

REBALANCING THE FOOD WASTE EQUATION: A CASE STUDY FOR SANTA BARBARA

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Community
Environmental
Council

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EXECUTIVE SUMMARY

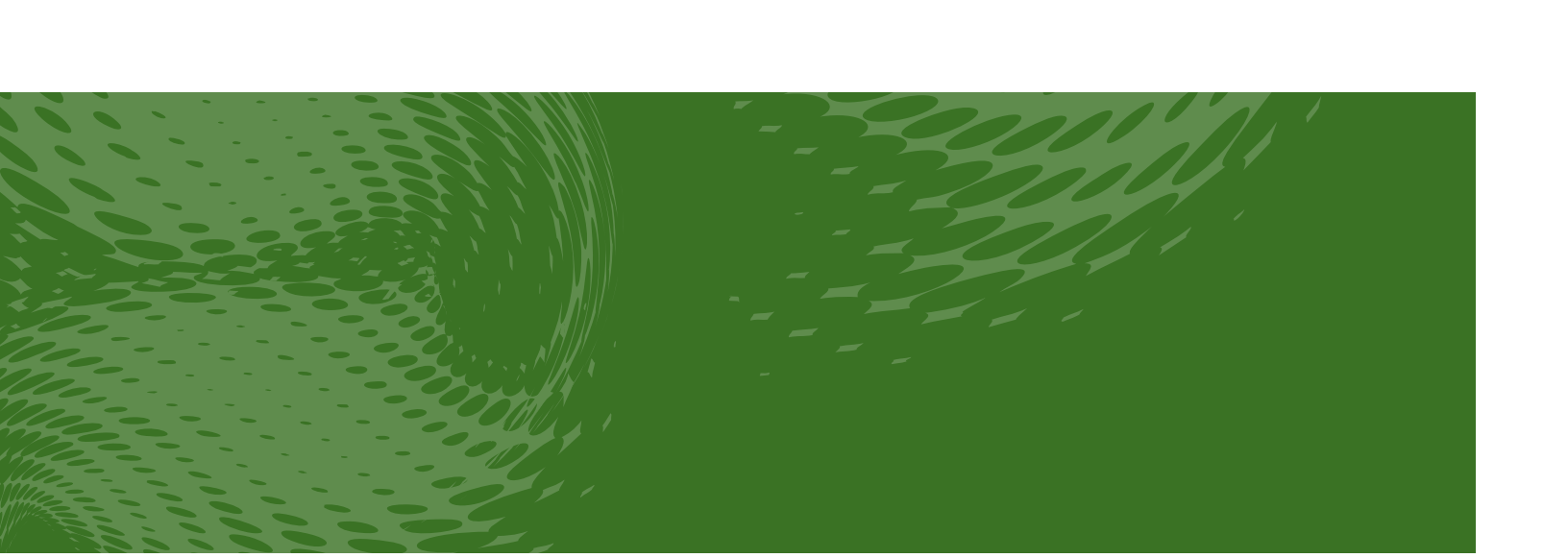
In 2014, two prominent nonprofit organizations on the Central California Coast — the Community Environmental Council (CEC) and the Foodbank of Santa Barbara County (FBSBC) — spearheaded a community process to look at how the region's food system could be designed to better support healthy people, a healthy economy, and a healthy environment.

Partnering with two established foundations — the Santa Barbara Foundation and the Orfalea Foundation — the team has embarked on an 18-month process to develop a Santa Barbara County Food Action Plan, expected to be published in early 2016. Through this community-based process, community leaders are looking at every aspect of the food system: production, processing, distribution, access, consumption, and waste management.

Early on in the process, it became evident that the public is increasingly concerned about food waste. With several major environmental groups reporting

that approximately 40% of food produced in the U.S. is never eaten,¹ and the media exploring this issue in earnest, the team found that:

- ▶ After recycling paper and paperboard, food waste is the largest amount of municipal waste nationwide — comprising 21% of solid refuse sent to the landfill.²
- ▶ The U.S. wastes \$165 billion on food annually,³ with the average family of four losing between \$1,365 and \$2,275 per year.⁴
- ▶ Food waste is a significant source of methane, a potent greenhouse gas with a warming potential 21 times that of carbon. In fact, landfills account for more than 20% of all human-related methane produced in California.⁵
- ▶ If food waste were a country, it would be the world's third largest emitter of greenhouse gases, behind the U.S. and China.⁶



Anecdotally, project leaders heard from local government staff that 10 to 15% of the food being thrown into compost bins by grocery stores and the hospitality industry appeared to be edible — much of it fresh produce. At the same time, the project team heard during interviews with community members that many nonprofit organizations serving at-risk families were having a difficult time providing fresh fruits and vegetables to their clients as a result of the California drought.

With support from the Santa Barbara Foundation, CEC conducted a 4-month pilot project to assess what can be done about the amount of useable food wasted in our region. It should be noted that while project stakeholders often touched on a much bigger conversation that is developing in Santa Barbara County — how best to manage all organic waste, including edible food and inedible food scraps — this project specifically focused on preventing and recovering usable, edible food from the waste stream.

As part of this project, CEC:

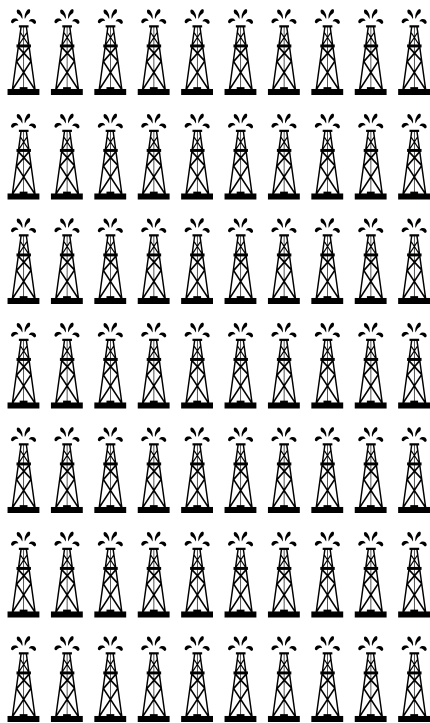
- ✓ Interviewed charitable organizations about their needs;
- ✓ Interviewed local grocery stores about their waste management processes and any barriers they might face in donating usable food;
- ✓ Conducted a food waste audit for one participating grocery store, finding that nearly 18% of the items in its compost bin could be considered usable food;
- ✓ Facilitated a roundtable discussion to encourage dialogue among local stakeholders about food waste in Santa Barbara County;
- ✓ Collaborated with community groups to identify best practices around managing and reducing waste that could be applied locally.

