



8-31-2011

A Public-Private Initiative to Reduce Food Waste: A Framework for Local Communities

Steven M. Finn

University of Pennsylvania, finnsm@sas.upenn.edu

A Public-Private Initiative to Reduce Food Waste: A Framework for Local Communities

Abstract

The problem of global food waste is critical to resolve – from the standpoint of both alleviating hunger and improving the environment by reducing carbon emissions and landfill usage. Successfully reducing food waste requires involving many stakeholders – both public and private – and galvanizing them to overcome barriers through positive action. This paper draws on lessons in stakeholder management from an impressive sustainability project involving multiple stakeholders – the implementation of the Vélib' bicycle program in Paris – and applies them to the issue of reducing food waste at the local community level. The framework is a “start-small” approach on which to build.

Cover Page Footnote

Suggested Citation:

Finn, S.M. (2011). A Public-Private Initiative to Reduce Food Waste: A Framework for Local Communities. *Graduate Studies Journal of Organizational Dynamics*. Vol. 1(1).

A PUBLIC-PRIVATE INITIATIVE TO REDUCE FOOD WASTE: A FRAMEWORK FOR LOCAL COMMUNITIES

STEVEN M. FINN

Organizational Dynamics Graduate Studies
University of Pennsylvania

The problem of global food waste is critical to resolve – from the standpoint of both alleviating hunger and improving the environment by reducing carbon emissions and landfill usage. Successfully reducing food waste requires involving many stakeholders – both public and private – and galvanizing them to overcome barriers through positive action. This paper draws on lessons in stakeholder management from an impressive sustainability project involving multiple stakeholders – the implementation of the Vélib’ bicycle program in Paris – and applies them to the issue of reducing food waste at the local community level. The framework is a “start-small” approach on which to build.

Reducing Food Waste

In 2010, Timothy Geithner and Bill Gates co-authored an article calling for a renewed commitment to ending global hunger and poverty, noting that “a world where more than one billion people suffer from hunger is not a strong or stable world.” The Gates Foundation, working with the U.S. and other nations, launched the Global Agriculture and Food Security Program with the goal of helping the world’s poorest farmers grow more food and escape poverty. The Program is a noble effort at a global level, and involves individuals “giving back” to eradicate hunger and make the world a better place (Geithner & Gates, 2010, A23).

A second globally prominent problem is developing sustainable means of transportation, particularly in urban areas. This paper considers possible solutions to local hunger problems by applying principles from a public-private solution to transportation problems in Paris, France. The inspiration for the paper came from two personal experiences:

1. Shopping for food: Very early one Sunday morning I was one of the few people in my local supermarket. I noticed the butcher removing several packets of prime meat from the shelves – filets, porterhouse steaks, etc. – and putting them on a cart. I had a bad feeling and questioned whether the meat was being thrown out. He confirmed that he was, indeed, discarding the meat because it had passed its “sell-by” date. I was stunned and questioned whether the store had considered donating such items rather than throwing them in the trash. Aside from the great need for good food among the poor, I assumed that the company would be interested in getting a tax deduction for the donations and in minimizing their garbage disposal costs. The butcher replied that the company had previously donated such goods but stopped doing so due to liability considerations – fear of a lawsuit in the event that someone claimed the donated food made them sick. I was disheartened by this waste and walked away thinking that I had to try and do something about this issue.

Eliminating food waste and providing high quality food to the needy seemed like a simple problem to overcome, and it seemed particularly important to do so in such difficult

economic times. My poignant experience in a busy farm stand illustrates this importance. While discussing the potential for an organized food donation process with the owner of the stand, another individual commented that there was no need for a food bank in our affluent area. A few minutes later, I noticed a woman seemingly agonizing over the cost of a small amount of produce. When it became clear that she had only two dollars to spend and was going to put back some of her selection, I quickly offered two dollars so that she could get what she needed, and she accepted. It was a good lesson for me that poverty is all around us, even if it is not always highly visible.

2. Studying in Paris: The second experience was the exposure to the Vélib’ bicycle project, one of the topics studied at the École Nationale d’Administration (ENA) in Paris, France as part of the Dynamics 786 course, “European Approaches to Complex Multi-Stakeholder Management,” taught by Dr. Jean-Marc Choukroun. Vélib’, a portmanteau of the French words *vélo* and *liberté* [bicycle and freedom in English] is a public-private partnership between the city of Paris and JCDecaux, one of Europe’s largest outdoor advertising companies. The project involves the placement of thousands of bicycles that Parisians can access daily at very low cost at docking stations throughout the city. In return for its investment in the bicycles and the infrastructure, JCDecaux gained access to over 1,600 billboards which it can rent to clients over its ten-year contract, while the city of Paris receives millions in annual fees from JCDecaux as well as from the bike rentals (Erlanger & de la Baume, 2009, para. 26).

The Vélib’ project is a major “green” initiative; bicycles are now available for individuals to travel all over the city of Paris, free of charge for short trips – and free of traffic congestion, noise and pollution! The organizational challenges faced in setting up the Vélib’ program included making sure bicycles were available in all locations throughout the day; seeing to cycle repairs promptly; dealing with opposition from shopkeepers and others who feared a negative impact on their

Reducing Food Waste

businesses; ensuring safety of riders; and managing vandalism. I wondered, can we take some lessons from the French Vélib’ public-private project and apply them to reducing food waste, assisting the needy, and improving the environment here? An examination of the extent of the hunger problem in the U.S., the factors contributing to the problem, the obstacles to solving the problem, and the organization of the

Vélib’ program will help answer the question.

Extent of the Food Problem

The statistics on hunger and poverty in the U.S. for 2008 are staggering (see Table 1). Recent difficult economic conditions have undoubtedly made things worse.

