a little onion, mushrooms and herbs, adding it to an omelette, and serving with salad, today's lunch bears no resemblance to last night's soggy tomato salad. “If you just keep working with your leftovers, each day, within 20 minutes you can have a simple, delicious, and nutritious meal...anyone can do it.” After all, most of the delicacies of global cuisine, brandished on restaurant menus across the GTA - bouillabaisse, paella, curry, and onigiri, are all just celebrated feats of turning available odds and ends into delicious meals. Learn more about cooking and saving food from Maria, and her grandmother, through her digital cookbook [“Cook Like a Grandma.”](#)

MULTI-RESIDENTIAL BUILDINGS

Although the City of Toronto began collecting organic waste from apartments and condos in 2008, diversion rates remain very low: 27% compared to 65% in single family homes.⁴ Superintendent at 430 Mayfair on the Green, Princely Soundranayagam, has beaten the odds by converting the building's garbage chute to organics only. His 1000 residents are now diverting 85% of their organics and recyclables and have reduced their monthly waste collection fees from \$1500 to \$150. Learn more from [Toronto Environmental Alliance](#).



Photo Credit: Holly Thompson, Toronto Environmental Alliance

BEYOND THE KITCHEN

In front and backyards all over the city, 1.5 million pounds of fruit are growing, yet most of this bounty goes unpicked. In 2008, Not Far From The Tree formed with a community-driven solution to this surplus from local fruit trees. Since then, with the help of a growing team of over 2000 volunteers, they've harvested over 148,000 pounds of fruit in 15 of Toronto's 44 Wards. Homeowners of one of the 1800 registered fruit trees inform the organization when their fruit is ready for harvesting using NFFTT's ripening guide, and the harvest is shared evenly between the homeowner, the volunteer pickers, and one of over 30 participating local service agencies. By dividing their volunteer power by ward, over 200 picks a year are organized with deliveries made by cargo bike. [NotFarFromTheTree.org](#)



Photo Credit: Not Far from the Tree

¹ Value Chain Management ² City of Toronto single family household waste audit ³ Toronto Food Policy Council ⁴ Toronto Fact Sheet: Waste Diversion in Apartments and Condominiums

400 producers & manufacturers

REDUCING
FOOD
WASTE

IN PRODUCTION
& MANUFACTURING

Did you know?

- 18% of food waste happens at the production and manufacturing stage¹ often due to overstocking, lack of communication, cancellation of orders, or wasteful production methods.
- Waste due to overproduction can reach up to 56% of a company's total output (meaning more food wasted than sold). A baseline of 5–7% is considered inevitable.²
- Potatoes get wasted more than any other agricultural product. The average is that 50% of every processed potato (i.e., pre-cut french fries, chips or mashed potato flakes) will be lost.³

What we can do:

The secret to reducing food waste in production is **prioritization and systems thinking**

Manufacturers play a major role in reversing the food waste trend. This can be done both through influencing supplier and end consumer behaviors, as well as through direct and tangible action, but reducing food waste must be made a company priority in order to find solutions in production.

Conduct a waste audit. Figure out what you're throwing out, why, and how much its costing you. Knowing how much you're saving in waste disposal fees helps justify investing in solutions.

By-products. Study your by-products and research if there isn't a use for them. Can it be rendered into another product? Is it something another industry could use?

Revisit packaging. Although we don't want to solve a food waste problem by creating a packaging problem, the right packaging can avert spoilage in distribution and retail. Easily resealable packages with clear best-before information and instructions for cooking, freezing and re-using will help reduce waste at the customer end.

Fine-tune forecasting. Overproduction and last-minute cancelled orders can be a huge cause of waste. With better, more accurate forecasting models, food manufacturers can spend less time guessing and more time maximizing the ingredients they have. Have consequences for buyers, and ensure that you aren't legally prohibited from donating cancelled orders.

ERP System. By using Enterprise Resource Planning software you can track lots, analyze shelf life, avoid overstocking, create accurate inventory orders, avoid cross contamination and everything in between.

Using unavoidable food waste. Although priority should always be given to avoiding waste, unavoidable food waste should be separated from other garbage as it can be converted into bioplastics, compost, or directed to a biodigester to be converted into energy.

1. Cinda Chavich (2015). "How to Solve the Food Waste Problem" MacLean's Magazine.

2. Food and Agriculture Organization of the United Nations (2013). "Toolkit: Reducing the Food Waste Footprint."

3. Jesse Hirsch and Reyhan Harmana (2013). "Food Waste: The Next Food Revolution". The Modern Farmer. <http://modernfarmer.com/2013/09/next-food-revolution-youre-eating/>

MAPLE LEAF FOODS

If being considerate is a Canadian trait, Maple Leaf Foods has brought it to the food industry. Although they consider themselves small players in the food industry, Maple Leaf are Canada's largest consumer packaged meats company employing over 11,000 people across Canada and exporting globally.

Headquartered in Mississauga and active in the [Provision Coalition](#)'s mission to make the food industry more sustainable, Maple Leaf Foods has established an aggressive goal to cut its environmental footprint in half by 2025, requiring significant reductions in the company's climate change impact, waste and water usage. Their sustainability office has been seeking evermore ethical and environmentally responsible production methods and has recently achieved a 91% waste diversion rate by recycling or utilizing their waste by other means.

With 61% of their waste consisting of organics, this became an obvious focus for waste reduction. Their historic partnerships with rendering plants which convert by-products into pet food or other animal feed have grown to support bio-digesters which can convert otherwise unusable recalled products into biofuel and electricity.

Maple Leaf Foods has also recognized the widespread detrimental impacts of food insecurity and has been working to share resources and provide financial support for organizations that build capacity to overcome food insecurity through their [Centre for Action on Food Security](#). In 2016, their fund supported the The McQuesten Urban Farm which is increasing food security for more than 7,000 in need Hamilton residents, and funded the expansion of Food Share's Good Food Markets in Toronto. For more information on Maple Leaf's sustainability efforts, see <http://www.mapleleafsustainability.ca>.



Photo Credit: Mapleleaffoods.com



EARTH
+CITY

"We can't ignore food waste. It isn't an afterthought, but something that we integrate directly into our value set and mission of being responsible and sustainable food producers."

Their customers may be altogether too enraptured by the flavours of Earth+City's humble and healthful delicacies to realize the food revolution they are supporting. Behind the scenes, Lisa Sweetman and Cassandra Rizzotto are alchemists of food waste and entrepreneurs of a soulful nobility.

