**ABSTRACT**

*Our action research examines the successes and challenges for Evolv Composting LLC business of Saratoga Springs, New York in the hopes of raising awareness and encouraging restaurants to compost their food waste. Evolv is a newly established local composting business stemmed from two Skidmore students. We worked with our community stakeholder Evolv Composting, and completed semi structured interviews and surveys with restaurants that are currently participating in a compost collection program in order to uncover the perceived benefits of participation in the program. We conducted surveys and interviews with non-participating restaurants in order to better understand the barriers to restaurant participation in composting programs.*

**Key Words:** food waste, solid waste, restaurants, compost, pollution, and financial incentives

**INTRODUCTION**

The Department of Agriculture (USDA, 2014) has identified a distinction between food loss and food waste. Food loss is defined as “the amount of edible food, postharvest, that is available for human consumption, but is not used for any reason”(USDA, 2014). This is a separate definition because food waste is a specific type of food loss. Food waste occurs when edible food is discarded for reasons such as expiration, unwanted parts that aren’t edible for whatever reason. This conceptualization of food waste occurs more on the retail and household level of the agri-food chain (USDA, 2014).

***1.1 Food Waste in America***

The average American creates almost 5 pounds of trash per day. Since, on average 12% of what we throw away is or once was edible, we can estimate that each one of us discards half a pound of food per day. That adds up to an annual total of 197 pounds of food per person. Worryingly, Americans’ per capita food waste has doubled since 1974 (Bloom, 2010). As a nation, we grow and raise more than 590 billion pounds of food and waste approximately 160 billion pounds of food each year (Bloom, 2010). Food waste is one of the biggest challenges that we see in the restaurant industry in the United States. Americans often seek out food establishments that offer more for their money, which generally contributes more to waste. There are many reasons as to why Americans seek out for more, such as the satisfying feeling of not having to go hungry. Americans are also obsessed with fast food, and are always on restricted schedules, so finding a fast, tasty, cheap meal, that gives you more than enough, would be ideal. Americans don’t like the discomfort that comes with being “hungry,” like the stomach growls and physical cramps.

Food waste in restaurants isn’t solely based on post-consumer waste, but pre-consumer waste as well. Kitchen waste can include incorrectly prepared food, spoiled food; trim waste, overproduction, and contamination. Once a consumer finishes their meal, they have the option to take it home or leave it. If they do choose to leave it, then the food would be wasted because health regulations prevent it from being donated to local food banks for health regulations. A study was conducted in Arizona to help quantify food losses at major stages of the food marketing system. These stages include harvesting, processing, storage, retail, distribution, food service and households. Jones discovered that fast food restaurants estimated about 9.55% of food loss, and full service restaurants estimated a 3.11% of food loss. Although these numbers may not appear to be significant, they are actually equivalent to an estimated total of 49,296,540 pounds in all of the food service restaurants and 85,063,390 pounds in all fast food restaurants (Jones, 2005).

Within the USA, it is estimated that the process of getting food from the farm to plates consumes up to 10 percent of the total budgetary allocation of the energy sector. This agricultural process guzzles up to 80 percent of all the fresh water consumed in the United States. Thus, much of our food production is wasted and ends up decomposing in landfills, thus constituting the largest portion (16 percent) of methane emissions in the US (Gunders, 1995). If we were to reduce these losses by just 15 percent, we could feed an excess of 25 million Americans annually. According to the Department of Agriculture (2014) composting organic materials are best manage as a resource than a waste. One potential method to reduce the waste that is left over is to compost it.

***1.2 Food Waste in Saratoga Springs***

Within New York State, Saratoga Springs is a prosperous city with an area of about 29 square miles and an estimated residential population of about 27, 315 people (U.S. Census Bureau: State and County Quick Facts, 2013). Our initial findings revealed that each restaurant in Saratoga Springs produces approximately 200 pounds of food waste weekly. There are approximately 102 restaurants in Saratoga Springs (Cooper 2007), and if 200 pounds of food waste is generated from each restaurant, then it can be generated that restaurants in Saratoga Springs produce approximately 20,400 pounds per week. Unfortunately, this is only a conservative estimate and it can be expected that these numbers will increase with track season. A lot of financial resources have been committed to reducing the impacts of environmental pollution in the US and to raise awareness on the adverse effects of food wastage. For instance, various programs, such as Pay As You Throw/ Save Money and Reduce Trash (PAYT/SMART), help to alleviate environmental degradation as a result of food waste pollution by providing financial incentives for consumers to waste less, recycle, reuse, and compost. This research worked with a newly start up business in Saratoga Springs company called Evolv Composting, LLC or in other words *Evolv*. Two Skidmore College students: Brad Cray and John Manning established Evolv in January 2014. Evolv Composting introduced the use of new composting bins that contain bacteria acting as a catalyst to the process of composting at fee to businesses. Evolv worked with several restaurants in Saratoga Springs, such as Comfort Kitchen, One Caroline Street Bistro, and Mouzon House by hauling away compostable wastes such as food scraps, greasy paper products, and all other compostable products. Evolv also worked with Jim and Monica Fredell, a local family composting in their own home. Evolved offered weekly or bi-weekly pick-ups from businesses and residences in Saratoga, Albany, Washington, and Schenectady Counties, in which they charged a fee of $19.99 for residents and $39.99 per month.

