



What is the Food Systems Lab?

The Food Systems Lab is a one-year pilot Social Innovation Lab working on solutions to address the issue of food waste and food insecurity in the Greater Toronto Area (GTA). Through this collaborative process we aim to contribute towards a resilient, sustainable and just food system in Toronto and beyond.

Social Innovation Labs are multi-stakeholder platforms created to address complex system challenges. We are bringing together individuals and organizations from diverse parts of the food system in the GTA. Our stakeholders include farms, food businesses, Indigenous leaders, consumers, schools, associations, civil society groups, faith organizations, charitable foundations, and local government. We seek to identify promising interventions that will increase the resiliency and sustainability of our food system. To accomplish this goal, the Lab process includes ongoing qualitative and quantitative research such as interviews with stakeholders and experts to harvest current knowledge about food waste, analyzing archival records, and modelling food waste data. The Lab also brings together stakeholders through a series of three workshops to gain a deep understanding of the system, identify and prototype innovations and opportunities that can address root causes of food waste.

Our Values: Reconnecting to Food through Reconciliation & Inclusivity

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

Melanie Goodchild (Anishinaabe), Indigenous Advisor Food Systems Lab

“We keep the survivors at the heart of our story...”

Marie Wilson, Commissioner, Truth and Reconciliation Commission, Special Advisor Food Systems Lab

At the foundation of our Lab is 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 annual cost of \$31 billion) amidst food insecurity affecting close to one million Canadians, cannot be separated from the system that suppressed and discriminated 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 Lab as a platform to develop equitable relationships between diverse stakeholders to promote balance in our food system.



Image courtesy of U of T Office of Sustainability, illustrated by Kathlyn of Thinklink Graphics based on a Keynote by Tammara Soma.

By answering the Truth and Reconciliation Commission's *Calls to Action* and the Ontario Ministry of Environment and Climate Change's call for a *Circular Economy*, we believe that a vision for a circular economy in Canada should integrate the circular philosophies that have been practiced, passed on, and taught for thousands of years by Indigenous peoples. For example, the Indigenous teachings of “All My Relations” is an important principle that promotes a circular philosophy based on respect and balance for all relations (both human and non-human). Based on our workshops, our research, and our engagement with Indigenous community members as well as the Lab's Indigenous Special Advisor Melanie Goodchild, our Lab recommends that policies to reduce or prevent food waste and food insecurity in Ontario must:

1. Engage with Indigenous communities;
2. Include the voices of Indigenous elders, youths and community members;
3. Recognize the value of Indigenous traditional ecological knowledge and laws in promoting food waste reduction and closed loop food systems; and
4. Invest in Indigenous-led innovation and initiatives that promote a circular economy, food waste reduction and a sustainable food system.

In addition, our Lab recognizes the importance of inclusive collaboration. Our workshops and research method integrates the voices and leadership of communities that are often underrepresented in food-related consultation processes or discussions. Our initiative collaborates with and includes the expertise of farmers, migrant farm workers, food-service workers, community service agencies, faith-based communities and community members of diverse backgrounds including people of colour in our decision making process.



Lab Timeline: Our Progress so Far

Sep to Nov 2016	The lab team conducted 47 semi structured key informant interviews and literature review on food waste in Toronto. We developed a Design Brief to prepare the stakeholders for the first workshop.
Nov 2016	Workshop 1. We brought together 30 organizations and individuals representing different parts of the food system and diverse viewpoints. Participants explored issues related to food waste through whole system thinking tools such as systems mapping, identifying historical events that contributed to a culture of wasting more food and playing with the 'horns of the dilemma' of food waste (two equally desirable alternatives that appear to oppose each other). Participants also went on a research mission to observe food waste in downtown Toronto to gain first-hand experience from other points of view.
Dec 2016 to Feb 2017	The lab team synthesized findings from Workshop 1 and conducted additional research to produce an Executive Summary of key trends, horns of the dilemma and timeline of the recent history of food in Toronto. We fostered connections with organizations beyond Toronto working on food waste. We were invited by the Ontario Ministry of the Environment and Climate Change (ECCC) to be a member of the Food and Organic Waste Framework working group.
Mar 2017	Workshop 2. With approximately 30 participants, we applied the systems understanding developed in Workshop 1 to generate and play with ideas for solutions. The group first identified patterns from existing innovations, then created a long list of over 30 solution ideas. These ideas were ranked, and further developed with a bricolage exercise where teams 'sculpted' their idea using found objects to turn these ideas from theory into a tangible working model. Seven ideas were mapped onto a Rhizome Impact Canvas (based on a business model canvas).
Mar to May 2017	The lab team and participants conducted additional research and testing of the seven ideas from Workshop 2 to prepare for prototyping in Workshop 3. The lab team integrated the research and synthesis to date in this Executive Summary. We continued to make new connections in Ontario and attended key food waste events. We presented our findings at the Ontario Ministry of Env. Climate Change Food and Organic Waste Framework meeting, the Commission for Environmental Cooperation North American Workshop on Food Waste Reduction and Recovery, UofT Green Gala , UofT Senior Alumni Association and more.