FOOD WASTE GLOBALLY AND IN THE U.S.

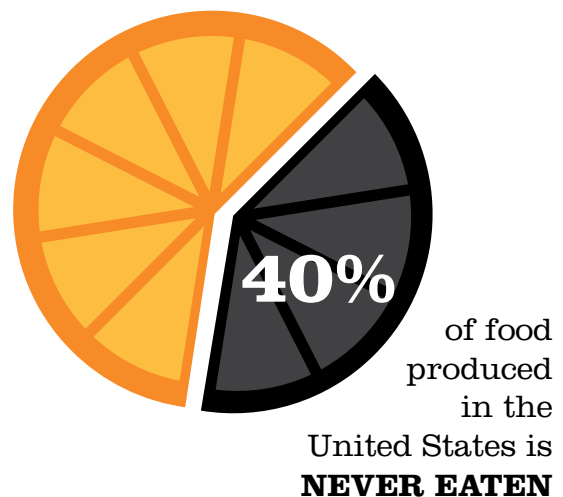
**A number of recent analyses
of the food system point
to a troubling conclusion:
up to 40% of all food grown
globally is never eaten.**

**It is lost somewhere along the
chain as it is grown, processed,
transported, stored or prepared.⁷**

The oil
used
annually
to produce
uneaten food
in the U.S.
is nearly
70 times the
amount of oil
that was
spilled in the
**Deepwater
Horizon
oil spill.**⁸



The U.S. is no exception; in 2010, we wasted approximately 133 billion pounds of food.⁹ Here and in most other developed countries, the majority of this waste takes place at the end of the food chain — fruits and vegetables left in the fields and orchards after harvest, edible food thrown out for cosmetic reasons or because it has passed its “sell by” date, or oversized meals that go partially uneaten.¹⁰



When food is wasted at this magnitude, we lose not only the end product of nourishment, but also all of the embedded resources that it took to grow or produce the original product — including the water, fossil fuels, land resources, nutrients, and financial investment. For instance, an estimated 25% of freshwater consumed

in the U.S. goes to producing uneaten food.¹¹ This is particularly concerning at a time when much of the western region of the U.S. is in severe to exceptional drought.

In addition, food waste brings up another environmental concern: when organic material ends up in a landfill, its decomposition emits methane – a greenhouse gas that is 21 times more potent than carbon dioxide.¹² In fact, approximately 20% of all methane emissions in California come from the decomposition of organic matter in landfills, including food waste. We can no longer afford this misuse of resources and to adequately address climate change we must aggressively reduce food waste in our county.¹³

Given the environmental impact of food waste, the U.S. Environmental Protection Agency has adopted a

“Food Recovery Hierarchy,” which prioritizes the recovery of usable food and places greater emphasis on feeding people in need. This hierarchy has been modified and adopted by organizations and local jurisdictions around the world (See Figure 1, page 8).

In mid-September, Agriculture Secretary Tom Vilsack and EPA Deputy Administrator Stan Meiburg announced the US’ first-ever national food waste reduction goal: 50% by 2030. To achieve this, they will lead a new partnership with charitable organizations, faith-based organizations, the private sector and local, state and tribal governments to reduce food loss and waste.¹⁴

In addition to the environmental implications of food waste, there are significant social and financial implications as well. In 2013, 14.3% of U.S. households (about 17.5 million) were food insecure – meaning that at some point during the year, these families had difficulty providing enough food for all members of the household due to a lack of resources.¹⁵ This is despite the fact that 200 food banks across the country – and 63,000 affiliated pantry and shelter agencies – distributed more than 2.5 billion pounds of food.¹⁶ In light of the 133 billion pounds wasted in 2010, it seems that some solution could be made to reduce the amount of food insecurity in the U.S.

Lastly, this waste comes at a hard cost, with the U.S. annually spending \$165 billion on edible food that is not consumed.¹⁷ The average family of four loses between \$1,365 and \$2,275 per year on wasted food.¹⁸

When food is wasted

**at this magnitude, we lose not only
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US FOOD DONATION LAWS

Emerson Good Samaritan Food Donation Act¹⁸ Donors and their donations made in good faith to food banks have uniform federal protections from civil and criminal liability, excepting gross negligence and/or intentional misconduct.

Federal Food Donation Act of 2008 Extends the definition of donor to include both executive agencies and contractors hired by those agencies.¹⁹

California Tax Credits AB 152 (2011) created a tax credit for 10% of the wholesale value for fruit and vegetable donations to California food banks by eligible growers. Now, AB 515 is awaiting the governor’s approval to increase this to 15%, expand which donors and donated items qualify for the credit, and extend the credit to 2021.²⁰

FOOD WASTE IN CALIFORNIA AND SANTA BARBARA

Trends at a global and national level are reflected in California.

Food remains the largest source of waste in California, making up about 15.5% of the total refuse sent to landfills each year.²²

In Santa Barbara County, the Tajiguas Landfill receives 22,744 tons of food surplus and food scraps from the South Coast, specifically the cities of Buellton, Santa Barbara and Solvang, and the unincorporated areas of the county.²³

Fortunately, with the recent passing of the State's Assembly Bill 1826, these numbers will likely decrease. The bill requires the composting of organic waste — food wastes, yard waste, and compostable wet goods such as paper towels or napkins — and will become mandatory statewide starting April 1, 2016. Businesses across the state that generate over a specific amount of organic waste per week — 8 cubic yards initially and 4 cubic yards after January 1, 2017 — will need to implement organic waste diversion programs to keep organic waste out of landfills. This bill also mandates cooperation between the California Environmental Protection Agency, local jurisdictions, and industry to provide aide in increasing the feasibility of organic waste recycling and to identify financing mechanisms.²⁴

Regionally, the City of Santa Barbara has made significant strides in reducing the amount of food going to landfill by spearheading a voluntary commercial compost service for restaurants and grocery stores. The City's waste hauler, MarBorg, collects the presorted, compostable food scraps and hauls it to the Engel and Gray commercial aerobic composting facility in Santa Maria. The program, up and running since 2009, has over 200 participating businesses that are reducing food waste sent to the landfill.²⁵

50% of adults in Santa Barbara low-income households are FOOD INSECURE.



A recent study found that
13.5% of people
and 23.3% of children
in Santa Barbara County
are food insecure.

