

# BUILDING A RESILIENT TENDER FRUIT INDUSTRY IN ONTARIO

The Ontario Tender Fruit Lab:  
Food for Action

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### Authors

Claire Buré  
Sam Laban  
Joeri van den Steenhoven

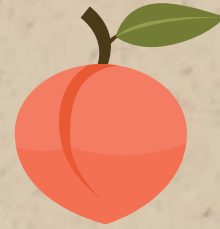
### Designer

Terrie Chan

**MaRS** Solutions Lab

**WISIR**  
Waterloo Institute for  
Social Innovation and Resilience

# THE CHALLENGE



# ABOUT THE LAB

The tender fruit industry in Ontario is facing a watershed moment. Fierce competition from foreign imports, as well as between large retail chains, has put pressure on prices. Meanwhile, demand for fresh fruit year-round is rapidly increasing, largely driven by a broader consumer trend of purchasing products to help improve health and wellness. Much of this new demand is currently being met by increasing imports of exotic fruits such as pineapple and mangoes, while the volume of exports is declining and value-added processing is carried out abroad. These challenges are forcing the industry - growers, distributors, processors and retailers - to change.

While the changes in Ontario's tender fruit sector pose significant challenges, they also create opportunities. With appropriate interventions, we think it is possible to rebuild this sector to meet the shifting demands of our 21st century food system. This could have many positive spinoff effects, including stronger businesses across the value network, greater opportunities for innovators, a better environment and healthier living.

As with any market, people's expectations around food are evolving. Today, consumers want their food supply to be reasonably priced, appealing and in reliable supply, but also increasingly sustainable, healthy and local. Demand for organic and local products continues to rise, although this still represents a relatively minor segment of the market. New investments are also being made into new niche processing facilities in Ontario. It is apparent that the current food system favours some of these demands and trends but seems to neglect others. And some demands seem contradictory. To meet changing needs we must reconcile these different, seemingly conflicting demands. And we need everyone in the sector - from producers to processors, retailers and consumers - to make that happen.

We see challenges but also opportunities to get new varieties into markets faster, grow local brands, improve farming practices and harness technological and logistical efficiencies and create a stronger fruit industry for the long term. But we need to work together in order to realize this. By meeting these opportunities and finding new and innovative solutions to the current challenges, a revitalized tender fruit industry could act as a beacon for the entire Canadian food system.

The Ontario Tender Fruit Lab is an attempt to address this set of challenges. It is a new approach that brings together stakeholders to collaboratively develop, test and scale solutions. We conducted in-depth research and convened 35 stakeholders from across the Ontario tender fruit value chain to generate a shared strategy and design interventions for a stronger tender fruit industry. The convening question that Lab participants developed together, was:

**How can we create a resilient tender fruit economy in Ontario, in a way that provides economic, environmental and social benefits?**

The resulting interventions were designed to bring about positive change in the tender fruit industry in Ontario. We invite others to work with us to act on and support elements of the strategy and shared goal that we developed. The lab is founded on the belief that it is only by sharing unique insights and acting in collaboration that we can create a food system that meets the demands of all Ontarians.

Local champions are currently pushing forward on these intervention topics. Since the workshops, different participants have accomplished the following: launched an Eco-basket™ made of more sustainable packaging used by major retailers, won a grant for a new quality and cold chain management project, and are creating a business case to speed up availability and commercial production of new varieties. More information on these outcomes is found later in the report.

The Ontario Tender Fruit Lab also served as a test of a new Social Innovation Lab model, developed and conducted by the Waterloo Institute for Social Innovation and Resilience and MaRS Solutions Lab. The J.W. McConnell Family Foundation, Ontario Trillium Foundation, Metcalf Foundation and Friends of the Greenbelt Foundation generously supported this initiative. See the About the Lab section in this document for a deeper description of the lab process and tools and methodologies used.

<http://www.marsdd.com/systems-change/mars-solutions-lab/>

<https://uwaterloo.ca/waterloo-institute-for-social-innovation-and-resilience/>

# PARTICIPANTS



**Jamie Warner**  
Owner, Warner Orchards / Board  
Director, Vineland Growers' Co-operative

**Michael Ecker**  
President, Vineland Growers Co-op Ltd.

**Janaki Hadida**  
Founder, Leslieville Farmers' Market



**Michael Kauzlaric**  
Horticulture Technology Scout and  
Grower Outreach, Vineland Research  
and Innovation Centre

**Cecil Bradley**  
Manager, Agriculture Development  
Policy, Ontario Ministry of Agriculture,  
Food and Rural Affairs (OMAFRA)

**Jay Subramanian**  
Associate Professor in Tree Fruit  
Breeding and Biotechnology, University  
of Guelph, Vineland Campus

**Patrick Gilbert**  
Vendor Development Manager for  
Ontario, Loblaw Company Limited

**Dave Kranenburg**  
Director of Programs, Centre  
for Social Innovation / Former  
Executive Director, Meal Exchange



**Jennifer Hyde**  
Brand Manager, Ontario Natural Private  
Label, Ontario Natural Food Co-op

**Phil Tregunno**  
President, Tregunno Farms Inc. / Chair,  
Ontario Tender Fruit Producers' Marketing  
Board

**Amy Proulx**  
Researcher & Industry Liasion /  
Professor & Program Coordinator,  
Niagara Research, Canadian Food  
and Wine Institute at Niagara  
College

**David Enns**  
Board of Directors, Ontario Tender  
Fruit Producers' Marketing Board

**Joe Dutchyn**  
Owner, Niagara Orchard & Vineyard Corp.



**Barbara Smith**  
Foodland Ontario Retail Supervisor,  
Ontario Ministry of Agriculture,  
Food and Rural Affairs (OMAFRA)

**Dan Branson**  
Senior Director, Loblaw Brands  
Limited, Loblaw Company Limited

**John Boot**  
President, Niagara Fruit Snack  
Company Inc,

**Praveen Saxena**  
Professor & Director, Gosling Research  
Institute for Plan Preservation, Department  
of Plant Agriculture, University of Guelph

**Beth Hunter**  
Program Director,  
J.W. McConnell Family Foundation

**David Ervasti**  
Sustainable Supply Chain Analyst

**John Kelly**  
Executive Vice President, Ontario Fruit  
and Vegetable Growers' Association

**Ralph Martin**  
Chair, Loblaw's Chair of Sustainable Agri-  
culture / Researcher, Univeristy of Guelph

**Bill Hodgson**  
Chair, Agricultural Policy and Action  
Committee / Mayor, Town of Lincoln

**David Hipple**  
Hipple Farms Ltd. / Board Director,  
Ontario Tender Fruit Producers'  
Marketing Board



**John Thwaites**  
Thwaites Farms Ltd. / Vice Chair, Ontario  
Tender Fruit Producers' Marketing Board

**Renato Razzolini**  
Produce Category Manager, Sobeys

**Brock Puddicombe**  
Owner, Puddicombe Cider Company

**Donna Speranzini**  
Regional Ag-Land & Agroforestry  
Manager, Knowledge Technology  
Transfer Office, Agriculture and  
Agri-Food Canada

**Julie Sommerfreund**  
Health Promotion Specialist, Toronto  
Food Strategy

**Ryan Goad**  
Procurement Merchant, Loblaw Company  
Limited

**Carolyn Dowling**  
Project Coordinator, Agri-Food  
Management Institute

**Hugh Fraser**  
Agricultural Engineer, Horticultural Crop  
Protection and Post-Harvest Handling,  
Ontario Ministry of Agriculture, Food and  
Rural Affairs (OMAFRA)