Harvesting delicious and nutritious pulp from Toronto's juicing industry, Lisa and Cassandra have partnered with Village Juicery to transform this otherwise wasted product into their flavorful Juice Pulp Crackers. By developing relationships with local food producers, they manage to procure second, or 'ugly' fruits and vegetables to turn into a wide range of delicious plant-based foods like black bean burgers wrapped in collard greens or kale pesto, available weekly at many of Toronto's farmers' markets. They take great pride in ensuring the maximum utilization of their products' nutrients by using kale's nutritious stocks in their smoothies, and fine-chopping veggie-ends into their "Second Salads" which they make available on a pay-what-you-can scale.

They have incorporated mindfulness into every step of their business model from sharing their commercial kitchen with other food start-ups to making sure that any unavoidable food waste gets turned into compost. These two entrepreneurs take great pride in prioritizing their social and environmental values while developing functional systems which support their growing business.

Learn more at <https://earth-city.myshopify.com>

3000
food retailers

REDUCING
FOOD
WASTE

IN GROCERY STORES
& FOOD RETAIL

Did you know?

- 10% of food waste in Canada comes from grocery stores and food retailers.¹
- Most perfectly edible food gets thrown out from grocery stores because of superficial damage, damaged packaging, overstocking, and confusion around best before dates.²
- Ontario's 1994 Donation of Food Act protects grocers or any person donating food in good faith from any liability.³

What we can do:

The secret to reducing food waste in grocery stores is to focus
public image & public education

Ben Simon, CEO of Imperfect Produce, a company dedicated to making use of “ugly” produce says it is important for grocery stores to sell misshapen food. The reason is simple. “For the average consumer, grocery stores are their connection to where food comes from,” he explained. “As anchor institutions in our communities, grocery stores have a responsibility to be part of the solution around food waste.” Grocery store chains have a “big opportunity with the new ugly produce trend to do well and do good at the same time.”⁴

Abundance displays. The perception of abundance is perpetually sought to entice customers, but pyramids of produce leads to damaged goods. Display molds and mirrors can give the same perception of abundance with less damage to the products.

Refresh expiry dates. Our current labelling system is confusing with uncertainty between ‘Use by’ and ‘Sell by’ dates. Places like the EU are taking steps to address this issue by removing the sell by date.

Reduce handling. A recent report by [ADEME](#) on reducing food waste in supermarkets in France highlighted how the efforts of one store that hired staff to sell delicate fruit to patrons lead to 15,000 euros in savings over a two month period.

Local focus. Food that travels further has much more chance of spoilage and therefore food waste along its journey. Logistics are much simpler, and consumer / producer relations much tighter.

In-house food-rescue chef. Bakers and deli-counter cooks could be trained to use products and produce that have been removed from the shelves for their soups, salads, and baked goods. As grocery stores increasingly offer ready-made meals, customers may be delighted with fresh offerings made from rescued food.

Partner with food rescue agencies. Second Harvest has been rescuing food from Toronto food producers, restaurants, grocery stores, and catering companies since 1985. To date they have delivered over 100 million pounds of rescued food to people in need. Donate at: <http://www.secondharvest.ca/donate-food>

MOBILE GOOD FOOD MARKETS

FoodShare's Mobile Good Food Markets are travelling community food markets filled with fresh, quality vegetables and fruits. Having identified food deserts in Toronto neighbourhoods, they collaborate with communities to find the best locations to bring fresh produce at cheaper-than-normal prices every week to communities where there are either no grocery stores within walking distance, or where shops are too expensive to be accessible to community members. Read the stories from the Mobile Good Food Market here:

<http://foodshare.net/custom/uploads/2015/11/MG-FMbooklet-web-1.pdf>



Inside the converted transit bus Mobile Good Food Market

FLASHFOOD

Surplus Food
Discount App

After witnessing the extent of systemic waste in the catering industry, Flashfood founder Josh Domingues was determined to make a difference. With his freshly launched app, restaurants, grocery stores and caterers will be able to send notifications of steeply discounted foods available at the end of the day or nearing the end of their shelf life directly to consumers.

Having launched this spring at Farm Boy grocery store in London, FlashFood is currently expanding to Longo's Elizabeth Street location in Toronto where customers can pick up their purchase from the Flashfood zone, show confirmation of their online purchase on their phone, and proceed to checkout with the rest of their purchases.

Keep updated on their participating partners at flashfood.com

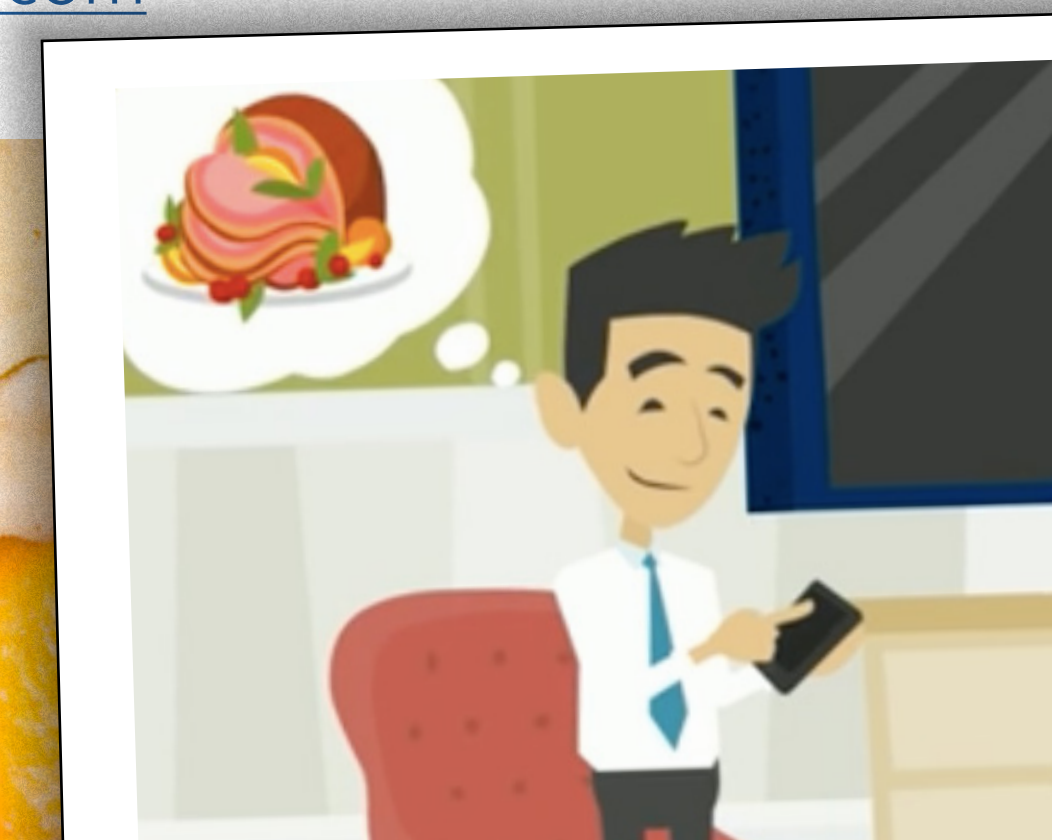


Photo Credit: Flashfood.com

LOBLAWS Naturally imperfect

Recognizing the 20% of produce that gets discarded before even leaving the farm because of cosmetic consumer expectations, Loblaw's began an experiment in 2015, with their “Naturally Imperfect” line of blemished or misshapen apples and potatoes.