In addition, the County of Santa Barbara is operating a pilot commercial food scraps collection program with eight businesses and two schools, collecting approximately one ton of food waste a week. Lastly, a handful of nonprofit organizations work directly with grocery stores to capture usable food before it goes to trash or compost. The Grocery Rescue program, run by the Foodbank of Santa Barbara County, picks up perishable products (baked goods, dairy products, deli meats and produce) daily at over thirty store locations throughout the county. Between July 2014 and June 2015, the Foodbank rescued 1.9 million pounds from grocers and an additional 1.2 million pounds from county growers, restaurants, and manufactures. The Foodbank was able to divert 3.1 million pounds of food from landfills and supply it to people in need.

However, there is more to be done. The City of Santa Barbara's Environmental Services Department estimates that 10 to 15% of the total compost collected each week from participating grocery stores is still edible. This becomes a social issue when viewed in light of the fact that Santa Barbara has been ranked the fourteenth most food insecure county in California.²⁶ In a recent study, Feeding America found that 13.5% of people – and 23.3% of children – in Santa Barbara County are food insecure, meaning that many of our residents are not certain where the next meal is coming from.²⁷

The lack of food security in this region is surprising, and indicative of a food system that is not working for everyone. While Santa Barbara County's agricultural crop production generated nearly \$1.3 billion in 2012 alone, the Foodbank and other nonprofit organizations

Out of California's 58 counties,
Santa Barbara ranks:


in the
TOP 12
for agricultural sales



but in the
BOTTOM 14
in meeting the daily food
needs of its residents



serving food-insecure families are finding it increasingly difficult to provide fresh fruits and vegetables to the residents of our county. Recently, the Foodbank reported a 75% drop in donated produce due to the drought and its consequences – including rising prices and lower agricultural production.²⁸

Usable food going to compost facilities – where it can be used as a nutrient rich soil amendment – is preferable to it going to the landfill. However, the best scenario, and the one that would do the most social good, would be to find outlets that could connect this food to hungry people. There are clear needs that could be met if some of the usable food items could be captured before they are thrown out or sent to compost.

PILOT PROJECT RESULTS

CEC began private conversation with various organizations impacted by food waste, exploring whether solutions could be identified to elevate food waste from the bottom of the hierarchy (the landfill) to the top (reducing waste and/or feeding people in need).

The resulting pilot project was designed to harness synergies between food producers, retailers, and charitable organizations by:

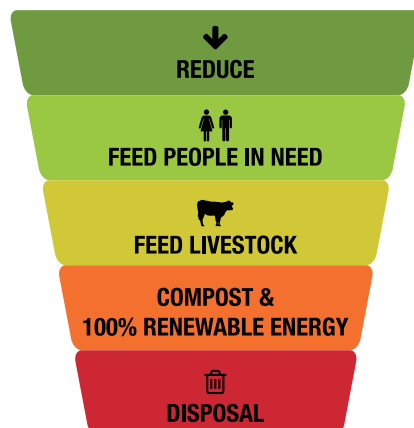
- ▶ Identifying the food needs of charitable organizations and the people they service;
- ▶ Measuring the quantity and quality of wasted food at Santa Barbara grocery stores;
- ▶ Determining whether usable food could be diverted from compost facilities and landfills; and
- ▶ Identifying opportunities to create less waste to begin with.

The project was divided into four phases: informational interviews, a food waste audit, a roundtable discussion, and an exploration of global and national best practices in food waste reduction. Results of each phase are discussed below.

PHASE 1: INFORMATIONAL INTERVIEWS

To understand the needs of potential recipients of usable food, CEC first conducted informational interviews with local charitable organizations that feed people in need, such as the Foodbank of Santa Barbara County, Food From the Heart, and Organic Soup Kitchen. These groups expressed that fresh, healthy produce remains difficult to obtain and is arguably one of the most valuable donation items. Definitive barriers exist, such as pick-up and delivery, storage and refrigeration, and the diversity of grocery items left at the end of the day. However, the possibility for increased food donations makes research and investigation into new solutions highly valuable.

FIGURE 1
The Food Recovery Hierarchy, as presented by Feeding the 5000 Steering Group and London Food Board.²⁹



CEC then turned to grocery stores, speaking with managers at two Trader Joe's stores on Milpas and De La Vina Streets, the Isla Vista Food Co-op, Tri-County Produce, Mesa Produce, Lazy Acres, Whole Foods, Vons, and Albertsons. Formal interviews and informal conversations revealed that most stores already have some form of donation and composting policies for unsellable food. While some stores were not able to allow an analysis of the quantity and quality of their food waste, this barrier seemed to be primarily based on proprietary issues or corporate culture.

PHASE 2: FOOD WASTE AUDIT

CEC next partnered with Trader Joe's on Milpas to conduct a food waste audit to determine the quality and quantity of food waste at local grocery stores. This particular Trader Joe's store already employs many best practices, such as participating in the City's commercial composting program and consistently donating to Catholic Charities.

Green Project Consultants assisted CEC with a voluntary waste audit of one Trader Joe's three-yard compost dumpster and a one-day collection of the trash dumpster to determine what portion of the materials being composted might still be usable and recoverable. The dumpster is shared with two other stores, Rite Aid and Jack's Bistro & Famous Bagels.

Five grades were established in order to categorize the food waste within the compost bin. Food was considered to be usable if it fell within the first three grades:

Grade 1: completely edible for more than one day

Grade 2: edible today, with slight bruises and blemishes

Grade 3: usable as an ingredient, with substantial bruises and blemishes

Grade 4: rotten and/or moldy

Trash: all non-food products, including plastic, cardboard, and coffee grounds

Based on these established grades, the audit revealed that approximately 18% of materials going into this shared dumpster were usable – falling near the estimate of 10 to 15% made by the City of Santa Barbara Environmental Services staff.

While this is a substantial percentage, is important to recognize that the overall quantity was still relatively small – 15.2 pounds in Grade 1 and 7 lbs in Grade 2³⁰ – and contained very small amounts of an assortment of foods: one container of blueberries, two apples, a single tomato, etc. Such small amounts can pose a barrier, as they may not merit pick-up by a charitable organization. In addition, while some items were sorted into Grade 1 (in part because Trader Joe's does not donate or re-sell any items that have been returned to the store, so must throw out or compost those items), 50.3 % of the food waste was sorted into Grade 2 and 3.³¹ This means they would have needed to be distributed and consumed within a day or two, a timeframe too short for most standard modes of food donation.

Of course, this glimpse into the waste of one grocery store is not comprehensive or necessarily representative of all grocery stores in Santa Barbara. However, the results still yielded important insights into some of the challenges of reducing food waste.

