

2020 GLEANNING CENSUS



Acknowledgments

This report is the work of the Association of Gleaning Organizations and its members. We would like to thank all the organizations who participated in this research. Shawn Peterson, Founding Member, Association of Gleaning Organizations, is the lead author. Olivia Burton MFALP'21, Vermont Law School, provided research and writing support and Claire Child, Assistant Director, Center for Agriculture and Food Systems at Vermont Law School, helped to review and edit—without their help this report would not have been possible.



About The Association of Gleaning Organizations (AGO)

AGO works to build the capacity of other food rescue entities to provide healthy food access to vulnerable populations while reducing food waste and connecting communities. Founded in 2019, we are a member-led, member-run association composed of gleaning organizations in North America. Please visit gleaningorgs.com for more information.



About Vermont Law School's Center for Agriculture and Food Systems (CAFS)

CAFS uses law and policy to build a more sustainable and just food system. In partnership with local, regional, national, and international partners, CAFS addresses food system challenges related to food justice, food security, farmland access, animal welfare, worker protections, the environment, and public health, among others. CAFS works closely with its partners to provide legal services that respond to their needs and develop resources that empower the communities they serve. Through CAFS' Food and Agriculture Clinic and Research Assistant program, students work directly on projects alongside partners nationwide, engaging in innovative work that spans the food system. Please visit www.vermontlaw.edu/cafs to learn more.



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INTRODUCTION

Food insecurity and food waste are two interconnected issues that have become increasingly prevalent in our society. Grocery stores and distributors tend to value produce of high aesthetic value—think of uniformly perfect red apples, perfectly straight carrots, and totally unblemished tomatoes that most consumers prefer. To get those perfect looking pieces of produce, many others are rejected, usually never even harvested from the field due to minor aesthetic imperfections. It is estimated that more than 10 billion pounds of produce grown are never harvested.¹ It is also estimated that one in seven people is currently experiencing food insecurity.² Through this report, we discuss the potential benefits that gleaning may have on decreasing on-farm food waste, increasing food security, and strengthening our current food system overall.

Gleaning is the practice of harvesting unused or surplus produce and distributing it to those experiencing food insecurity. This practice has long historical standing and is mentioned in many religious texts from around the globe, when farmers would intentionally leave produce in the fields to be harvested by the hungry. Today, gleaning occurs on small farms, commercial farms, at farmers markets, in backyards, and from urban fruit and nut trees. Gleaning meets many community needs including but not limited to, food loss reduction, providing access to fresh produce, and building connections. The majority of this gleaned

1 World Wildlife Fund. "No Food Left Behind Part 1: Underutilized Produce Ripe for an Alternate Market." World Wildlife Fund, c402277.ssl.cf1.rackcdn.com/publications/1170/files/original/WWF_NoFoodLeftBehind820_2.pdf?1564432069.

2 Id.

produce is then redistributed throughout the community through a variety of routes, such as food banks, school meal programs, and senior meal programs. Some organizations go a step further and process gleaned produce into shelf stable products, such as tomato paste, to increase utilization and shelf life of produce that may have a short window to be used. By rescuing food that would otherwise be wasted and redistributing it throughout the community, issues such as food waste, food insecurity, and environmental harms can be significantly reduced. Many organizations have dedicated themselves to gleaning and food redistribution, and are able to provide farms with volunteers, cold storage, distribution help, and tax credits or write-offs in some states.

Another related issue is that Americans are consuming less fruit and vegetables, both fresh and canned, on a regular basis. Citrus and berries used to be popular choices at breakfast time and a side of vegetables used to be a staple on most dinner plates; however, dietary trends have shown declines in produce consumption resulting from changing meal trends.

Consumption of single item meals, such as pizza or sandwiches, has resulted in a decline in American's consumption of vegetable side dishes. Tomatoes, broccoli, green beans, corn, berries, and citrus such as oranges and grapefruit have all seen a decline in consumption. This decline in produce consumption has caused an increase in diet-related health issues. Consumers in the 18–44 age group have seen an overall decrease of 5 percent in produce consumption.³ There are a variety of adverse health effects that have been linked to poor diet and high consumption of processed foods, such as obesity, high cholesterol, type 1 and 2 diabetes, heart

disease, and dental issues. Many of these health issues disproportionately affect those in lower-income communities who struggle to access, afford, and consume fresh produce. Those who lack access to fresh produce at affordable prices tend to consume less of it. This causes a decline in produce consumption and an increase in on-farm food waste and diet-related health issues.



3 Produce for Better Health Foundation. *State of the Plate, 2015 Study on America's Consumption of Fruit and Vegetables*, Produce for Better Health Foundation, 2015. Web. <http://www.PBHFoundation.org>.

Changes in Fruit & Vegetable Consumption Summary

Total Fruit Excluding Juice -4 Annual eatings per capita 2014 vs. 2009 (-2%)	Total Vegetables -30 Annual eatings per capita 2014 vs. 2009 (-7%)
Gains For: <ul style="list-style-type: none">• Berries (+4^), Bananas (+2)• Store Fresh Fruit (+6)• Breakfast (+3), Snack (+2), (am in particular)• Side Dish Fruit (+5), Dinner (-4),• Dessert Use (-7) Losses For: <ul style="list-style-type: none">• In-Home (-3)• Processed Fruit (-2), Homegrown (-2)• Lunch (-5), Dinner (-4), Dessert Use (-7)	Gains For: <ul style="list-style-type: none">• Store Fresh Vegetables (+1)• Additive/Ingredient Vegetable Used in Main Dish (+3)* Losses For: <ul style="list-style-type: none">• In-home (-18) and Away-from-home (-7)• Lettuce/Salad (-9), Green Beans (-4), Corn (-4), Onions (-3), Mixed Veg (-3)• Processed (-8), Homegrown (-5)• Dinner (-24), Lunch (-8)• Side Dish Use (-10)• Eaten "As Is" (-23)

^ Actual change in AEPC 2014 vs. 2009

*"As is" and ingredient use into a side dish as well as eaten "as is" as a main dish have all declined.

Produce for Better Health Foundation. State of the Plate, 2015 Study on America's Consumption of Fruit and Vegetables, Produce for Better Health Foundation, 2015

On farms, preharvest food waste occurs for a variety of reasons, many stemming from contractual terms with large distributors based on consumer aesthetic preference. The crop may be overripe, underripe, damaged, or simply aesthetically displeasing in terms of size or color. This food is usually not wasted in terms of ending up in a landfill; instead, it is tilled under in-field, used as a compost component or animal feed, or left to naturally decompose in the field. However, it is not sustainable to continue to produce fresh crops that will not be used to feed growing populations.

In many cases, it is not economical for the farmer to harvest produce that is of questionable ripeness or aesthetics, as it could be refused by the distributor or the customer. The most economical choice may be to leave the produce in the field. To harvest food that won't be distributed or sold is seen as a waste of labor and machinery, as well as the farmer's valuable time during peak harvest season.⁴

4 World Wildlife Fund. *No Food Left Behind Part 2: A Tale of Two Markets, a Model for Working Together to Fully Utilize the Food System.* World Wildlife Fund, c402277.ssl.cf1.rackcdn.com/publications/1246/files/original/NFLB_Part_II__V4_Final__Low_res.pdf?1562159669.

Another more complex issue occurs even when produce is aesthetically perfect. If this produce adds to a market surplus and causes a drastic price reduction, this makes the crop economically nonviable to harvest. If the crop can be sold at all, the price will often be less than the cost to harvest it. This is where gleaning programs become highly important and necessary for food rescue and redistribution to occur. Timing is key in many gleaning operations, and stronger farmer-gleaner relationships are needed to facilitate the produce being harvested quickly at peak time to reduce further degradation and damage.

Gleaning is typically done by volunteers through hunger relief organizations in an effort to reduce the economic burden on farmers who decide to participate in food donations. In at least nine states and one providence, tax credits are also available to farmers in exchange for their donation of surplus produce; however, in most states the tax credits are usually too meager to create a strong incentive for donation, as they don't adequately compensate the farmers for materials, resources, and labor costs.

There are two main challenges to using volunteer workforces in gleaning operations. Volunteers can be unpredictable in terms of commitment and can pose liability issues for farmers if untrained or using heavy equipment. Organizations have been working to combat these two issues by providing training to volunteers before gleans, building reliable volunteer bases, and by having their own liability insurance that extends to their volunteers during gleaning projects.

STATES OFFERING TAX CREDITS TO FARMERS FOR DONATED PRODUCE:

- Oregon
- Iowa
- Arizona
- California
- New York
- Pennsylvania
- Virginia
- Maryland
- Missouri
- Ontario

Our society is at a peak, with the highest number of hungry people and the largest amount of wasted fresh produce in history. In 2018, it was estimated that tomato farmers in Florida left 41 percent of crops in the field, lettuce farmers in Arizona left 56 percent of crops in the field, and peach farmers in New Jersey left 40 percent of crops in the field.⁵

It is currently estimated that more than 10 billion pounds of food are left in the field and never harvested, usually referred to as a “walk-by” field by farmers. These walk-by fields have the potential to greatly support the current food system and significantly reduce food insecurity if harvested and utilized.

⁵ World Wildlife Fund. *Five Holistic Approaches to Tackling On-Farm Food Loss*. World Wildlife Fund, c402277.ssl.cf1.rackcdn.com/publications/1170/files/original/WWF_NoFoodLeftBehind820_2.pdf?1564432069.



Growing crops, whether eaten or not, uses valuable resources. The process can lead to loss of the topsoil layer, releases greenhouse gases, uses precious water supply, and incurs equipment and labor costs through machinery and skilled workers, not to mention the time, effort, and commitment of the farmers. No one is more aware of this loss than the farmers; they more than anyone want the food they grow to be consumed. They know that using so many resources to produce fresh, healthy, tasty produce, just to till it under due to aesthetic concerns or a lack of buyers is not the most economical option for our environment.

Environmental factors may not always be a part of the food waste discussion, but they are important considerations that must be included in the larger connections between food insecurity, surplus and waste, and the residual effect on the environment. The practice of growing food is environmentally degrading for a multitude of reasons, and the practice of throwing away food continues to degrade communities facing food insecurity.