Loblaw's was inspired by Intermarché's wildly successful “Inglorious Fruits and Vegetables: A Glorious Fight Against Food Waste” campaign which began as an attempt by France's third largest grocery retailer to tackle the alarming issue of food waste.

The store gave inglorious fruits and vegetables their own aisle and gave out samples of soups and juices made from this imperfect produce to customers to prove that the flavour was just as good, and the misshapen produce was sold at a 30% discount.

The result was a huge success: all stocks of the fruit and vegetables sold out in an initial rush and supermarket traffic overall increased by 24%.

Naturally Imperfect products are already available in select Maxi, No Frills, Zehrs, Loblaw's, and Real Canadian Superstore outlets across the country, and the product line has expanded to meet consumer demand and now includes peppers, onions, pears, carrots and mushrooms. Learn more at www.media.loblaw.ca

“Grocery store chains have a big opportunity with the new ugly produce trend to do well and do good at the same time”

– Ben Simon, Imperfect Produce



Loblaw's joins the fight against food waste with their “Naturally Imperfect” line of apples and potatoes

1. \$27 Billion Revisited: The Cost of Canada's Annual Food Waste. Value Chain Management, 2014. 2. [Business Insider](#), Oct 15, 2014. 3. [Donation of Food Act, 1994, S.O. 1994, c. 19](#) 4. Solutions to Grocery Store Food Waste by Gina-Marie Cheeseman on Wednesday, Nov 18th, 2015. <http://www.triplepundit.com/special/food-waste/solutions-to-grocery-store-food-waste/>

50,000 growers and distributors across Ontario

REDUCING FOOD WASTE IN AGRICULTURE & DISTRIBUTION

Did you know?

- When food gets thrown out, we waste not only the food itself, but all of the resources that went into producing it including water, land, and energy. If food wastage were a country, it would be the third largest emitter of green house gases, after USA and China¹
- Torontonians spend \$7 billion per year on food² which increasingly comes from larger farms and imports. The number of farms in Canada has decreased 65% yet their size has grown 300%.³
- Harvest losses have several causes including poor timing or poor conditions during harvest, shortcomings of technique or equipment, or discrepancies between demand and supply which involve farmers not finding a market for products and leaving them to rot in the field. Lack of infrastructure for transportation, storage, cooling and marketing can also lead to spoilage.

What we can do:

The secret to reducing food waste in agriculture is **connection and circular thinking**

Give me spots on my apples. Changing our aesthetic expectations of products, and developing systems for creating value-added products from misshapen foods can greatly reduce food wastage.

Cooperatives. Joining farmers together in cooperatives or professional associations can help to greatly reduce food losses by increasing their understanding of the market, enabling more efficient planning, enabling economies of scale and improving their ability to market what they produce.

Connection. Creating close ties between farmers and consumers can help create circular nutrient cycles and intensify how we value food, helping keep it out of the waste stream.

Urban Agriculture will be an integral part of a closed loop, waste-free food system. We will need new rules that allow and prioritize the creation of growing spaces on rooftops and on under-utilized public lands.

GLEANNING THE HARVEST:

Ontario Association of Food Banks

Throughout history, gleaning has played an integral role in permitting people in need to glean the remaining crops from a field after the initial harvest has taken place. In light of our twin crises of food waste and food insecurity, the Ontario Association of Food Banks organized the Community Harvest Ontario program which arranges for employee organizations to conduct gleaning events and donate the food to local food banks. At a recent gleaning event, Highliner employees gleaned 1,350 pounds of corn from a Markham farm which was donated to North York Harvest.



Gleaning corn with the Community Harvest Ontario Program.

BLACK CREEK COMMUNITY FARM

There is an unexpected landscape at Jane and Steeles. A collaborative project of Everdale, FoodShare, African Food Basket and Fresh City Farms, seven acres of conservation land has been converted into an urban farm which raises not only organic fruits, veggies, ducks and chickens, but a new generation of leaders in food security, and community pride.

The farm also acts as a teaching facility, kitchen and community hub, training interns in youth leadership and the many skills involved in tending orchards and crops, food prep and preservation. Supported by harvest shares as well as an ever-growing array of youth camps and programming, Black Creek Community Farm grows ever-more effective and integrated into their community with each harvest season, exemplifying the power of earth and food to draw people together, inspiring healthy and sustainable choices, in building community and local food systems.



Farmer for a Day program, Black Creek Community Farm

WASTENOT FARMS

Wastenot Farms, located north of Toronto, is an earthworm hatchery that provides offices and workplaces in the GTA with a clean, easy Zero Waste solution by picking up their organics. On the farm this gets converted to valuable compost. They also sell red wigglers and worm castings biofertilizer (worm manure) as an all-natural substitute to synthetic fertilizers.