PHASE 3: COMMUNITY ROUNDTABLE DISCUSSION

After the audit, CEC brought together a targeted group of stakeholders for a roundtable discussion on food waste reduction in Santa Barbara County. Participants represented over 26 different community businesses and organizations, including:

- Grocery stores and restaurants;
- Hospitality services, such as the Chumash Casino;
- Charitable organizations, such as the Foodbank of Santa Barbara County, Santa Ynez Veggie Rescue, Unity Shoppe; Trinity Episcopal Church, and Food From the Heart;
- Local government staff from the City and County of Santa Barbara;
- Community innovators, such as Social Venture Partners, and UCSB's Bren School of Environmental Science and Management.

Powerful conversations took place about the needs of the charitable organizations, barriers to food waste reduction for food service industry businesses, and partnerships and synergies that could be harnessed in order to reduce food waste within the County.

TABLE 1 synthesizes the most promising solutions that emerged from the roundtable. Some of the potential solutions involve developing new programs, positions, and networks, while others build on existing models. The ideas also varied in total cost to develop, total potential impact, and complexity. As work to reduce food waste continues more ideas will certainly emerge, but this list acts as a starting point for future conversations.

GROCERY STORES/RESTAURANTS

RECOMMENDATION	STRENGTHS/SUCCESSSES	WEAKNESSES/BARRIERS
Establish donation brokers to facilitate volunteer networks who pick-up and deliver quantities of food that are too small for other programs.	Food Runners in San Francisco provides a potential model, ³² using a vast network of volunteers to pick up perishable and prepared food from businesses and deliver it directly to neighborhood food programs.	Requires standardized software and a committed volunteer base.
Promote food waste recovery through existing programs, such as the Santa Barbara County Business Green Business Program, County Public Health Dept., and/or the City of Santa Barbara's composting program. Possibly develop food waste certification or eco-label for businesses that minimize food waste.	Leverages existing programs and staff. Adding a certification for food waste may provide an incentive to involve new businesses.	These existing outreach programs are already stretched thin in terms of budgets and staffing. Developing a new certification would require resources and support.
Hire a sustainability coordinator at County Public Health Dept.	Among other duties, this staff person could ask stores and restaurants how they currently handle food waste.	Developing a new position would require resources.
Allow employees to take home excess food.	Isla Vista Food Co-op successfully employs this form of non-fiscal compensation.	Employees could intentionally over-order or over-produce food to create excess.
Encourage commercial composting programs countywide, similar to the City of Santa Barbara.	The City of Santa Barbara's commercial composting program is a successful example and could be used to scale-up across the County (It already has over 200 participating businesses). Composting food scraps also costs less than traditional trash service, allowing businesses to save money.	Requires employees of grocery stores, restaurants and the hospitality industry to correctly manage food scraps and understand the sorting protocol for waste management. In addition, waste management is handled separately by each city (with the County managing the unincorporated areas), although these jurisdictions could learn from each other and share best practices.

HOSPITALITY INDUSTRY / INSTITUTIONS / EVENTS

RECOMMENDATION	STRENGTHS/SUCCESSSES	WEAKNESSES/BARRIERS
Provide waste reduction training for chefs, possibly through Santa Barbara City College.	SBCC Culinary Academy currently educates its students to make waste reduction second nature.	Difficult to change behaviors of established chefs.
Reduce amount of food displayed at buffets.	Less food set out at a time reduces waste.	Requires more frequent replenishing .
Transition to trayless dining halls, which encourage customers to take and waste less food.	Successfully implemented at UCSB; able to purchase sustainable fish and organic produce with savings. ³³	Dining hall customers might view the removal of trays as an inconvenience.
Make composting mandatory in order to obtain a City permit for a large public event.	Santa Barbara Earth Day Festival, organized by the Community Environmental Council, diverts approximately 95% of its waste – including food waste – by employing an intensive hand-sort of all waste on the premises.	Labor is needed to sort all bins. Only one company in Santa Barbara currently provides this service (Green Project Consultants), so a mandate could be seen as exclusionary.
Permit and encourage caterers to transport food waste back to commercial kitchens for composting.	Many caterers compost kitchen scraps at their kitchen sites through the city commercial composting program and are familiar with the basics.	Additional work needed to take food scraps back after the event. Some caterers have incorrectly reported that policies from the County Dept. of Health prevent them from backhauling waste from an event site in the same vans in which they transport food.

PUBLIC EDUCATION

RECOMMENDATION	STRENGTHS/SUCCESSSES	WEAKNESSES/BARRIERS
Educate the public about the difference between a landfill and a compost site.	Many people do not understand the difference; potential for individual behavioral change.	Requires time and financial resources to implement an education program.
Recruit more volunteers for existing produce gleaning programs (Backyard Bounty, Veggie Rescue, Food From the Heart)	Consider contacting businesses to offer paid time off to their employees to volunteer. Companies such as Citrix and Bank of America already do this.	Sometimes organizations cannot utilize high school volunteers due to liability issues.
Increase awareness and education on backyard composting for residential use.	The County of Santa Barbara offers the Earth Machine backyard composting bin for \$40, which is more than half off the retail price, and offer workshops on how to compost.	Individuals must use free-time to maintain the composter and have space for the final product or know someone who would need it.

PHASE 4: BEST PRACTICE DISCOVERY

CEC's final step was to research best practices from around the globe. Some solutions rely on innovative technology, such as apps and smart data capture, while

others employ age-old practices, such as eating produce that doesn't conform to the standard ideal.

TABLE 2. Summary of best practices and innovative solutions to minimize food waste across the globe and across the food chain. See Appendix for more detailed descriptions.

