



Characterization and Management of Food Waste in North America



Wasted Food Rescue and Recovery



complex world | CLEAR SOLUTIONS™

Source: Greater Vancouver Food Bank, 2015

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Source: Feeding the 5000, 2016



FOOD PRODUCTION
POST-HARVEST



PROCESSING



DISTRIBUTION



RETAIL



FOODSERVICE

Definition – Wasted Food Rescue and Recovery

- **Wasted food rescue and recovery**

Actions to recover safe and nutritious food

- First - for **human consumption**

... through receiving, storing or processing food, with or without payment, that would otherwise be discarded or wasted.

- Second - for **animal feed**, which can include food scraps



Source: Greater Vancouver Food Bank, 2015

Building the Case for Wasted Food Rescue and Recovery

- Investing in wasted food rescue and recovery strategies has potential benefits for stakeholders across the food supply chain
- Case by stakeholder type
 - **Industry** (Post-Harvest Food Production and Processors)
Potential to unlock new markets and mitigate disposal costs from recovered food
 - **Businesses** (Distribution, Foodservice and Retail)
Economic benefit; socially responsible business practices
 - **Government**
Increase economic growth, reduce food waste to landfills, combat food insecurity, and increase resource efficiency to further reduce GHG emissions
 - **Food Rescue Nongovernmental Organizations**
Offset food procurement costs; use resources more efficiently

Challenges to Wasted Food Rescue and Recovery

- Labor and transport costs of food recovery or gleaning may outweigh financial savings
- Inadequate resources and coordination
- (Perceived) brand risk
- Regulatory obstacles and food safety concerns
- Competing interests between organics recycling vs. recovery
- Concerns regarding quality, nutritional value, and managing less desirable donations and discards





























Source: University of Alberta, 2015

6 Approaches to Wasted Food Rescue and Recovery



Source: Tetra Tech/L.A. Kitchen, 2015

Approaches Across the Food Supply Chain

Approaches <i>Canada, Mexico & United States¹</i>	Post-Harvest Food Production	Processing	Distribution	Retail	Foodservice
1. Value-Added Processing					
2. Donation Tax Incentive and Liability Protection					
3. Increasing Access to Healthy Food					
4. Storage and Transportation Improvements					
5. Online Food Recovery Platforms					
6. Feeding Animals					

1. Approach sections pertain to all three countries

Approach 1 – Value-Added Processing

- **Description** – Culled foods and food parts can be used to develop new products; other industrial processing can extend shelf life
- **Trend** – Economically driven by disposal costs, opportunities from increased profitability or resource efficiency
- **Challenge** – Seasonal fluctuations in feedstock
- **Examples**
 - CAN: BC Tree Fruits
 - MEX: Grupomar
 - USA: South Jersey Food Bank

BC Tree Fruits Estimates Record Cherry Crop



Case Study – Canada: Value-Added Processing

- BC Tree Fruits produces 77 million kilograms of fruit; 20% culled
- Culled fruit usually destined for juicing and animal feed, but these prices are low
- Partnered with Lonetree Cider to make Broken Ladder cider
 - Aims to recover 25% of culled fruit for cider, giving higher-value market for fruit
 - Profits go to processor and growers of the co-operative



Source: BC Tree Fruits Cider Co. (2016)

Approach 2 – Donation Tax Incentive and Liability Protection

- **Description** – Tax deductions for food donation and liability reduction for food donors
- **Trend** – Tax credits exist in all three countries; liability protection exists in Canada and United States
- **Challenge** – Donation is seen as “low cost disposal,” liability legislation has not been fully tested
- **Examples**
 - CAN: Provincial and Territorial Food Donation Acts
 - MEX: Federal Income Tax
 - USA: Bill Emerson Good Samaritan Food Donation Act



Sources: Washington Post, 2014;
Greater Vancouver Food Bank, 2015

Case Study – Canada: Guidelines for Donations

- The **British Columbia Centre for Disease Control** developed two guidelines:
 - Guidelines for Food Distribution Organizations with Grocery or Meal Programs
 - Industry Food Donation Guidelines
- Updated regularly to include effective communication with industry, volunteers and other FDOs to better understand liability of food donations
- Explains and addresses liability of concern to donors to help reduce barriers to donating healthy food



Source: BC Centre for Disease Control, 2015

Approach 3 – Increasing Access to Healthy Food

- **Description** – Preventing food from being wasted by recovering healthy food for food banks, soup kitchens and secondary markets
- **Trend** – Growing efforts to address hunger as part of societal challenges
- **Challenge** – Perishability of fresh nutritious items and related food safety concerns
- **Examples**
 - CAN: Greater Vancouver Food Bank
 - MEX: Sedesol
 - USA: Food Shift