Reducing food waste and supporting food security in vulnerable communities can be seen as complementary issues. A solution that connects them is gleaning, which both reduces the amount of on-farm food waste and strengthens communities by providing them with fresh, wholesome produce. In order to make a shift and increase the amount of food gleaned as a means of safeguarding food security, cooperation among farmers, organizations, communities, and government entities is needed. Additionally, there needs to be a societal shift from the demand for absolutely perfect produce. We need a reintroduction of sorts to how food is produced to foster a newfound acceptance of aesthetically imperfect produce, which will undoubtedly have an impact on the amount of produce that is wasted solely for aesthetic reasons.

Gleaning has proven to be a good solution to these aforementioned issues. A larger, society-wide adoption of these practices could positively benefit communities across the nation. Throughout this report, gleaning will be discussed as a solution to on-farm food waste, food insecurity, and diet-related health problems.

METHODOLOGY

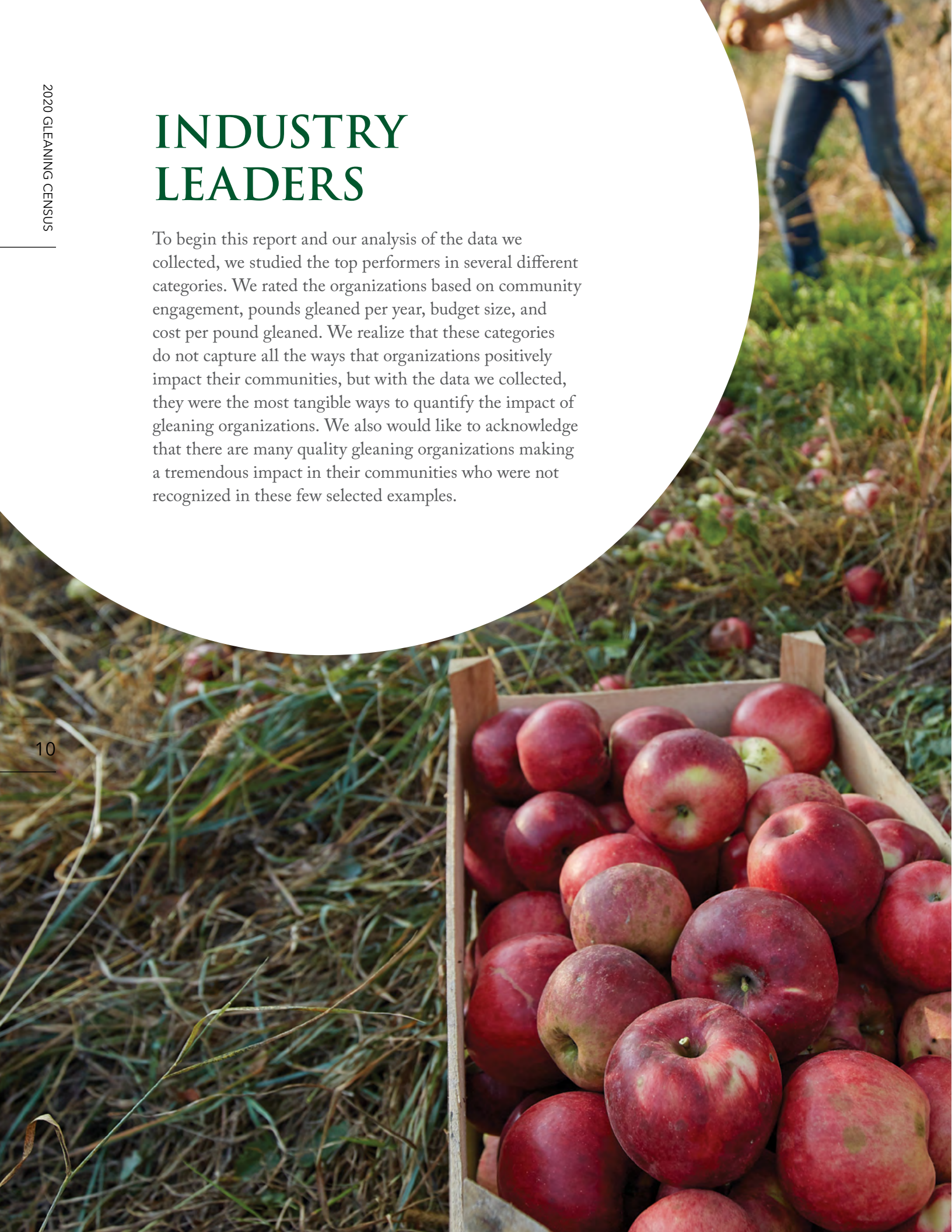
In this report we have attempted to gather data from existing gleaning organizations in order to understand their struggles, strengths, and needs. Over the course of 2020 we held verbal interviews with 129 gleaning organizations in North America. In addition, we gathered data from 34 other gleaning organizations via their websites and annual reports. These organizations were asked questions about their budgets, yields, staffing, volunteers, harvest practices, and distribution methods. This information was combined with more qualitative data as they shared stories about their purpose, their struggles, and how they operate.

Due to the reporting methods, knowledge of staff, and organizations' willingness to share, many organizations did not provide answers to all the questions asked. We made every effort to obtain accurate data from all organizations. But it should be noted that all data was self-reported, and there was no way to independently verify any of it. Lastly, it should be noted that gleaning organizations are very diverse and so is their data. In order to ensure that one organization did not have an outsized impact on the data, we removed any outliers. We considered an organization an outlier if a data point was more than double the next two organizations in a data set. We hope you find some insight in these data sets and gain a better understanding of the gleaning movement.

For the purpose of this report we classify gleaning as harvesting food from a plant. We also looked at organizations' efforts to recover food from people who harvested food directly from the plant. This includes farmers market rescue, food recovery from field and backyards, recovering produce from farms that were already harvested and other similar activities. We did not look at grocery stores, wholesale, or truck load recovery. While we believe these are valuable sources of food rescue, we wanted to better understand the effects of food loss at the farm for this report.

INDUSTRY LEADERS

To begin this report and our analysis of the data we collected, we studied the top performers in several different categories. We rated the organizations based on community engagement, pounds gleaned per year, budget size, and cost per pound gleaned. We realize that these categories do not capture all the ways that organizations positively impact their communities, but with the data we collected, they were the most tangible ways to quantify the impact of gleaning organizations. We also would like to acknowledge that there are many quality gleaning organizations making a tremendous impact in their communities who were not recognized in these few selected examples.

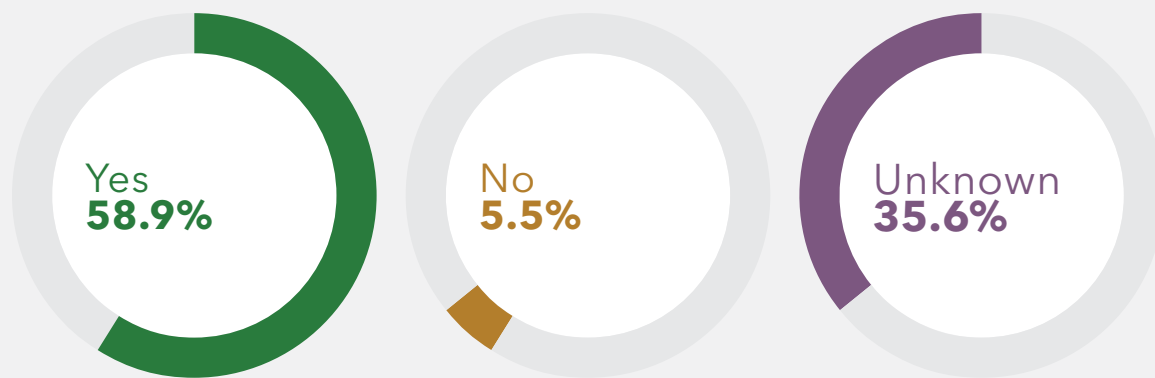


COMMUNITY ENGAGEMENT

The first category we examined was community engagement. We examined volunteer numbers, volunteer hours, number of distribution sites, and number of harvest sites in an effort to find organizations that excelled at community engagement. We studied five organizations that excelled in this category: **Boston Area Gleaners (BAG), Food Forward, Village Harvest, CROS Ministries, and Produce Good.**

All of these organizations are located in urban areas and engage large numbers of volunteers, averaging 2,600 volunteers per organization. Volunteer leadership and allowing kids at gleans seem to also play a role in community engagement.

Organizations Allowing Kids to Glean

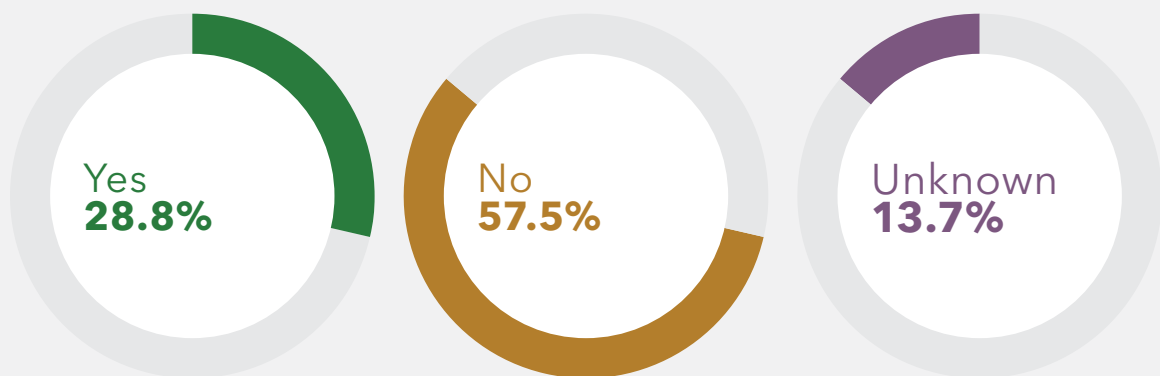


All but Boston Area Gleaners allowed volunteers to lead harvests, and all allowed kids to harvest. Urban gleaning also seems to be important when engaging large numbers of community members in gleaning. All of these organizations do some sort of urban gleaning with the exception of BAG. Volunteers can take home produce from the harvest at four of these organizations and this benefit may be another key to volunteer engagement. **In fact, organizations that let volunteers take home produce engage 45 percent more volunteers than organizations that do not.**



Farmers markets played a key role for Food Forward and Produce Good, accounting for high percentages of their produce rescued. The other groups do not offer any farmers market rescue, but there may be a potential for them to do so as it seems they have the volunteer structure to support it. Many organizations find farmers markets a great way to engage with farmers, volunteers, and the public. Farmers market rescue can often be run entirely by volunteers as there is a gentle learning curve and does not require the specialized skills that harvesting does. With a little training this could be a great way to build community engagement that requires very little staff involvement.