BEST PRACTICE / INNOVATION	STRENGTHS/SUCCESSSES	WEAKNESSES/BARRIERS
Daily Table <i>Dorchester, MA</i> Non-profit grocery store that sells salvaged groceries close to expiration date.	Founder and President of Daily Table was the President of Trader Joe's for 14 years.	Some criticism over selling "rich man's trash" to low income people; some public concern over the safety of expired foods.
Food Forward <i>County of Santa Barbara</i> A regional educational campaign.	Includes a list of locations in Santa Barbara County that accept donations of prepared or unprepared food, as well as criteria for participating in the County's pilot commercial collection program for food scraps.	Pilot collection program currently has a limited scope.
Food Recovery Hierarchy <i>Worldwide</i> Utilize the Food Recovery Hierarchy as protocol and best management practice	Using the Food Recovery Hierarchy to achieve food waste reduction goals tackles the diverse aspects of food waste throughout the entire food chain. Emphasizes feeding people and turning a waste into a resource.	Any entity (such as a business or local government) with plans to make this the food waste management plan must choose their own specific strategies.
FoodLoop <i>Cologne, Germany</i> App that allows food retailers to send out notifications for discounts on nearly-expired products.	App began its first customer pilot phase in early 2015.	Could be difficult for consumers to coordinate shopping schedules with daily discount alerts.
French Food Waste Ban <i>France</i> French law that mandates no edible food waste can be thrown out from grocery stores, but must be given to charity or used for animal feed instead.	Prevents food from being intentionally rendered inedible (no bleach in waste bins); part of a wider push to eliminate 50% of food waste in France by 2025.	May prevent looking into deeper systemic issues of food waste, including overproduction. May impact charities requiring increased refrigeration, storage, and transportation.
Harvester <i>Redmond, WA</i> A proprietary system for grocers and food service providers to turn food scraps into organic liquid fertilizer.	Grocery stores purchase the Harvester, which turns food scraps into a high-nutrient liquid that can be converted to organic fertilizer and sold to customers and local farmers; also delivers data to help stores cut down on waste. ³⁴	The technology is focused on grocery stores and larger institutions; not widely available yet.
Hungry Harvest <i>Washington, DC & Baltimore, MD</i> A startup that collects surplus produce from local farmers, gleaning networks, and distributors for delivery in CSA-like bags to paying customers. For every pound delivered to a customer, one pound of produce is donated to a local food bank, family in need, or homeless shelter.	Creates a profitable market for food products that would normally go to waste, and at the same time creates opportunities to increase food donations in communities.	Customer base is limited to those residents looking to invest in a CSA-type produce share. Requires a lot of coordination between parties, and as well as willing gleaners and farmers.

BEST PRACTICE / INNOVATION**STRENGTHS/SUCCESSSES****WEAKNESSES/BARRIERS****Imperfect Produce**

Bay Area, CA; France; Canada

Produce delivery company selling ugly fruits and vegetables that would have been thrown away from farms, for half the price.

When launched, Imperfect Produce will operate as a CSA in the Bay area.

The Community Supported Agriculture model requires substantial community buy-in before the program can begin.

Inglorious Vegetables

France

A campaign that advocates for buying produce that would be discarded due to failing to meet traditional visual standards.

Intermarché, Frances's third largest supermarket chain, brought visually unappealing produce into Intermarché stores and sold it for 30% less than typical produce. Takes something considered waste and creates consumer demand, driving increased sales and foot traffic.

Consumers must be willing to shift perspective on what produce is suitable for buying and eating.

LeanPath Solutions

Portland, OR

(implemented across U.S.)

Automated food waste tracking system for food service operations of all sizes.

10 year old company; MGM Grand Buffet in Las Vegas reduced food waste by 80%, resulting in savings of \$6,000 and \$8,000 per month.

The software and system itself is expensive, although the company is now offering varying levels of service for lower prices.

Loco'l

San Francisco, CA

Zero-waste fast food restaurant model

Chefs use common ingredients across recipes and utilize every food scrap to avoid food waste. First location to open in late 2015.

This restaurant has not yet launched, and it is uncertain if the zero-waste model will allow it to be competitive with big fast food chains.

Sainsbury

United Kingdom

Supermarket chain that changed labels from reading "expires on" date to "use or freeze by," encouraging consumers to use or freeze food instead of throwing it away.

Labels save an estimated 800,000 metric tons of food each year.

May be difficult to alter consumer purchasing and storing habits solely with changed labels.

The Real Junk Food Project

United Kingdom

Pay-as-you-feel café model that sells salvaged food. Edible food destined for landfill is intercepted from supermarkets, restaurants and market stalls across Leeds. Instead of going to waste, food is used to feed hundreds of people every week.

In 2014, the café in Leeds, UK diverted 22 tons of food from landfills and fed 10,000 people.

Potentially similar criticism regarding the perception of selling "trash" to low income people; may require an awareness campaign about expiration dates.

Waste Not / Orange County

Orange County, CA

Public/private coalition that strives to meet nutritional needs of the Orange County community by facilitating donation and distribution of surplus food.

Connects grocers and restaurants to food recovery agencies, and those in need with services. Trains and educate potential donors in food handling safety.

Requires a lot of coordination and collaboration across many different sectors of the food system.

WRAP - Love Food, Hate Waste

United Kingdom

A government-funded Waste Resources Action Programme in the UK to fight food waste at the consumer level.

Offers consumers a free mobile app that features tools to reduce food waste, such as portion and meal planners and recipes specifically aimed to use leftovers.

Users must be internet savvy and have computer or mobile phone access; not currently promoted heavily in areas where people grocery shop.


CONCLUSIONS AND NEXT STEPS

If Santa Barbara County can implement some of these proposed strategies to minimize food waste and recover excess usable food, we will avoid increased greenhouse gases, feed more hungry people, and save money.

This pilot project and white paper are intended to provide a starting point for dialogue between relevant parties involved in our local food system and to inform the future efforts of the Food Action Plan.

Santa Barbara already implements several successful programs designed to avoid food waste and divert good, edible food to those in need:

- Santa Barbara Community College Culinary Academy currently educates their students to make waste reduction second nature.
- The Foodbank's Grocery Rescue Program picks up perishable product (baked goods, dairy products, deli, meats and produce) at 31 store locations throughout Santa Barbara County daily.
- Backyard Bounty works to collect surplus fruit from households and farms to increase the availability of fresh produce at the Foodbank.
- Volunteers in Santa Ynez Valley – working with Veggie Rescue, St. Mark's Church, and People Helping People – have formed a loose network with locally owned grocery stores and bakeries to pick up food and distribute usable food directly to those in need.
- For those food scraps and other items that are unusable, the next best option is composting, following a system similar to the Santa Barbara City's commercial composting program, which has over 200 participating businesses, from coffee shops to hotels.



Through one-on-one interviews and roundtable discussions, CEC has identified four primary recommendations that could help our region address issues related to food waste in our region:

Adopt the Food Recovery Hierarchy.

Adopting a foundational hierarchy of recovery actions would ensure that future diversion efforts work together towards a common goal. It would provide businesses, organizations, and policy-makers with a clear prioritized guide to action and best practices to reduce food waste — including the hierarchy, for example, in city and county general plans, climate action plans, campus sustainability plans, and other frameworks as appropriate. Roundtable participants recommend adopting a slightly revised version of the EPA's Food Recovery Hierarchy, instead placing “energy use” and “composting” on the same tier.

Facilitate easier pick-up and distribution of smaller amounts of surplus food.

As was discovered by the waste audit, grocery stores have the potential to capture edible food before it heads to the landfill or composting system. However, donations from smaller stores often do not meet the requirement for pick-up from larger food donation organizations, such as the Foodbank. Creating “hubs” for collection, and connecting smaller donations with community charities as Food Runners does in San Francisco, could foster more donations.