Workshop 2 Recap

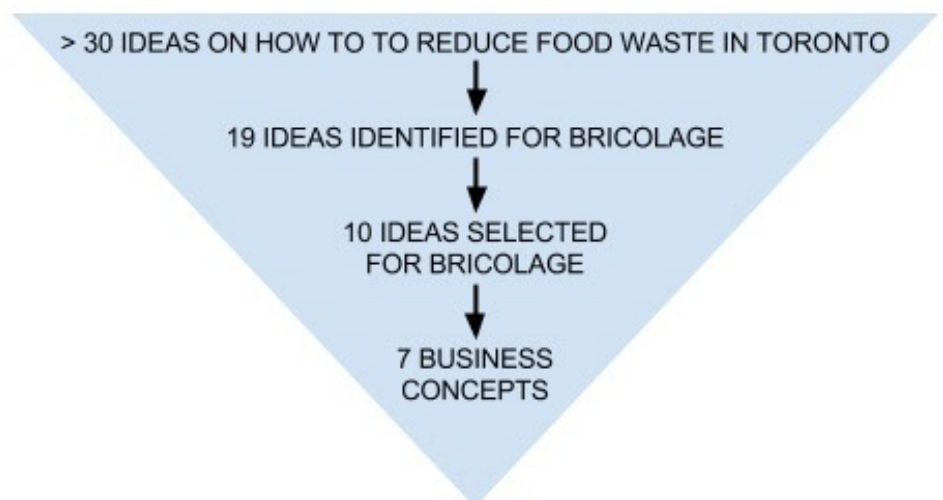
We opened Workshop 2 with remarks from Hon. Glenn Murray (Ontario Minister of Environment and Climate Change) and a ceremony led by Melanie Goodchild. The key messages from the opening is that food connects everybody and we are one family that needs to work on the solution together.

Approximately two-thirds of the participants of Workshop 2 were present at Workshop 1. We warmly welcomed the new participants to this workshop and generated some laughter with an improv activity to tell the story of Workshop 1. Through this activity, teams re-enacted their interpretation of the two days of Workshop 1. New participants got caught up to our lab process and returning participants got a refresher on what we did.



Once we were through our warm-up, we went straight to work. The goal of the first day was generate divergent ideas, push our thinking, and select ideas for bricolage. We looked back at our outputs from Workshop 1 and case studies of current food waste solutions. Through these reflective exercises, we identified elements of solutions that help or hinder systemic change to reduce food waste. Through a rapid brainstorming, ranking and clustering process, we generated more than 30 ideas and identified 19 ideas for bricolage. Participants then selected ideas they want to work on and 10 bricolage groups were created.

On the second day, participants turned ideas into bricolage sculptures, which were then 'destroyed' (taken apart with the most important element removed) and rebuilt to open up new creative possibilities. After another round of re-grouping and selection, seven ideas were then translated into business concepts with the aid of the Rhizome Impact Canvas.



Business Concepts

These are the seven concepts developed during Workshop 2. A full list of the ideas generated throughout the workshop is posted on our [website](#).

- Food Literacy in Schools:** Comprehensive environmental and social curriculum in schools around food skills and food waste such as experiential learning with food management, gardening, composting.
- Grade 'C' Food App:** An app to create new local, regional and commercial channels for grade 'C' food.
- Growing Local/Dining Local:** Connect community gardens/urban growers with restaurants so the community gardens/urban growers have access to high quality compostable organics, restaurants divert organic waste, and restaurants also have access to purchase tasty, seasonal, local food.
- National Food Policy Food Waste Campaign for Consumers/Households:** Promote equitable access to food that is also environmentally and economically sustainable through a combination of policy, operational and promotional tools such as expansion of organics collection, food waste bans, and education on food literacy.
- Solution Mapping:** Connect and inform Torontonians /Ontarians /Canadians about food waste projects and transferable ideas to reduce duplication of effort.
- Technology for Change:** Introduce food processing technology at the farm level to decrease perishability while increasing revenue by capturing more of the value chain through selling preserved crops throughout the year.
- Ministry of Waste Reduction:** Create a ministry/department designated to waste reduction, with a focus at the local level. Switching from a waste management to waste reduction perspective.

