

## Introduction

The National Zero Waste Council – a leadership initiative of Metro Vancouver that brings together governments, businesses, and non-government organizations to advance waste prevention in Canada and the transition to a circular economy – has engaged Value Chain Management International (VCMI) to explore means to proactively reduce food loss and waste (FLW) and its equivalent carbon footprint (CO<sub>2</sub>e). This project is additionally supported by RECYC-QUEBEC, EEQ, Packaging Consortium (PAC), and Vancity.

Optimizing packaging solutions from economic and environmental perspectives is one of the scenarios being explored. Other means for reducing FLW that the project is exploring include identifying circumstances where the elimination of prepackaged foods or beverages (e.g. consumers using reusable containers to buy items sold in bulk) can produce positive social, economic, and environmental outcomes. Opportunities to reduce FLW by redesigning business models will also be explored.

To assist our analysis, we would greatly appreciate your perspectives by completing this online survey. The survey is entirely confidential and should take no longer than ten minutes to complete. If you wish to review the questions before completing the survey, the questions can be previewed here.

All of the information provided will be treated with the strictest confidentiality. We are not seeking the names of people, businesses, or organizations.

If you have questions about the study please contact Martin Gooch +1 416-997-7779 or [martin@vcm-international.com](mailto:martin@vcm-international.com).

We thank you in advance for your cooperation.

Regards,

Martin Gooch, PhD  
[Value Chain Management International Inc.](#)

## General background

1. Who are you? *Please choose one answer.*

- |  |   |
|--|---|
| <input type="radio"/> Source material (resin) supplier | <input type="radio"/> Retailer                          |
| <input type="radio"/> Packaging manufacturer/converter | <input type="radio"/> Hotel, restaurant, institution    |
| <input type="radio"/> Material recovery facility (MRF) | <input type="radio"/> Food rescue/redistribution        |
| <input type="radio"/> Packaging recycler               | <input type="radio"/> Federal government                |
| <input type="radio"/> Food processor/manufactururer    | <input type="radio"/> Provincial/territorial government |
| <input type="radio"/> Food distributor                 | <input type="radio"/> Municipal government              |
| <input type="radio"/> Other (please specify)           |   |

2. In which province or territory are your operations located?*Please identify all that apply.*

- |  |   |
|--|---|
| <input type="checkbox"/> Alberta                   | <input type="checkbox"/> Nunavut              |
| <input type="checkbox"/> British Columbia          | <input type="checkbox"/> Ontario              |
| <input type="checkbox"/> Manitoba                  | <input type="checkbox"/> Prince Edward Island |
| <input type="checkbox"/> New Brunswick             | <input type="checkbox"/> Quebec               |
| <input type="checkbox"/> Newfoundland and Labrador | <input type="checkbox"/> Saskatchewan         |
| <input type="checkbox"/> North West Territories    | <input type="checkbox"/> Yukon                |
| <input type="checkbox"/> Nova Scotia               |   |
| <input type="checkbox"/> Other (please specify)    |   |




4. In your experience, what materials are commonly used to package the following products? *Please select all that apply.*

*Please ignore any options that you consider inappropriate*

	Cardboard/Paper	Plastic	Glass	Tin	Other
Leafy greens	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Berries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Apples	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fresh chicken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hamburger beef	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liquid milk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yogurt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Granulated sugar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fresh fish fillets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shrimp-frozen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sliced bread	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dried pasta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

\* 5. Are you familiar with the types of plastics predominantly used to package food?

Yes

No 



7. How economically viable is it to use post consumer recycled (PCR) material in the manufacture of each type of food grade packaging? Please answer using a scale of 1 to 5 where 1 = Not viable, 3= Somewhat viable, 5 = Very viable.

	1 = Not viable	2	3 = Somewhat viable	4	5 = Very viable
PET – polyethylene terephthalate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LDPE – low-density polyethylene	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Polystyrene	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PLA - polylactic acid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complex or multi-layered laminates / films	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HDPE – high-density polyethylene	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PP – polypropylene	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments:

8. What is the maximum post-consumer recycling (PCR) content that can be included in the manufacture of food grade packaging for each of the plastics listed?

	20% or below	21-40%	41-60%	61-80%	81-100%
PET – polyethylene terephthalate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LDPE – low-density polyethylene	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Polystyrene	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PLA - polylactic acid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complex or multi-layered laminates / films	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HDPE – high-density polyethylene	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PP – polypropylene	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>





## Optimizing packaging solutions

10. In your experience, how effective is each type of packaging at preventing food waste in each of the foods listed below? *Please answer using a scale of 1 to 5 where 1 = Not effective at all, 3 = Moderately effective, 5 = Very effective. Please ignore any options that you consider inappropriate*

	Cardboard / Paper	Plastic	Glass	Tin	Don't know or N/A
Leafy greens	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Berries	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Apples	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Fresh chicken	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Hamburger beef	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Liquid milk	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Yogurt	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Granulated sugar	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Fresh fish fillets	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Shrimp-frozen	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Sliced bread	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Dried pasta	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>



12. What is the potential to increase the percentage of each of these foods sold in bulk/not-packaged formats? *Please answer using a scale of 1 to 5 where 1 = None, 3= Moderate; 5 = Significant). Please ignore any options that you consider inappropriate.*

	1 = None	2	3 = Moderate	4	5 = Significant
Leafy greens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Berries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apples	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fresh chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hamburger beef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Liquid milk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yogurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Granulated sugar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fresh fish fillets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shrimp-frozen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sliced bread	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dried pasta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. What is the potential impact on food waste that would result from selling each of these foods in bulk/not-packaged format?

*Please ignore any options that you consider inappropriate*

	-10%	-20%	0	+10%	+20%	+30%	+40%	+50%	+60%	+70%	+80%	+90%	+100%
Leafy greens	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Berries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apples	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fresh chicken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hamburger beef	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Liquid milk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yogurt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Granulated sugar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fresh fish fillets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shrimp-frozen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sliced bread	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dried pasta	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. For each food and packaging type listed below, please indicate which of the options given offer the best opportunity to reduce the environmental footprint of packaging without negatively impacting food waste. *Answer options include: light weighting; increased functionality, e.g. resealable; reuse; recycling; composting. Please ignore any options that you consider inappropriate*

	Cardboard/Paper	Plastic	Glass	Tin
Leafy greens	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Berries	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Apples	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Fresh chicken	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Hamburger beef	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Cardboard/Paper

Plastic

Glass

Tin

Liquid milk

Yogurt

Granulated sugar

Fresh fish fillets

Shrimp-frozen

Sliced bread

Dried pasta

Other/Additional Comments:

\* 15. Do foods and beverages purchased online (e.g. from Amazon) and delivered to individuals' homes require more packaging than foods and beverages purchased by individuals at a retail store?

Yes

No











	1 = Minimal impact	2	3 = Moderate impact	4	5 = Significant impact	Don't know or N/A
Outdated technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resistance from resin suppliers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resistance from packaging manufacturers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of international standardization of SUP materials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resistance from food industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of guidance on material choices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other / Additional Comments:

21. Thank you for taking the time to participate in this survey. Is there anything further that you would like to add regarding optimizing the environmental impact of packaging and food loss and waste?