**Kathy Macpherson**  
Vice President, Research & Policy,  
Friends of the Greenbelt Foundation

**Ryan Koeslag**  
Executive Director, Agri-Food  
Management Institute

**Carolyn Young**  
Acting Director, Sustain  
Ontario

**Jamie Reaume**  
Executive Director, Holland Marsh  
Growers Association / Chair, Ontario  
Food Terminal

**Lori Elstone**  
Founder, Provisions Food Company

**Sarah Andrewes**  
Vice President, Hill+Knowlton Strategies  
Canada

**Sarah Marshall**  
Manager, Ontario Tender Fruit Producers'  
Marketing Board

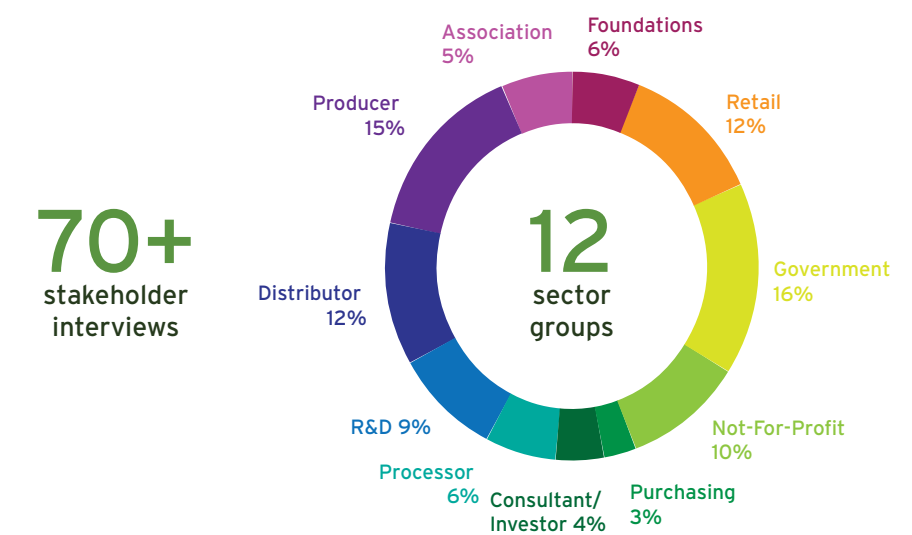


# THE RESULTS IN SUMMARY



Between the fall of 2013 and summer of 2014, the MaRS Solutions Lab (MSL) and the Waterloo Institute for Social Innovation and Resilience (WISIR) interviewed over 70 stakeholders and experts across the Ontario food system, and researched over 175 published sources of statistics and related research. We brought together this research into the Design Brief (which you can download [here](#)). The Design Brief provided input for participants throughout the workshops, and also served to drive public awareness on the challenges and opportunities of the Ontario tender fruit industry.

## Who we talked to (divided by sector)



In the fall of 2014, the lab convened 35 participants at a series of three workshops in the Niagara region, with the support of the Vineland Research and Innovation Centre and the Ontario Tender Fruit Marketing Board. We developed a shared strategy and interventions to bring about change in the Ontario Tender Fruit industry within the entire value network.

# INTERVENTIONS

1.

## Creating a Better Eating Experience

Improve the consistency of quality of Ontario tender fruit for consumers, in order to reduce poor eating experiences such as mealy peaches. This will be done by improving post-harvest handling, cooling, packing and storage practices and systems across all stages from the grower to the consumer.

A proposal by the Ontario Tender Fruit Marketing Board was recently accepted by Agriculture and Agri-Food Canada for a quality and cold chain management project.

The Vineland Growers Coop in the Niagara region recently launched the Eco-Basket™, a more sustainable packaging alternative. It saves on packing labour costs from previous containers, and helps minimize the costs associated with storage of unused containers. The basket is now being used with Loblaw's, Costco, Sobeys, Wal-Mart, and Metro.

2.

## Niagara Fruit Forever

Increase tender fruit production efficiency on-farm to increase net profitability at the farm gate and boost environmental performance, in order to raise competitiveness and commercial value of the sector for benefit across the value network.

3.

## Skin in the Game

Create a supportive ecosystem to enable entrepreneurs to develop new products and engage with growers to create fruit processing businesses. This is to meet consumer demand (current and potential) for high-value processed foods, by engaging growers to identify opportunities, and create a higher return for growers while lowering the barriers for entry to entrepreneurs.

Participation in the lab helped to validate one of the participant's ideas around how to create an enabling environment for entrepreneurship. As a result he will be launching a new initiative, Rhizome, in 2015.

The Vineland Research and Innovation Centre is in communication with the Canadian Food Inspection Agency to try to solve challenges around tree quarantine, to speed up availability of new varieties.

4.

## Marketing Ontario Stone Fruit

Adopt standardized packaging to increase efficiency for the value chain and reduce costs and waste for a highly labour-intensive industry. Better labeling and marketing to increase consumer awareness of the value of Niagara stone fruit, and the connection between growers and consumers to build and strengthen the Niagara region brand. These will boost the value of tender fruit produced in Niagara and ensure consistent presentation to consumers, which will increase sales for producers.

The Ontario Tender Fruit Marketing Board is working with the University of Guelph to speed up commercial production of new varieties.

5.

## New Varieties

Create a cross-sectoral collaboration for an updated virus testing procedure (ie. DNA testing) to speed up availability of new varieties across the value chain. This will help to meet consumer demand for new varieties such as white peaches, and provide Canadian growers with a competitive advantage in the marketplace. Among other things, this will speed up the availability of new varieties for both local and foreign products, recognizing the changing and increasing demand for more ethno-cultural products, and extends Ontario's relatively short growing season to increase profits and market share. This will include white peaches and plumcots.

**Some highlights are:**

**A common strategy with 5 interventions**

The Ontario Tender Fruit Lab developed a shared strategy and five interventions that together can boost the Ontario tender fruit industry. Lab participants engaged in co-design activity where they refined their initial brainstorming ideas into more viable system interventions for action. These are described in short below. More in-depth descriptions can be found in the Interventions for a More Resilient Tender Fruit Industry in Ontario section.

**We are now working to make these interventions happen.** As one participant described:

*“Translating words into deeds is typically a serious challenge, but it seems you guys been a real catalyst”.*

More information and updates on the status of the interventions can be found in this report.

**200+ creative ideas, 9 interventions and 10 hidden gems**

The lab generated over 200 creative ideas for bringing about change in the tender fruit industry. From these, we designed 9 intervention ideas, and chose the 5 best interventions to pitch. We have also identified 10 ‘hidden gems’, or promising ideas, that can inform or lead to further actions to be taken to strengthen the industry.

**New insights for innovation in tender fruit in Ontario**

Participants developed new insights into the challenges, and into possible solutions. Overall, 92% percent of participants indicated that they gained new insights about barriers and opportunities for Ontario tender fruit.

**New connections and partnerships**

The lab had strong participation from diverse stakeholders from across the value network in Ontario. These included: growers, processors, distributors, retailers, government, NGOs and researchers. New connections were made and new partnerships were forged. For example, one workshop participant who was launching a campaign incorporating the use of ‘seconds’ at the 2015 Green Living Show leveraged some of the connections she made with other participants. The campaign focused on the extended freshness of local-Ontario food, minimizing food waste and getting the most out of ingredients.