Evolv had aspirations of expanding their services more widely throughout the restaurant community in the County, yet faces challenges in expanding. Even though Evolv composting is a brilliant idea, its benefits are not widely known.

The literature review below analyzes composting as a solution to curb pollution from food waste, explores the established policy framework on composting that have been formulated by state agencies and rationalizes the incentives offered to restaurants, by the state, to participate in a composting service.

**LITERATURE REVIEW**

***2.1 Overview of Composting***

Compost is nature’s way of recycling itself. It is a biological process that breaks down organic matter and converts it to a spread that is useful for improving soil conditions. Although compost may seem like an obvious solution to our food waste problem, the New York State government isn’t heavily implementing it. The Department of Environmental Conservation (DEC) prioritizes reduction at the top of the materials management hierarchy followed by recycling and then disposal. These are the immediate goals of New York State, and recycling organic materials come after. For instance, the DEC acknowledges that “recycling organic materials by composting, anaerobic digestion, land application and other organics recycling technologies reduces the generation of greenhouse gases; create soil amendments, energy and jobs; and reduces reliance on waste disposal”(DEC, 2014).

***2.2 How does Composting Work?***

Composting is defined as the biological decomposition of organic waste such as plant material or food by worms, fungi bacteria and other organisms under regulated aerobic conditions. The end product of composting is the accumulation of partially decaying organic matter known as humus. When the process of composting is facilitated by the presence of worms, in a process referred to as vermiculture, it results in nutrient-enriched worm castings. The process of composting can either be through pie/bin composting or worm composting (University of Florida, 2012). There exist three techniques that can be utilized when composting. These are the standard method, and the slow and fast methods. The standard technique is recommended if one is dealing with a variety of organic resources such as grass clippings, leaves and kitchen scrap. The slow method is recommended if the supply of organic material is deemed to be not steady. It deviates from the standard approach in that there is no requirement for assessing whether there is moisture or proper mixing. The fast method is best applicable if there is a large amount of organic matter. However, it requires much more energy and time since there is a need to guarantee ideal conditions.

***2.3 Composting In San Francisco, Los Angeles and Seattle***

Unlike New York State, San Francisco has implemented a Mandatory Recycling and Composting Ordinance in 2009 that required that habitats of San Francisco to separate their recyclables, compostable and landfilled trash and participate in recycling and composting programs. San Francisco became the first local ordinance that required people sort and separate organic material including food. Although this may seem like a great program to implement, it’s not happening, especially in majority of the restaurants. Composting seems like an option for most businesses, but it isn’t heavily enforced. Recycling and composting is one way to help San Francisco achieve its goal of zero waste by 2020. It is the ordinance’s aim to recreate the hierarchy to prevent waste, reduce and reuse first, then recycle and compost. For small restaurants, storage space of compost bins can be a problem, but most restaurants in San Francisco have a three trash bins that offers the options of landfill, recycle, and compost, and offers a description as to what can and can not go into that bin.

Biocycle 2011 posted an article of the successful program in San Francisco stating, “The program now recycles nearly 220,000 tons of organics annually producing compost utilized by area farms, vineyards, and residents” (Biocycle, 2011). These achievements stemmed from the successful partnership between the city, its residents and commercial and institutional sectors, and Recology (an company owned that provides landfill diversion and resource recovery services).

Recology operates on the residential and commercial level. Recology provides compostable, recyclables, and garbage collection to single family homes, apartments and condos. Recology works with the community and in 2010, it reported having composting more than 907,000 tons of food scraps and vegetative waste from San Francisco residences and business since launching its pilot program in 1996 (Biocycle, 2011). Since San Francisco’s bold action to legislate a recycling law, other cities have also participated such as Seattle, Washington passing an extension of its recycling bill to mandate composting as well as Portland, Oregon fining businesses that did not comply with recycling and composting laws. New York City has also made this list of progression, however it is simply a proposal.