Share best practices and barriers.

Some institutions throughout our region are making strides in reducing food waste; however corporate culture often prevents them from openly sharing what's working and what's not. A small conference or private educational events that provide a safe place for managers of grocery stores, restaurants, hospitals, large businesses and hospitality providers to learn from innovators in the industry and discuss barriers could significantly help these institutions reduce waste and improve their bottom line.

Develop outreach to increase participation in existing programs.

Throughout Santa Barbara County, several existing agencies and programs —such as County Public Health Department, the City of Santa Barbara's Environmental Services Department, and the Santa Barbara County Green Business Program — are in regular contact with businesses. Educating their teams about food waste reduction and providing them with some simple materials to take on their site visits could increase participation in existing collection programs, and could start a cohesive conversation with all different members of the community.

APPENDIX

Descriptions of Innovative Best Practices from Table 2

Daily Table: The Daily Table is a new type of grocery store that will sell salvaged edible food traditionally thrown out by other grocery stores due to expiration dates of cosmetic deformities. This will be a non-profit retail store with items priced to compete with fast food, targeting audiences who otherwise could not afford fresh produce. The first store opened in Dorchester, Massachusetts in May 2015.^{35, 36}

Food Forward: This County of Santa Barbara program launched in 2013-14 and includes information on how households can reduce their food waste and participate in the County's pilot food waste commercial collection system. Educational materials also explain food expiration language, and list locations in Santa Barbara County that accept donations of prepared or unprepared food, as well as food scraps for animals.³⁷

Food Recovery Hierarchy: Business, organizations, and governments around the globe are choosing to address food waste using the Food Recovery Hierarchy. Its a guide for prioritizing actions to prevent and divert wasted food, through the lens of the entire food chain. The EPA uses it for its Food Recovery Challenge (FRC) and numerous others establish it as best practice management for food waste worldwide.³⁸

FoodLoop: An app that connects thrifty shoppers with food retailers looking to clear their shelves of nearly-expired products. In the morning, supermarkets scan in products that are near their expiration date and set a discount they are willing to offer. The FoodLoop system records these price cuts and sends notifications to users, encouraging them to visit stores to snap up the bargains.³⁹

Harvester: In 2010, two former Microsoft employees anxious to work on the growing food waste problem developed the Harvester. With the help of biologists, computer programmers, and engineers, they developed a machine that turns any food matter into a high-nutrient liquid that is then converted to organic fertilizer. A pumping company picks up this liquid and delivers it to a WISerg processing facility (one in the Pacific Northwest and two more due to open this year). WISerganic fertilizer is sold to both farmers and to consumers. The company currently processes 15,000 gallons of fertilizer a month. The Harvester delivers data, offering critical information necessary for grocery stores to cut down on food waste.⁴⁰

Hungry Harvest: This East Coast startup has found a way to turn a profit and do some good with the potential food waste in their region. Hungry Harvest collects surplus produce from local farmers, gleaning networks, and distributors for delivery in CSA-like bags to paying customers. Their 300 customers have paid to recover over 115,000 pounds of produce with over 62,000 lbs of the total going to local people in need. The collected produce is brought to a warehouse where it is received by workers hired from the Montgomery County Coalition for the Homeless who sort and bag it. The produce then goes out on delivery where for every pound delivered to a customer, one pound of produce is donated to a local food bank, family in need, or homeless shelter.⁴¹ At the moment Hungry harvest is operating in Washington, D.C., Columbia, and Baltimore with plans to increase its current few hundred customers to 10,000 along the I-95 in the next three years. Customers buy a share for 10 weeks at a time with prices starting at \$13 for a 5-7 pound bag of produce. This \$13 covers the cost of the delivery of both their bag and the donated bags.⁴²

Imperfect Produce: Imperfect, a crowd-funded company based out of Oakland, California, is planning to capture some of the 6 billion pounds of fruits and vegetables wasted annually in the U.S. that are considered too “ugly” to be marketable.^{43,44} This business will operate under a Community-Supported Agriculture (CSA) model, where customers pay \$12 per box for weekly deliveries of imperfect fruits and vegetables that would have otherwise gone to waste on California farms.⁴⁵

Inglorious Fruits & Vegetables: A campaign focused on consumer buying habits, Inglorious Fruits and Vegetables was launched by France's third largest supermarket chain, Intermarché, to combat food waste.⁴⁶ This campaign brought visually unappealing produce into Intermarché stores and sold it for 30% less than typical produce. As a result, Intermarché sold an average of 1.2 tons of produce per store in the first two days of the campaign, saw a 24% overall increase in store traffic, and pushed five of their main competitors to launch similar offers. Canada's largest food retailer, Loblaws, has since implemented an analogous discounted produce campaign. Currently, this program is only selling imperfect apples and potatoes as a trial to gauge consumer interest.⁴⁷

LeanPath Solutions: In many cases, what gets measured gets done. LeanPath, based out of Portland, Oregon, is the first fully automated waste tracking system on the market, offering businesses with a method to meticulously measure food waste. With varying levels of support and technology based on the size of the food industry business, LeanPath records every food item being thrown out, gives an approximate monetary value to each item, and helps businesses to make smarter decisions on menus, production, portioning, and purchasing.⁴⁸ The software has the ability for different users to compare their waste habits, incentivizing waste reducing practices and creating a culture of fighting food waste in the kitchen. Reported results range from a 27% reduction in pre-consumer food waste in the deli department of a small grocery store in Minnesota, to an 80% reduction in pre-consumer food waste, resulting in savings between \$6,000 and \$8,000 per month, for MGM Grand Buffet in Las Vegas.⁴⁹

Loco'l: Two San Francisco-based chefs are trying to start a competitive, healthy fast-food chain for everyday people: Loco'l. These chefs plan to keep prices

competitive by implementing a zero waste model from the start. Chefs will be trained to utilize every food scrap, putting vegetable peelings, ends, and non-choice cuts of meat into tamales fillings instead of throwing them away. Common ingredients will be used across recipes in order to encourage reuse and complete use of kitchen supplies. The first location will open in San Francisco in late 2015.⁵⁰

Sainsbury: A supermarket chain that has changed its labels to encourage consumers to use or freeze food by the use-by date instead of throwing it away, saving an estimated 800,000 metric tons of food each year.⁵¹

The Real Junk Food Project: This project has developed a pay-as-you-feel café model, which sells food that would have been thrown out due to strict labeling laws. In 2014, the café located in Leeds, UK diverted 22 tons of food from the landfill and fed 10,000 people.⁵²