Source: USDA Food Waste Challenge, 2016

Case Study – Mexico: Increasing Access to Healthy Food

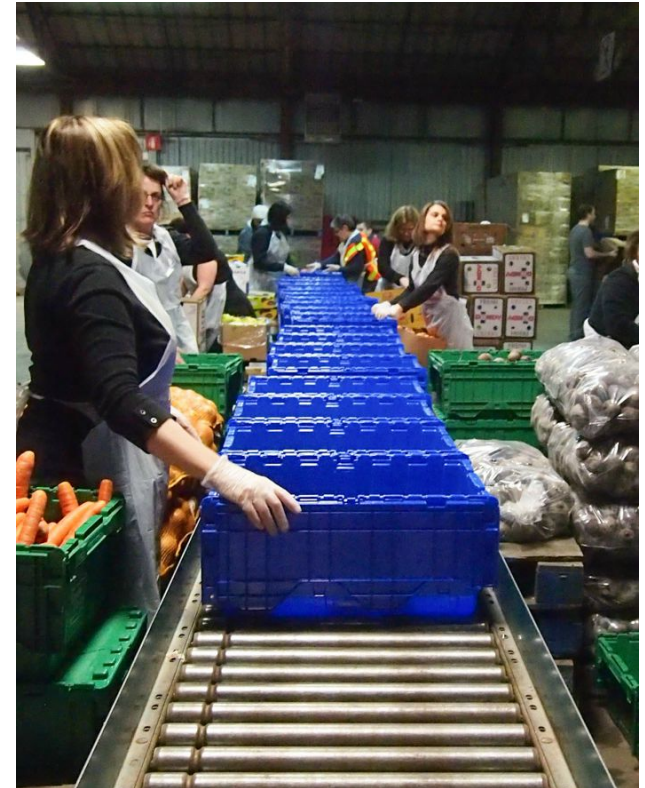
- *Alimento para Todos* is an independent food bank that uses volunteers to compile donated food into nutritionally balanced packages for distribution
- Approximately 2 tonnes of food is recovered on a weekly basis and distributed to 32,000 people in vulnerable communities
- Access to government support programs would benefit and offset operations expenses



Source: Alimento para Todos, 2013

Approach 4 – Storage and Transportation Improvements

- **Description** – Sharing infrastructure reduces need for cold storage units across the supply chain including for food recovery
- **Trend** – Centralized food recovery, smaller food banks/kitchens collect from central location
- **Challenges** – Quality control, capital costs
- **Examples**
 - CAN: *Moisson Montréal*
 - USA: Borderlands Food Bank



Source: Moisson Montréal, 2016

Case Study – Canada: Storage and Transportation Improvements

- *Moisson Montréal* is a food recovery hub that collects 60,000 kilograms of meat/month
- 85% of food recovered requires refrigeration
- Partnered with Loblaws to recover meat, Montréal Food Terminal for produce
- Dedicated trucks for freezer transport, manages 200 pickups per week
- Software-based inventory tracking system



Source: Moisson Montréal, 2016

Approach 5 – Online Food Recovery Platforms

- **Description** – Opportunity to recover food from smaller donors, tackling transportation and eliminating intermediaries
- **Trend** – Showing up in various metropolitan areas
- **Challenges** – Scalability, transportation costs, dependability
- **Examples**
 - USA: Food Cowboy



Source: Food Cowboy, 2015

Case Study – US: Online Food Recovery Platforms

- **Food Cowboy** connects donors directly with charity via mobile app
- 400 charities and 200 donors use the mobile app
- Charities accept only what they want and can use, app includes a mutual rating system
- Charges a 15% commission for donators and reinvests in operation, donations to charities for extending operating hours, obtaining donations, and increasing cold storage

**FOOD
COWBOY**
USES LOCATION-
BASED TECHNOLOGY
TO ROUTE FOOD
"WASTE" TO ITS
HIGHEST AND
BEST USER



Source: Food Cowboy, n.d.

Approach 6 – Feeding Animals

- **Description** – Minimally processed food waste or food scraps are mixed into dry animal feed
- **Trend** – Economically driven to avoid disposal costs
- **Challenge** – High cost of dewatering
- **Examples**
 - CAN: Enterra
 - MEX: *La Nueva Viga*
 - USA: Quest



Source: Harvard, 2016

Case Study – Mexico: Feeding Animals

- *La Nueva Viga* is the largest fish and seafood market in Mexico
- Excess fish supply is diverted from landfill to make fish flour for animal feed
- Economic benefit
 - Previous cost per month for disposal of fish waste: - US\$8,379
 - Current revenue per month for selling fish waste: + US\$11,229



Source: La Nueva Viga, 2013

Policy and Education Highlights

- Canada
 - The Government of Canada is developing a national food policy, which is anticipated to include food waste
- Mexico
 - Sedesol created the *Cruzada Nacional Contra el Hambre* (National Crusade Against Hunger), which mentions recovery of edible food along supply chain
 - Semarnat supports food recovery as strategy to divert food from landfills
- United States
 - EPA's Food Recovery Challenge encourages source reduction, recovery and recycling
 - Federal initiatives to support value-added processing
 - Bill Emerson Good Samaritan Food Donation Act to encourage donation of food, providing liability protection to food donors
 - Internal Revenue Code 170(e)(3) provides enhanced tax deductions to businesses for wholesome food donations

Thank you

Questions?

Tetra Tech Project Team