The city of Portland and its Office of Sustainable Development help companies set up composting systems by providing free training for staff, collection containers, educational materials, and technical assistance and troubleshooting when needed (Biocycle, 2006). Programs like these help encourage positive attitudes towards composting.

In Seattle, Washington a change from current practice. As of January 1, 2015, all commercial establishments that generate food waste or compostable paper will have to subscribe to a composting service, compost their food waste on-site, or self-haul their food waste for processing (Biocycle, 2014). Biocycle states that beginning next July, Seattle area households, apartment buildings, and businesses will be fined for any organic waste that exceed 10% by volume in their bins or dumpsters. Single families will be charged $1, while businesses and apartment building will be charged $50 if violating this new rule more than three times.

***2.4 The New York State Department of Environmental Conservation (DEC)***

The New York State Department of Environmental Conservation (DEC) has adopted the "Beyond Waste" strategy that calls for a revision of the Part360 Solid Waste Management Facility Regulations. The ultimate target of this plan is to have a shift in waste management techniques. The plan is to create a combination of programmes and policies that are aimed at diminishing the amount of waste generated within the state of New York. The beyond waste program aims are the following:

·    Providing necessary incentives for waste prevention through volume-based pricing for waste management programmes. Examples of such plans include, Pay As You Throw (PAYT) and Save Money and Reduce Trash (SMART)

·    Recovery of organics through a blend of programs and policies targeted at intensifying the level of composting among residential and commercial establishments.

·    Adoption of best management strategies that would ensure adequate capacity of the most viable environmentally sound means of waste disposal.

Since the United States accounts for approximately 5% of the global population and yet it consumes 24% of the world’s energy resources, the Part360 beyond waste management plan aims to reduce the amount of waste disposal to about 0.6 pounds/day/person (New York State Department of Environmental Conservation, 2014).

Another plan that has been formulated by the DEC to facilitate composting is the Product Stewardship Policy Program. This program extends the responsibility and role of products or packages to cover the whole life cycle of the brand. Thus, this includes the ultimate disposal of the product at the end of its useful life. The Empire State Development also serves as a repository for the market of recycling information of the State. Through its online database, users such as hotels and restaurants in Saratoga Springs can access vital information on outlets on composting (New York State Department of Environmental Conservation, 2014).

***2.5 Composting in New York City***

In June 2013, Mayor Michael Bloomberg of New York City made a proposal to begin a voluntary composting program.  Restaurants that were interested in sustainability welcomed this idea, however other restaurants showed restraint and took issue with this proposal. The Mayor’s initiative would apply to residences and schools voluntarily first, and then later require business to compost. Food waste, according to the Mayor’s office, makes up 30% of New York City’s trash, and restaurant waste in the city contributes to 70% (New York Times, 2013).  In April 2013, the mayor announced that 100 restaurants had signed up for a pilot compost program, which included Chipotle and Momofuku. There is no time frame for making composting mandatory in New York City, and so no one knows how long it will be to get the entire city to reduce the amount food waste they have in their homes, schools and businesses.  Although composting isn’t mandatory as it is in San Francisco, some restaurants are composting and small green businesses are emerging to help.

As of December 20th, 2014, the New York City Council passed a legislation requiring commercial food scraps from the largest food service establishments to be recycled.   This policy is set to take into effect July 1, 2015. This legislation is expected to have an impact that reaches well-beyond NYC’s five boroughs, as the country’s largest city sets an example on the national stage (ILSR, 2014).

**2.6 Composting in Albany, New York**

The Radix Ecological Sustainability Center, is a non-profit educational organization aimed to promote ecological literacy and environmental stewardship through educational programs based around demonstrations of sustainable technologies (Radix Center, 2014). The Radix center is located about 40 minutes from Skidmore College, in Albany. Initially the business started very small as a compost drop-off point, however this system didn’t work out well due to the compost bags being dropped-off in an open space, which resulted a bad odor. Later Radix Center changed its business plan to a composting initiative, which is a weekly compost pickup service for center Albany residents and businesses. The business is run under a small group of employees. The company currently has 30 clients in which 2 of them are businesses and the rest is residential customers. The company tries to be as efficient as they can with compost collection. “Cause when you’re looking from a business angle; you want to maximize the number of pick-ups per minute per ten minute chunk that you can. Because you want to do the whole loop in about three hours, so you want to grab as much as you can” (Scotty from Radix Center). Radix Center uses the basic composting method, which customers put their food scraps, excluding meat, dairy, or egg products, in a compostable bag inside a provided filtered, no-odor container. The company collects 32.5 gallon buckets and an additional 100 gallons of coffee grounds every week. The community compost initiative offers a small fee for residents at a fixed rate of $15 per month and if an extra container is necessary then that is an additional $5 charge.