Organizations Doing Farmers Market Gleanings



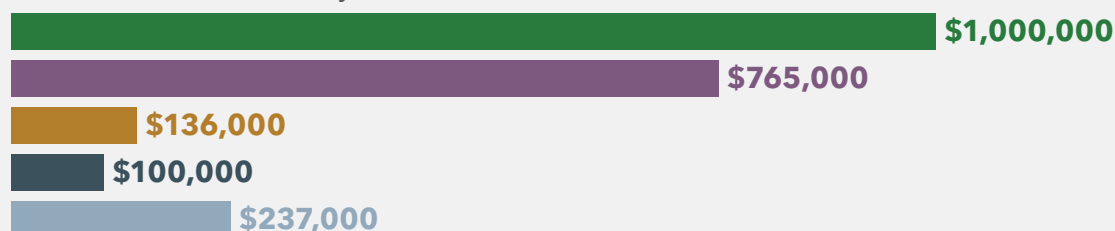
Two of these organizations are quite large with large staffs and budgets over \$750,000. The other three budgets are more in line with the average gleaning organization and have smaller staffs, between 1.5 and 3 FTE (full-time equivalents). These organizations were all between 10 and 20 years old. Our data suggest that after 20 years, community engagement actually drops off. This could be due to organizations founded in that time period not having as strong a focus on engaging volunteers. It could be due to a drop-off in volunteer-run organizations. Or, it could be that as organizations age it becomes harder to engage new people. High community engagement seems to pay off in the amount of produce gleaned, with the average amount gleaned by this group being 616,000 pounds per organization per year, well above average, with a reasonable average cost per pound gleaned of \$0.62.

Community engagement is important and our research shows it can be done well by both large and small organizations. Having opportunities to engage volunteers year-round does make it easier, but it can be done seasonally if you are creative about keeping people involved. For more information please see the volunteer engagement section.

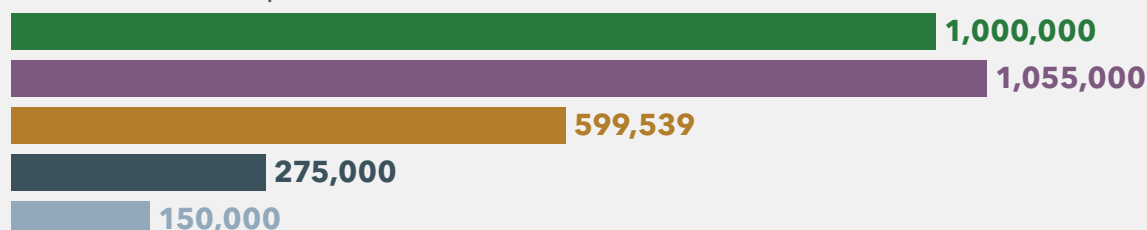


Community Engagement: the top 5 organizations at a glance

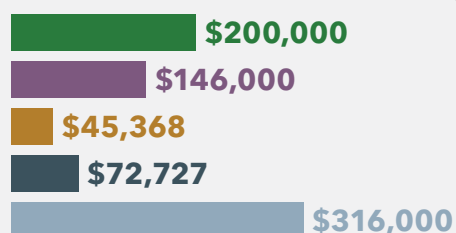
GLEANING BUDGET (\$/year)



TOTAL GLEANED (pounds)



COST PER 100 TONS GLEANED (\$/ton)



Gleaning has a wide array of benefits beyond reducing food waste and providing fresh food to people. One of the most compelling benefits of gleaning work is its ability to build and strengthen community. For some gleaning organizations, community building is a wonderful side effect of the work they do, while for others, it is the driving force of their work. Whichever the case, we believe that with a bit of focus and effort, organizations create a larger impact in joining communities together.

Iskashitaa Refugee Network (IRN)

Iskashitaa Refugee Network (IRN) is based in Tucson, Arizona. Their mission centers on creating opportunities for United Nations (UN) refugees to integrate into the community while reducing food insecurity and waste and building strength in the local food system. They work with UN refugees spanning more than 30 ethnic groups to glean and redistribute food to those facing food insecurity. Each year they glean and redistribute more than 75 tons of produce, which has had an immensely positive impact on food security, agricultural knowledge, and community building in refugee groups.



Iskashitaa Refugee Network was started in 2003 and has grown from a gleaning network to a diverse organization that addresses issues of food security, integration, and community building in Southern Arizona's refugee communities. IRN's gleaning efforts allow their volunteers to better understand Southern Arizona geographically, provides an opportunity to practice speaking English, acquaints them with local businesses and community members, and begins to provide a US work history.

Many of IRN's community outreach programs have the goal of increasing awareness, action, and compassion for pressing human rights issues, both locally and internationally. IRN also has a few other programs, such as food preservation classes, where refugees can both participate in and lead classes to share culinary traditions and learn new cooking skills.

Refugee communities are typically familiar with food insecurity and are horrified by food waste. Coming from a diverse geographical background, refugee communities may be familiar with a wide range of edible plants and have been able to share their knowledge to identify lesser-known food sources that have the potential to be gleaned in urban communities. IRN also found that refugee communities that participate in gleaning experience a greater degree of food sovereignty, such as being able to harvest native foods that they would not otherwise find on the shelves of grocery stores. This helps to redefine food resources throughout communities and allows for organizations like IRN to better impact food waste and security.

IRN has learned that food is a common denominator in communities across the world, one that has the potential to nourish, educate, and strengthen. They have found that refugee communities are often looking to be part of their new community. Gleaning gives a great opportunity to do just that, through ensuring food security, supporting community integration, and strengthening skills necessary to entering the US job force.

BUDGET SIZE

We then looked at the five largest organizations by budget size. We excluded the Society of St. Andrew as the organization functions more as a network than a single gleaner. We also excluded America's Grow a Row because 99 percent of the produce they distribute comes from their own farm. The top five organizations by budget size were **Boston Area Gleaners (BAG), Food Forward, Hidden Harvest, Farm to Pantry, and Rolling Harvest Food Rescue**. This group has a large range in budgets, from \$300,000 to \$1,000,000. BAG and Food Forward are also in the top five organizations for community engagement, and Food Forward, BAG, and Hidden Harvest are in the top five organizations for pounds recovered. Strikingly, none made the list for the top five for lowest cost per pound rescued. It should be noted that Hidden Harvest's data comes from their annual report as they did not participate in the interview portion of the report, and therefore we have very little data about them.

These organizations are all at least 10 years old, with the oldest being founded in 2004. They have a high average number of volunteers at 2,125, but the median is just 300 and the range is from 200 to 5000. They also glean an above average amount, with a mean of 1,051,000 pounds; the range is from 2,500,000 to 300,000. There is a wide cost range, from \$0.13 to \$1 per pound of food rescued. The average cost is \$0.73 cents per pound gleaned.

We did not find any commonalities in the organizations besides location. Two are located in California and the other three are in the northeastern United States. Location could help explain the higher than average budgets—these areas have a high concentration of gleaning organizations, making it easier for gleaners in those locations to raise funds due to funders' familiarity with gleaning. California has the highest average budget of any region we studied and the northeastern US comes in second. More data can be found on regions later in this report. We would like to state that these organizations are all well run and do a great job creating real impact with the funds invested in their work. This is not always the case; as is shown many times in this data, money alone does not make organizations more successful or impactful.

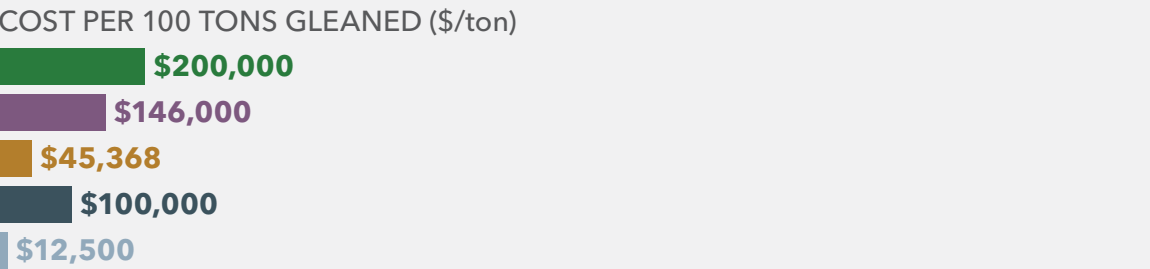
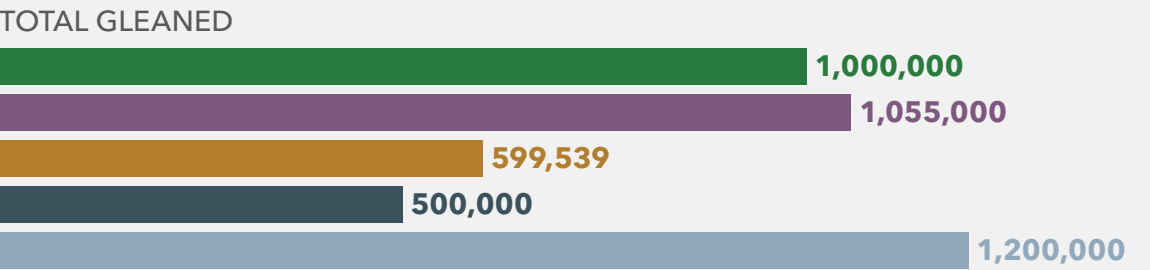




POUNDS GLEANED

We next evaluated the total pounds gleaned. Of the organizations we talked to, the five top performers were **NJ Farmers Against Hunger, CROS Ministries, Boston Area Gleaners, Food Forward, and Arkansas Gleaning Project**. We excluded SOSA due to the nature of their network and America’s Grow a Row due to their substantial production activity. The harvest per year range of the group is 1.2 million pounds to half a million pounds.