**Build momentum and commitment**

The lab built steady momentum and commitment for new solutions for a more resilient tender fruit sector in Ontario over the course of the 3 workshops. This is reflected in the feedback from surveys conducted after each of the three workshops.

**Final Workshop Survey Feedback (16 participants)**

100% believe that this process is a key step in leading to real, lasting change

100% agreed that they had the opportunity to meet and work with compelling people

100% enjoyed the experience of taking part

81% agreed that they have participated in the creation of a viable prototype

88% feel that their time has been used effectively

94% are committed to stay involved with the lab to tackle this issue

94% feel aligned with the strategy that we developed together

**New model and tools for social innovation**

Through this lab, WISIR and MaRS Solutions Lab developed and tested a new model and tools for social innovation that will be shared publicly in a Social Innovation Lab Guide. This will help any organization or institution around the world to create systems change more effectively.

# AN INNOVATION AGENDA FOR TENDER FRUIT



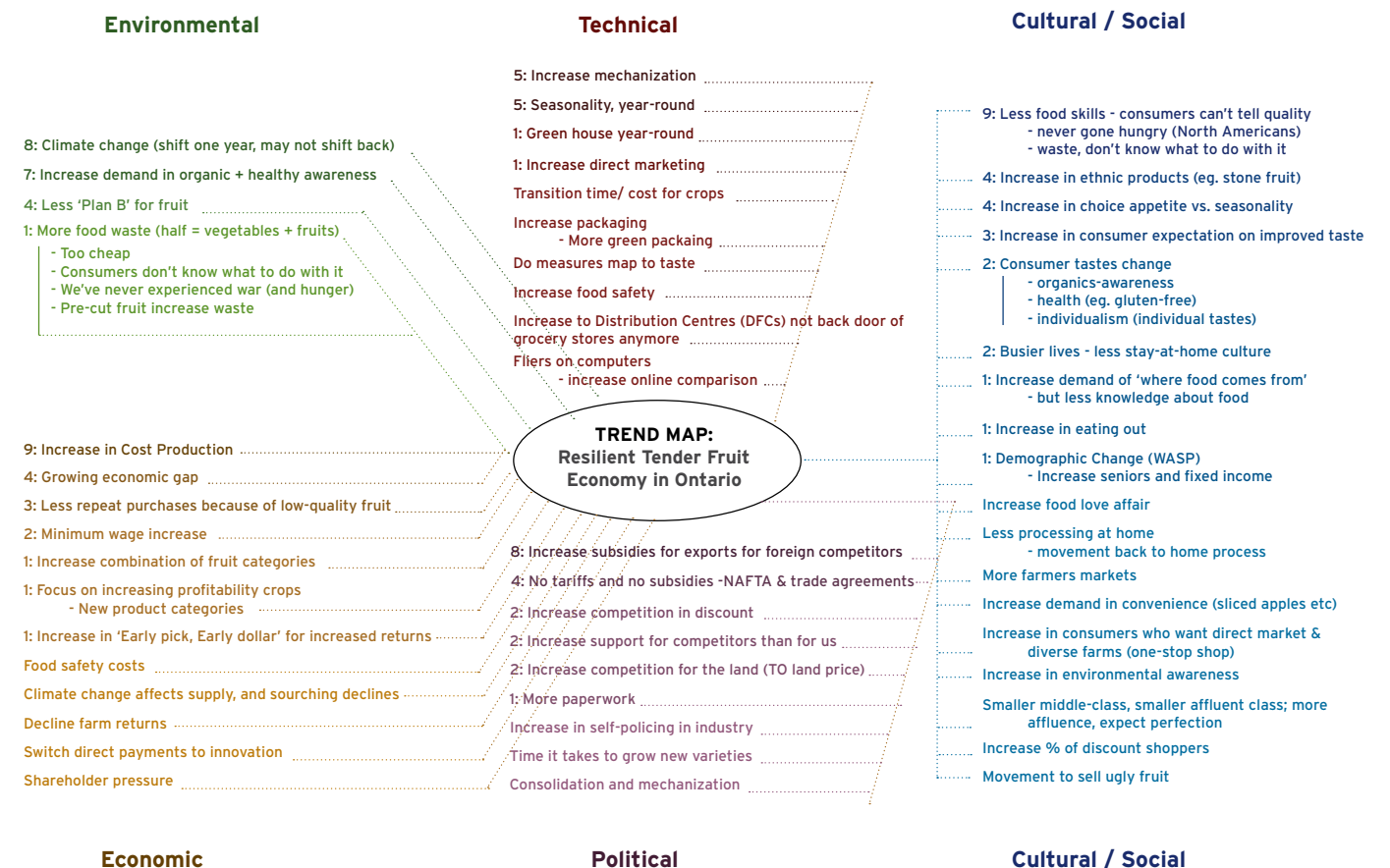
## What Brings Us Together

The Ontario Tender Fruit Lab process centers on the following convening question:

**How can we create a resilient tender fruit economy in Ontario, in a way that provides economic, environmental and social benefits?**

To tackle this question, participants identified many complex and often conflicting trends that affect the tender fruit economy in Ontario. For example, in the province, we have an increased cost of production and greater competition with imported fruit. Meanwhile, some regions like California - where much of our imported fruit comes from - face serious problems with drought, which is worsening. Consumers are increasingly health-conscious and want to know where food comes from, yet have less and less knowledge about food (such as knowing the difference between varieties of cherries, and which to use for processing). Additionally, minimum wage increases are newly in place for farm workers, which raises production costs.

These trends and many others are listed below. They are listed in order of participants' perceived significance in affecting the industry (numbers represent workshop participant votes on significance). Each trend falls under environmental, technical, cultural/social, economic, or political impact. Additional trends affect the industry, but the ones you see below emerged as the most significant trends affecting the Ontario tender fruit industry.





In addition to highlighting trends that affect the Ontario tender fruit sector, we also looked at the opportunities that might occur in the future that could lead to change. For example, a key trend related to globalization is that Canada's food market has been flooded by cheap imports. This effect on the food system results from two levers: an open market policy and a lack of policies on subsidies that promote local food.

**Potential opportunities for change (identified by participants) could include:**

- A continued social or cultural shift in the way Canadians view food to transform the political landscape for food in Canada.
- With dropping oil prices, we need to focus on other sectors for our export strategy, and therefore food may well be one of these sectors.
- The 2015 Canadian elections and the policy shifts it may cause always offer opportunities.
- A changing environmental landscape globally, affecting supply of crops and import and export balance across the globe.

To leverage these opportunities, one vision that was put forward was for Canada to adopt a national food strategy that includes putting Canadian tender fruit first, both for Canadians as a healthy option and for foreign markets as a 'safe' option (in terms of food quality).

## Journey of Fruit

**Throughout the journey of fruit from farm to consumer, we collectively identified four broad areas for concern:**

- **Quality** (e.g.: quality of fruit)
- **Quantity** (e.g., quantity of production or being sold)
- **Time** (e.g., the time that passes, such as from the tree to cold storage)
- **Cost** (e.g., such as the cost of packaging or distribution)

These elements each affect the journey from production to consumption in different ways. For example, **producers** are most affected by **time** (such as the time required to bring new varieties to market) and cost of packing and packaging. **Distributors and processors** recognized that **quantity** (scaling production for processors) and **cost** (such as access to capital) are key factors affecting that part of the process for them. Last, **retailers** found that **quality** of fruit, **quantity** (consistency of supply) and **cost** (profit margin) were concerns affecting their businesses. By understanding how these elements interact and affect the value chain, we are better enabled to identify opportunities for change. These issues critically affect the tender fruit industry as it stands today.