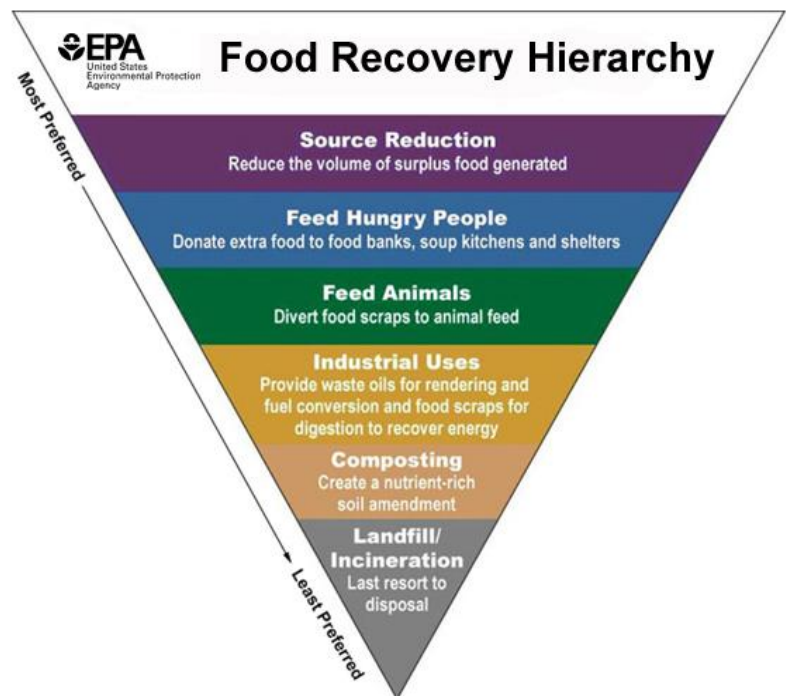


Emerging Insights

In Donella Meadows' game-changing systems theory book *Thinking in Systems: A Primer*, she outlined twelve types of leverage points to intervene in a system. Leverage points such as standards, taxes, and subsidies, while tangible and easy to implement, are considered the least effective because they do not address the root causes of problems in a system. Leverage points such as changing or transcending paradigms is the most effective, yet also more challenging to achieve. The Lab team began to ask ourselves: **What paradigm and system are necessary to achieve the audacious goal of making Toronto a zero food waste city?**

Currently, the dominant paradigm for managing food waste is based on the waste management hierarchy, such as the United States Environmental Protection Agency's Food Recovery Hierarchy. This hierarchy prioritizes solutions with a 'reduce, reuse, recycle' mentality, with some adaptations (e.g. feeding people and animals instead of reuse).

We propose to challenge the structure of this hierarchy. While the hierarchy has helped raise awareness and advance efforts in reducing food waste, it is still based on a paradigm of food as a commodity or material resource. This paradigm favours an industrial food system and management practices. This paradigm does not necessarily promote a culture of innovation or address deeper seeded social and environmental problems in the food system. Depending on how one is situated in the food system (e.g. a household, a small business, a multinational company), the hierarchy's most preferred and least preferred solutions to food recovery may not be applicable or may result in unintended negative consequences in other parts of the food system. For example, there may be more community benefits to giving food scraps to a local urban grower to compost than ship the food scraps to a digester in another city for processing even though industrial uses is higher on the hierarchy.



A New Paradigm: “Next Best Use”

An important insight emerged from our Lab through the *bricolage* activity and interactions with our stakeholders: **“Next Best Use”**. According to the Merriam Webster dictionary, the definition of *bricolage* is: *construction (as of a sculpture or a structure of ideas) achieved by using **whatever comes to hand**.*

Historically, practitioners of *bricolage* would visit communities to collect odds and ends (*Bricole*) and create, mend or develop useful items out of materials that are considered “waste”. This practice requires creativity, innovation, and a paradigm that sees value in making do with whatever is at hand without resorting to using new resources. To reduce food waste and foster innovation, we need to develop a culture of *Bricolage* by constantly asking “What is the next best use?”. Perhaps this is the paradigm shift that is needed in the food system.

Case Study: Earth + City



Food Systems Lab participant Cassandra Rizzotto (co-founder of Earth + City) found out a juicing company was producing a lot of high-quality pulp from juicing organic vegetables and fruits. Rather than simply compost the pulp, Cassandra developed a recipe for pulp crackers which created additional value to foodstuffs that would have been composted or wasted.

Cassandra's innovation falls outside of the Food Recovery Hierarchy (it's not an industrial use, nor feeding animals, nor donating food to food banks) yet it brings numerous benefits in reducing

food waste while creating a nutritious new product for her growing business.