Waste Not - Orange County: The non-profit Waste Not OC Coalition was conceived in November 2012 as an answer to “if we were able to capture food that is wasted and direct it to people in need, could we end hunger in Orange County?” WNOC formed as a public-private partnership with the goal of eliminating hunger through reducing food waste. The coalition facilitated the donation of wholesome surplus food to local pantries by reaching out to, educating, and partnering with food producing facilities.⁵³ In their pilot project, Anaheim-Orange Pilot, WNOC recovered 42.7 tons of food (71,223 meals) between July and December 2014.⁵⁴

WRAP's Love Food, Hate Waste (LFHW): UK government-funded organization WRAP (Waste Resources Action Programme) is fighting food waste from the angle of consumer practices. Since launching in 2007, LFHW claims to have reduced avoidable food and drink waste by 21% in the UK while saving consumers \$3.3 billion dollars a year in the process.⁵⁵ Consumers can find the resources they need on the **LFHW website** or the recently available free mobile app. Both feature resources such as portion and meal planners, recipes aimed at reducing waste and using leftovers, and tools to keep track of what food you already have at home. With the success they've had in the UK, LFHW has been able to expand to Australia and Canada, and is looking to expand to United States consumers.

SOURCES

- ¹ Gunders, D. "Wasted: How America Is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill." *Natural Resources Defense Council Issue Paper*. August 2012. <<https://www.nrdc.org/food/files/wasted-food-ip.pdf>>
- ² Buzby, Jean C., Hodan F. Wells, and Jeffrey Hyman. "The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States", EIB-121, U.S. Department of Agriculture, Economic Research Service, February 2014. <<http://www.ers.usda.gov/media/1282296/eib121.pdf>>
- ³ Buzby, J. and Hyman, J. "Total and Per Capita Value of Food Loss in the United States." *Food Policy*, 37(2012):561-570. <<http://ucce.ucdavis.edu/files/datastore/234-2425.pdf>>
- ⁴ Bloom, J. *American Wasteland*, 187. Da Capo Press, 2010.
- ⁵ "Greenhouse Gas Emission Inventory: Sources of CH₄ in California for 2013." California Environmental Protection Agency Air Resources Board. N.p., 6 May 2015. Web. 14 Sept. 2015. <<http://www.arb.ca.gov/cc/inventory/background/ch4.htm>>.
- ⁶ Food Wastage Footprint: Impacts on Natural Resources. 2013. Food and Agriculture Organization of the United Nations. Web. <<http://www.fao.org/docrep/018/i3347e/i3347e.pdf>>.
- ⁷ Ibid, Gunders.
- ⁸ The Ocean Portal Team. "Gulf Oil Spill." Smithsonian National Museum of Natural History. <<http://ocean.si.edu/gulf-oil-spill>>
- ⁹ Buzby, Jean C., Hodan F. Wells, and Jeffrey Hyman. "The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States", EIB-121, U.S. Department of Agriculture, Economic Research Service, February 2014. <<http://www.ers.usda.gov/media/1282296/eib121.pdf>>
- ¹⁰ Ibid, Buzby.
- ¹¹ Hall, Kevin D. et al. "The Progressive Increase of Food Waste in America and Its Environmental Impact." Ed. Thorkild I. A. Sorensen. *PLoS ONE* 4.11 (2009): e7940. *PMC*. Web. 24 July 2015. <<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0007940>>
This statistic was calculated assuming agriculture accounts for approximately 70% of freshwater consumptive use (with freshwater defined as renewable freshwater supply equal to evapotranspiration on land and runoff to the sea which includes soil infiltration and groundwater replenishment). Please see journal article for complete methodology.
- ¹² Ibid, Cal EPA Air Resources Board.
- ¹³ Ibid, Cal EPA Air Resources Board.
- ¹⁴ United States Department of Agriculture. Office of Communications. USDA and EPA Join with Private Sector, Charitable Organizations to Set Nation's First Food Waste Reduction Goals. United States Department of Agriculture. N.p., 16 Sept. 2015. Web. 24 Sept. 2015. <<http://www.usda.gov/wps/portal/usda/usdahome?contentid=2015/09/0257.xml>>.
- ¹⁵ Coleman-Jensen, Alisha, Christian Gregory, and Anita Singh. "Household Food Security in the United States in 2013", ERR-173, U.S. Department of Agriculture, Economic Research Service, September 2014. <<http://www.ers.usda.gov/media/1565415/err173.pdf>>
- ¹⁶ "Serve Families at Food Banks and Food Pantries - FBNP | USDA." United States Department of Agriculture, 08 Apr. 2013. Web. 24 July 2015. <http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=fnp_page01-4C.xml>
- ¹⁷ Ibid, Buzby.
- ¹⁸ Ibid, Bloom. Ibid, Buzby.
- ¹⁹ "PUBLIC LAW 104-210—OCT. 1, 1996." U.S. Government Publishing Office. United States Government, 1 Oct. 1996. Web. 16 Sep. 2015. <<http://www.gpo.gov/fdsys/pkg/PLAW-104publ210/pdf/PLAW-104publ210.pdf>>.
- ²⁰ "PUBLIC LAW 110-247—JUNE 20, 2008." U.S. Government Publishing Office. United States Government, 20 June 2008. Web. 16 Sept. 2015. <<http://www.gpo.gov/fdsys/pkg/PLAW-110publ247/pdf/PLAW-110publ247.pdf>>.
- ²¹ California. Legislature. Assembly. 515. 2015-2016 Reg. Sess. (February 23, 2015). California State Assembly. Web. 16 Sep. 2015. <http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB515>
- ²² Cascadia Consulting Group. "California 2008 Statewide Waste Characterization Study." California Integrated Waste Management Board. 2009. <<http://www.calrecycle.ca.gov/publications/Documents/General/2009023.pdf>>
- ²³ Calculated by taking the total franchise MSW tonnage sent to Tajiguas Landfill in Calendar Year 2013 (126,361 tons) and multiplying by the percentage of food waste comprising the national municipal waste stream as characterized by the EPA (18%). <<http://www.epa.gov/region9/waste/features/foodtoenergy/food-waste.html>>. Tonnage does not include self-haul waste.