## Key Issues:

The Ontario tender fruit industry is affected by a number of key issues, which emerged through our interviews with key individuals who work in the industry. Below are highlighted some of the issues that were mentioned regularly or stood out in some way.

### Production:

- **Labour:** The high price of labour in a labour-intensive industry makes it difficult for Ontario fruit growers to produce as cheaply as international competitors, and minimum wage increases are a heavy burden for producers.
- **Vulnerability to price and climate fluctuations:** Ontario fruit growers have few options for selling their fruit in part due to the loss of processing capacity. They are therefore bound by the price of fresh fruit when it becomes ripe, which is extremely dependent on external forces such as weather and international markets.
- **Ageing workforce and loss of farms:** Many producers are very concerned about the future of their farms once they retire. Many others worry about the effects of land being taken out of fruit production and used for other crops such as grapes or grains.

### Distribution:

- **Difficulty in connecting small suppliers and large retailers:** Many interviewees mentioned that it was difficult to work in a situation where suppliers are unable to provide consistent, high volume, all-year round product given the demands of large retail stores and their preference for simplifying logistics.
- **Lack of distributors with a genuine commitment to local food:** Some growers mentioned being poorly treated by distributors or feeling that distributors were not sensitive to the importance of promoting local products.

### Processing:

- **Lack of local organic suppliers:** Organic fruit processors find that Ontario fruit growers are frequently unable to provide them with the raw materials required, due in part to inefficiencies in growing practices and market structures.
- **Ageing infrastructure:** Processing locally is often felt to be untenable due to a lack of investment in modern processing machinery and infrastructure.

**Environment:**

- **Every part of the value network can potentially be affected by environmental changes:** Climate change will likely have a dramatic impact on international competitors as we have seen with the recent California droughts. If Ontario is suddenly less able to import fruit from international markets it will become crucial to protect the productivity of existing agricultural land by preserving soil quality, pollinators and human skills and knowledge, to name a few resources.

**Retail:**

- **Difficulty in differentiating products:** Consumers are not well informed about different varieties of fresh fruit, such as how to distinguish one variety of peach from another. Ontario fruit sellers need to find a way to attract consumers away from buying imported alternatives, perhaps by creating strong brands attached to regionally differentiated products.
- **A lack of consumer willingness or ability to pay more for premium products:** Although consumer surveys consistently indicate that consumers are interested in buying local and organic fruit, their buying behavior in-store does not always reflect this interest. There seems to be a lack of understanding or desire on behalf of consumers of the importance and value of paying more for premium products.

**How to intervene in the journey?**

Moving from our shared understanding of context, issues and concerns, here we take a deeper look at the barriers present in the system, and the driving forces behind the challenges. We uncovered the drivers - or underlying causes - of these issues, such as the length of time it takes to get new varieties into the consumer market (as much as 10-15 years long). We mapped the key drivers that affect the fruit journey from tree to table so to speak, with the understanding that this journey is not linear. Both the time it takes to get approvals from the Canadian Food Inspection Agency (CFIA) and the cost of labour involved in packaging fruit were found to be key barriers for producers.

**Barriers faced by the Ontario Tender Fruit Industry**

The Ontario tender fruit industry is affected by a number of key issues, which emerged through our interviews with key individuals who work in the industry. Below are highlighted some of the issues that were mentioned regularly or stood out in some way.

Production	
<b>Cost of production:</b>	<p>Labour costs account for approximately 33-44% of the cost of packing and packaging, where the cost of packaging itself accounts for about 15-20% of the total cost of production.</p> <p>Retail buyers are key players here, given that they tend to have specific packaging requirements to differentiate themselves from competitors, improve produce displays, lower their own labour costs and reduce wasted fruit.</p>
<b>Time required to develop new varieties:</b>	<p>The amount of time it takes to develop, approve, and produce new varieties to maturity to get them to market (10-15 years in total) is a barrier to production. A constraint in this process is the time it takes for the CFIA (Canadian Food Inspection Agency) to approve new varieties in Ontario. The CFIA, on the other hand, faces safety concerns and is less willing to take risks.</p> <p>There are two routes to new varieties being available in Canada: one is through cleaning for viruses and testing for commercial viability within Canada, and the other is through wider recognition of other certified varieties. While Canada recognizes USDA certified varieties, California's state level certification is not recognized - recognition of which could cut three years from the process.</p>
Distribution & Processing	
<b>Small processors have difficulty scaling:</b>	<p>Small processors have difficulty scaling as a result of a variety of challenges across the value chain:</p> <ul style="list-style-type: none"> <li>• Inconsistency of quality and supply of produce at an affordable cost</li> <li>• Extended length of time from research to development</li> <li>• Difficulty selling to retail chains and other retail outlets</li> <li>• Capital cost required for processing and mechanization</li> <li>• Lack of technical skillset (skilled labour) to undertake labour</li> </ul>
<b>Access to/ lack of capital investment:</b>	<p>Similarly, another barrier for processors is lack of access to capital investment, due to a number of factors:</p> <ul style="list-style-type: none"> <li>• It takes time, knowledge and effort to negotiate the levers in government</li> <li>• Little flexibility of government to "help"</li> <li>• It is difficult to get funding from banks, who seem to view agricultural businesses as high-risk</li> </ul>

Retail:	
<b>Consistency of fruit quality:</b>	<p>Consistency of fruit quality differs due to a number of factors:</p> <ul style="list-style-type: none"> <li>• Growing practices</li> <li>• The quality of pickers</li> <li>• Storage at the grower</li> <li>• Handling in distribution centre or terminal</li> <li>• Storage at the store</li> <li>• Quality of the store, staff or market</li> </ul>
<b>Consumer expectations:</b>	<p>Consumer expectations are difficult to maintain a number of factors:</p> <ul style="list-style-type: none"> <li>• Segmentation of consumers</li> <li>• Managing the growth of organic fruit</li> <li>• Managing the expectations of consumers (ex. quality of produce)</li> <li>• Price</li> </ul>

## Creating an Agenda for Change

By designing interventions that tackle the barriers in the system, and particularly at certain trigger points in the system simultaneously, we can build a stronger tender fruit industry in Ontario. By analyzing the opportunities in the system, we recognize that there are three broad areas of opportunity to work in, which are described below. These are not the only potential areas for innovation to occur, but the key places where we believe interventions can have the greatest impact.

**Retail:** By affecting policy in the following areas - not just in government but also in entrepreneurship and consumer education - we'll be able to design interventions that can impact the tender fruit industry.

By collaborating more closely with government and other institutions such as academia, there are opportunities to:

- Speed up approval procedures for allowing new varieties to be grown
- Create a food innovation strategy for Ontario or across Canada, in order to promote strategic innovation processes across value chains like in Ontario tender fruit
- Market Ontario fruit as high-quality, healthy and safe outside of the province for new market opportunities
- Promote education and awareness for both entrepreneurs and consumers, so entrepreneurs can be better enabled, and for consumers to make more educated choices about food.