* 1. **Composting in Saratoga Springs, NY**

Saratoga Springs hotels and restaurants fall under the jurisdiction of New York state and Saratoga County. Within the county, the commercial food waste disposed of in landfills or combustors remains a significant challenge. This has necessitated the legislation of the Commercial Organics Law that is set to take effect on July 1, 2015 (ILSR Admin, 2014). The new law targets organic waste generators such as retail food stores, catering establishments and food service establishments. These institutions are required to ensure that there is a collection of organic waste by private waste haulers or ensure that they provide on-site in-vessel composting, anaerobic or aerobic digestion. As mentioned before, Evolv Composting, LLC is a fairly new business that aims to make composting easy for every household and business. Evolv designed its own composting bins that are airtight and prevents food from beginning to rot. There are many sizes for the bins, ranging from 5 to 64 gallons. Evolv’s bins include wheat bran flakes that contain bacteria, which accelerate the decomposition process, turning food scraps into nutritious compost as quickly as possible. Other companies may try to accept the same amount of inputs, but cannot in the same low-odor, airtight and convenient fashion. What also differentiates Evolv from other businesses is the use of the Bokashi Method. Bokashi is a Japanese term, which translates to fermented organic matter. The Bokashi method is an anaerobic fermentation process, which doesn’t require the separation of food waste. It can process a variety of food items such as meats, oils, dairies, and vegetables. Customers can either choose to finish the compost process themselves or use Evolv’s collection service. In order to help combat food waste in Saratoga Springs restaurants we conducted live action research to help improve Evolv’s business and increase restaurant participation.

**METHODS**

***3.1 Purpose Statement***

The purpose of this action research is to uncover the logistical barriers of recruiting restaurants to join the composting service, as well as the success of restaurants that are participating in a composting service.  Research is needed to investigate why some restaurants aren’t participating, in hopes of increasing participation. 10 restaurants were interviewed, in which 2 of these restaurants participated in a composting program. Guiding Research questions are as follows:

1.   What are the economic and logistical barriers to restaurant participation in a compost collection program?

2.   How do restaurants perceive composting, and to what extent do restaurants identify with the advantages of composting for their business?

3. How can Evolv be more effective in increasing restaurant participation in composting?

***3.2 Populations and Setting***

Saratoga Springs is a prosperous city located in New York State with an area of about 29 squares miles. According to the 2013 US Consensus Bureau, there are 27,315 residents in Saratoga Springs, New York. Although the permanent resident population is 27,315, the population increases immensely in summer due to the horse racing events. Saratoga Race Course events contribute greatly to the economy of Saratoga Springs over the summer. According to the 2015 census data, 92% of Saratoga Springs is classified as “White”, and 2.6% are “African American”, while 3.2% are classified as “Hispanic or Latino”. Of the most common industries between 2008-2012 in Saratoga Springs, 8% are accommodation and food services. As of 2014 city data, there are 102 full-service restaurants in Saratoga Springs.

***3.3 Instrumentation and Data Analysis***

Our research team consisted of two students, Raquel Escobar and Melissa Kaslowski, under the supervision of one faculty advisor, Andrew J. Schneller. The data for this study was collected over an eight-month period from 2014 to 2015 (September, 2014 to April, 2015).

Interviews began in February 2015 and were conducted through April 2015. Interview questions were designed to gather information on restaurant’s knowledge on composting and motivate them to composting. Two sets of semi-structured interview questions were created depending on whether or not restaurants are composting. In total we conducted 12 interviews; one informal interview with our stakeholder Evolv, another informal interview with Scotty Kellogg, who manages a compost collection program in Albany, and interviews with ten restaurants. The ten restaurants included: The Mouzon House, One Caroline Bistro, Wheatfields, Max London’s, The Local, Saratoga Farmstead B&B, Olde Bryan Inn, The Brook Tavern, 50 South, Henry Street Taproom. Seven out of ten interviews with restaurants were conducted on site at the restaurants, two were conducted over the phone, and one restaurant requested questions to be sent through email, in which they responded with detailed answers. All interviews were recorded using an IPhone voice memo application and call recorder application. Our interviews lasted approximately fifteen minutes. A complete list of interview questions can be found in Appendix A.

After data collection, Interviews were transcribed into Word documents for analysis. Restaurants were charted and organized based on their responses and then later transferred into an Excel spreadsheet for statistical analysis.