- 24 Assem. Bill 1826, 2013-2014 1st Ex. Sess., ch. 727, 2014 Cal. Stat. <http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB1826>
- 25 "Commercial Foodscrap Composting." City Trash & Recycling. City of Santa Barbara, 25 July 2015. Web. 15 September 2015. <<http://www.santabarbaraca.gov/services/recycling/business/foodscrap.asp>>
- 26 UCLA Center for Health Policy Research — *California Health Interview Survey*. <http://healthpolicy.ucla.edu/CHIS/Pages/default.aspx>
- 27 Map the Meal Gap 2014: Child Food Insecurity in California by County in 2012. Publication. Feeding America, 2014. Web. 15 Sept. 2015. <http://www.feedingamerica.org/hunger-in-america/our-research/map-the-meal-gap/2013/CA_AllCounties_CDs_MMG_2013.pdf>
- 28 "Drought Impacts the Foodbank." FoodBank Santa Barbara County. N.p., 31 Mar. 2014. Web. 15 Sept. 2015. <<http://www.foodbanksbc.org/drought-impacts-the-foodbank/>>
- 29 Greater London Authority. "Helping Businesses Manage Food Waste." [London.gov.uk](http://www.london.gov.uk/priorities/environment/waste-litter/foodsave). Web. 27 May. 2015. <<https://www.london.gov.uk/priorities/environment/waste-litter/foodsave>>.
- 30 *Waste Audit for Community Environmental Council*. Rep. Santa Barbara: Green Project Consultants, 2015. Print.
- 31 *Waste Audit for Community Environmental Council*. Rep. Santa Barbara: Green Project Consultants, 2015. Print.
- 32 "About Food Runners." Food Runners: Relaying Excess Food. Web. 27 May 2015. <<http://www.foodrunners.org/about>>.
- 33 Foulsham, G. "Trayless Dining, Composting Projects Are Sustainability Successes at UCSB." UCSB Public Affairs & Communications. 04 Nov. 2009. Web. 27 May 2015. <<http://www.ia.ucsb.edu/pa/display.aspx?pkey=2124>>.
- 34 "Curbing Food Waste" Web 17 June 2015. <<https://wiserg.com/harvester/curbing-food-waste>>.
- 35 Segran, E. "Can America Learn to Love Misshapen Veggies?" *The Atlantic*. 01 July 2014. Web. 11 Nov. 2014. <<http://www.theatlantic.com/business/archive/2014/07/can-america-learn-to-love-misshapen-veggies/373793/>>.
- 36 "Our Story." Daily Table. Web. 27 May 2015. <<http://dailymtable.org/about-us/our-story/>>.
- 37 <http://lessismore.org/system/files/175/original/Food_Foward_Booklet_FINAL.pdf>
- 38 "Food Recovery Hierarchy." EPA. Environmental Protection Agency, 14 Sept. 2015. Web. 15 Sept. 2015. <<http://www2.epa.gov/sustainable-management-food/food-recovery-hierarchy>>
- 39 "The Market Solution Reducing Retailer's Food Waste." *FoodLoop*. Web. 29 May 2015. <<https://www.foodloop.net/>>.
- 40 Schneur, Jenna. "Meet the Machine That's Turning Grocery Stores' Food Waste Into Fertilizer." *Entrepreneur*. N.p., 26 May 2015. Web. 17 June 2015. <<http://www.entrepreneur.com/article/245919>>.
- 41 King, Arianna. "Eat Ugly Fruit: An Interview with John Zamora of Hungry Harvest." *Food Tank*. N.p., 15 Feb. 2015. Web. 27 July 2015. <<http://foodtank.com/news/2015/02/targeting-food-waste-an-interview-with-john-zamora-of-hungry-harvest>>.
- 42 Gantz, Sarah. "These Maryland Grads Are Feeding the Hungry by Delivering Produce to Your Doorstep." *Baltimore Business Journal*. N.p., 26 Mar. 2015. Web. 27 July 2015. <<http://c.bizjournals.com/ct/c/99256842/NjYzNTgzNzI6OjA>>.
- 43 Ibid, Gunders.
- 44 Bratskeir, K. "6 Billions Pounds of Perfectly Edible Produce Is Wasted Every Year, Simply Because It's Ugly." *The Huffington Post*. 19 May 2015. Web. 27 May 2015. <http://www.huffingtonpost.com/2015/05/19/food-waste-ugly-fruits-and-vegs-dont-judge_n_7309432.html>.
- 45 Imperfect. "Imperfect: Redefining Beauty in Produce." *Indiegogo*. 09 May 2015. Web. 27 May 2015. <<https://www.indiegogo.com/projects/imperfect-redefining-beauty-in-produce#/story>>.
- 46 "Inglorious Fruits & Vegetables." *Intermarché*. Web. 27 May 2015. <<http://itm.marcelww.com/inglorious/>>.
- 47 Loblaw Public Relations Department. "Less-than-perfect Produce Branch Launches at Select Loblaw Stores." *Loblaw*. 12 Mar. 2015. Web. 27 May 2015. <<http://www.loblaw.ca/English/Media-Centre/news-releases/news-release-details/2015/Less-than-perfect-produce-brand-launches-at-select-Loblaw-stores/default.aspx>>.
- 48 "How LeanPath Works." *LeanPath: Food Waste Prevention*. Web. 27 May 2015. <<http://www.leanpath.com/how-it-works/>>.
- 49 "Client Case Studies." *LeanPath: Food Waste Prevention*. Web. 27 May 2015. <<http://www.leanpath.com/case-studies/>>.
- 50 Markham, L. "The Untapped Potential of Wasted Food." *The New Yorker*. 04 May 2015. Web. 27 May 2015. <<http://www.newyorker.com/business/currency/the-untapped-potential-of-wasted-food>>.
- 51 Lehner, P. "Food Waste in Supermarkets, Part II: Pursuing Perfection, Driving Waste." *Switchboard: NRDC Staff Blog*. National Resources Defense Council, 5 Oct. 2012. Web. 15 Dec. 2014. <http://switchboard.nrdc.org/blogs/plehner/food_waste_in_supermarkets_par.html>.
- 52 Mellino, C. "3 Young Entrepreneurs Find Revolutionary Way to Cut Out Food Waste." *EcoWatch*. 25 Feb. 2015. Web. 29 May 2015. <<http://ecowatch.com/2015/02/25/entrepreneurs-reduce-food-waste/>>.
- 53 "Waste Not OC Coalition." Web 17 June 2015. <http://media.wix.com/ugd/c117b4_d8aa24f5b81e46da940300f66aaed8f7.pdf>.
- 54 "Projects". *Waste Not OC Coalition*. Web 17 June 2015. <<http://www.wastenotoc.org/#!projects/c21kz>>.
- 55 "UK Media & Resources." Love Food Hate Waste. WRAP, n.d. Web. 23 July 2015. <<http://england.lovefoodhatewaste.com/node/2343>>.

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