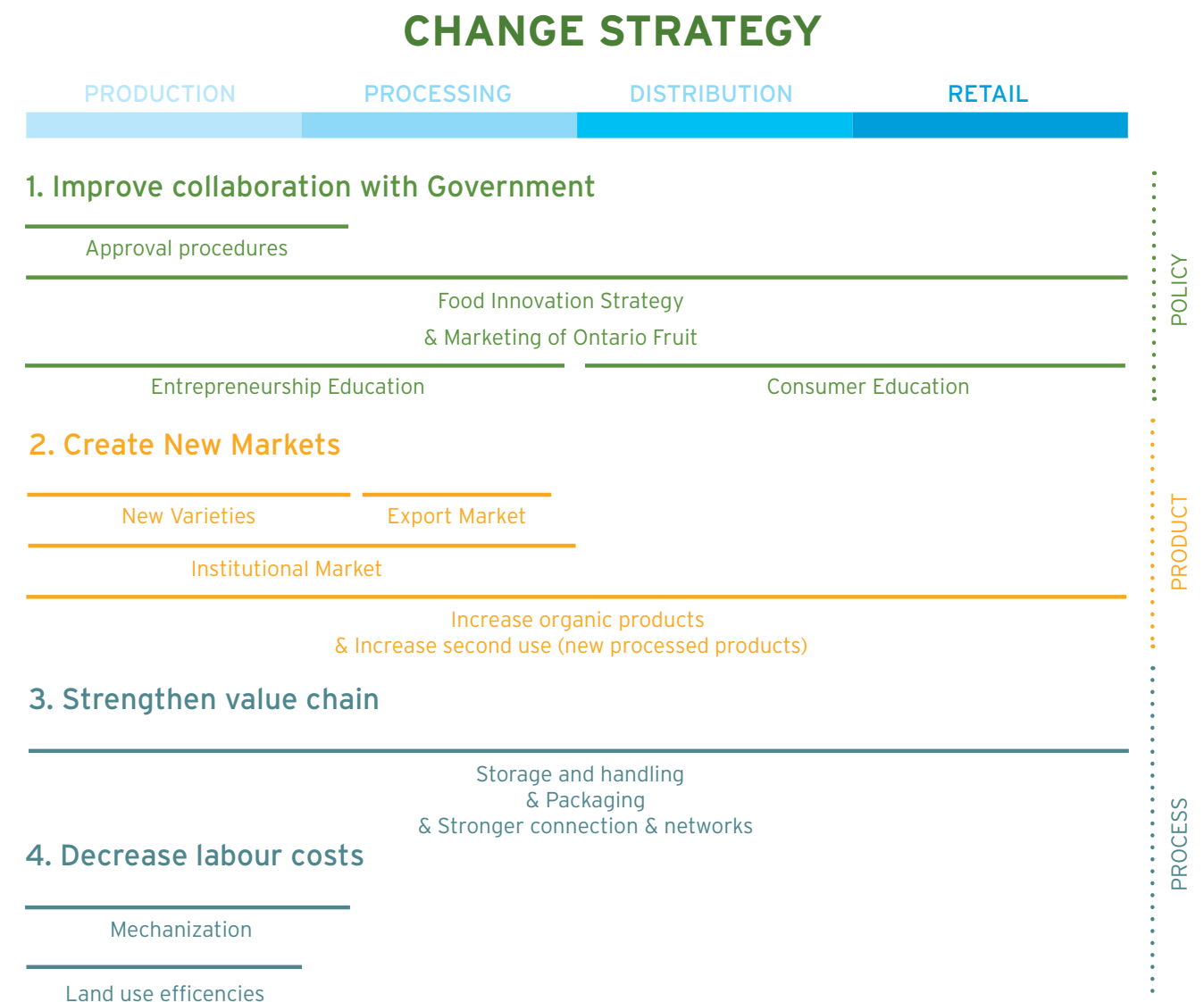
**Product:** There is an opportunity to create new markets for Ontario tender fruit:

- There is a market for new varieties, such as white peaches or pluots, in the export market and also the institutional market
- Increasing production and selling of organic products to meet consumer demand
- Increasing other uses of fruit besides fresh fruit (for example, through new processed products such as frozen fruit)

**Process:** Improving efficiencies in process, particularly for tender fruit which has a fast depreciation value, is critical. We need to innovate to strengthen the value chain; we recognize that this can be done in a number of ways:

- Overall, we need to decrease labour costs within production. This can have the most significant impact through:
  - o Greater mechanization of production
  - o Improving land use efficiencies
- Improving storage and handling across the value chain, which will have an impact on quality of fruit (example, for less bruising and slower depreciation), in turn allowing for greater quantities to be sold, also lengthening shelf life.
- Improving packaging requirements across the value chain for more consistency across packaging. Reducing labour costs and the time required to pack fruit will increase efficiencies, lengthen shelf life and improve product quality.
- By building stronger connections across the value network, there is an opportunity to work together more cohesively for better product, again leading to an opportunity to boost the value of fruit through higher quality and price.

See below for these opportunities on the system map:



# INTERVENTIONS FOR A MORE RESILIENT ONTARIO TENDER FRUIT INDUSTRY



## Over 200 ideas generated

Throughout the workshops participants generated over 200 ideas in the brainstorming process to bring about change in the tender fruit industry. These ideas were based on diverse participants' often long-standing experience within the industry. The best ideas were chosen to move forward to the design process.

## Creation of 9 interventions from over 200 ideas

Each of the top ideas was then refined into a feasible 'intervention idea' that seemed like it would really work. The ideas were 'stretched' in different ways in order to see the opportunity from different angles. This produced 26 different intervention ideas which were voted on by participants in order of potential to bring about change. This narrowed down the process to nine intervention ideas. Each of these interventions was taken through a process to uncover the desirability, feasibility, viability and potential impact.

1. **Desirability:** Does it fulfill the need of the user? Will it help to bring the change that we want? In essence, is the idea worth investing in?
2. **Feasibility:** Is the idea realistic? Can it be done? How and with whom?
3. **Viability:** Can the idea become sustainable and can it scale over time?
4. **Impact:** Does the idea have the desired impact? Does it contribute to system change?

## 5 interventions for a more resilient fruit sector in Ontario

From the nine interventions, a final five were chosen to develop further. They were chosen based on their promise to boost the industry in some way.

By using the Business Model Canvas - Systems Change Edition, groups of participants were able to dig down into the core aspects of the business for each potential idea, to ensure that each intervention made strong business cases, from the value proposition to the cost structure. This process produced the following five interventions, explained in more detail in this section.

## A slice of some of the ideas that emerged...

- Use high tunnels to extend season and increase consistency of good quality products
- Plant early and late fruit cultivars to fill gaps in seasonality
- Enable processors to process, e.g. pear chips
- Encourage more procurement of local food in restaurants
- Use refrigerated harvest vehicles for faster cooling of fruit after picking
- Boost organic production to meet local demand
- Train school teachers about horticulture
- Enable more robotic sorting and packaging
- Develop and market an Ontario line of beverage alcohol based on tender fruit

# 1. Creating a Better Eating Experience

## Description

Consumer demand in the industry is influenced by quality and freshness. Creating a Better Eating Experience seeks to educate consumers on ripeness of fruits and advance post-harvest handling, cooling, packing and storage practice and systems. The desired outcomes are to reduce waste and the need for discounting.