Top Organizations for Total Pounds Gleaned

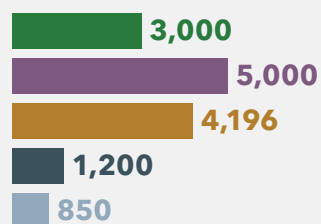


- BOSTON AREA GLEANERS
- FOOD FORWARD
- CROS MINISTRIES
- NJ FARMERS AGAINST HUNGER
- ARKANSAS GLEANING PROJECT

Like many of the top producers in other categories, these organizations tended to be older, between 12 and 25 years old. In order to harvest so much produce, they engage lots of volunteers, averaging 2,850 volunteers per organization per year. As mentioned before, Food Forward and BAG are larger organizations with large staffs, but the other three have modest staffs of 1.2–2 people and have an average budget of just \$154,000. These five organizations combined glean 4,355,000 pounds, almost 20 percent of all produce gleaned by non-SOSA organizations.

Volunteer Use of Top Organizations for Pounds Gleaned

VOLUNTEERS PER YEAR



VOLUNTEER HOURS DONATED PER YEAR





These organizations are diverse in the sources and methods used to recover produce. For three of these organizations, less than 50 percent of the recovered produce is picked by the organization. For BAG and the Arkansas Gleaning Project, 50 percent of their recovered produce comes from farms but has already been picked; they help only with distribution. Food Forward gets almost 70 percent of its produce from farmers market rescue. The diversity extends to locations gleaned as well, with all but one of the organizations doing farm gleans and all but one doing urban gleans.

Year-round gleaning is not necessary to be a top harvester. Just two of the organizations glean year-round, CROS Ministries operates ten months of the year, NJ Farmers Against Hunger gleans six months of the year, and Arkansas Gleaning Project gleans eight months each year. We are heartened to see that only two of these organizations are located in parts of the country with year-round growing climates. This means large yields can be achieved in many parts of the country.

These large organizations take advantage of their huge scale to drive costs down. BAG has the highest cost per pound at \$1 but it should be noted that they directly distribute a lot of food, to many organizations, which accounts for much of this cost. In many ways, they play the role that food banks play for many other organizations. The mean and the median cost per pound is \$0.50 with the Arkansas Gleaning Project gleaning produce for just \$0.06 a pound. Pounds harvested per glean are quite high in this group as well. With the exception of Food Forward, all organizations average harvest are more than 5,000 pounds per glean. Arkansas Gleaning Project gleans 48,000 pounds per glean but this is largely due to how they count gleans. They will often be in an area gleaning the same farm or neighboring farms for a week or more at a time. They count this whole event as one glean leading to tremendous yields.

All of these groups harvest more than 500,000 pounds of produce a year which requires staff support, volunteers, and resources. However, the range of organization sizes leads us to believe that if an organization can reach 1-2 FTE and have access to the proper equipment, they can grow their organizations and harvest this volume of produce. We believe that this kind of success has more to do with having a good system and strong community relationships than it does with large budgets and staff sizes. One of AGO's goals is to help organizations grow in reach and harvest more produce. If we could help just half the gleaning organizations of this type, we would glean more than 70 million pounds of produce each year. We believe this goal is achievable with proven models for organizations to emulate.



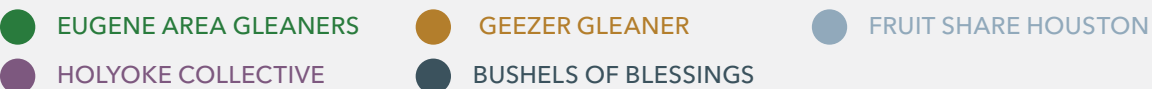
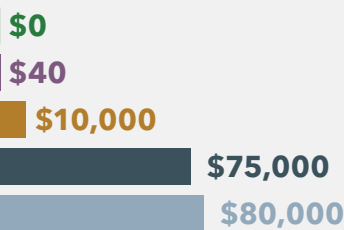
COST PER POUND

Lastly, we reviewed organizations by cost per pound. We had to add a few qualifiers in order for this data to make sense. To start, we removed all organizations that harvested less than 15,000 pounds per year. This scale was just too small for us to know if their cost would stay the same as the organization grows. This gave us five organizations that all had costs under \$0.04 per pound gleaned. These organizations were **Eugene Area Gleaners, Holyoke Collective, Geezer Gleaner, Bushels of Blessings, and Fruit Share Houston.**

TOTAL POUNDS GLEANED



COST PER 100 TONS GLEANED



All of these organizations had the founder still involved in their work and were founded between 2009 and 2020. These are very small organizations, with many using just a few volunteers. In fact, the median number of volunteers used each year was just 60. All of these organizations are led and run by volunteers. Bushels of Blessings has a full-time staff member, but they receive a small stipend rather than a salary. These organizations are all run with very little resources; the average budget is just \$3,260. Even this does not tell the complete story, as all but one of these organizations have budgets under \$800. All this being said, the yields are not insignificant; this group harvests 627,200 pounds per year.

These dedicated volunteers are gleaning an average of 92 times a year and operate anywhere from 4 to 12 months out of the year. All but one gleaned from farms, with two holding urban gleans as well. For two organizations, Bushels of Blessings and Holyoke Collective, less than 20 percent of the produce they recover is picked by them; the rest is pre-picked by their farm partners. The rest of the organizations in this group do not recover any pre harvested produce. Despite being operated solely by volunteers, these organizations are doing remarkable work and deserve to be celebrated for it.

Because these organizations are all volunteer-led, we felt the need to examine cost per pound within organizations with paid staff as well. We hoped this would help us identify and learn lessons from these organizations that could be replicated by other organizations with paid staff. This list included **Arkansas Gleaning Project, Harvest Pierce County Program, Project Share, Merrimack County Gleaning Program, and Hillsborough County Gleaners**. These organizations had a cost per pound that ranged from \$0.06 up to \$0.15 per pound gleaned.

Four of these organizations are very small with budgets between \$4,000 and \$12,000. The organizations have small staffs of between 0.3 and 0.5 FTE per organization. They all glean a significant amount of produce considering their sizes and budgets, averaging 66,000 pounds per organization. The outlier in this group is Arkansas Gleaning Project, whose budget, staff size, and pounds gleaned are much larger than the others.

All the organizations glean farms and all but one do urban gleaning. Unfortunately this is where the commonalities end. They vary in age, volunteer engagement, percentage of produce received that's pre-picked, urban versus rural locations, and pounds per harvest. They even vary on how they engage volunteers, whether they let them lead harvests without staff, and whether they have volunteers distribute produce.

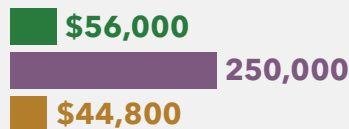
This inconclusiveness led us to examine one final group for cost per pound. To better understand this data point we looked at the cost per pound gleaned for organizations that had at least one paid staff member working at least one FTE. The five organizations in this group are **Arkansas Gleaning Project, the Gleaning Project of South Central PA Franklin County, CROS Ministries, GleanSLO, and Village Harvest**. Their costs range from \$0.06 to \$0.36 per pound gleaned. Surprisingly, all these organizations have modest budgets ranging from \$56,000 to \$136,000. Despite modest budgets, they have decent staff sizes, averaging 1.8 FTE per organization, and all harvest well above the average each year. The range of produce recovered each year is from 250,000 all the way up to 1,200,000 pounds.

Cost per Pound Gleaned for Organizations that had at Least One Paid Staff Member

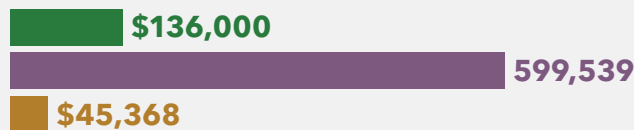
ARKANSAS GLEANING PROJECT



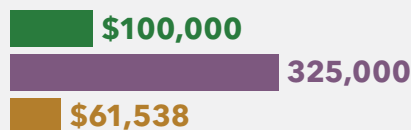
THE GLEANING PROJECT OF SOUTH CENTRAL PA FRANKLIN COUNTY



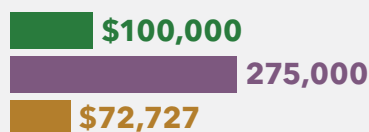
CROS MINISTRIES



GLEANSLO



VILLAGE HARVEST



● GLEANING BUDGET ● TOTAL POUNDS GLEANED ● COST PER 100 TONS GLEANED

Volunteer engagement seems to be key for these organizations to keep their costs low. On average, each organization uses 1,430 volunteers who perform 5,100 hours of service annually.

Three of these organizations let volunteers lead harvests without staff and two have volunteers who help distribute produce. These organizations all have access to a large pool of volunteers with all but one located in a large urban area. Being located in an urban area, it makes sense that they all perform urban gleaning. They are also taking advantage of the efficiency found in harvesting on farms with all but one engaging in farm gleaning as well. With an average cost of just \$0.24 per pound harvested, these organizations are true models to follow.

They demonstrate that cost can be kept low even if you don't harvest year-round or are not in a climate that can grow food year-round. One of these organizations operates five months out of the year and one operates eight months, and these two are both located in northern climates. They also demonstrate that you don't have to rely on post-harvested produce to keep costs low either. Only two of the organizations recover a significant portion of post-harvested produce. We believe that with good practices and thoughtful growth, other gleaning organizations can bring their costs more in line with these organizations. In fact 80 percent of all produce received by gleaning organizations is done for less than \$0.50 a pound.

Several organizations made multiple lists. Boston Area Gleaners, CROS Ministries, and Food Forward all made at least three of these lists. CROS Ministries made every list except the highest budget, which says a lot about their effectiveness. We believe there is a lot to learn from these organizations, as well as other organizations across North America. We intend for this study to be a starting place for further research and training to build a gleaning movement that is lean, efficient, and responsive to the needs of the unique communities they are located in. The rest of this report includes additional analysis of best practices, case studies, and examples. We believe it will help funders and policymakers better understand gleaning. It also will help gleaning organizations make better decisions and expand their reach.