Owner / operator of Wastenot Farms, Jocelyn Malyniuk

FOOD PRESERVATION TECH

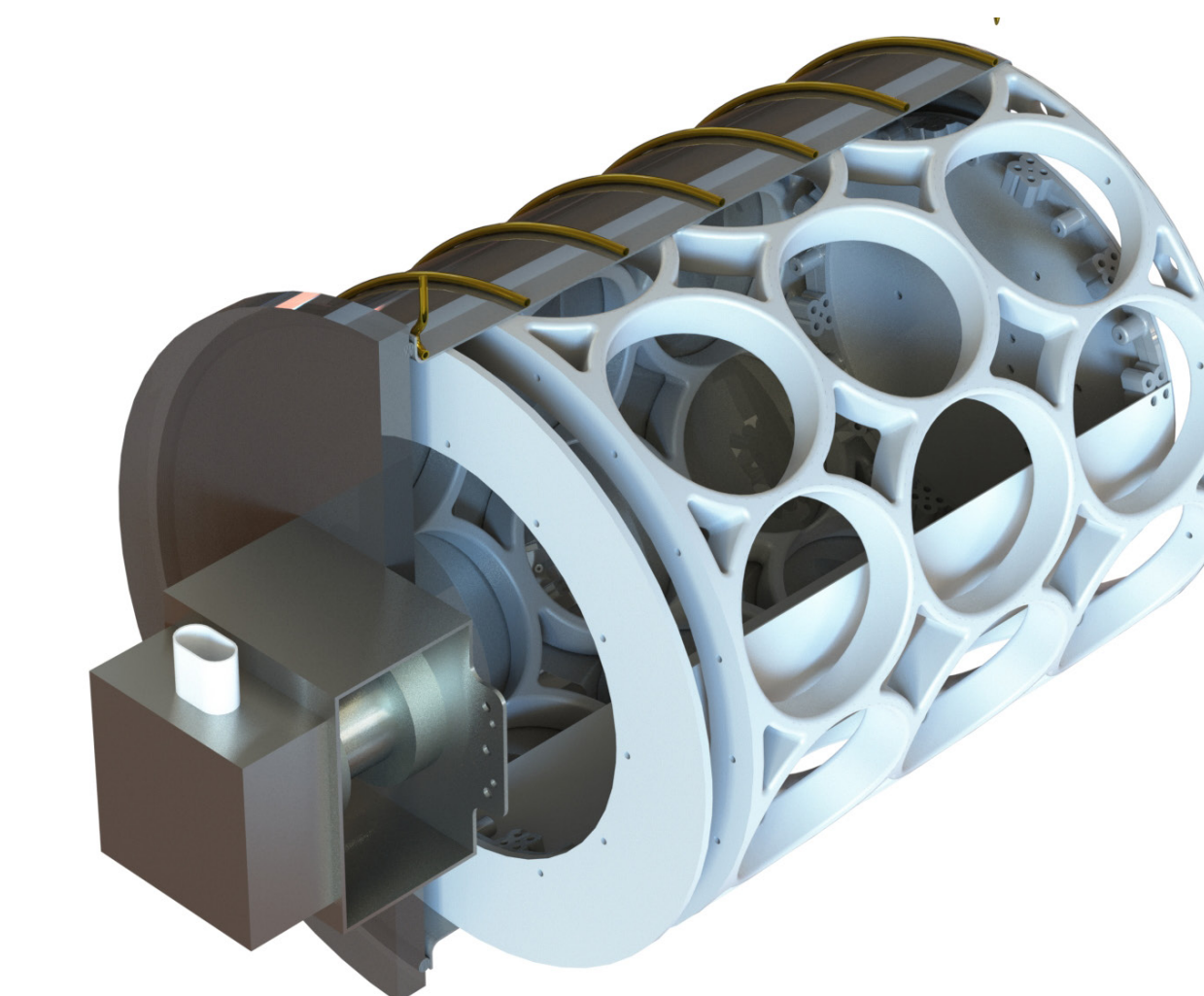


Photo credit: Lyofresh

It is estimated that in North America 20% of fruits and vegetables are wasted before even leaving the farm, due either to imperfect form, over production, or insufficient labour.

Founder of Lyofresh Technologies, Nicholas Steele, is a disaster relief specialist who is developing the next generation of freeze drying technology which salvages perishable produce and lends it a shelf life of 15-20 years. This process also results in the lowest weight of any other form of preservation making it ideal for shipment to communities suffering from food insecurity or in need of disaster relief.

At York University's Bergeron Entrepreneurship Lab Nick is developing the technology to produce an affordable on-site freeze drying machine capable of processing larger batches than conventional processors, 66% faster, with energy efficiencies making it possible to function off-grid which is vital in remote communities or developing countries. Turning otherwise unsuable product shelf-stable reduces food insecurity and exposure to food shortages. It can also be converted into valuable and value-added products like soup and stew mixes, fruit compotes, nutrient-packed foods, or any convenient re-constitutable meal.

There is also great potential in Canada through this technology for our government to incentivise the preservation of surplus foods for distribution to Northern communities where high food prices, low income, and lack of access to traditional food sources has lead to food insecurity rates as high as 90% in some Aboriginal communities. Contact Nicholas at nick@lyofresh.com

OASIS FOOD SECURITY DREAM

St. James Town's LIFT (Low Income Families Together) has developed a vision for a community run year-round urban aquaponics greenhouse which filters wastewater and grows produce for its high-rise residents. Get involved at <http://www.lift.to/the-oasis-food-security-dream/>

1. Food and Agriculture Organization of the United Nations, Food wastage footprint: Impacts on natural resources, 2013

2. based on spending by Torontonians extrapolated from Statistics Canada (2003) 3. Nina-Marie Lister (2007) Placing Food: Toronto's Edible Landscape



REDUCING
FOOD
WASTE

IN RESTAURANTS
HOTELS & CATERING

Did you know?

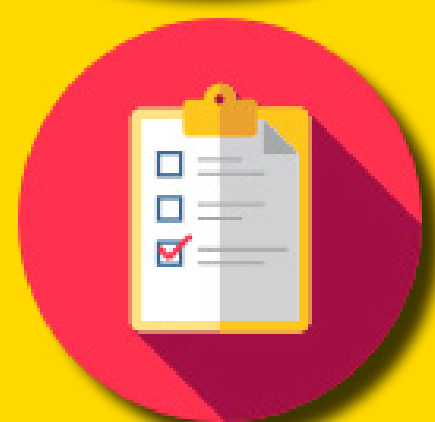
In Toronto we have over 10,000 restaurants and catering services.¹ These industries create 10% of food waste nationally² and range in scale from your neighbourhood diner or coffee shop to chains like Starbucks and Mc Donalds, or caterers that serves meals by the thousands every day. Of this food waste:

- 21% is spoilage
- 45% is lost in food preparation
- 34% is post-consumer plate waste
- The amount of food which could have been eaten but is being thrown away by food service outlets is equivalent to 1 in 6 meals³

What we can do:

The secret to reducing food waste in your restaurant is **getting the whole staff involved**

From ordering and menu planning to prep and bussing, food waste can be reduced all along your restaurant food chain saving money and the environment.



Organize, organize, organize! Although the restaurant industry is hectic and exhausting, it pays to put someone in charge of minimizing waste - ensure new stock goes at the back so older product gets used first - ensure there is a plan to use everything in the fridge and freezer - watch sales to anticipate busy and slow days to know how much to order. It's better to run out than throw out!



Kitchen layout. Separating organics and recycling will save you lots of money in waste removal fees, but in the fast-paced environment of commercial kitchens, waste separation must be convenient. Take the time develop a handy, functional waste bin layout for your kitchen.