Currently, the lifespan of a tender fruit from the picker to the customer is not widely tracked or understood. What is needed is a systems-wide quality control set of best practices, internally within the industry, combined with a marketing campaign that educates the average shopper on fruit readiness.

## Value Proposition

To improve the consistency of quality of fruit in Ontario while simultaneously reducing waste for growers and retailers. Higher revenue and stable profit margins, for both growers and retailers, and a better eating experience for the consumer.

## Intervention Points

There are no industry-wide quality control or public education efforts on fruit readiness. Engage all stakeholders across the value chain, from producers to processors, retailers and consumers. Conduct process mapping on the storage, handling, and packaging of products. Take on quality improvement best practices and benchmarking across the industry. Engage in public education for consumers on how to recognize good quality fruits.

## Next Steps

1. Establish a steering committee made up of growers, shippers, researchers, and a board staff governing this new group (gain buy in from partners)
2. Design the project plan and terms of reference
3. Apply for funding and establish additional resources
4. Take the journey from grower to the store level and benchmark what is currently happening with an ideal process
5. Research best practices for fruit management systems
6. Disseminate results and learning

## Key Partnerships

Engage growers, retailers, shippers, suppliers (cooling/building contractors) throughout the research and design process. Seek funding from all levels of government and other investors, as well as expert advice from the Greenbelt Policy Review, researchers at the University of Guelph, and process engineers/logistical engineers, sorting/packing suppliers.

## Cost Structure

The expected expenditures will go towards process mapping and benchmarking (\$150-200k); best management practices (\$450-500k); and marketing/education (\$150k).

## Revenue Stream

Banks, government, and key partners would cover the revenue initially required for this intervention (i.e. capital and capacity building). Once proven, growers/retailers would sustain it, based on outcomes that increase their sales and profit margins.

# 2. Niagara Fruit Forever

## Description

Minimum wage increases and a skilled labour force are some of the modern challenges facing growers. More specifically, high cost and inefficient use of labour are having a negative impact on producers' net revenue and profitability. Niagara Fruit Forever is focused on the process efficiency of farms.

Employing the skills of process engineers/logistics specialists to work with growers on process improvement, Niagara Fruit Forever supports the development of process engineering expertise and availability for the tender fruit sector (to investigate and evaluate what can be done better).

## Value Proposition

To increase tender fruit production, net profitability, boost environmental performance. To increase low-skill/high-skill jobs and rural social support.

## Next Steps

1. Evaluate how to improve processes without significant upfront investment.
2. Redesign the process, go back and re-evaluate it.
3. Determine what technologies can help with process change.

## Cost Structure

The most important fixed and variable costs would be spent on personnel (project manager, program administrator, grower, and engineer) and resources (data management/Fruit Tracker, marketing, supplier technology development).

## Intervention Points

Use a framework for data collection on benchmarking techniques, process management change, and input costs track to redesign the process.

## Key Partnerships

Grower organizations, government, retailers.

## Revenue Stream

- Early support in the beginning phases of the initiative from government (Agri-Food Management Institute, Industrial Research Assistance Program, the Great Lakes Agricultural Stewardship Initiative).
- Growers who want to increase profit margins. Engineers who want to increase business opportunities.
- Applied research bodies like the Vineland Research and Innovation Centre (VRIC). Dollars can be allocated either to growers or to VRIC so they can undertake the work, or funds can go straight to process engineers.

# 3. Skin in the Game

## Description

In commercial agriculture, the cost of entry for young people is extremely high. This has resulted in a severe gap between experienced growers, who have the expertise and access to land, and the next generation of young people who have new ideas and energy to undertake the work.

The purpose of Skin in the game is to create an enabling environment that supports enterprises. It wants to build open-innovation based communications between the individuals with the resources (growers) and those with the ideas (entrepreneurs) in order to create an environment of collaboration that identifies key challenges and opportunities in the industry.

For example, a producer could post a design challenge looking for someone who can help them with a specific challenge, such as increasing the productivity or discovering new uses for 'seconds' (e.g. such as for peach pits).

## Value Proposition

A regional incubator of start-ups in food entrepreneurship. Entrepreneurs will be resourced with skills in both business and food technology. Producers will gain access to resources for on-farm value additions and reduce barriers to on-farm processing.

## Intervention Points

Remove barriers to entry for new food entrepreneurs and inspire a culture of start-ups in regional and sustainable food for the Niagara region. Increase value-added food processing and competitiveness for growers.

## Key Partnerships

- Growers
- Entrepreneurs
- Niagara College
- Toronto Food Business Incubator
- All three levels of government
- Ontario Tender Fruit Marketing Board.

## Cost Structure

Offer monetary incentives for business startup competitions to support the testing and implementation of a solution.

# 4. Marketing Niagara Stone Fruit

## Description

Building and strengthening the Niagara region brand for peaches, nectarines, and plums within the province and across the country.

## Value Proposition

Boosting product value through consumer education and marketing strategies that connect our growers (where the food comes from) to our consumers (who buy our product) through storytelling.

## Intervention Points

Use growers' photos and stories in marketing materials to develop better connections with consumers of their product. More consistent packaging to increase efficiency for the value chain and reduce costs for the highly labour-intensive industry. Better labeling and marketing of locally grown product intra-provincially.

## Next Steps

Encouraging Ontario Tender Fruit Marketing Board to work with large retailers in order to streamline packaging. Tell the story of Niagara better on the label. Collaborate with Foodland groups and other partners to create a marketing strategy.

## Key Partnerships

- Growers
- Shippers
- Ontario Tender Fruit Marketing Board
- Plastic manufacturers
- Friends of the Greenbelt Foundation
- Retailers
- Partners outside of Ontario



# 5. New Varieties

## Description

The Canadian Food Inspection Agency (CFIA) has a lengthy approval process that is putting Ontario producers at a disadvantage in the marketplace. Ontario producers can grow new varieties from other regions that are popular with Canadians, but cannot meet consumer demand for new varieties from other regions, such as Asian pears or white peaches.

## Value Proposition

Create an updated virus testing procedure to speed up availability of new varieties across the value chain to provide Canadian growers with a competitive advantage in getting their products to the marketplace more quickly.

## Intervention Points

- Speed up availability of new varieties through DNA testing
- Generate revenue by licensing novel varieties protected by patents

## Cost Structure

Strategic planning of proposal to CFIA (\$25 -50k). Development, testing, and iterations of new technology (\$125k).

## Next Steps

Gather industry, academic institutions, and retailers to come together to create a cross-sectoral proposal for the CFIA. Present proposal to CFIA; if approved, start to ramp up propagation.

## Key Partnerships

- University of Guelph
- CFIA
- VRIC
- Ontario Ministry of Agriculture and Food
- Genome Canada
- Retailers
- Canadian/Ontario Produce Marketing Associations
- Nurseries
- Growers and growers associations
- Foodland

## Revenue Stream

Royalty payments from licensed varieties and foundations.

# HIDDEN GEMS

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One of the primary goals of the Ontario Tender Fruit Lab was to come up with creative ideas to boost the industry economically, socially and environmentally. Over the course of the lab, many more ideas were developed than the final five interventions. Some of these were not deemed as effective as the interventions chosen with respect to the desirability, viability, feasibility and potential impact (DVFI) analysis. A number of ideas were also merged into the existing interventions early in the development of the idea. And some others were seen as low-priority.