Table 1. 2008 Statistics on Hunger, Poverty, and Food Waste in America
<ul style="list-style-type: none"> • 39.8 million people (13.2%) were in poverty. • 8.1 million families (10.3%) were in poverty. • 22.1 million (11.7%) of people aged 18-64 were in poverty. • 3.6 million (9.7%) of seniors 65 and older were in poverty. <p>Source: http://www.feedingamerica.org/faces-of-hunger/hunger-101/hunger-and-poverty-statistics.aspx</p>
<ul style="list-style-type: none"> • An estimated 100 billion pounds of food, enough to totally eliminate hunger, is thrown away annually in the United States. • One out of six Americans needs food assistance, but can’t get fresh produce from the local food pantry. • Millions of American homeowners grow more food in their backyards than they can possibly use. <p>Source: http://www.ampleharvest.org/index.php</p>
<ul style="list-style-type: none"> • In the U.S., food waste has increased more than 50% since 1974. • 40% of all the food produced in the U.S. is thrown out. • Food waste accounts for more than a quarter of freshwater consumption and 300 million barrels of oil per year. • Food is the third largest waste stream after paper and yard waste. • 8.3 million tons of food is thrown away by households in the U.S. annually. <p>Source: http://www.greenlivingtips.com/blogs/491/Food-waste-statistics.html</p>
<ul style="list-style-type: none"> • 49.1 million Americans lived in food-insecure households. • 14.6% of households (17.1 million households) experienced very low food security, an increase from 11.1% (13 million households) in 2007. • Households with children reported food insecurity at almost double the rate for those without children, 21% compared to 11.3%. • 4.1% of all U.S. households accessed emergency food from a food pantry one or more times. <p>Source: http://www.feedingamerica.org/faces-of-hunger/hunger-101/hunger-and-poverty-statistics.aspx</p>

Reducing Food Waste

We all see examples of wasted food in our daily lives – from what we discard at home and at work, to oversized restaurant portions that we cannot finish, to fresh produce left unpicked in fields and orchards. On occasion we feel bad about the waste, but it is so common that many of us have come to accept it. We don't stop to think about how those resources could be redistributed to the needy, nor do we consider all of the environmental negatives associated with food waste. Wasted food involves the waste of all of the resources used to produce it (water, labor, oil, etc.) and also results in methane emissions as it rots in landfills. It is estimated that the financial cost of food waste is as high as \$100 billion annually (Bloom, 2007, para. 10).

The hunger problem in America is serious and the sad reality is that much of that hunger could be alleviated by diverting wasted food to the needy. California restaurants dump “tens of thousands of tons of edible food” yearly, while discarded food amounts to one quarter of all waste discarded by California households (Mather, Daniels & Pence, 2010: 2). A website on hunger issues in California developed by USC's Annenberg School says: “It's a sad paradox, while California's abundant fields of fruit and vegetables fuel much of America, millions of tons of food rot in farm fields or grocery store and restaurant trash bins, much of which is edible and could go a long way toward eliminating hunger in California” (Food to Waste, 2010). Similarly, as the AmpleHarvest organization notes on its website, “an estimated 100 billion pounds of food, enough to totally eliminate hunger, is thrown away annually in the United States.” In addition, AmpleHarvest notes that one in six Americans needs food assistance but cannot get it from the local food pantry – this despite the fact that millions of Americans grow more food in their backyards than they can use. The group's message is a simple, powerful statement: “It Doesn't Have to Be This Way!” (Two Looks at Hunger in America, 2010). If the food is available, we need a way to bring people together to gather, store, cook, and distribute it before it goes to waste. We need a public-private partnership at the local community level as a model which can succeed, and then spread elsewhere.

Obstacles to Solving America's Hunger Problem

Reducing food waste and distributing excess food to the needy before it deteriorates seems like a “no-brainer” concept, and yet it does not happen at the level that it should. What factors currently hold it back?

My interviews with local business people affirmed that the largest single factor in preventing significant donations of food is the fear of liability – managers and owners are clearly fearful of a potential lawsuit. A farmer with whom I spoke related the story of a caring local restaurant owner who for years had donated all of his leftover homemade pies at the end of each day. He stopped donating when he was sued by someone claiming to have become sick after eating one of the pies. One franchise operator told me that donating more edible food would require clearance from the corporate office, and he felt certain that he would face resistance on liability grounds.

Liability fears extend beyond the stores and restaurants to the fields as well. While some farmers allow food banks to conduct “gleaning” (additional harvesting) operations, others are reluctant to do so for fear of a lawsuit should one of the laborers be injured on their land. Supermarkets have the same fear – too often meats, fruits, vegetables, and bread products that hit their “sell-by” dates are immediately discarded, despite the fact that in most cases this food is still perfectly fine for consumption. Such disposal has resulted in “freegans” – also known as “dumpster divers” – individuals who seek out and consume the discarded, yet perfectly edible, food products from stores and restaurants (Trueman, 2007, para. 9).

Another reason for the lack of donations is lack of available storage space. One storeowner stated that even if he wanted to donate more of his leftover food, he didn't have the space to store the products until they could be picked up. A local farmer concurred, noting that his efforts to donate in the past have been stymied by an inability to get prompt pick-ups. He noted that in the summer he has a varying amount of fresh food to donate every day, but he would need an organization to pick it up in a timely manner.

Reducing Food Waste

Large quantities of fruits and vegetables ripen simultaneously, and if not picked promptly, much of it spoils without ever leaving the farm. Negative weather and market conditions play a critical role in the lives of farmers and impact the amount of food waste. Extreme weather can ruin crops in the field and eliminate the potential for harvest. Market conditions can reduce a farmer's incentive to harvest at all. If market prices are so low that a farmer cannot harvest his crop and make a profit, or if the crop is not perfect enough for a prospective buyer, the crop may simply go to waste despite the fact that it is perfectly edible (Mather, Daniels & Pence, 2010: 3).

Another problem is that throwing edible food in the trash is just too easy, while donating requires the work of contacting a food bank, arranging for a pick-up, storing the food, and monitoring the loading when the pick-up truck arrives later. Many companies operating with a limited number of employees and seeking to clear space quickly simply opt to throw out the food, thinking it is more efficient to do so. One blogger related a story in which a high-end food store discarded entire boxes of organic apples simply because they had been stored next to regular apples, which violates a standard.

Rather than removing the “organic” sticker from the organic apples and selling them as regular apples, the store simply discarded them to save the labor time (Trueman, 2007, para. 13).

Some supermarkets avoid donating for fear that doing so will negatively impact their sales revenue, thinking that individuals will seek out food at food banks more aggressively in order to avoid the cash outlay at the store (Mather, Daniels & Pence, 2010: 5).

Lessons from the Vélib' Project

The Vélib' project in Paris emerged from the need to solve mounting problems of air pollution, traffic jams, and accidents associated with the high volume of vehicular traffic in Paris. As noted earlier, collaboration between the City of Paris and JCDecaux resulted in the consistent availability of low-cost, pollution-free bicycle transportation to thousands of Parisians anywhere in the city. Some general facts about the Vélib' initiative are noted in Table 2, and a Strengths/Weaknesses/Opportunities/Threats (SWOT) analysis follows in Table 3.