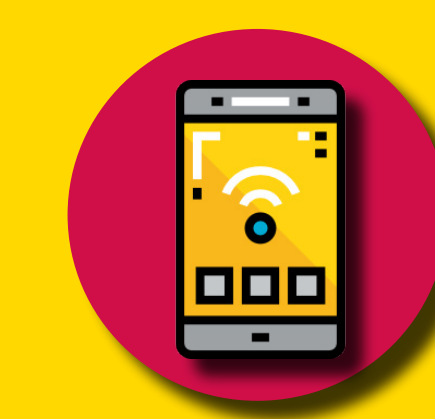
Food is money! Measure your waste. In small kitchens, simply paying attention could be enough to understand your waste, but in larger kitchens a measurement system like Winnow (see next page) can keep tabs on how much food (and consequently money) could be saved.



Portion control. Are there dishes that rarely get finished? Garnishes that no one ever eats? With communication between front and back of house, portions could be reduced, or presentation changed to minimize ongoing avoidable plate waste.



Doggie bags. Help your customers take as much pride in your food as you do. Though some people may see it as scavenging and be shy to ask to take food home, present leftovers to them with pride that can be enjoyed for lunch the following day, with tips on the best way to reheat or repurpose them. (Make sure to use reusable, or fibre-based compostable containers!)



Have a plan for leftovers. Whether you turn leftovers into staff meals or tomorrow's soup, sell it marked down for quick sale through an app like Flash Food, or have a relationship with a local community center for a breakfast program, ensure that leftovers are part of your planning.



Don't let your green bin breed complacency. Using your green bin is certainly better than landfill and saves money in waste disposal fees, but organic waste represents waste of food that could have been eaten as well as the water and energy that went into producing it.



Montgomery's
996 Queen Street West, Toronto

“Food that's been raised well doesn't need much work to blow people's minds with its taste and flavour. We just let the food shine.”

Kim Montgomery and Chef Guy Rawlings are making a name for themselves among both foodies and policy nerds. Montgomery's restaurant holds all the secrets of a masterful pioneer kitchen exquisitely executing the fruits of our landscape and rich heritage with an artistry long forgotten in this era of processed foods and fusion flavours.

While Guy is busy blowing minds in the kitchen, Kim has gotten involved in some of the most progressive food policy groups in the city. Having approached them originally to see how to incorporate some of the industry's most pressing issues into their business model, Kim has become a valued representative of the restaurant community at the Toronto Food Policy Council, Sustain Ontario, and The Food Systems Lab helping bridge the gap between food policy makers and the real life intricacies of small business.

Montgomery's also prides itself in building strong relationships with local producers including Amish and Mennonite Farmers, which enables them to bring in products that have been grown and raised with such care that you can taste it, and to source local delicacies like pawpaws and chokecherries.

Guy is a master of preserves and has ingenious ways of capturing the flavours of harvest season and otherwise wasted parts of foods for use throughout the year. He ferments the green tops of leeks for use in various dishes. He makes his own goat cheese, caramelizing the leftover whey to garnish vegetables. He malts his own vinegar out of a beer making by-product from the Bellwood's Brewery. At Toronto's recent 'Trashed and Wasted' event, drawing attention to the global issue of food waste, Montgomery's delighted diners with chicken tails and fermented mustard hot sauce.

The mindfulness with which decisions are made at Montgomery's has even influenced their lighting. They've averted the packaging and shipping associated with ordering wax candles for their tables by rendering beef tallow from their local butchers into homemade candles in jars (though vegan candles are also available upon request).

The thoughtfulness with which Kim and Guy make decisions in one of the city's most demanding industries, while raising two young children, goes to show what is possible when you believe in what you're doing.

1. Calculated from Toronto's [DineSafe food inspection records](#), 2017. 2. Cinda Chavich (2015). 'How to Solve the Food Waste Problem' MacLean's Magazine. 3. Madison Maguire (2016). [Wasted Potential: A Food Waste Reduction Strategy for Toronto Restaurants](#).

NISHDISH Indigenous fare and fanfare - 960 Bloor Street West

Aanishnaabe Chef Johl Whiteduck Ringuette is reviving Aboriginal food culture in the heart of Korea Town. After 12 years of nourishing people through NishDish Catering, Whiteduck Ringuette and his business partner Hywel Tuscano have opened their kitchen to the public at Bloor and Clinton. A beautifully painted birch forest mural by Ren Lonechild stops passers-by in their tracks. Their eyes wander to the inscription above the door, and you see a nod of understanding as they read: 'Your Friendly Neighbour since...Always.'

Since celebrating their grand opening with over 800 attendees—breaking Toronto restaurant history—NishDish is busy with patrons eager for a taste of their seasonal dishes imbued with soul, history and ceremony. The three sisters (corn, beans, and squash) play a prominent role in their menu, as do wild game and local wild rice. Many of the producers of NishDish's ingredients are Indigenous, from their leeks and mushrooms to their Mohawk roasted coffee. Other food and craft products offered in their marketaria build further connections and opportunities for Indigenous companies, artists, and food providers.

While patrons are delighted by the simple and hearty seasonally rotating breakfast and lunch menu available at NishDish Restaurant and Marketaria, their catering of traditional whole foods can add a powerful impact to a gathering. Nothing brings an event together like everyone in the room sharing the rich earthly experience of drinking cedar tea together—a subtle, but extraordinary connection that doesn't exist when we are each drinking out of our own soda cans or styrofoam coffee cups.

But catering, and the restaurant and marketaria are far from the sum of Johl's contributions to building Indigenous food sovereignty. He teaches youth about traditional food through Native Child and Family services and is developing an ever-increasing web of networks leading to speaking engagements, partnerships and projects including an Aboriginal business incubator and a traditional food garden at Ashbridge's Bay where a sacred 300 year old strain of Native corn has been planted by youth who are taught the ceremonies around tending plants, and the 13 moon calendar which guides planting, gathering, hunting and harvesting traditions. Johl's commitment to Indigenous food and culture is an inspiration not only to Native youth, but to all those looking to build a healthier more sustainable relationship with our land, our food, and each other.



STARBUCKS - A new fleet dedicated to reuse and redistribution

In the US, Starbucks has been working with Food Donation Connection, collecting end-of-day pastries at the company's 7,600 stores for distribution to food banks and homeless shelters. After extensive research into logistics and investment in a fleet of refrigerated delivery trucks, Starbucks is currently rolling out a five-year plan to expand on this project to include perishable items such as breakfast sandwiches, salads, and other ready-to-eat meals.

Although this program is not yet being pursued in Canada, the precedent of the US program is promising. Currently, in Toronto, Second Harvest collects and delivers Starbucks' end-of-day pastries. Introduction of the US plan would relieve logistical pressure on food banks of having to pick up unused food themselves.