Throughout this process a number of 'hidden gems' or promising ideas emerged that have the potential to influence interesting parts of the tender fruit value chain. They could be worked on and implemented given robust business structures and where they make sense. We hope these serve to inspire action and positive change, and encourage anyone to approach us if you are interested in getting involved.

## Supply chain innovation

- Distribution costs: Create structure for 'local' to be prioritized
- Decrease wait times for getting product into distribution centres
- Implement logistics performance measures
- Conduct post-harvest consolidation

## Quality

- Educate in-store produce managers on how to care for fruit in store/back of store
- Apply the use of drones or robotics used for labour
- Use nanotechnology to combat disease and/or spoilage

## Environment

- Greater organic production enough to meet local demand
- Financial and/or tax incentives/credits for eco-friendly farming/land practices/organic certification; carbon reduction
- Promoting local/healthy purchases

## New Varieties

- Micro-propagation to increase new variety production as quickly as possible
- Innovations derived from genomic research

## New Markets

- Explore Chinese market potential; greater export to China and India
- Seconds: Market undersized fruit to schools or hospitals, e.g. small peaches for kids

## New Products

- Develop an Ontario line up of beverage alcohol based on tender fruit, such as Vineland cidery peach ice-wine
- Explore the value-add of offering fresh cut fruit

## Trade Policy

- Tariffs on imports: Tariff imported tender fruit product; CFIA import quality to match other countries' import standards

## Marketing

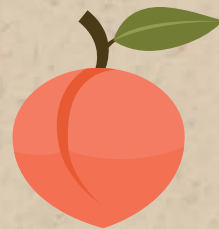
- Mass marketing campaign using 'how it's made' narratives and connecting consumers to growers
- Incorporating sustainability into marketing

## Education

- Teacher training about horticulture
- Home economics in high school (Bring it back / Make it mandatory)

*We encourage anyone to get in touch with us about refining, defining and implementing any of these ideas. In the next section we provide an update on what is already happening.*

# GOING FORWARD: FROM IDEAS TO ACTION



## Prototyping: An experimental approach to creating change

In solving a complex challenge, it is hard to predict what works, so we need to experiment and iteratively develop and test ideas to learn what can bring about the change we want. We call this process prototyping solutions.

The MaRS Solutions Lab is dedicated to helping to further the Ontario Tender Fruit Lab prototypes described above, as well as other promising, viable ideas (such as the 'hidden gems') that can help to boost the industry socially, economically and environmentally. Each of these prototypes and ideas will move along at a different pace and in different directions: we look forward to supporting this process to see the prototypes and ideas become a reality.

A number of champions within the tender fruit industry are moving forward to work on the strategic initiatives described here, and to address some of the issues, including applying for funding around the quality and cost of labour.

### Here is what is currently happening to create a more resilient tender fruit industry:

1. The Ontario Tender Fruit Growers were awarded approximately \$355,000 in Growing Forward 2 Funding from Agriculture and Agri-Food Canada for funding for a **quality and cold chain management project**. The project is titled: Ontario Stone Fruit Harvest and Best Management Practices under the Assurance Systems-Traceability area of focus. The project's objectives are to:
  - Establish harvest maturity standards for certain peach and nectarine varieties based on a more "tree ripe" maturity level
  - Benchmark current practices of harvest maturity and orchard picking /packing systems and processes vs. using smaller vented plastic totes and gentle pack-line dumping systems on a more mature product as well as labour and cost savings
  - Conduct forced air cooling trials on commercially ripe vs. tree ripe product and corresponding consumer sensory panel on results
  - Design, pilot and launch quality and cold storage modules in Fruit Tracker for monitoring and tracking quality specifications such as count size, brix, bruising etc. and tracking the movement through cold storages
  - Determine best management practices for transport and handling at retail of a more mature product.
2. The Vineland Growers Cooperative in the Niagara region recently launched the **Eco-Basket™**, a **more sustainable packaging alternative**. The Eco-Basket™ is a clamshell-type basket made with a minimum of 70% recycled North American drink bottles. It is made in a plant in California that runs off of the largest privately funded solar farm in North America, where 50% of the energy used to produce the packaging comes from 3,880 solar panels. The clamshell is banded with a cardboard sleeve shaped like a basket handle and maintaining its 'local look'. Previous baskets were all produced in China.

The basket saves on packing labour costs from previous containers, helps minimize the costs associated with storage of unused containers, and is produced closer to customers so lead time to acquire them is lower. The basket is now being used with Loblaw's, Costco, Sobeys, Wal-Mart, and Metro.

3. There is a strong push by participants to speed up the process to get new varieties into market. The Vineland Research and Innovation Centre is in communication with the Canadian Food Inspection Agency to try to solve challenges around tree quarantine, to speed up availability of new varieties.

The Ontario Tender Fruit Marketing Board is working with the University of Guelph to speed up commercial production of new varieties. They are exploring opportunities to build infrastructure at the University of Guelph and other related facilities to support the new varieties initiative. This would be a joint venture with the Ontario Apple Growers.

4. One workshop participant launched 'The Mindful Plate' food feature at The 2015 Green Living Show; which focused on the extended freshness of local-Ontario food, minimizing food waste, using seconds and getting the most out of our ingredients. Leveraging some of the connections made with other participants, the campaign included consumer education on food waste, panel discussions, a misshapen vegetable market stand and meals demonstrating the use of seconds and ingredients that are commonly overlooked. Food demos showcased to visitors tips and tricks on storing and preserving food, how to maximize value from their grocery bills, how to get creative with leftovers, and how to maintain a greener kitchen.

5. Participation in the lab helped to validate one of the participant's ideas around how to create an enabling environment for entrepreneurship. As a result, he will be launching a new initiative, Rhizome, in 2015. Rhizome works with existing actors in the food value chain to identify the barriers that prevent the pursuit of a sustainable food system. These barriers represent an opportunity and so Rhizome then directs entrepreneurial talent towards developing a viable business model. When a promising model is identified, it will then be supported with seed capital and other resources to help it succeed. All of this will be achieved through technology that will allow for crowdsourcing of solutions and crowdfunding of capital.

6. The Ontario Tender Fruit Marketing Board held review sessions with the Niagara region and the Friends of the Greenbelt Foundation (where contacts were strengthened, and in some cases created, as a result of the Fruit Lab workshops). These sessions informed the Greenbelt review for 2015 and the Niagara Region's new Agri-Food Policy which is in development.

For the latest on what is happening, or for connections to any of the activities described above, please get in touch with [Claire Buré](mailto:cbure@marsdd.com) at [cbure@marsdd.com](mailto:cbure@marsdd.com). Alternatively, follow the discussion via the [#ONFruitLab](https://twitter.com/ONFruitLab) hashtag on Twitter.

## ABOUT THE LAB

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The Ontario Tender Fruit Lab is an initiative from MaRS Solutions Lab, the Waterloo Institute for Social Innovation and Resilience, in collaboration with the Vineland Research and Innovation Centre.

The lab is made possible through the support of the J.W. McConnell Family Foundation, Ontario Trillium Foundation, Friends of the Greenbelt Foundation and Metcalf Foundation. We wish to express our sincere gratitude to these foundations.

We also wish to express thanks to everyone who was involved, for your input, time, participation and energy, including our advisory group members, interviewees and participants.