NEXT STEPS

If we truly want to address on-farm food waste, gleaning must be part of the solution. ReFED's 2020 Food Waste Insights Engine estimates that gleaning has the potential to recover another 78.5 thousand tons of food each year.⁶ This will require significant growth to more than triple the amount of produce being gleaned. In order to do so we recommend the following five action steps.

1. Better networking and mentorship.

Luckily, we have some great examples of gleaning organizations who are doing all types of gleaning well at scale. This does not mean that every organization should have to operate at scale. There is plenty of room in the gleaning world for small hyper-local volunteer groups but those who do want to operate at scale should have access to mentoring to do so.

Funders should provide funding for successful gleaning organizations to offer other organizations formal mentorship and technical assistance to other gleaning organizations. They should also fund informal mentoring in the form of regional networks, peer training sessions and webinars, and networking events.

⁶ ReFED. *Solution database: Gleaning*. <https://insights-engine.refed.com/solution-database/gleaning>. Last consulted 6/30/21.

2. Peer learning and technical assistance.

Training and technical support is necessary to build the capacity of new and young organizations. These organizations are often not founded by nonprofit professionals. Founders are often passionate about food waste and gleaning. But they may not have experience in nonprofit best practices, fundraising, recruiting and managing volunteers, or in many cases the act of gleaning itself. Funds should be provided for founders to attend training and conferences in these areas. A small amount of training can go a long way toward ensuring the long-term success of these organizations.

Gleaners should work together to identify small changes they could make to improve their operations. For example, gleaners could explore other ways to use their existing resources to glean more produce. This could include gleaning farmers markets or recovering already harvested produce on farms. In the past, many gleaners have focused on adding more gleaning events. Instead, they could focus on finding larger harvest sites in order to harvest more produce. Organizations could also look at how and why they are using volunteers. They could reimagine old beliefs, such as volunteers being needed to harvest large amounts of produce. Instead, organizations may be more effective harvesting without volunteers. Each of these changes would be dependent on the individual goals and mission of each organization. Some organizations are focused on reducing food loss, others on fresh food access, and still others on community building. Organizations should work with their peers to identify small changes they can make to better meet their goals.

3. Leadership transition.

As stated above, organizations become more efficient as they age. This work is relationship-based and building relationships takes time. Yet we know this industry has high organizational turnover, with frequent burnout of founders and no one to take their place. Many grassroots organizations cease operations, to be replaced by a new grassroots organization a few years later. Support is needed to build the bench of volunteer leadership and to help volunteer organizations transition to having full-time staff.

Some of this work is being done by Harvest Against Hunger. They place AmeriCorps VISTA positions in young organizations who often act as the first paid staff. They then try to help the organization transition to paid staff after the three-year VISTA grant expires. This is a great start, but more support is needed in this area.

4. Data management.

Gleaners need to do a better job tracking and managing data. The movement could benefit from some uniform metrics and language to help funders compare gleaning organizations to each other. This information would also help to quantify the impact of the moment in North America. Currently this information is very fragmented. We recommend that gleaners work together to find common language and data points.

5. More funding.

Funding is desperately needed in the gleaning space. ReFED estimates that gleaning needs \$47.2 million dollars in funding a year in order to reach the above-stated goal. Currently, gleaning receives just \$13 million in funding each year. All but the largest of gleaning organizations operate on shoestring budgets. For gleaning to reach its maximum impact the sector needs a significant increase in spending. As mentioned above, money alone is not the solution, but combined with the strategies above it is needed to grow the sector. When investing in organizations with strong systems and community support, funders' dollars will have an outsized impact in their communities.

CROS Ministries

CROS Ministries is a Palm Beach and Martin County, Florida-based organization that is committed to gleaning produce from large scale farms and redistributing that produce through collaborative efforts with regional food banks and their own food pantry system at no cost to the recipients. CROS Ministries operates a number of programs, from food pantries to educational summer camps, and many of these programs are supported by produce gathered during their gleaning efforts.



CROS Ministries focuses on gleaning produce from large scale farms in Florida. They have the ability to engage in large-capacity food recovery projects and focus their gleaning efforts to utilize harvests to the fullest extent. They have access to cold storage facilities through their collaborative partners, which helps give the gleaned produce a longer shelf and distribution life. By maximizing their harvest capabilities, they have been able to reduce on-farm food waste while maximizing the available free produce in their communities. They work with both volunteer groups and individuals to coordinate the gleaning and distribution of rescued produce.

CROS Ministries values strong community collaboration, which has been instrumental in keeping costs down and redistributing vast amounts of food to those facing food insecurity. They use a variety of routes to advertise for volunteers, such as community presentations and word-of-mouth partnerships. Through this, they have built a strong foundation with a high retention rate of volunteers who are committed to fighting hunger through gleaning.

Through their gleaning and food rescue efforts, CROS Ministries has been able to positively impact food security for residents of Palm Beach and Martin Counties. They have also been able to reduce the amount of produce that goes to waste on-farm. Both of these accomplishments are vital for continuing to support and develop our current food system to reduce food waste and ensure everyone has access to nutritious food.

Boston Area Gleaners

Boston Area Gleaners is the only gleaning and food rescue organization in the greater Boston, Massachusetts, region. They have been committed to on-farm food rescue and redistribution since 2004 and have steadily grown their gleaning capacity over the years.

Boston Area Gleaners focuses on gleaning and food redistribution throughout eastern Massachusetts. They bridge a gap between farmers and hunger relief organizations, using a unique model. They organize volunteer groups of corporate employees who are looking to have team-building experience. The food that these groups glean is then redistributed through Boston Area Gleaners' network to directly impact and reduce food insecurity and hunger in vulnerable communities.

Boston Area Gleaners has developed their own centralized distribution model with data software they developed themselves. All gleaned crops are brought to their facility, where they are sorted, assigned, and labeled with lot numbers and then entered into a database that allows the food to be allocated while fulfilling orders to their partner food distributors. This system allows for greater efficiency when food banks and similar organizations select and receive gleaned produce from Boston Area Gleaners, while being conscious of reducing food waste that can occur, typically as the result of seasonal overabundance in food donations and gleans. This model, and the use of data software to centralize produce allocation, is completely unique to Boston Area Gleaners.

Boston Area Gleaners uses a fundraising model unique to their organization, that supports their gleaning operations, while also supporting farmers. Boston Area Gleaners will contract with a farmer for their time planting and tending a crop. The crops are then harvested by corporate groups that pay for the event as a team building opportunity. The crops are distributed to food pantries who buy a subscription for weekly produce delivery. The pantries use funds that are already allocated to purchase produce for distribution to their clients. Boston Area Gleaners provides produce at a lower cost per pound than is available from other sources. This model deserves more attention, as it creates a win for all parties involved.

Boston Area Gleaners has developed a system that enables them to efficiently and effectively impact food insecurity and waste in the greater Boston area. This system allowed them to glean more than four million pounds of produce annually, with all gleaned produce directly benefiting hunger relief organizations.



A MORE IN-DEPTH
LOOK AT GLEANING
ORGANIZATIONS
AND FACTORS
CONTRIBUTING TO
THEIR SUCCESS



ORGANIZATION AGE

The age of an organization plays a significant role in its effectiveness in gleaning produce and volunteer engagement. As you can see in the chart, the number of organizations starts to drop significantly at the 10-year mark. The data seems to show that fewer organizations were founded in the last few years compared to 10 years ago. We do not think this is the case and instead believe it is most likely due to the difficulty in discovering new organizations. It takes a few years to learn about new organizations' work and add them to our database. It is most likely the case that some organizations were founded and dissolved before they even learned about the support that other gleaners can offer them. We need to find better ways of sharing information about the support available to new organizations.

We found that as organizations age, there is a decline in the number of founders still involved. Our research found that 55 percent of organizations founded in the last 10 years have a founder involved. This drops to 27 percent of organizations between 10 and 15 years old and to 19 percent for organizations between 15 and 20 years old. We did not find founders present for organizations older than 20 years. We believe one of the reasons for the decline in organizations at the 10-year mark is that many organizations fail to survive the exit of the founder.

Founder Involvement Over Time



We also see a drop in the number of volunteer-run organizations as organizations age. The median age for a volunteer-run organization is seven years and 70 percent of these organizations were founded after 2010. Founders tend to play an outsized role in volunteer-run organizations, with 65 percent of these organizations having the founder present. This is compared to 37 percent of staffed organizations. **Volunteer-run organizations play a key role in the gleaning movement, effectively building communities and harvesting 1.2 million pounds of food each year.** Supporting these volunteer run organizations and ensuring their longevity will support the gleaning movement's diversity and its long term success.

PROPOSED SOLUTION

Both of these problems could be addressed with more support and planning for leadership transitions. A focused effort by funders, organizations, and AGO could have a far-reaching impact on gleaning organizations as whole. Funders can support these transitions by funding transition planning, mentorship, and the transition process for organizations whose founders are preparing to reduce or end their role. We at AGO plan to provide training and support to organizations making this transition. Organizations need to start thinking about this from day one, building their leadership bench with strong training and support to ensure the organization outlives the founder. Luckily this transition gets easier with time. Each time an organization transitions leadership, it is easier than the time before. Because of this, an investment in helping organizations get their first leadership transition right could pay dividends for decades to come.

We at AGO are interested in supporting the transition process because organization age is important. Organizations that have been around for decades provide mentorship to new organizations and stability to a movement. Older organizations are more impactful in their communities because it takes time to build a base of volunteers, farmers and landowners, and funders. It also takes time to develop systems to ensure maximum efficiency in their food recovery efforts.

One of the reasons we are interested in supporting this transition is that cost per pound gleaned is drastically different between organizations that are less than five years old and organizations that are five to nine years old.

The less-than-five group has a mean of \$0.90 and median of \$0.78, while the five-to-nine group has a mean of \$0.77 and a median of \$0.43. Both these groups have a similar portion of volunteer-run organizations. This is important for the comparison because volunteer-run organizations have a much lower cost per pound: \$0.33 on average compared to \$1.26 for organizations with paid staff.