While these strategies are often lauded as a solution to both food insecurity and food waste, steady increase in food bank use suggests that food banks are not, in themselves, the solution to food insecurity. They do little to discourage over-production among manufacturers and retailers, but do help to increase the diversity of the products that are eligible for donation.

WINNOW - Savings by weight

Although in small kitchens food waste can be addressed through communication between front of house and kitchen staff, in large hotel, restaurant and catering kitchens, a head chef or purchaser may never see a customer's plate after it leaves the kitchen and are unaware of certain dishes that never get finished, or garnishes that are perpetually tossed.

The Winnow system takes the guess work out of reducing food waste by allowing staff with one touch to record what is being tossed. The system weighs and categorizes the waste to allow for informed decisions that not only reduce waste but promote cost-savings. Winnow users have regularly reported 50% savings with one saying "the awareness was there in terms of food waste, but to implement and see it on a daily basis in a report was eye-opening."

One case study of ESS-Compass—one of the food suppliers that service the majority of government-resourced hospital, prison and defense kitchens in Canada—reported that in their UK kitchens which installed Winnow, the system resulted in a 70% reduction in food waste within one year. For more information see <http://www.winnowsolutions.com>



GENECIS - U of T Students tackle restaurant waste with technology

A group of University of Toronto students are prototyping a technology which will convert prep and plate waste into biodegradable plastics. The process would utilize an on-site machine no larger than a city green bin that can process a week's worth of restaurant waste while separating silverware on site – a service worth up to \$7,000 / year in cutlery replacement alone. The machine is fully-automated and with the touch of a button, waste is weighed, GHG offsets are calculated, and waste is prepared for weekly pickups where it is converted into compost and volatile fatty acids—the raw material for bio plastics—at an offsite facility. For more information see: <http://genecis.co>

1,700
institutions

REDUCING
FOOD
WASTE

IN INSTITUTIONS

SCHOOLS, HOSPITALS, COMMUNITY KITCHENS

Did you know?

- Though often discounted as circumstantial or inevitable, food waste in schools, offices, stadiums, museums, seniors homes, hospitals and correctional centres can be drastically reduced.
- These institutions have incredible buying power, and in the case of schools, hospitals and correctional facilities are resourced with public funds and therefore receptive to policy decisions.
- Ontario hospitals produce 136 million kilograms of solid waste annually with an average of .22-.67 kg of food and packaging waste discarded per meal. 90% of hospital food waste can be diverted.¹

What we can do:

The secret to reducing food waste in institutions beating the budget with a new model

Institutional kitchens and food programs often outsource their food production and are usually part of a larger beurocracy. They therefore face fierce pressure to stick within an allotted budget—but this doesn't automatically need to mean processed nutrient poor-food. The stories here suggest that in fact, addressing food waste and food quality can go hand in hand with quality programming, health, and over-all savings.

In Hospitals. Each Ontario hospital sets its own food budget, since the Ministry of Health and Long Term Care doesn't give hospitals a cost guideline. North York General Hospital in uptown Toronto spends \$4.46-million a year on food service (\$1.66-million for food, plus \$2.8-million for labour). The hospital says it had 144,165 "inpatient days" in 2014-15, which works out to \$11.51 for food and \$19.42 for labour, each day, per patient.² Savings can be attained through decreased disposal costs, by recycling and composting, and by switching to a-la-carte ordering, or offering of choices vs serving of meals.

In Schools. There is so much potential to make our public schools the epicenter of literacy, resources and action on a new holistic food system. With their large yards, underutilization during the growing season, central locations and eager participants, our public schools are the perfect host for community hubs that grow food, compost waste, and educate about health, justice and equality in our food system.

In Community Kitchens. The Community Food Centre model, which is now operating in 12 communities across Canada, including The Stop and the Regent Park Community Food Centre in Toronto engage the centre's participants in growing and preparing food which can both reduce costs, and raise the dignity of the service and the quality of the food while building community and skills development.

1. Hancock, Dr.Trevor (2001). "DoingLessHarm-Assessing&Reducingthe Environmental and Health Impact of Canada's Health Care System." The Canadian Coalition for Green Health Care".
2. Corey Mintz. "Food in hospitals and prisons is terrible – but it doesn't have to be that way." The Globe and Mail May 10, 2016.

HOSPITAL FOOD

Aramark Healthcare conducted a study on [Strategies to Reduce Waste in Patient Food Services](#) where they found that 55% of hospitals never perform waste audits on non-food waste returned on patient trays, and approximately 70% of recyclable and compostable wastes from returned patient trays are thrown in the garbage. A pilot waste separation program in a hospital dishroom stripping station resulted in a 50% reduction in regular waste, and a doubling in the amount of recycled waste at the station e.g. by recycling milk cartons and juice containers. There were no additional costs to initiate the program aside from better utilizing labour.

UNIVERSITY OF TORONTO

As of September 2017, U of T will manage and prepare its food in house, making it the largest University in North America to turn away from corporate food contractors. This, coupled with the new U of T Food Policy Council and courses like Lori Stahlbrand's 'Food Matters,' and a university-wide organics recycling program are bound to bring enlightening changes to food waste at the university.

TDSB ECOSCHOOLS

Toronto District School Boards' EcoSchools program reflects their commitment to supporting students and staff in learning about, caring for, and protecting the environment—starting right in their own school.

Programs include their Litterless Lunches campaign and resources for how to conduct a waste audit and set up a green bin program for your school. Food waste education in schools will help children form positive waste reduction and diversion habits and bring their lessons home. The program provides opportunities for students to build leadership skills, share their findings with the rest of the school, raise awareness, and learn how to implement impactful projects.

GEORGE BROWN CULINARY PROGRAM FEEDS FOOD BANK

After years of witnessing George Brown's culinary program assignments being tossed after grading, Professor Jason Inniss recently partnered with the College's food bank to make student's culinary creations available to students and families in need. Beautifully crafted meals and desserts designed and plated to serve four people rarely got eaten except for the professor's taste test. The program now provides a regular supply of restaurant quality meals for the 850 members of the George Brown Food Bank.

REGENT PARK COMMUNITY FOOD CENTRE

"Building Lives. Creating Community"

Never again will too small of a budget or too large of a crowd justify a a poor menu. For \$1.20 / plate, community chef Norberto Cáceres feeds hundreds of people per meal with deliciously crafted, whole food meals at Regent Park's Community Food Centre.