Table 2. General Points about the Vélib' Program in Paris

- Designed for short-range trips
- Significant number of annual users
- Low annual membership fee
- Roughly 20% of Vélib' users no longer use their cars.
- Conveniently located stations
- Bikes are relocated nightly to ensure availability in high use areas.
- High maintenance requirements
- Liability disclaimer required of members
- Vandalism and theft are still a problem.
- Reliability of the system is critical for users.
- Technological advances continually improve system.

Source: June 4 2010 class lecture with Erik Spitz and Jacques Skowron at Ecole Nationale d'Administration (ENA)

Reducing Food Waste

Table 3. SWOT Analysis* - Vélib' Program in Paris

Table 3. SWOT Analysis* - Vélib' Program in Paris	
<p><u>Strengths:</u></p> <ul style="list-style-type: none"> • Reduces traffic congestion • Reduces pollution • Reduces road maintenance costs • Improves health • Uses existing roads • Uses technology to link the rider to the bike for tracking • Builds sense of community • Promotes simple, less stressful lifestyle 	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> • Safety • Weather-susceptive • Negative social perception • High maintenance costs • Theft • Not easy for tourists to utilize • Doesn't help the handicapped • Bikes must be reallocated throughout the City nightly • Difficult to manage
<p><u>Opportunities:</u></p> <ul style="list-style-type: none"> • Provides opportunity to install a major program with a private company picking up much of the cost • Provides revenue to the City of Paris with potential for increased revenue in the future • Fits with growing worldwide sustainability movement • Promotes community pride • Takes advantage of technology advances such as smart phone applications • Leverages the healthy lifestyle aspect 	<p><u>Threats:</u></p> <ul style="list-style-type: none"> • Negative perception of high cost of bikes and Vélib' stations • Vandalism • Disgruntled taxpayers • Business owners • Taxi drivers and auto repair facilities • Individuals who fear high medical costs on safety grounds (accidents) • Private advertisers who feel "left out" • Disabilities advocates who feel excluded
<p>*Source: Class notes and discussion at Ecole Nationale d'Administration (ENA) in June 2010.</p>	

Many Parisians clearly have built the Vélib' into their lifestyle. The very low annual membership fee of 29 Euros allows access to most citizens, and no cost is incurred for the 80% of trips that are within 18 to 20 minutes in duration. More than 170,000 individuals use the bicycles annually for short trips around the city, and 20% of users no longer use their cars. On average, each bicycle is used between four and eight times per day, with the total number of daily trips ranging from 80,000 to 150,000. In 33 months, the number of bike trips totaled about 75 million, with peak usage occurring on Saturday, and the distribution of trips over the days of the week remaining fairly even. Users are now taking advantage of technological

advances and using an iPhone application to check on the availability of Vélib's at different locations – further building the bikes into their daily routines (Spitz, Skowron, 2010, lecture).

On the negative side, vandalism and theft of the bicycles, though on the decline, remain a significant problem, as evidenced by the fact that none of the bicycles in use today existed at the start of the program. Inhibiting vandalism and theft required changes to the bicycles and to the stations and thus greatly increased the annual costs of the program. The problem was so severe that the city of Paris conducted an advertising campaign to appeal to Parisians to stop it (Spitz, Skowron, 2010, lecture).

Reducing Food Waste

Supporters of the program would point to the obvious environmental benefit of a widespread bicycle program – it reduces air and water pollution by decreasing the daily use of (and the longer-term need for) cars. It reduces traffic congestion and noise pollution in a city which suffers heavy traffic volume. In addition, over time the program should result in some reduction of road maintenance costs due to decreased automobile volume. From an implementation standpoint, the program is attractive because it doesn't require a new system of lanes or roads but instead makes use of the existing surfaces.

The program also has appeal in that it promotes exercise as well as a simple, less-stressful lifestyle. Both aspects could result in some reduction of medical costs over the long term. And the program has social benefits – it builds a sense of community by encouraging more personal interactions among Parisians.

The Vélib' program also provides a number of opportunities to enhance and promote the city of Paris. It fits with the growing worldwide sustainability movement, putting Paris "on the map" in this regard and allowing Parisians to take pride in both the project and their city. It harnesses technology and gets the city more in tune with technological developments such as smart phone applications and their uses. The Vélib' program also promotes a healthy lifestyle and can motivate some portion of the population to embrace other health initiatives – again with the potential benefit of reducing long-term medical costs. In addition, it provides the city with the opportunity to install a cutting-edge program with a private company picking up a substantial portion of the costs, while also allowing the city to take in annual revenue from Vélib' users.

The program has weaknesses. An obvious concern involves safety – bicycle riders moving alongside automobile and bus traffic in the congested streets of Paris bear the risk of being involved in serious accidents (five Vélib' riders died in accidents in 2009). Weather conditions are also an issue – rain, sleet, or extremely hot or cold temperatures can make bicycle riding unattractive. Social perception matters as well – some individuals look down on those making

use of public bicycles to get around, and others do not wish to arrive at their destinations windblown and sweaty (Spitz, Skowron, 2010, ENA).

Infrastructure issues also present a challenge. The bikes are not easy for tourists to access and they need a sound locking mechanism to prevent theft. Both the stations and the bikes require considerable ongoing maintenance, and the bikes must be reallocated throughout the city nightly to ensure continual daily usage. Without nightly maintenance, the system would grind to a halt in 10 to 15 days. Vandalism is a continual problem and adds to the cost of the program, as well as to user dissatisfaction, as users sometimes struggle to find a "good" bike to ride (Spitz, Skowron, 2010, ENA).

Threats to the program come from several areas. Those arguing against the use of any public funds (which can be linked to higher taxes) for such an initiative would object to the high cost of the bikes, as well as the high costs of installing the stations and of ongoing maintenance. Some business owners would object to the program on the grounds that it would result in decreased revenues. Shopkeepers, for example, might fear that lost parking spaces due to the installation of Vélib' stations would result in reduced revenue (due to decreased convenience for customers) or higher costs (due to decreased space to accommodate delivery trucks). Gas station owners and auto repair shop owners might argue that the decreased auto traffic would result in lost revenue. Cab drivers might make the same argument as individuals can now quickly access a Vélib' for their transportation needs. In addition, advocates for the handicapped might also object as the Vélib' program does little to help give the handicapped access to low cost transportation. Finally, competing advertising firms might object to JCDecaux's dominant role in this partnership, as the company gains access to considerable advertising spaces in the city in return for its investment in the Vélib' program.