STAFFING

One of the factors we looked at when evaluating best practices for gleaning organizations was staffing. For our analysis, we categorized the organizations with paid staff into the following divisions based on the number of paid hours each organization has, expressed in full-time equivalents (FTE):

0.11 to 0.25 FTE

0.26 to 0.5 FTE

0.6 to 0.99 FTE

1 FTE

1.1 to 2 FTE

2 to 5 FTE

5+ FTE

Efforts were made to divide the organizations into equal groups with logical divisions.

Our assumption going into this analysis was that increased staffing would lead to increased efficiency and amount of produce rescued. Interestingly, the data does not seem to support this theory.

The group with the lowest cost per pound was the 0.26 to 0.5 FTE group at \$0.66 per pound. The second best performer was the 0.11 to 0.25 FTE group at \$0.72. This low cost per pound is most likely due to much, if not all, of the administrative work being performed with volunteer labor and a reliance on staff using their own vehicles for distribution. This number continues to increase until reaching 1 FTE staff member, where it dips before climbing again.

Initially it seems obvious that large organizations harvest far more produce than small organizations. But when we break it down by pounds of produce harvested per staff member, the numbers tell a different story. Organizations with 0.26–0.5 staff harvest an average of 125,000 pounds of produce per staff FTE. Next in line is organizations that have 1.1–2 FTE; this group vastly outperforms the groups just above and below. As you can see on the chart on the following page, there seem to be two dips in staff performance, one just after staff increases above 0.5 FTE and one when staff increases above 2 FTE.

We believe that growing staff is a tricky proposition. Most organizations must go through a transitional state. This state means that less paid time is spent gleaning and more time is spent fundraising, managing staff, marketing, managing volunteers and property owners, and managing data. In smaller organizations much of this work can be done by the board and dedicated volunteers, but at a certain size this work becomes too much to be completed by all but the most dedicated volunteers. At this point, the work shifts to staff. This leads to a transition phase where economies of scale have not yet been achieved, yet staffing costs have become quite high.

This transition period can be very difficult for organizations, as efficiency decreases. However, funders should expect to see this, and do their best to push through to get to the other side. Funders and AGO can support these organizations and provide resources to help them move through this transition.

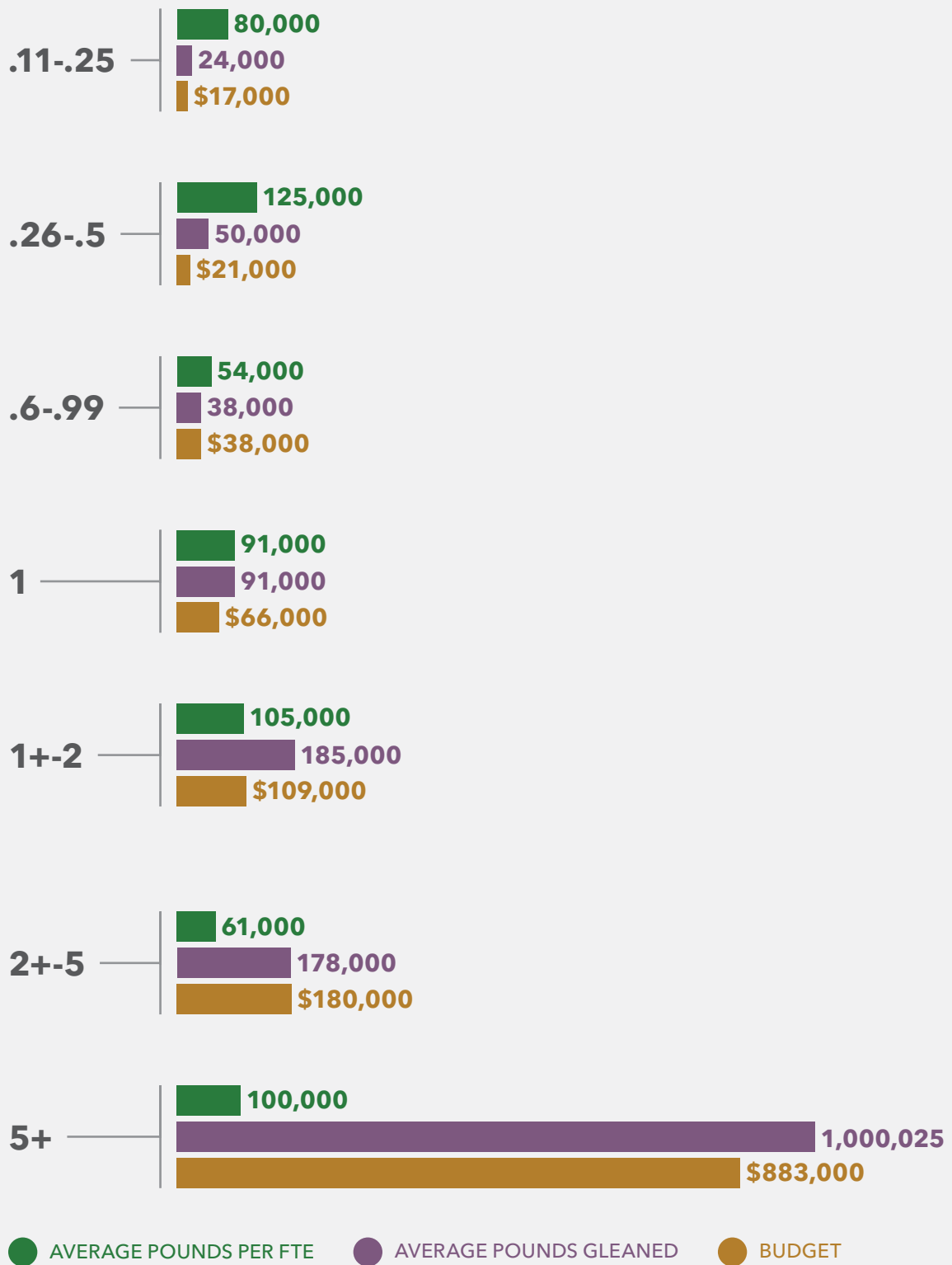
The Society of St. Andrew

The Society of St. Andrew, or SOSA, is a unique case when it comes to gleaning organizations and staffing. SOSA is the only gleaning organization that has operations in multiple states, and has 35 FTE in staff. Because this organization is an outlier, it was not included in this data. However, there are some lessons to learn from the SOSA model. SOSA organizations share much of their administrative costs, including fundraising, human resources, and marketing. While the head office provides guidance and funding, the individual organizations have autonomy to run their programs in a way that best serves their community. This helps keep their cost low at an average of \$0.14 per pound. They rescue more than 571,000 pounds of food per staff member, which far exceeds what is rescued by any other gleaning organization.



A strategy to consider is finding ways to replicate the SOSA model. We believe there could be great value in collectively sharing a development, data management, marketing, and human resources team. There is also space to consider jointly purchasing insurance, software, and other resources. This could be done on a larger scale via AGO or on a smaller scale through regional groups. We believe this can be done in a way that honors individual organizations' autonomy as well as their ability to operate creatively.

Pounds Gleaned Related to Staff Size



*Please note that of the 5+ FTE groups the data is not usable; this group includes only two organizations, Boston Area Gleaners and America's Grow a Row. Of the two, Boston Area Gleaners is the only organization that is comparable to the other organizations surveyed. America's Grow a Row performs a small amount of gleaning, but 99 percent of their produce comes from their own farm. Therefore, America's Grow a Row should be excluded when comparing this data.

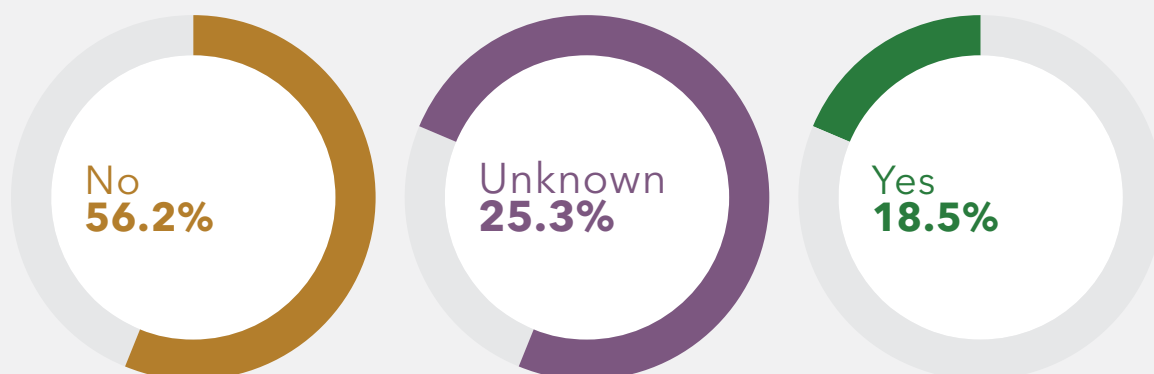


PART OF A FOOD BANK

Twenty-seven gleaning organizations are part of a food bank. These organizations are less likely to use volunteers in unsupervised roles than other gleaners. Seventy-four percent have staff at all gleans, and only 14 percent let volunteers distribute produce. These organizations average 101,000 pounds harvested per year at a cost of \$0.67 cents per pound. The average annual budget of these organizations is \$56,000. Although budgets are on the small end, these organizations tend to be well resourced with the access to the storage, vehicles, fundraising, and administrative staff of their parent organizations.