Please contact [Claire Buré](mailto:cbure@marsdd.com), Program Manager at the MaRS Solutions Lab at [cbure@marsdd.com](mailto:cbure@marsdd.com) if you would like to get involved in any way. We encourage ongoing participation and support for these initiatives.

## About the Organizers

### MaRS Solutions Lab

MaRS Solutions Lab is a public and social innovation lab that helps tackle complex social and economic challenges that require systems change. We convene stakeholders from across society to develop, prototype and scale new solutions. And we help to build capacity for systems change through strategic advice, training and events.

Our focus is on four areas: health, food, work and learning and government. In these areas, we see systems in need of change. But we also see many opportunities to solve the challenges of our time using the problem-solving capacity of society. With people being more educated and informed, and enabled by technology to perform complex, collaborative tasks cheaply, quickly and easily. With more private capital for social good, and many people that want to create a better world. But we need to work together to develop system-wide solutions. And to succeed, we need to experiment and learn.

MaRS Solutions Lab is part of MaRS Discovery District and was created in 2013 through a generous gift honoring the remarkable contributions of Dr. John Evans, Chair Emeritus and co-founder of MaRS Discovery District. It is part of a growing global network of public and social innovation labs. And we work with an increasing number of partners to build systems for a future that matters.

#### Team:

Joeri van den Steenhoven, Director  
Claire Buré, Program Manager  
Hyun-Duck Chung, Information Specialist  
Terrie Chan, Associate

### Waterloo Institute for Social Innovation and Resilience

The Waterloo Institute for Social Innovation and Resilience (WISIR) was founded as a joint venture between the University of Waterloo's Faculty of Environment and Faculty of Arts.

WISIR is an outcome of the Social Innovation Generation project at the University of Waterloo (SiG@ Waterloo), part of a national initiative focused on advancing understanding of and perpetuating social innovation. Through collaborative research projects that bridge UW's faculties, join together researchers at different universities, and work beyond the university community, WISIR is committed to generating new inter-disciplinary knowledge about social innovations and the social innovation process (the dynamics of learning, adaptation and resilience) in Canada and internationally.

WISIR seeks to mobilize this knowledge through a range of new curriculum offerings and training opportunities within and outside the university setting, including the new Graduate Diploma in Social Innovation.

#### Team:

Frances Westley, Chair  
Sam Laban, Manager, Education Programs  
Ola Tjornbo, Senior Researcher  
Kirsten Robinson, Lead Researcher - Simulation

*The MaRS Solutions Lab (MSL) and the Waterloo Institute for Social Innovation and Resilience (WISIR) are committed to sharing learning and to advancing the emerging theory and practice of Labs. What follows is a selection of information about the Ontario Tender Fruit Lab and key insights we drew from the experience.*

## The Big Picture

The Ontario Tender Fruit Lab is a response to a period of transition for the tender fruit industry in Ontario. A number of significant trends are combining to create both challenges and opportunities for the industry, and the lab offers a process through which those motivated to act can come together.

#### Key considerations for lab facilitators:

- **Role of the Ontario Fruit Lab in systems change:** the lab is an important first step in creating systems change. The ultimate goal of these activities is to build momentum for change. Lab facilitators clearly articulate what the contribution their lab will make to systems change.
- **Role of MaRS Solutions Lab (MSL):** MaRS Solutions Lab has identified the Future of Food as a key strategic area of work. As such, MSL was both facilitator of the Lab and an emerging actor in the food system. This had a number of implications, including the possibility that MSL would undertake interventions itself or in partnership with other stakeholders. This active role reflects MSL's theory of systems change.

## Parts and Labour

The Ontario Tender Fruit Lab was a three-phase process:

### 1. Scoping phase: November 2013 to January 2014

- **Goal:** To identify and select a focus for the lab: building the resilience of the Ontario tender fruit industry.
- **Activities:** 10 interviews with food experts in Ontario; four teleconferences with the advisory group; an analysis of different value chains to assess 'readiness and need for change'

### 2. Research phase: February 2014 to August 2014

- **Goal:** To collect a broad range of perspectives on the fruit industry; to engage potential lab participants; to create worksheets and materials to use in workshops and for wider communication/engagement.
- **Activities:** 60+ interviews; thorough desk research; producing the Challenge Brief; developing a computer simulation that simulates the effects on the Ontario peach industry when shifts such as policy change take place.

*Note: given that summer is the busiest season for the tender fruit industry, the lab workshops were held in the fall of 2014, where the majority of research was completed before the summer 2014.*

### 3. Workshop phase: September 2014 - December 2014

- **Goal:** To build new relationships amongst stakeholders; to co-create potential interventions.
- **Activities:** three workshops (1.5 days each); additional desk research; computer simulation development.

# APPENDICES

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## Design Brief

The MaRS Solutions Lab and the Waterloo Institute for Social Innovation and Resilience interviewed over 70 stakeholders and experts across the Ontario food system, and researched over 175 published sources of statistics and related research.

We summarized this research into the Design Brief (which you can download directly [here](#)), which provided input for participants while we were convening, and to highlight the challenges and opportunities for public knowledge.

## Definitions

**Soft and Tender Fruit:** The tender fruit segment is indicated by OMAFRA to include apricots, peaches, nectarines, pears, plums and cherries and including sub-categories such as sour cherries, which are grown and sold to either the fresh or processing market (source: [OMAFRA Tender Fruit in Ontario](#)). It may also be taken to include hybrids derived from these such as plumcots and pluots. It does not include grapes or apples.

**Sustainable:** Our definition of sustainability encompasses both ecological and social dimensions. We want to build an Ontario food system that is more resilient in the face of external changes in the coming decades; one that is able to maintain its capacity to provide affordable and healthy food in the face of changing environmental and economic circumstances. That means preserving the key resources that allow Ontario food and agriculture to flourish, including protecting fertile land and maintaining healthy soils and water systems, passing on skills and knowledge to a new generation of growers and processors, preserving critical infrastructure, and limiting carbon emissions.

**Healthy:** As noted in the Metcalf 2020 Report (source: [Sustain Ontario \(2010\)](#), [Metcalf 2020: Ten Good Food Ideas for Ontario](#)), there are currently many serious problems in Ontario's public health sector that can be linked to food and diet. The Ontario food system should deliver nutritious and fresh food to consumers and make it affordable and attractive to choose to eat a balanced diet that reduces risks of diseases like heart disease and diabetes. The system should also be sensitive to the risks of products like pesticides and of food-borne illnesses, and maintain a robust inspection regime that minimizes the risks of public health outbreaks.

**Local:** There are many competing definitions of local food but this lab is choosing to classify food that is grown and processed in the province of Ontario as 'local'. It may seem counter-intuitive to choose a measure that is jurisdictional rather than geographic especially bearing in mind the size of the province; however, because transport is a relatively small contributor to both cost and carbon emissions, we do not consider geographic location to be critical to our measure of 'local'. Regulations and subsidies, on the other hand, often have considerable bearing on the cost and sustainability of food and thus we feel it is important to give these jurisdictional considerations primary importance.

**Small to Medium Enterprise (SME):** Industry Canada and Statistics Canada, two key sources of national data on firms define micro, small, medium and large sized enterprises in the following ways, which we adhere to in our definition of SME:

Firm Type	Number of Employees	Firm Revenue
Micro	1 - 4	N/A
Small	5 - 99	< \$5M
Medium	100 - 499	\$5M - \$25M
Large	500 +	\$25M