In spite of weaknesses and threats, the Vélib' program has had a positive impact on the environment, as the thousands of bicycle trips per day allow Parisians to travel easily without

Reducing Food Waste

the use of a car. Yet the project also illustrates the difficulties of implementing a cutting-edge, public-private initiative. Vélib' demonstrates that stakeholders must be considered, and heard, during the planning process in order to achieve buy-in and maximize the chances for the program's success.

Moving toward a Public-Private Initiative to Reduce Food Waste

The supermarket visit, experience at the local farm, and studying the public-private Vélib' bicycle project inspired me to start thinking of ways to bring public and private elements together to reduce food waste in my local community. Interviews with employees of local businesses confirmed that there *is* interest in donating food products that would otherwise go bad (and be discarded), yet there are also barriers that prevent donation as a daily option. Clearly communities need an organized push to overcome these barriers and reduce food waste through donation and redistribution, and if one local community can get this right, the process will surely spread to other regions.

It is an opportune time for several reasons. In the midst of our current economic downturn, state and local budgets are strapped, and legislators are looking at creative ways to keep people working and to keep commerce flowing. Last year, for example, more than 2,200 New York employers participated in that state's Shared Work program – an idea which began in Europe – in which employers trim back the number of hours employees work rather than laying them off permanently, while the state makes up the wage differential for them. The program allows employers to adjust to sharply reduced demand and avoid layoffs (Trottman, 2010, A21). In the same vein, any program designed to “stretch” tight budgets by diverting food resources to the needy that would otherwise be wasted should have appeal to legislators, because it could offset the cost of other programs to feed them. In addition, with so many people in need today, there is increased desire on the part of many to help others if they can. Further, there is growing interest in the

“buy local” movement, in sustainability initiatives, and in corporate social responsibility (CSR) efforts – all of which come into play in a plan to reduce food waste at the local level. The Vélib' project demonstrates that public and private sectors can be successfully merged under a meaningful sustainability initiative. Such a public-private partnership could be extended to the idea of reducing food waste at the local level.

What has to be done to make this happen? I drew on some lessons from the Vélib' program in Paris regarding stakeholder management in a public-private initiative. I considered the strengths and opportunities of a public-private initiative to reduce food waste, along with the weaknesses and the possible threats to it. A SWOT analysis is presented in Table 4, and a framework for such a public private collaboration is presented in Figure 1.

To start, the community must address the organizational aspects of bringing multiple stakeholders together in this effort. A passionate individual is needed, one who can assemble and lead a small team of concerned community members in a public-private initiative (PPI) steering committee, or team. This person is critical; he or she will be a key link to the larger community base and will focus on moving the process forward, displaying and generating personal passion for the project. The PPI team should be big enough to include representatives from key stakeholder groups to have legitimacy, yet small enough to avoid excessive bureaucracy. It would be comprised of roughly twelve individuals from the community, and might ideally include:

- A passionate volunteer lead advocate with experience in social mission
- One volunteer assistant with an interest in environmental and/or social causes
- The community's Mayor as well as a town executive

Reducing Food Waste

- Two representatives from local businesses (shops, markets, restaurants)
- One representative from the non-profit sector with ties to food banks/shelters
- One representative from the community Public Works department
- Two representatives of the farming community
- One concerned citizen volunteer with ties to churches and seniors
- One school executive to help organize student volunteers

The lead advocate, the assistant, the school executive and the additional citizen would focus on spreading the message of the project throughout the community and recruiting volunteers for communication efforts, gleaning, and food preparation. The school executive would play a key role in recruiting students from community colleges or high schools for website development and maintenance, logistical support, and other volunteer labor. The mayor, town executive, and Public Works official would focus on infrastructure issues to get the operation running in a sustainable manner. The representatives from local businesses would focus on the potential for food donations, while members of the farming community would do the same in their sector to ensure that food is redirected rather than wasted. These individuals would also communicate the message of savings through sustainability to their peers. The representative with links to the non-profit sector would help connect food banks and shelters to the community's processing center and upstream donors. With proper organization and access to a dedicated website, local food shelters could be matched directly with donors and even arrange their own pick-up of selected highly perishable food donations on occasion – thus allowing for more efficient capture of smaller quantities of nutritious produce.

Planning and implementing the Vélip' project involved collaboration among multiple stakeholders, with individuals airing concerns,

suggesting changes, and negotiating to improve the chances for successful implementation. The PPI team described above would function similarly, allowing the various stakeholders to voice concerns and make suggestions to address them. To support community buy-in, the team would focus on aligning PPI members and members of the community around the mission, its immediate benefits, and the opportunities that such a cutting-edge program brings.

Once organized, the committee must address several issues as noted below.

Identifying donors.

The team must first identify potential local donors, consider why food donors donate, and look to build on what they learn. Farmers, grocers, restaurants, and individuals comprise the largest bloc of potential donors, and each has different, sometimes overlapping, motivations for giving. The St. Mary's Food Bank Alliance website lists several reasons why food donors donate, including a desire to help the hungry in the community, minimize the cost of waste, get tax deductions, remove excess inventory at little cost, demonstrate good corporate citizenship, and build community goodwill and pride ("Donate Now: WHO, WHAT, WHY, HOW," 2010). Keeping these reasons in mind, local communities could seek to increase food donations by setting realistic goals; educating the community; coordinating activities of participants; establishing an infrastructure; offering corporate incentives; and exercising creativity in ongoing problem-solving.

Setting goals.

Although each community is unique, there are several common goals that might be set regardless of the location:

- Make the community a leader in reducing food waste by bringing the public and private sectors together
- Reduce trash disposal and landfill use and convert excess food into meals for needy organizations or feed for livestock. Citizens should also be encouraged to divert food-soiled papers for compost rather than landfills.