More innovation can be developed by promoting a space (hub) and investment into research that foster “bricolage thinking.” It is an opportunity for educational institutions, chefs, schools, restaurants and companies to discover value in what would otherwise be waste, drive innovation, and harness creativity.

Update Since Workshop 2: Research Team In Action

In between workshops, research and writing, the Food Systems Lab Team have been busy reaching out to industry, policy makers, academic institutions and community members to share our findings and to promote collaboration in addressing the complex issues of food waste and food insecurity in the Greater Toronto Area. The Team has also undergone further social innovation training sponsored by the J.W McConnell Foundation to ensure that we are up to date in our methodology and to provide our Team with a network of like-minded labs across the country.



Interest in our lab and in social innovation methodology has grown and we can barely keep pace with requests to speak. However, we are passionate about our work and promoting intersectoral collaboration that is both creative and committed to social justice. The following are events between the second and third workshops where we have the privilege of speaking:

- Commission for Environmental Cooperation North American Workshop on Food Waste Reduction and Recovery 28th February 2017
- Keynote at University of Toronto Office of Sustainability Green Gala March 9th 2017
- Carleton University Founders Seminar, March 15th 2017
- Careers in Science Communication Gerstein Science Information Centre 28th March 2017
- University of Toronto Senior Alumni Association March 29th 2017
- J.W McConnell Foundation LabWISE Social Innovation Training March 30th 2017
- Provision Coalition International Food Loss and Food Waste Forum April 12th 2017
- FUUDY Smart Sharing Fridges Launch April 13th 2017
- Ontario Ministry of Environment and Climate Change April 19th 2017
- Food Waste: A \$31 Billion problem hosted by "Why Should I Care" April 24th 2017
- Pierre Elliott Trudeau Summer Institute May 8th 2017
- Canadian Association of Food Studies, Congress SSHRC May 30th 2017

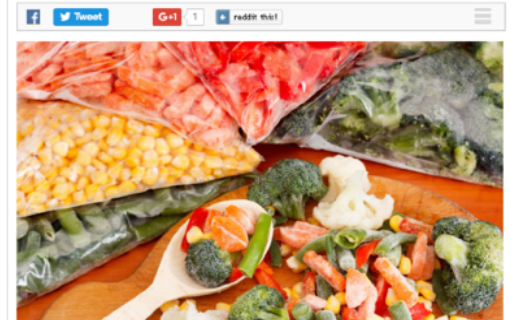
Media Features on Food Systems Lab

The following are a few articles featuring members of our lab and our work:

- March 24th 2017, Featured in the article, "Let it Go: Drop the frozen food snobbery, it's the new fresh", in [Metro News](#) by Genna Buck.
- April 6th 2017, Featured in the article, "Cutting down on wasted food" in [Investment Executive](#) by Beatrice Paez.

Let it go: Drop the frozen food snobbery, it's the new fresh

"We're so detached. We've lost that whole connection between production, processing and consumption," say experts.



What's Next?

Prototyping: Social Innovation Lab Workshop 3 June 7th and June 8th, 2017

Our third and final lab workshop will harness design thinking tools to prototype possible innovations and opportunities. A rapid iteration process will be used to maximize learning while minimizing the feedback loop. In this lab workshop, we will explore the potential opportunities, and challenges faced by the stakeholders when implementing selected interventions. This pilot social innovation lab will then provide a template for other interested parties who would like to replicate our model for collaborative cross-sectoral policy making in other jurisdictions.

Closing the Food Loop June 10th, 2017

Closing the Food Loop is a one-day ideas hackathon to work on innovative solutions to reduce food waste and create a circular food system in the Greater Toronto Area. This event is part of the Open Source Circular Economy Days (OSCE days) global community that uses open source resources to create a shift to a sustainable circular economy. Participants will be working on challenges pitched by a range of start-up businesses, entrepreneurs, national associations, and others. Using transparent, open source methods, we will generate and test new ideas, prototypes, products, and designs.

Acknowledgements

Lab Secretariat

Tammara Soma (Project Manager)
Belinda Li (Lead Facilitator)
Dave Kranenburg (Social Innovation Lab Advisor)

Research Team

Kelsey Carriere (Research and Policy Coordinator)
Clarissa Cremin-Endes (Research Assistant)
Omar Elsharkawy (Research Fellow)
Ania Ek (Research Assistant)
Dr. Rafaela Gutierrez (Research Fellow)
Daniela Spagnuolo (Policy Coordinator)
Dr. Michelle Coyne (Research Fellow)
Dr. Alissa Hamilton (Writer in Residence)

We gratefully acknowledge that Food Systems Lab was held on this sacred land on which the University of Toronto 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.

The meeting place of Toronto 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, on this territory.

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