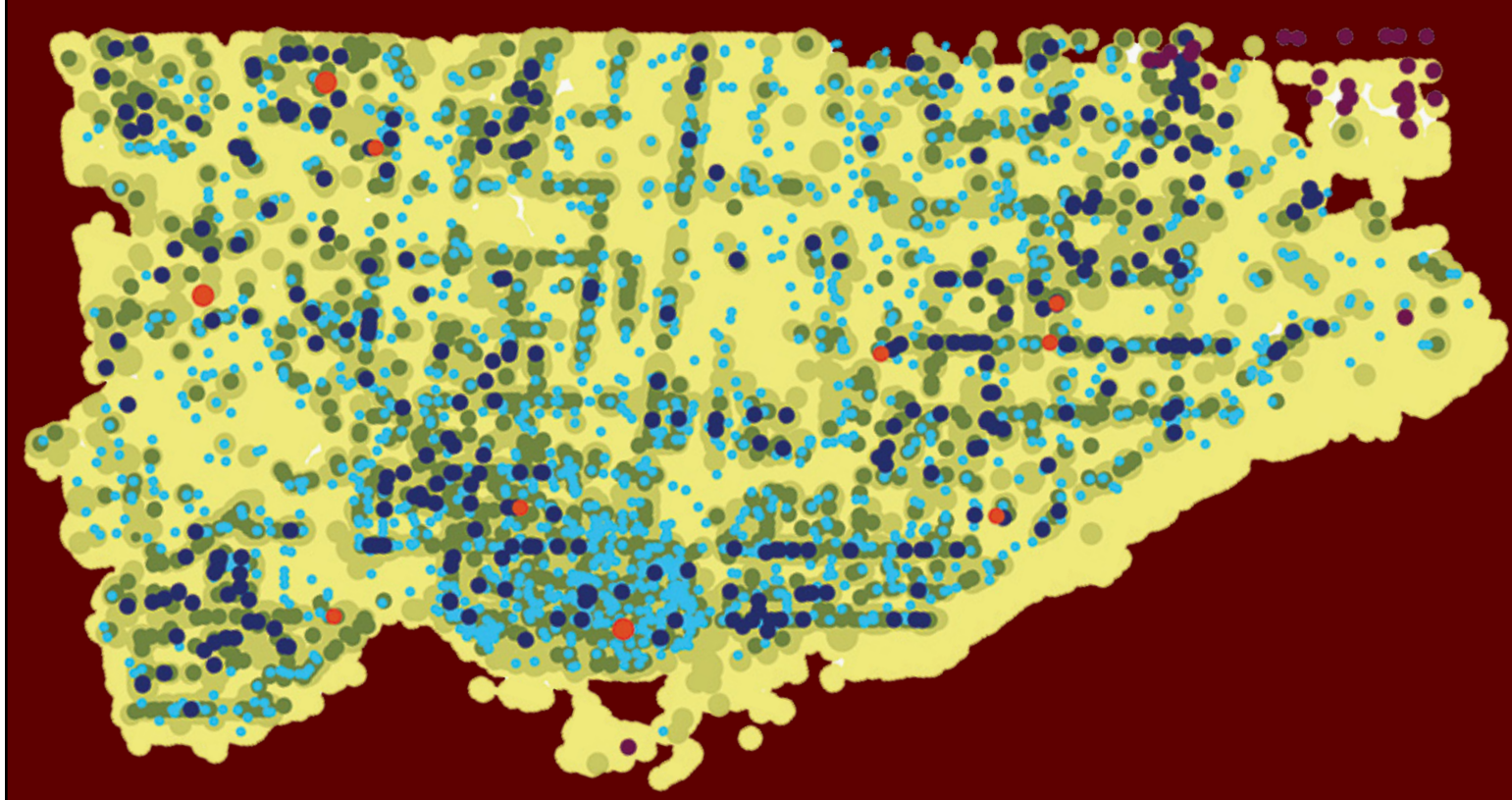
The diners are fed with dignity from a kitchen that creates a full nutrient cycle with their community garden. Ashrafi Ahmed tends the vermiculture composting program using red wigglers to break down kitchen waste throughout the winter, and a large three-step year round composting system which feeds their raised vegetable beds every spring.

Along with Toronto Chef Joshna Maharaj, Norberto was invited Brazil to participate in [Refettorio Gastromotiva](#) in [Chef Massimo Bottura](#) to prepare a meal to create a dinner menu with rescued and donated food—whatever was available—that would make a healthy and nutritious dinner for 150 people attending from local community organizations. Some would call him a miracle-maker. He would likely say, he's just doing his job making good food available to good people.



Norberto (front) cooking up a storm with friend and Chef Onu Obi at Regent Park CFC

Photo credit: Regent Park CFC Instagram



REDUCING FOOD WASTE SYSTEMICALLY

THROUGH POLICY

Did you know?

- Halifax and Vancouver have banned organics from landfill, and Quebec is in the process of rolling out their province-wide organics ban by 2020¹ spurring waste reduction / diversion action
- In 2001, Toronto committed to a 70% diversion rate and was once considered a food waste leader, launching North America's first major Green Bin program. Diversion is currently stalled at 53%.²
- San Francisco set a zero waste goal in 2001 as well, and now diverts 80% of its waste.³
- Metro Vancouver has reduced their per capita waste production 25% from 419 to 333 kg/year.⁴

What we can do:

The secret to reducing food waste systemically is **seeing food as a human right, part of a valued nutrient cycle and part of a circular economy**

Many of the following ideas were developed as part of the Food Systems Lab cross-disciplinary year long Social Innovation Lab seeking systemic, equitable, and functional solutions to food waste.



Behaviour change. Since consumers are the largest contributors to food waste, changing human behaviour will have to be made a priority. This must come from an integrated plan including public education, programming, and incentives, accompanied with systems that facilitate change.



Embrace Indigenous knowledge. In order to redesign our food system for equality and sustainability, we must surpass the colonialist ideals that has threatens this land and the Indigenous people that tended it for millenia before first contact. We must honour the circular philosophies that have been practiced, passed on, and taught for thousands of years by Indigenous peoples and value Indigenous expertise and knowledge in developing sustainable food systems.



Food based school programs & community gardens. To rebuild a healthy relationship with our land and with food as a society, we must engage our children, incorporating food into the curriculum and daily patterns of the school, as well as developing programs which transform school yards during summer closures into into lively community food growing projects.



Urban agriculture & community composting. We must develop policies encouraging roof top gardening and food-growing on underutilized land. Community composting programs must be developed to permit nutrient recycling and local delivery of organics and prepared compost.