Reducing Food Waste

Table 5. SWOT Analysis – Public/Private Initiative to Reduce Food Waste Locally	
<p><u>Strengths:</u></p> <ul style="list-style-type: none"> • Reduces hunger • Improves health • Reduces landfill use • Builds sense of community • Reduces methane gas • Generates tax deductions for donor firms • Reduces food cost for livestock • Creates some jobs • Inspires some lower income families to join the workforce 	<p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> • Safety – potential for sickness among people and livestock if donated food not handled properly • Safety – workers involved in “gleaning” operations could get hurt while working to recover food • Negative perception of “old” food (food at or past sell by date), or blemished food (fruit, vegetables) • Weather • Need a flexible workforce to work varied hours on short notice • Lack of storage space at donor locations • Without frequent pick-ups, the system does not work
<p><u>Opportunities:</u></p> <ul style="list-style-type: none"> • Minimize city costs by partnering • Receive tax deductions • Reduced garbage disposal costs (private sector) • Reduce landfill operations (public sector) • Create goodwill • Express creativity in a productive way • All participants get positive press • Enhances area’s appeal 	<p><u>Threats:</u></p> <ul style="list-style-type: none"> • Taxpayer objections • Liability fears • Fear of lost revenue by businesses • Disruptions to the labor force (particularly volunteers)

- Develop confidence in the system by showing that donations are being put to good use at all times, making donor efforts worthwhile.
- Coordinate the efforts of donors.
- Establish a communications network between donors and recipients.
- The St. Mary’s Food Bank Alliance website (www.firstfoodbank.org) is a good model. The site posts information on the state of its fiscal practices and openly invites readers to review its annual report, tax return, and comments

by its charity evaluator. The site also includes a ten-point Donor Bill of Rights to ensure that it retains the respect and trust of its donors. Such transparency is important to ensuring sound operations while breeding trust among financial donors; it is a good model for local community leaders to adopt for its donors.

- Make it easy to donate by providing timely pick-up and delivery of food and a cadre of volunteers to help with harvesting and transporting produce from local growers.

Reducing Food Waste

Educating the community.

The education process involves promoting public awareness, getting individuals past the fear of liability, and reaching out to farmers and other growers of food.

First, potential donors need to be made aware of the severity of the hunger problem – even in and around affluent communities where it is less visible. In addition to the human toll, they should be educated to the environmental impact of food waste, which includes the waste of water and other resources consumed in the production of food that is never eaten, the increase in greenhouse gases from decaying food, and the resources used in the disposal process.

A report by The Stockholm International Water Institute estimates that while the amount of food the world produces is more than enough to ensure a healthy life for the global population, as much as fifty percent of food produced is lost or wasted “between field and fork.” That food waste also involves the waste of a tremendous amount of water (Lundqvist, 2008: 4). Some estimates indicate that food wasted by the U.S. and Europe is sufficient to feed the world three times over (Humphries, 2010, para. 1). Other estimates indicate that food waste accounts for one fourth of all freshwater consumption and translates to 300 million barrels of oil per year, while the elimination of food waste would be the equivalent of removing one out of every four cars on the road (Humphries, 2010, para. 2). These statistics would undoubtedly get the attention of environmentalists in the community.

Individuals need to know how many ways “just one person” can help. To make it personal, individuals should be advised that food waste also involves overeating (Bloch, 2010, para. 20), as those excess food resources could have been better utilized as calories for those in need. Individuals who garden can be advised of local food distribution centers that could make use of extra garden produce and canned goods.

Educational efforts would also involve the PPI’s posting information on the “best foods” to donate to food banks. A sample listing can be found on the website of the Greater Boston Food Bank (The Best Foods To Donate To Your Food Drive, 2010) which lists optimal choices under each of the four basic food groups

and notes the importance of providing nutrient-rich foods for those with limited financial resources. Supermarkets could provide bread and meat products at their sell-by dates, and growers could focus on providing important fruits and vegetables.

Further, individuals need to be educated on the potential for diverting food waste into animal feed or agricultural compost. For feedstock, a company such as Barthold Recycling could be pursued. Barthold employs a method of cooking food scraps in its trucks after collection, increasing the temperature to a level which kills bacteria and makes them safe for livestock feed, allowing customers to save by having food waste hauled for recycling versus landfill disposal (Food Scraps Go to the Animals, 2010).

A critical second step involves overcoming the fear of liability associated with donations. Potential donors need to be aware that they are protected from liability by the Bill Emerson Good Samaritan Food Donation Act of 1996. The Act is designed to encourage donations to non-profit organizations such as food banks and shelters by limiting the potential liability of donors to acts of “gross negligence or intentional misconduct” (A Citizen’s Guide To Food Recovery, 2010). In other words, as long as donors are acting in good faith, they have little to worry about. To further allay liability fears, the PPI team (with help from the community’s legal counsel if deemed necessary) should take the extra step of indemnifying donors, especially farms that allow gleaners to work their property for excess crops. Volunteers would sign a “hold-harmless” document stating that they are working at their own risk and indemnifying farmers and the community from legal action in the event of injury. Recipients of food donations should sign a similar document, acknowledging that they are receiving donations in good faith and indemnifying donors and the community from legal action. These documents should be very simple and provide an added level of protection for those involved in the program. Once donors know they are protected from liability, they should be encouraged to *feel good* about donating – it’s not only safe, it’s the right thing to do.

A third important aspect of the educational process involves reaching out to farmers and

Reducing Food Waste

growers. Local growers should be instructed on ways to maximize both their donation and their personal reward. A University of Maine website instructs potential donors on the importance of proper planning to maximize yield, noting that needy organizations should be contacted in advance (to allow them to plan) and the food should be harvested at the proper time before it is over-mature (www.umext.maine.edu, 2010, Plan Before You Donate Produce).

The website also provides a commonsense Eight Step Process to maximize the individual donor’s potential for success. These steps are listed in Table 5. The fifth step, asking how the recipient prefers to receive the food, is particularly relevant, as one farmer informed me that a food bank had once turned down his offer of hundreds of pounds of potatoes because it was too much work to peel them. Clearly, while donors need to plan appropriately, recipients need to make it easy for them to make their donation. Local growers

should be encouraged to grow a variety of crops, with varying harvest times, to facilitate an even flow of food which could be transformed into meals. Crews of volunteers, or perhaps low-income personnel seeking work at minimum wages, should be created to maximize gleaning efforts in fields and orchards. These crews should be ready to work on short notice to limit spoilage of food.

Coordinating participants’ efforts.