**Limitations**

Only 10% of the restaurants in Saratoga Springs were interviewed due to limited time of data collection. The data collected was not significant and cannot represent the entire Saratoga Springs restaurant population. In addition, some restaurants were unwilling to be interviewed, such as Comfort Kitchen, Sweet Mimi’s, Harvest and Hearth, and Druthers. The operational hours of restaurants varied which hindered data collection. Our stakeholder, Evolv Composting shut down their business in April of 2015, the last week for our research project. This prevented giving recommendations.

**Findings and Discussion**

 Of the 10 restaurants interviewed, only 30% (3/10) of the restaurants are currently engaged in composting by themselves while the remaining 70% (7/10) are not (Figure 1). Out of the eight restaurants that are not currently composting, only four stated they are willing to start participating in a composting program, while the remaining four are reluctant. Restaurants that are opposed or reluctant to starting a compost program have logistical problems with composting (such as lack of space), while one restaurant was against the practice.

**Figure 1: Are Restaurants Involved in a Composting Program?**

Figure 1 shows that only 30% (3/10) of restaurants that are currently involved in a composting practices. The restaurants that were interviewed that were not in a composting program were unaware of the composting trends in the neighboring restaurants, and stated that our interview was the first time they heard, or actually thought about composting food scraps in their restaurants.

**Figure 2: Are Restaurants Willing to Participate in Composting**

Figure 2 depicts the number of restaurants that are willing to compost. Of the 70% (7/10) of restaurants that are not composting from the previous figure (Figure 1), approximately four restaurants are willing to participate in a composting program.

**Figure 3: Self-Reported Food Waste for Restaurants Weekly**

|  |  |
| --- | --- |
|  Restaurants  | Average Weekly Food Waste: |
| Max London’s  | 50 lbs. |
| Mouzon House  | Unknown  |
| One Caroline Bistro  | Unknown |
| 50 South  | 100 lbs. |
| Olde Bryan Inn  | 700 lbs. |
| Saratoga Farmstead B&B  | 70 lbs.  |
| The Local  | 98 lbs.  |
| Wheatfields |  Unknown  |
| Henry Street Taproom  | 140 lbs.  |
| The Brook Tavern  | 140 lbs.  |

Figure 3 depicts the approximate weight of food waste restaurants produce weekly. This table is raw estimate that was self reported during interviews, and as such is subject to over or underestimation, and will fluctuate with seasons. These quantities represent kitchen and table waste combined. The waste ranges from 50 to 700 pounds weekly. The size and the amount of hours and days a restaurant is open heavily influences these numbers.

***4.1 Restaurants' perceived challenges to composting***

We asked the restaurants who are and aren’t currently composting to express what challenges they saw with participating in a composting program on-site. We were able to better understand a trend of challenges that are disabling most of the restaurants from participation in a composting program. Challenges varied due to the differences in restaurant size and location. Common challenges included: space for placing compost bin, and issues related to potential odors, cost, and consistency of the compost collection businesses. The findings below further investigate the challenges identified by the restaurants in Saratoga Springs.

*4.11 Space*

50% (5/10), of the restaurants described "space" as the primary challenge to composting. A lot of the restaurants vary in size. For example both Max London’s and Wheatfields are located on Broadway, but Max London’s has more space availability than Wheatfields. While some restaurants were able to adjust their kitchen sizes and are able to potentially implement another bin for compost, others struggle with what space they currently have. Dianne Pedinotti, owner of The Mouzon House stated: “We didn’t know where to put the extra [compost] bins so we had to [re] arrange the whole kitchen. At first it was a pain because we couldn’t find the right movement and especially in a busy kitchen, you need that bin accessible” (personal communication, 2015). We saw that composting for the Mouzon House was easier compared to other restaurants due to their availability of space. Nicci Miller from Wheatfields mentioned that limited space is the primary issue for them that prohibit them from composting. “Being on Broadway, we do have difficulties in kitchen space as it is. There are definite disadvantages to being on Broadway, space being the biggest. We have a tiny little courtyard, which does not provide us enough space for multiple bins” (Miller, personal communication, 2015).

 An interesting challenge that stemmed indirectly from our interview with Wheatfields was the unaesthetic appeal of the compost bins. In the interview Nicci, the manager, stated, “We rent out the space and there are apartments looking towards it and I’m sure they wouldn’t want to see or smell it” (personal communication, 2015). Aesthetic appeal poses an interesting challenge, because the purpose of composting is to reduce food waste, not to accommodate for neighboring apartments, as well as tourists that visit during racetrack season.