35

Organization is Part of a Food Bank

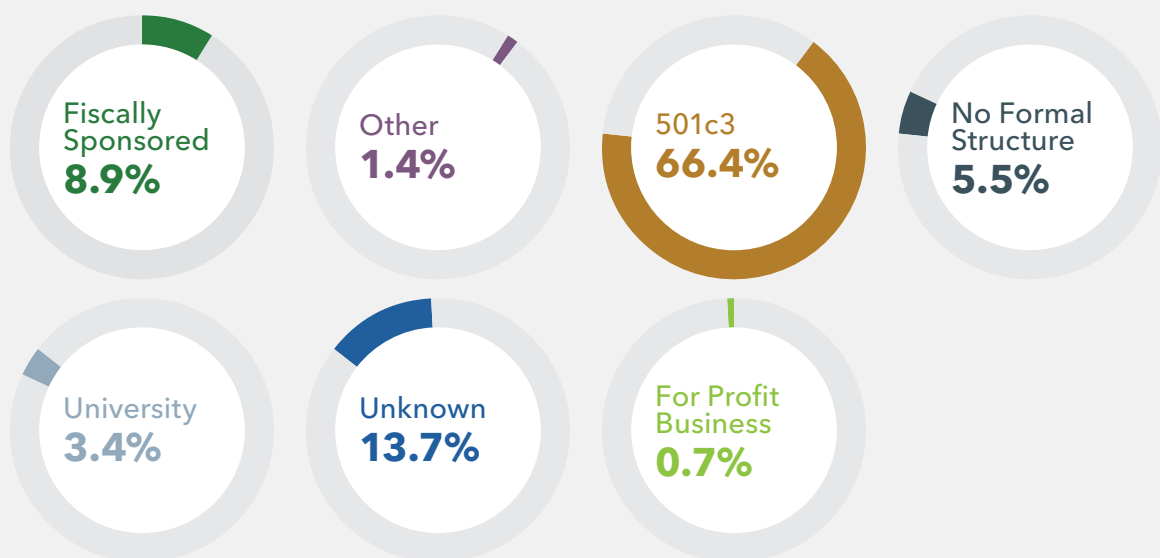


ORGANIZATIONAL STRUCTURE

There are significant differences between fiscally sponsored organizations and organizations with no formal structure, despite these organizations having a similar average age of six years. This could be due to the fact that fewer formal organizations seek fiscal sponsorship, but it is also worth exploring what effect fiscal sponsorship has on organizations' ability to raise funds and hire staff.

Type of Organization	Fiscally Sponsored	No Formal Structure
Number of Organizations	13	8
Founder Is Present	62%	62%
Volunteers Per Year	150	81
Volunteer Run	30%	75%
Average Staff Size	0.6 FTE	0.025 FTE
Budget	\$21,000	\$975
Average Pounds Gleaned Per Year	50,000	9,000
Cost Per Pound Gleaned	\$1.05	\$0.15
Total Pounds Gleaned by Group	611,450	64,722

Organization Structure



BUDGET SIZE

In order to understand the effects of budget size on gleaning organizations, we broke them into the following categories:

\$1-\$25,000

\$25,000-\$99,000

\$100,000-\$175,000

>\$175,000

Surprisingly, the age of the organization had little to do with budget size, with each group having a similar average age. The exception is organizations with budgets greater than \$175,000. These organizations are older than organizations in the other groupings, with no organization founded after 2010 achieving this milestone. One other note is that all of the groups, except the \$1-\$25,000 group, skew to the low end with more than half the organizations falling into the bottom quarter of the range.

Larger budgets allow organizations to hire more staff, engage more volunteers, and harvest more produce. But as the budget increases, so does the average cost per pound. This illustrates that more money is not always the solution. As our research shows, it must be paired with other best practices in order to ensure that additional funding leads to an increase in produce recovered.

Budget Size	\$1-\$25,000	\$25,000-\$99,000	\$100,000-\$175,000	>\$175,000
Number of Organizations in the Group	23	29	21	12
Volunteers per Year	Mean 156 Median 100	Mean 239 Median 224	Mean 452 Median 400	Mean 1142 Median 300
Pounds Gleaned	Mean 35,000 Median 20,000	Mean 72,000 Median 51,000	Mean 145,000 Median 120,000	Mean 777,000 Median 290,000
Cost Per Pound Gleaned	Mean \$0.75 Median \$0.47	Mean \$1.27 Median \$0.94	Mean \$1.73 Median \$0.93	Mean \$1.42 Median \$0.82
Pounds Gleaned By Group	1,092,070	5,963,651	3,511,824	32,770,800*

*20,000,000 pounds of this come from the Society of St. Andrew



VOLUNTEER BEST PRACTICES

Volunteers are integral to the work gleaning organizations do, playing greatly varying roles. In some cases volunteers run the entire organization; in others they distribute food or help with harvesting. Every gleaning organization in North America uses volunteers in some capacity, with 51,000 volunteers donating at least 377,000 hours each year to help glean.

While 60 organizations included in this study do not track volunteer hours, the best practice is to do so. This data is helpful when communicating with funders as it helps them understand your organization's impact in the community. We also believe it is a best practice to track unique individuals who help your program. These two numbers can be easily tracked with an online or in-person sign-up sheet, or by having your harvest leader count individuals at the events.

To analyze volunteer impact, we broke organizations into six divisions based on the number of volunteers engaged annually. The goal is to have a similar number of organizations in each division, while maintaining logical divisions. The divisions we use are: fewer than 25, 26-75, 76-150, 151-300, 301-600, and 600+. We found that volunteers were not a major part of the operations in organizations with less than 25 volunteers annually.

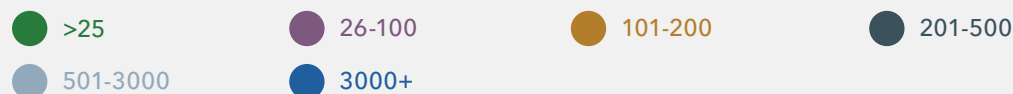
This analysis shows that an increase in volunteers leads to an increase in pounds gleaned, but it also leads to an increase in cost per pound gleaned. We believe this is due to the fact that harvesting produce is skilled labor and while volunteers are helpful, they are not always the most efficient harvesters. This is in line with our finding that using volunteer harvest leaders does not lead to a decrease in cost per pound or an increase in total pounds gleaned. We also observed an increase in staff size when volunteers are used, as volunteers require lots of time to manage and are incredibly expensive.

Volunteers per Year

POUNDS GLEANED



VOLUNTEERS PER YEAR



Due to the COVID-19 pandemic many organizations had to cut the number of volunteers involved in gleaning. One of these organizations was Food Forward in Los Angeles, California. They feared that the lack of volunteers would lead to a dramatic reduction in the amount of produce recovered. Yet despite a serious reduction in the number of volunteers, 2020 was a record year for the amount of produce recovered by Food Forward's gleaning program. Other organizations had similar results. Some have found that without volunteers at harvest, the paid staff can harvest more produce, not less. All of this invites gleaners to rethink how they use volunteer labor.

This is not in any way to advocate for not using volunteers. Volunteers help organizations with valuable goals other than low-cost food rescue. These goals tend to be more qualitative and were not closely evaluated in this survey, but they are nonetheless important.



They may include:

- increasing awareness around food loss
- providing opportunities to connect with where food comes from
- building community around food
- providing safe, accessible outdoor activities connecting people to local food
- integrating communities
- reducing food loss

Volunteers play many leadership roles in organizations. They run organizations, lead harvests, and distribute produce on their own. Below we will explore these three options and their impact on the organization.

Volunteers Per Year	>25	25-75	76-150	151-300	301-600	600+
Number of Orgs	21	21	22	23	16	19
Staff Size	1	0.3	0.6	1.1	1.4	2.3
Pounds Gleaned Per Year	Mean 50,000 Median 11,000	Mean 32,000 Median 22,000	Mean 51,000 Median 25,000	Mean 126,000 Median 78,000	Mean 91,000 Median 53,000	Mean 197,000 Median 70,000
Cost Per Pound Gleaned	Mean \$.54 Medium \$.50	Mean \$.62 Median \$.32	Mean \$.82 Median \$.71	Mean \$1.13 Median \$.79	Mean \$1.25 Median \$.71	Mean \$.82 Median \$.50
Pounds Per Glean	Mean 313 Median 290	Mean 690 Median 370	Mean 696 Median 400	Mean 1,396 Median 541	Mean 1,079 Median 542	Mean 2,565 Median 472
Gleans Per Year	Mean 33 Median 21	Mean 82 Median 70	Mean 84 Median 82	Mean 184 Median 76	Mean 72 Median 75	Mean 175 Median 150
Average Budget	\$9,000	\$15,000	\$41,000	\$81,000	\$73,000	\$198,000
Total Pounds Gleaned by Group Per Year	906,058	664,900	1,132,136	1,453,740	1,453,740	3,749,082

VOLUNTEER-LED ORGANIZATIONS

Nineteen of the organizations included here are completely run by volunteers, while another 13 have the equivalent of 0.1 FTE or less. Volunteer-led organizations' budgets tend to be quite small, ranging from \$0 to \$65,000. While the mean budget is \$8,000, the median is only \$1,500. These organizations are mostly passion projects of the founder who often funds the minimal cost of supplies themselves and uses their own vehicle for distribution. These organizations do not have dedicated fundraisers and in many cases the leaders lack fundraising experience. Therefore, raising the funds necessary to hire staff can be a real challenge. When these organizations stop operating, all their knowledge and the connections built are lost. Oftentimes these organizations are replaced with others doing the same work a few years later. Unfortunately by the time these organizations are operating at scale, the founder often burns out and the process is repeated.

We believe that small amounts of funding for these organizations to help them develop transition plans and perhaps fund staff could have a great benefit on the amount of fresh food recovered and distributed. In most cases, this intervention would only need to be a few thousand dollars. Organizations with 0.25 to 0.3 FTE staff have an average budget of \$12,000 and recover an average of 25,000 pounds a year at an average cost of \$0.64 a pound. These organizations also have greater longevity with less than 40 percent of founders present and an average age of 11 years compared to the 8-year average of volunteer-run organizations.

Staff who work at least a few hours a week are an important factor for organizations hoping to transition when a founder leaves. In the absence of paid staff, strong systems and processes are key. These systems should be documented and able to be easily implemented if the founder were to bow out suddenly. A deep bench of leadership with training and a sense of ownership of the organization can be vital to a transition.