In the same way that eBay lines up buyers and sellers, the PPI team must match up food banks and shelters with potential donors (supermarkets, farms, local growers, restaurants, etc.) to maximize donations and minimize food waste. A logistical system should be established so that donors can post information electronically about what they have to donate (and when), and the community’s operational team can plan when to get the material (or hours to receive donations on site), whether to process it into meals, distribute it directly to needy families, or compost it. Establishing such a system could be turned over to local high school or college students seeking service credits or volunteer projects for resume development.

Pick-up schedules must be established. Pick-ups should be frequent to overcome the lack of storage problem at donor facilities, and pick-up times should also be convenient for the donor (one farmer informed me that he had difficulty in getting a food bank to come to his location). Non-profits seeking food donations must do all they can to make it easy for the donors to donate. Just as consumers shun repairs and find it easy to discard old units and buy new ones in our throwaway economy, it is too easy for potential donors to throw the food in the trash. The system could also promote direct pick-ups from donors by food pantries.

Along with arranging pick-ups, non-profits should also have organized teams of volunteers available for gleaning operations in fields and orchards. When farmers or local growers call and indicate that produce is available to be harvested, the organization should immediately send the volunteer team out to gather the food. Timeliness is essential to avoid waste due to spoilage. One farmer lamented to me that he

Table 5. Eight Step Planning Process for Growers to Maximize Success

<u>Steps to Success</u>	
1.	Determine how much space you wish to donate to the project.
2.	Make a list of the possible crops you can grow in this space.
3.	Contact the recipient organizations to determine the crop(s) they need or can use effectively.
4.	Determine when and how much to donate at one time.
5.	Ask about the condition of the crop that the recipient prefers: washed, trimmed, etc.
6.	If you are growing storage crops like squash, potatoes, onions, or carrots, determine the maximum and minimum amounts that can be stored at one time.
7.	Plant and grow crops on your list that fit the needs of the recipients.
8.	Harvest and deliver the crop.

Source: Univ. of Maine website:
<http://www.umext.maine.edu/onlinepubs/htmpubs/4337.htm>

Reducing Food Waste

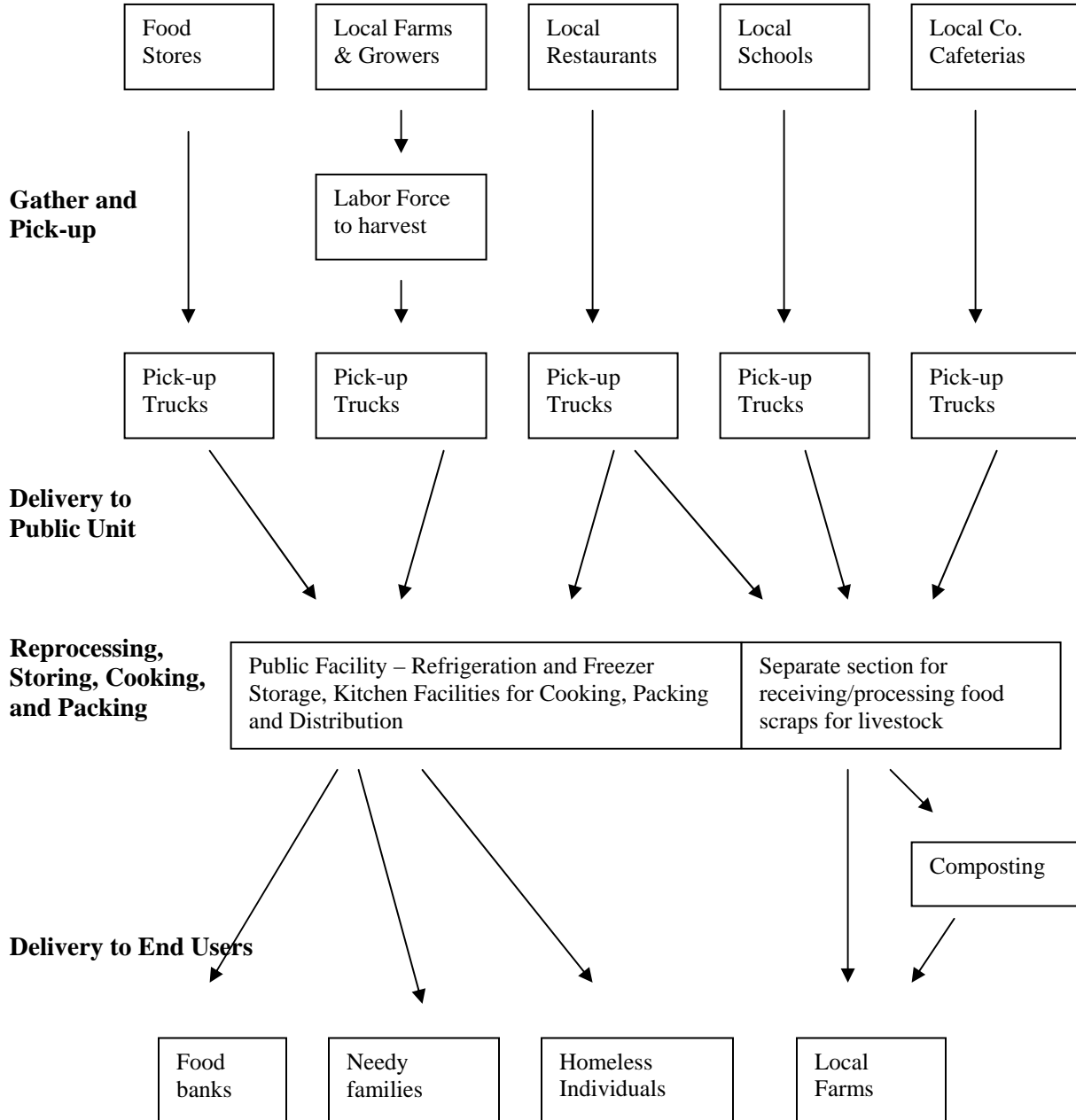
had long desired an email list of volunteers who could quickly spring into action upon contact. When I mentioned the benefits that he could receive in tax deductions if he had such a plan in place, he stated that he wasn't concerned about the tax savings at all – he simply did not want the food to go to waste in the field. With their

deep connection to the land, I suspect that many farmers feel the same way.

The following provides the major participants and possible lines of coordination for how to approach the organization but does not factor in costs or other resources.

Figure 1. Flowchart for Public/Private Initiative to Reduce Food Waste in Local Communities

Donor Chain:



Reducing Food Waste

Developing an infrastructure.