*4.12 Potential Odors*

 Three of the restaurants mentioned smell is another challenge for composting. The three restaurants concerned about compost odors consisted of The Brook Tavern, Wheatfields, and One Caroline. The traditional method to compost requires strictly organic material such as fruits and vegetables, and when these food items begin to decompose, it gives off an order that attracts flies, rodents, and other pests. Although this is a common issue, it varies based on the location of the restaurant. For example, The Saratoga Farmstead B&B is located two miles from the city center of Saratoga Springs, has 10 acres of farmland, and is practicing composting on their own. Having the available land area enables them to compost without being bothered or bothering neighbors with the smell. On the other hand, the general manager in The Brook Tavern stated: “for here basically, as you can see we’re kind of in the middle of the neighborhood, I know composting does sometimes give an awful odor, I don’t think people staying at the inn (Springwaters Inn) wouldn't want that under their window” (personal communication, 2015). Odors become an issue when the location of the restaurant isn’t appropriate for composting. These restaurants all share the common problem of not having an appropriate space where the odors could possibly be an issue.

*4.13 Prohibitive Cost for a Compost Collection Program*

 When we asked the restaurants how much they would be willing to pay for a compost collection service, three show no interest in paying a service fee. Chef Zach from Max London’s proclaimed that they wouldn’t want to pay for a service if they are not getting anything in return (personal communication, 2015). Nicci Miller, general manager of Wheatfields, also showed no interest in paying a service fee, “I truly don’t think I would be willing to pay for the service” (personal communication, 2015).

*4.14 Challenges for Training Employees to Compost*

Four of the restaurants interviewed voiced concern over the challenges of training employees to compost. Training of employees can indeed be a potential issue, because employees might be confused as to what can and cannot be successfully composted. Because there are various ways of composting, some employees might get confused and try to compost un-compostable products such as plastic. Elizabeth Pedinotti-Haynes, owner of One Caroline Bistro stated that challenges also exist with the Bokashi method, because it incorporates all food scraps such as meat and dairy, and as such, the employees assumed that almost everything could be composted (personal communication, 2015). During our interview with Evolv, both owners recalled when they found plastic bags as well as plastic bottles in their compost pile.

Ryan McFadden, the owner from Henry Street Taproom stated that the challenge is training the employees, because composting would only create more work, which will be problematic to his already shorthanded staff (personal communication, 2015).

*4.15 Consistency of the Service*

Only two of the restaurants, One Caroline and The Mouzon House, stated that one of the biggest challenges of composting was the consistency of the compost pick-up service. Interestingly enough, these were limited to the restaurants that previously participated in a composting program. Elizabeth Pedinotti-Haynes, the owner of One Caroline Bistro stated that her experience with Evolv was like they “Fell off the face of the earth” (personal communication, 2015). The Mouzon House as well had struggle with Evolv’s consistency of pick-up. The owner, Dianne, seemed fine about occasional slips in pick-ups; however, she stated that she would like to be informed if the company isn’t able to come for a pick-up. Kim Klopstock from 50 South mentioned that she was never able to start working with Evolv because right after their introductory meeting, John one of the owners of Evolv, stopped responding.

***4.2 Existing Participation and Sustainability Initiatives among Saratoga Springs* Restaurants**

**Figure 4: Sustainability Initiatives in Restaurants**

Figure 4 shows the existing sustainability initiatives taken upon by the restaurants that were interviewed. 100% (10/10) of the restaurants that were interviewed sourced their food locally, to some extent. Dianne Pedinotti, Owner of the Mouzon House stated:

We’ve always been a farm to table restaurant and we have always believed in serving food that isn’t mass produced but rather comes from a 150 miles radius for the most part, expect for our fish. Our mission is to have a business that supports the community and supports people with actually really good food. (Personal communication, 2015)

The percentage of local food served in restaurants differed among the restaurants. Some were able to identify the percentage of local food they served. Dawn from The Local, responded that 50-60% of their food is locally sourced; specifically their potatoes and hamburger meat (personal communication, 2015) All restaurants were very eager to support the local food business and identified themselves as "farm-to-table" restaurants.

Eighty percent of the restaurants we interviewed recycled glass, plastic, metal cans, aluminum, and cardboard (Figure 4). According to New York State, since the inception of the Solid Waste Management Act of 1988, recycling has become a priority of New York State in order to reduce solid waste management; however, it is not mandatory in the state. A trend that was apparent in the restaurants that were recycling is that almost all of the Owners and Managers took pride in recycling, which was apparent in their tone of voice and expressed their attentive policies regarding proper recycling practice. Dianne Pedinotti, owner of the Mouzon House, mentioned that they make sure to recycle every recyclable item (personal communication, 2015).

These restaurants have taken the initiative to recycle, along with other sustainability initiatives to help reduce waste, and also support local businesses and communities. Approximately 30% of the restaurants that were interviewed facilitated other sustainability initiatives such as recycling fryer oil, reusing food items for other dishes such as using the bones from meat to make broth, serving local draft beer/wine and reusing the Kegs, as well as using eco-friendly products such as, biodegradable take-out containers and to-go cups.