Change the laws. As part of an overall strategy to reduce food waste, many laws around gleaning, liability of well-intended donations, donation of branded products, community-scale composting, animal feed, landfill, taxation and urban agriculture will need to be amended. For a full analysis of food waste and law, see The Harvard Food Law and Policy Clinic's "[Keeping Food Out of the Landfill: Policy Ideas for States and Localities](#)"



Zero waste targets. Although governments tend to shy away from overly ambitious targets, in the case of waste, a full circle recoverable or biodegradable material stream should be the goal.

1. <https://www.nbcnews.com/quebec-takes-steps-to-advance-organics-recycling>
2. Toronto Environmental Alliance (2016). *Zero Waste Toronto: A Vision for our City*
3. <https://www.epa.gov/transforming-waste-local/zero-waste-case-study-san-francisco>
4. Metro Vancouver 2016 *Waste Composition Monitoring Program*

Ontario's Circular Economy

In March 2017, the Ministry of the Environment and Climate Change presented Ontario's Strategy for a Waste-Free Ontario: Building the Circular Economy. This new strategy outlines the province's plan to fight climate change by reducing landfilled materials that could otherwise be reused, recycled, composted and reintegrated into the economy.

The strategy includes concrete actions such as:

- Full producer-responsibility for the lifecycle management of their products and packaging
- Implementing a framework to reduce the volume of food and organic waste going to landfill
- Banning certain materials, such as food waste, beverage containers, corrugated cardboard and fluorescent bulbs, from disposal and driving creative strategies to reuse and recycle them
- Improving oversight and accountability in the waste management sector

The Ministry has also convened a Food and Organic Waste Stakeholder working group to develop policy recommendations to address food waste. Learn more about [Ontario's Strategy for a Waste-Free Ontario: Building the Circular Economy](#)

FEDERAL PROGRAMS

During the Second World War, federal governments were very effective at getting citizens to reduce food waste and engage in local food production with the introduction of Victory Gardens to support the war effort. Today with 12% of families struggling to get enough food, more Canadians are experiencing food insecurity than went to fight in WWII. With food waste contributing to the global crisis of climate change, this same nation-wide messaging should be used today to fight food waste and food insecurity.



PROVINCIAL REGULATION

A major consideration to tackling food waste is localization of our food and waste systems—demanding policies which would permit nutrient cycling from local food handling establishments to community gardens and urban farms. Current provincial policy and citing controls designed to manage large scale waste facilities create formidable barriers for community-managed compost systems and must be redefined to close the food waste loop.

MUNICIPAL ORDINANCES

Cities can be very influential in reducing waste and applying pressure to other levels of government. From San Francisco, which has made great strides towards its commitment to a zero waste future, some successful waste reduction policies include:

- Mandatory green bin program with non-compliance fees, household audits and waste separation training
- Plastic bag and styrofoam ban
- Mandating water bottle refill stations in new buildings
- City prohibited from purchasing bottled water
- Environmentally Preferable Purchasing Ordinance
- Surplus Disposal Ordinance
- Mandatory construction and demolition debris recovery

San Francisco has also reduced food waste through their grease disposal program which collects used vegetable oil from households, restaurants and industry. Previously a major cause of sewage back ups, used vegetable oil now fuels San Francisco's Muni bus fleet. Similarly, their garbage trucks have been converted to run on Liquid Natural Gas which is from the methane from their landfill.

The City of San Francisco is also applying pressure for State resolutions on Producer Responsibility Framework, Marine Plastic Pollution Producer Responsibility, and Toxic Substances bans.

TORONTO FOOD POLICY

The [Toronto Food Policy Council](#) has been working through Toronto Public Health since 1991 developing and advocating for Toronto's Food Charter and other policies to make our food system more accessible and sustainable. Get involved with TFPC, ask your local councillor what they are doing to close the loop on food waste in Toronto, or get involved with one of the many organizations on the next page.

“Connecting more people to food through gardens, farmers’ markets, and urban farms teaches that food isn’t trash. Its life.”
- Jonathan Bloom

There is great work being done to tackle food waste and food insecurity on a systemic scale by many organizations in Toronto, nationally, and abroad:

[Commission for Environmental Cooperation](#) just launched their North American Initiative on Food Waste Reduction and Recovery.

[Community Food Centres Canada](#) Now in operation or development in 12 communities, CFC’s foster collaboration in building dignified access to good food through empowering multi-dimensional projects.

[FoodShare](#) From school gardening and composting to The Mobile Good Food Market, FoodShare runs many integrated programs that demonstrate a sustainable and accessible food system for all.

[Food Systems Lab](#) is a one-year pilot Social Innovation Lab working on solutions to address the issues of food waste and food insecurity and contribute towards a resilient, sustainable and just food system in Toronto and beyond.

[Love Food Hate Waste](#) is a fantastic resource for tips on reducing food waste at home.

[Meal Exchange](#) engages post secondary students through the Real Food Challenge to bring healthy local food to campuses and begin to build a more just and sustainable circular food system.

[Ministry of the Environment and Climate Change](#) recently released [Ontario’s Strategy for a Waste-Free Ontario: Building the Circular Economy](#) which lays out ambitious, concrete actions towards zero waste.

[National Zero Waste Council](#) unites municipalities across Canada in working towards a zero waste future with strategies around packaging, a circular economy, and their [National Food Waste Reduction Strategy](#)

[Provision Coalition](#) supports businesses by working to provide practical, innovative, food waste reduction strategies or solutions to harvest environmental, economic and social gains across the value chain.

[Second Harvest](#) has been rescuing and delivering fresh, surplus food to feed people experiencing hunger in Toronto since 1985. They envision a future with no waste and no hunger.

[Sustain Ontario](#) is a province-wide, cross-sectoral alliance that promotes healthy food and farming. Among many projects they published the [Reducing Household Food Waste: Municipal-Regional Toolkit](#).

[The Stop Community Food Centre](#) uses food as a tool to build healthier, more connected, and more self-determined communities through many projects including their communityscale demonstration composting program at the Green Barn at Artscape Whychwood Barns.

[Toronto Environmental Alliance](#) is Toronto’s environmental watchdog, campaigning locally for solutions to Toronto’s environmental problems including advocating for a Zero Waste long term strategy for Toronto.

[Toronto Food Policy Council](#) advises the City of Toronto on food policy, and works to ensure universal access to healthy, affordable, sustainable and culturally appropriate food.

[Value Chain Management](#) is a pioneer and leader in research to identify the causes of food waste along the value chain and develop system-wide solutions.

[WRAP](#)’s wildly successful Love Food Hate Waste campaign has inspired many organizations internationally.

[Zooshare](#) is building North America’s first zoo-based biogas plant to turn poo from the Toronto Zoo and food waste from grocery stores into fertilizer and renewable power for the Ontario grid.