An infrastructure satisfying the needs of a food distribution network must be established. Refrigerated trucks must be obtained, along with drivers, to pick up food from the donors. A facility must be provided that is large enough to handle donations from the local area, including refrigerators and freezers to store the food properly and cooking facilities and personnel to convert it to meals for the needy. Many non-profits in the food sector have such a facility – the missing piece is the organizational effort to maximize food donations by coordinating the reduction of food waste in the local communities.

Embracing CSR - corporate incentives.

We are in a time when individuals expect more from their employers than just a paycheck. Employees and consumers expect corporations to be good citizens, demonstrating corporate social responsibility (CSR) by assisting local communities with monetary donations along with volunteer labor and equipment for specific projects. Non-profit organizations requesting food donations should seek to partner with local corporations, riding the CSR wave and rewarding the donors with good publicity. The PPI should seek out donors in the community, drawing on members of the farming industry as well as local restaurants and food stores. The committee should periodically post advertisements in municipal bulletins and local newspapers thanking corporate donors, as well as volunteers in other aspects of the process, for their efforts. Food banks and shelters should post the list of corporate donors and volunteer laborers on their websites and initiate annual service awards for outstanding donors and volunteers.

The success of such corporate-public collaborations is well documented. Companies in the food industry are in a prime position to display good corporate citizenship by donating food, or by donating the resources to ensure that food banks can transport food safely and quickly. Food Lion, for example, partners with

Feeding America and has donated more than 200 million pounds of food since 2000. The company recently announced plans to raise money for food banks in the communities in which it operates through its “Hunger Has a Cure” campaign (*Charlotte Business Journal*, 2010). Wal-Mart announced plans in May of 2010 to donate \$2 billion in cash and food to food banks. In addition, the company donated labor from its staff to assist food banks in improving lighting and refrigeration at their facilities and in increasing the quantities of fresh food on their shelves (Strom, 2010, para. 8). Wal-Mart also donated 35 refrigerated trucks to Feeding America to ensure that food removed from its shelves would arrive at the food banks quickly and safely (Mather, Daniels & Pence, 2010: 6).

Other companies in the food industry are also making important donations. The Ralph’s grocery chain initiated a program to donate food that had reached its “sell-by” date but was still edible. In addition, Albertsons established a formal “perishable food recovery program” entitled “Fresh Rescue.” Under the program, Albertsons stores partner with and distribute food to food banks in their communities. The stores provide high-quality perishable food (eggs, cheese, milk, and fruit) to the food banks, items typically hard for the food banks to get. There is evidence that employee morale is positively affected by such activities (Mather, Daniels & Pence, 2010: 6), an important issue that companies easily miss by focusing too narrowly on their operations.

Business owners should also be educated to the bottom-line benefit that is possible through tax deductions and the reduced garbage disposal costs that come from continued food donations. In addition, they should be advised of the goodwill they can achieve in the local community through food donations – which could likely translate to increased sales along with improved employee morale.

Business donors should be given the opportunity to *see* the benefit of their donations in action in the form of meals provided to the needy. This would help allay fears that their donations negatively impact their sales and also foster the good feeling they should get from being a good citizen.

*Reducing Food Waste***Exercising creativity.**

While the donation program is at the core of the effort to reduce food waste, followed by a recycling effort of food scraps to feed livestock, all kinds of creative offshoots are possible with a motivated community. Those leading the PPI should encourage citizens to launch other programs, or simply to get involved in any way possible. Many residents will look for the opportunity to give back to the community once they see other efforts taking hold. For example, in Detroit – a city reeling from budget cuts and a battered economy – many citizens are now taking matters into their own hands and using their own time and funds to mow lawns, maintain parks, and board up vacant buildings (Kellogg, 2010, A3).

Once a successful food waste reduction program is in process, creative efforts by caring individuals to do even more could kick in. For example, the community could sponsor a contest for local growers, awarding prizes (and recognition) to the individuals or farms that donated the largest amount of a particular crop, and similar rewards could be given to those gleaners who harvested the largest amount of food. Rewards could be given in the cooking area as well, perhaps to those with the most creative use of donated food. One could even envision contacting an organization such as the Food Network for a contest which would yield positive publicity for a good cause.

Other creative efforts could be used to improve social relationships within the community. Individuals could use the community's website to promote tips for reducing food waste, including the best ways to use leftovers. Children could be encouraged to volunteer at the public-private facility, helping to harvest crops, pick up donations, cook meals, or distribute meals to the needy, efforts that would make them better future corporate citizens. Young and old individuals could be brought together creating meals with donated food at the community's facility. In the same way that adults travel to Italy to take cooking classes from elderly Tuscan women, younger members of the community, particularly those

who might be interested in cooking careers, could get cooking tips from older members. Schools could make food waste reduction an educational experience, getting students to manage food donations, food recycling, and composting efforts.

Local restaurants could be encouraged to promote "value portions" to address the issue of nightly waste in that sector. This in turn could be tied to a general healthy lifestyle campaign, with various events such as 5K races or similar fundraising events defraying expenses associated with running the cooking facility or the food scrap recycling effort. A community composting program could be initiated to reduce waste and create organic fertilizers.

Local business organizations could donate equipment and employee labor to help run the food waste reduction program. They could enlist their cafeteria operations in the food scrap recycling effort. Local restaurants could take a higher-profile role in preparing meals for the needy periodically, which would generate goodwill in the community and good public relations for the restaurants. In Irvine California, rather than disposing of a significant amount of leftovers, a restaurant recently began providing a meal every Thursday night for those in need. The restaurant combines its expertise – cooking high quality meals – with a desire to put food to good use that would otherwise go to waste (Mather, Daniels & Pence, 2010: 8).

A holistic attempt by a local community to successfully eliminate food waste would truly be a noble effort.

Reducing Food Waste: Summarizing the Benefits

Donors can achieve many benefits by overcoming barriers and reducing food waste by getting involved in a food donation program. As noted above, companies that donate get the satisfaction of helping the hungry, and they help their bottom line by reducing their garbage-hauling costs, obtaining tax deductions, and by moving excess inventory at little cost. They also benefit by demonstrating good social responsibility, building community goodwill, and generating increased employee pride.