Wheatfields participates in a fryer oil recycling initiative where a company comes to collect the fryer oil, which then gets reused for other purposes, such as energy conversion (personal communication, 2015). The General Manager of The Brook Tavern on Union Avenue mentioned that before the company who took the fryer oil used to pay the restaurant for the oil pick-up because at one point it was a high priced commodity; however, now restaurants must pay the company in order to have fryer oil collected (personal communication, 2015).

The Farmstead Bed & Breakfast is certified "green" by the Audubon Society and the New York State Department of Environmental Conservation (NYS DEC), and is also working with an Audubon Society Cooperative Wildlife Refuge. This restaurant has gone above and beyond its sustainability practices in order to be certified such as utilizing sustainable energy, practicing water conservation, an effective solid waste management regime, sustainable utilization of the land, and suburb-building infrastructure.

Smaller initiatives included serving draft beer/wine and using eco-friendly products such as biodegradable to-go containers/ cups. Both The Local and Henry Street Taproom, indicated that they use cloth napkins rather than paper napkins so as to reduce solid waste, and also use eco-friendly products: biodegradable or recyclable straws, to-go cups, to-go boxes/bags. An interesting initiative included serving draft beer or wine, which 30% of the restaurants practice. The General Manager at The Brook Tavern said: “With this practice, the wine stays fresh and there is no waste. You can reuse the kegs, the company comes to pick them up and then refills them” (personal communication, 2015). Another variation for sustainable wine service was seen at 50 South. Kim Klopstock’s, the owner of 50 South asserted that they use typically organic and bio-dynamically farmed wine (personal communication, 2015).

**4.3 Restaurant Perceived Benefits to Composting**

*4.31 Garbage Tipping Fee*

Two of our respondent restaurants (Mouzon House and 50 South) stated that they found composting to be/would be cost effective. A garbage-tipping fee is common in most restaurants that have to pay for their garbage based on the weight. For restaurants that have to pay this fee, composting is extremely cost effective because it reduces the weight of the garbage, which ultimately reduces the price. Restaurants such as Wheatfields and Henry Street Taproom have to share a dumpster with other restaurants, and so it wouldn't be practical to invest in composting if it is not reducing their fees. However, there are restaurants such as 50 South that does their own composting, have a garbage-tipping fee of $400 a month, and with composting, they reduced it to approximately $200;Composting cut their fees in half.

*4.32 Environmental Ethics*

Half (5/10) of the restaurants we interviewed described the environmental benefits of composting restaurant waste. Respondents described their interest in creating less trash, producing inputs for healthier vegetable gardens, and reducing the amount of methane released in landfills. When we asked Kim Klopstock from 50 South to mention the benefits of composting, she emphasized that the impact of composting on the community is good, however, for her the biggest part is the educational aspect, peoples mindfulness, and awareness about food waste.

*4.33 Supporting Local Business*es

Approximately two of the restaurants interviewed (Max London’s and 50 South) stated that the benefits to composting would be supporting local businesses such as the composting service (Evolv) as well the local farmers. As mentioned earlier, all of the restaurants were participating in sustainability initiatives, such as using locally sourced food from local farms, and as such, it would make sense to also support local businesses that provide compost collection services. One restaurant that showed a lot of enthusiasm about Evolv, a local business, was 50 South. Kim Klopstock mentioned how eager she was to support the local composting business and would love to help to promote the company if necessary.

***4.4 Restaurant Experience with Evolv Composting Collection Service***

Although the use of the Bokashi Method was a great success among the restaurants that participated in a compost collection program, the cooperation and communication between both Brad and John was a great challenge. The responses from the two restaurants participating in Evolv’s composting program (One Caroline and The Mouzon House) reflected the majority of the advantages of the Bokashi method. As mentioned before, what really differentiated Evolv from other composting companies, such as Empire Zero or The Radix Center, was the use of the Bokashi method. Kim Klopstock, Owner from 50 South stated, “See my world, my bones have to be put in garbage, where with this method [Bokashi method] I can put them with the rest of the food” (personal communication, 2015). Dianne Pedinotti, the owner from Mouzon House stated: “Sometimes it would really leek and it was disgusting [the old method of composting] so it was nice not to have that anymore [with the switch to Evolv composting]” (personal communication, 2015). With the use of the highly innovative, airtight bins, there is prevention of leakage and odors, which ultimately prevents pests. Last name admitted that: “We were doing our own composting, but we weren’t doing it as well or as effectively as we were able to do it with Evolv” (personal communication, 2015). Evolv was extremely effective, when it came to the use of the Bokashi method, as well as the design of their bins; however they lacked consistency in compost pick-up as well as communication with the participating (paying) restaurants.

One of the managers from One Caroline stated that, she didn’t know what happened, they (Evolv) just stopped coming to collect the compost. They received a call from one of the owners stating he couldn’t pick up the compost, and while she assumed it was for a week, it turned out to be permanent (Haynes, personal communication, 2015). This lack of communication was a huge issue for both the company and the restaurants, because the composting service wasn’t free. The inconsistency of service was a reflection of the relationship between the two owners because there (also) existed a lack of communication. The Owner of the Mouzon House recalled the same experience with Evolv, however, she continued using the bin, but it became so overfilled that she had to get rid of it because it was overflowing, created a stench, and attracted pests (Pedinotti, personal communication, 2015).  Although both restaurants expressed many positive and negative experiences with Evolv, both agreed that if Evolv continued their services they would still want to participate.

**Conclusion**

Food waste is a prominent issue in the United States, and an even more pressing issue in Saratoga Springs. As mentioned before, it is not mandated by New York State Law to reduce food waste, and so any sustainability initiatives taken by restaurants are by choice. Our initial reactions from restaurant managers before our interviews took place were either really positive or negative. Evolv Composting faced many challenges such as not being able to receive active participation from restaurants. Initially, many restaurants were reluctant to have an interview about a composting program, specifically (Evolv) because this was the first time this idea was ever posed. Many managers were not aware of restaurants that were currently participating in a composting program in that area, which influenced their stigma and attitudes towards composting. While some showed stigma to composting, others were more willing to learn and practice composting, if the service was either free or they had more space in their restaurant. All of the restaurants were partaking in sustainability initiatives such as recycling, locally sourcing food, making environmentally friendly “to-go” containers, but were hesitant to push boundaries and reduce food waste or compost. Evolv Composting had its own challenges with its business operations such as a miscommunication between owners as well as inconsistent pick up services. Unfortunately, Evolv ceased its operations as of April 2015. However, if it were to start up again, it could transform from a service to a trading business, in which they could sell their bins to community composters, starting with Skidmore College.

With climate change continuing to be pressing issue we can expect see more efforts to reduce food. We hope that our interviews sparked interests in creating a green future in the restaurant industry, and want to see more restaurants composting their food waste in the future.

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**Appendix A**

***Interview questions for Evolv Subscribers***

1. Describe what you see as the advantages for your restaurant of participation in a compost collection program.

A) [If they don't discuss above] Can you describe the environmental benefits of your restaurant participating in a compost collection program?

2. Please describe any other sustainability initiatives that your business is undertaking (they may touch on these points whilst answering #1)

3. How did you discover Evolv Composting, and for how long have you been subscribing to Evolv’s commercial collection service?

4. To what extent was your restaurant composting before working with Evolv?

5. [If not composting before working with Evolv] - To what extent was the transition to composting easy? So for instance, you could discuss any challenges, or lack of challenges in using the Bokashi Method.

6. What was your incentive to work with Evolv rather than another company?

7. On average, what is the approximate weight of the food waste you compost weekly? (Approx. weight)

8. What items comprise the bulk of your food waste?

9. To what extent do you recommended Evolv Composting to other local businesses?

10. Please list some of the sources of the food you serve.

11. What would you recommend for Evolv Composting to provide a better compost collection service for restaurants?

***Interview Questions for restaurants not participating in compost collection with Evolv***

1. If possible, could you estimate the approximate weight of food waste that your restaurant produces every day or week?

2. What would you say comprises the bulk of your restaurant food waste?

3. What do you currently do with your food waste, and to what extent is your restaurant currently composting any of its food waste?

4. Please describe any sustainability initiatives that your business is undertaking

5. What do you see as the benefits to your restaurant, if any, if you were to begin composting food waste on a weekly basis?

6. What do you see as the benefits to the environment, if you were to begin composting food waste on a weekly basis?

7. [If the restaurant is not composting] To what extent have you given serious consideration to composting your restaurant's food waste yourself, or possibly paying a company to collect your restaurant's food waste?

8. What do you believe to be the challenges, if any, to having your restaurant's food waste collected for composting?

9. Do you know much about Evolv Composting, a local company that collects food waste at Saratoga Springs restaurants?

**TELL THE RESPONDENT ABOUT THE PROCESS IMPLEMENTED BY EVOLV**

10. If you were to pay for a food waste collection service, what would be your expectations?

11. Would you be willing to sign up for a free one-month trial with Evolv Composting?

Please list some of the sources of the food you serve.