Reducing Food Waste

Individuals in need of food receive vital nourishment. Local communities and state governments benefit as increased donations through reduced food waste yield some reduction in the costs needed to fund food programs for the poor. Communities benefit in terms of reduced costs associated with disposal of food waste in landfills and from the positive community spirit that results when organizations and individuals get together to make a difference in the lives of others. Environmental benefits occur in the form of reduced carbon emissions from decaying food in landfills, and in reduced waste of key resources, especially water, utilized in the production of food. The environmental benefits are increased if the program also recycles food scraps (which would otherwise go to landfills) into feed for livestock and/or utilizes composting to create organic matter for fertilizer.

Achieving these benefits involves putting together a comprehensive program to reduce food waste through increased donations. This can be done at the local community level, and would be most effective through a well-run public-private partnership.

Using advertising in exchange for donations and for assistance in running the program from private firms, the local government can offset the costs of the program. Some savings can be expected from reduced

trash disposal and landfill operating costs over time, and those savings can be redirected to benefit the public in other areas. As in Paris, the local government would be seen as being on the cutting edge of a meaningful sustainability initiative – which would result in the area's being seen by others as a more desirable place to live.

My personal experience with the Vélip' cycling project was fantastic and illustrated the importance of the unquantifiable rewards that can result from participation in a public-spirited project. Riding down the Champs-Élysées from the Arc de Triomphe to the Louvre on a Friday afternoon and then back to a café for a beer was a joy. I felt as though I was able to see the city from a unique perspective, and doing the work of pedaling gave me a physical connection to a meaningful sustainability project. I felt more a part of the French culture, enjoyed the sights of Paris more because of the effort that I had put in to get around the city, and took pride in knowing that I was not contributing to greenhouse gases or noise pollution. Establishing a successful program in which community members reduce food waste and redirect it to benefit the needy and the environment can generate similar feelings of excitement and personal reward as well as a positive connection to social and environmental causes.

*Reducing Food Waste***References**

- A citizen's guide to food recovery. 2010. Retrieved from <http://www.usda.gov/news/pubs/gleaning/seven.htm> Accessibility verified July 30, 2010.
- Barnett, E. 2008. Creative strategies for reducing food waste. Retrieved from <http://www.worldchanging.com/archives/007784.html>. Accessibility verified July 20 2010.
- Bloch, M. 2008. Cutting food waste. Retrieved from <http://www.greenlivingtips.com/articles/268/1/cutting-food-waste.html> Accessibility verified July 20, 2010.
- Bloch, M. 2010. Food waste statistics. Retrieved from <http://www.greenlivingtips.com/blogs/491/Food-waste-statistics.html> Accessibility verified July 20, 2010.
- Bloom, J. 2007. Food waste: out of sight, out of mind. Retrieved from http://www.culinate.com/articles/features/wasted_food/print Accessibility verified July 21, 2010.
- Donate now: who, what, why, how. 2010. Retrieved from <http://www.firstfoodbank.org/donate.html> Accessibility verified July 26, 2011.
- Erlanger, S. and de la Baume, M. 2009, October 31. French Ideal of Bicycle-Sharing Meets Reality. *The New York Times*. Retrieved from <http://www.nytimes.com/2009/10/31/world/europe/31bikes.html?pagewanted=all>
- Food Lion launches food-bank drive. *Charlotte Business Journal*. 2010, April 29. Retrieved from <http://charlotte.bizjournals.com/charlotte/stories/2010/04/26/daily33.html> Accessibility verified July 25, 2010.
- Food scraps go to the animals: Barthold Recycling and Roll-off Services. 2010. Retrieved from <http://www.epa.gov/wastes/conserves/materials/organics/food/success/barthold.htm> Accessibility verified July 30, 2010.
- Food to waste. 2010, March 19. Retrieved from <http://hungerincal.uscannenberg.org/> Accessibility verified July 27, 2011.
- Geithner, T., and Gates, B. 2010. A new initiative to feed the world. *The Wall Street Journal*. April 22, A23.
- Humphries, J. 2010, March 4. The impact of domestic food waste on climate change. Retrieved from <http://www.nextgenerationfood.com/news/looking-at-food-waste/> Accessibility verified July 20, 2010
- Hunger & poverty statistics, 2008. Retrieved from <http://feedingamerica.org/hunger-in-america/hunger-facts/hunger-and-poverty-statistics.aspx>
- Kellogg, A. P. 2010. The do-it-yourself city. *The Wall Street Journal*. July 6, A3.
- Lundqvist, J., de Fraiture, C., and Molden, D. 2008. Saving water: From field to fork – curbing losses and wastage in the food chain. *SIWI Policy Brief*, SIWI: 4-36.

Reducing Food Waste

- Mather, T., Daniels, K., and Pence, S. 2010, March 31. Food waste remains persistent problem at farms, grocery stores, and restaurants. Retrieved from: <http://www.californiawatch.org/health-and-welfare/food-waste-remains-persistent-problem-farms-grocery-stores-and-restaurants> Accessibility verified July 21, 2010.
- Plan before you donate produce. 2010. *University of Maine Cooperative Extension Bulletin 4337*. Retrieved from http://www.umext.main.edu/online_pubs/htmpubs/4337.htm Accessibility verified July 30, 2010.
- Shreeves, R. 2008, August 25. The shocking statistics of food waste (and how to keep your contribution to the problem at a minimum). Retrieved July 20, 2010 from <http://blog.sustainablog.org/the-shocking-statistics-of-food-waste/>
- Spitz, E., and Skowron, J. 2010, June 4. Lecture and discussion at Ecole Nationale d'Administration (ENA).
- Strom, S. 2010. Wal-Mart gives \$2 billion to fight hunger. *The New York Times*. May 13.
- The best foods to donate to your food drive. 2010. Retrieved from <http://www.gbfb.org/donateFood/documents/BestFoodsToDonateToYourFoodDrive.pdf>.
- Trottman, M. 2010. Program helps keep business working. *The Wall Street Journal*, July 15, A21.
- Trueman, K. 2007. Freeganomics. November 8. Retrieved from http://livingliberally.org/eating/story_freeganomics_nov_08_2007_id744. Accessibility verified July 20, 2010.
- Two looks at hunger in America. 2010, June 2. Retrieved from <http://www.ampleharvest.org/downloads/info.pdf> Accessibility verified July 27, 2011.

Steven Finn is a candidate for the degree of Master of Philosophy in Organizational Dynamics. This paper is based on an earlier version submitted to DYNM 786, Multi-Organization Project Management, taught by Jean-Marc Choukroun, Ph.D. Steve can be reached at finnsm@sas.upenn.edu.