PROPOSED SOLUTION

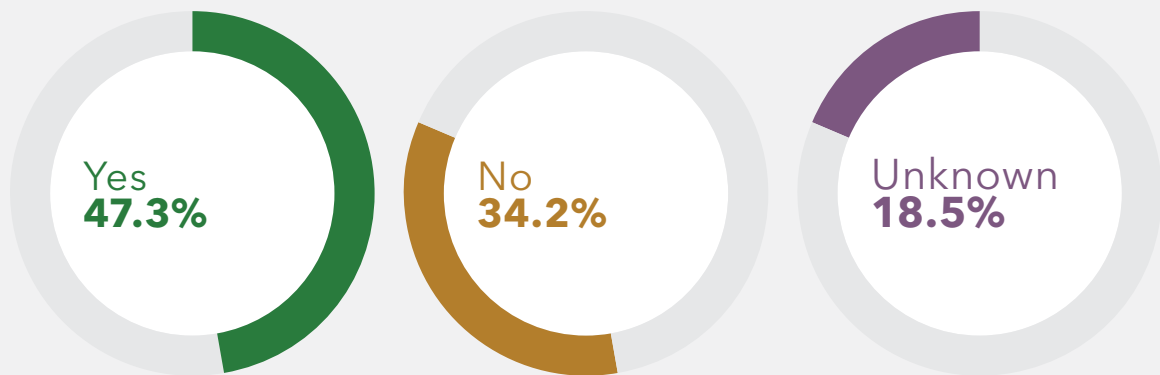
This is a place where support from AGO can make a big difference. AGO's in-house development team can help organizations write small grants to overcome the hurdle of hiring their first staff members. We can also continue to provide fundraising training and support. Lastly, we can provide some technical assistance to help these organizations develop a transition plan. This can be accomplished for an annual investment in AGO of no more than \$15,000.



VOLUNTEER TEAM LEADS

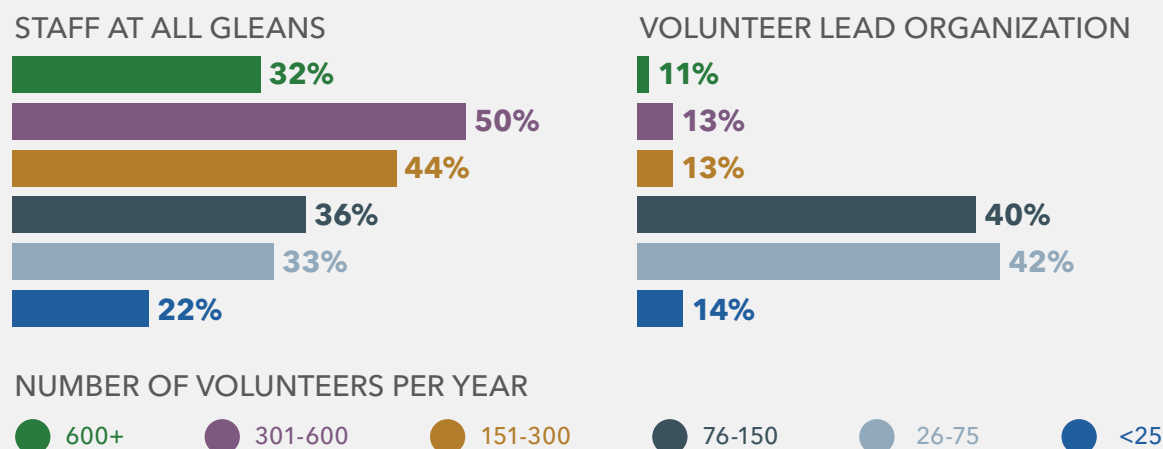
A volunteer lead is a trained volunteer who leads gleaning without a staff member present. We found that 69 organizations allow a volunteer to lead and run a harvest without staff present; this is compared to 50 organizations that have a staff member present at all gleans. Considering that 19 organizations do not have staff, the split is right down the middle on this issue.

Volunteer Team Leads



We found that the cost per pound gleaned is slightly lower in organizations with volunteer team leads, at \$0.85 per pound compared to \$0.94. However, organizations with staff members at every glean harvest more than four times as much produce at each gleaning event than those without. Why staffed organizations harvest more food per event is hard to know for sure. It could be due to staff presence, or other factors such as type and size of farms gleaned, percentage of pre-harvest food gathered, location, urban versus rural setting, or size of organization. More research is needed to determine whether the difference is due to volunteer team leads or other factors.

Staff at All Gleans / Volunteer Lead Organizations Relationship to Volunteer Numbers



When comparing organizations with volunteer team leads to those with staff on site at gleans, the volunteer team leads attract more volunteers, but have smaller staff sizes, smaller budgets, and glean less produce.

1. Organizations with volunteer team leads have an average of 410 volunteers per organization. Those without volunteer team leads have 250 volunteers on average.
2. Organizations with volunteer team leads have median staff sizes half the median size of organizations without team leads. They have on average 0.8 FTE per organization compared to 1.9 FTE in organizations with staff at all harvests.
3. Organizations with volunteer team leads have an average budget of \$63,000 compared to \$110,000 for organizations with staff at each glean.
4. Organizations with volunteer team leads on average glean 79,000 pounds a year, compared to 110,000 gleaned on average by those without volunteer team leads.

In the end we are unsure why organizations with volunteer team leads tend to be less efficient at harvesting produce. This could be due to staff members being better at organizing volunteers and harvesting produce, or it could be due to other outside factors. This could suggest that paying staff to oversee and participate in gleaning events is a good use of funds, but we cannot know for certain at this time. We recommend more research in this area.

We do believe that volunteer team leads can help you involve more community members, build leaders in your community, and run your organization with fewer staff and less funding. Whether or not volunteer team leads are the right choice for you will depend on your organization's goals, but it is a strategy worth exploring.

KEEP REFRIGERATED

VOLUNTEER DISTRIBUTION OF PRODUCE

44

Fifty-two organizations reported using volunteers to distribute produce, 57 said that volunteers do not distribute produce, and 37 did not provide this data.

On average, organizations whose volunteers help with distribution report gleaning 63,000 pounds of food, compared to 154,000 pounds in organizations that do not use volunteers to distribute produce.

However, their operating budgets are on average almost 75 percent lower as well, with an average savings per pound gleaned of \$0.47 for organizations who let volunteers distribute produce. Organizations who have volunteers distribute produce operate with less staff as well. They average 0.5 FTE staff compared to an average of 1.5 FTE staff used in organizations that do not ask volunteers to distribute produce.

Who Distributes the Produce



This is most likely due to the significant staff time needed for distribution of produce. Distribution can be a very time-consuming process and includes other costs as well, such as a vehicle, fuel, and maintenance.

PROPOSED SOLUTION

We believe that distribution is a low-skill operation that should be outsourced to volunteers. Allowing volunteers to contribute in this way can help broaden your volunteer base, reduce cost, and increase efficiency. Consideration should be given to ensuring that drivers carry the proper insurance.

Some consideration should be given to glean size; many volunteers do not have room in their car for large amounts of produce. We found that organizations that use volunteers to distribute produce tend to hold smaller gleans with less produce gleaned per event. On average, they glean 830 pounds per event, half as much as organizations that do not let volunteers distribute produce.

As mentioned above, volunteers play a vital role in the gleaning movement. But special consideration should be paid to ensure that volunteers are not burdened with too much responsibility. This can lead to burnout and the loss of the volunteer. Boards and staff should find ways to thank volunteers and make sure they know they are valued. Evaluate whether your organization would best be served with paid staff or volunteers performing a particular task, while finding creative ways to engage volunteers. If you can do this, it will increase the reach of your work and help strengthen your community.

TYPE OF GLEANING PERFORMED

We wanted to better understand the relationship the type of gleaning an organization does and its effect on the impact that gleaning organization has. We broke the organizations into three groups: organizations that harvest from farms; organizations that harvest private property such as fruit trees and gardens, referred to as urban gleaning; and organizations that do both. We found that 54 organizations do both types of gleaning, 41 just harvest from farms, and 20 only perform urban gleans.

Organizations that do only farm gleans use more volunteers than the other categories, and have larger staffs. Their budgets are larger and they glean more food than urban gleans, even though they hold fewer gleans. Their costs are also slightly less than the other two groups in this section.

Next we annualized groups exclusively doing urban gleaning. For the most part, these are very small organizations who glean on average 31,000 pounds of produce, but over 50 percent of the organizations glean less than 11,000 pounds of produce annually. With 50 percent of these organizations operating on less than \$5,000 per year, these groups are really small and, combined, harvest just 616,836 pounds annually.

The largest group is comprised of those who perform both types of gleaning. This group uses slightly fewer volunteers than on-farm gleaners, and has smaller staff.

On average, these organizations are able to raise more money and harvest the most produce per year, of the three groups. These organizations tend to be very diverse, with many also gleaning farmers markets or having their own farm. Although their mean cost per pound harvested is slightly higher than organizations who only glean farms, their median cost is slightly lower. This group is responsible for 30,697,415 pounds of produce gleaned annually.

On-farm gleaning tends to be very efficient. You can harvest lots of produce in a single location, you can use larger groups of volunteers, and you can come back to the same farm several times each year. Being able to repeat the same location is helpful as you can build stronger relationships with landowners who benefit from your services several times a year



and spend less time managing those relationships. Many on-farm gleaners will visit just a handful of farms a year, coming back weekly or monthly to the same farm.

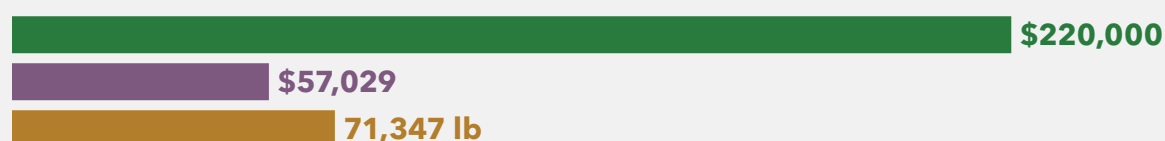
Urban gleaning has other benefits that are not found on farms. Much of the surplus produce in urban areas is truly food waste. On a farm, unharvested produce will be plowed under and act as a fertilizer to enrich the soil. In a yard it most often ends up in the landfill where it lasts for decades and contributes to climate change. Fruit trees are often a nuisance to landowners and without the intervention of gleaners, they attract pests and may result in the landowner cutting down the tree. Some of these trees are unique heirloom varieties that are in danger of extinction. Gleaners divert food from landfills, connect urban dwellers to a rural landscape, and provide a manageable way to preserve the trees without having to consume hundreds of pounds of fruit.

Gleaning by Location

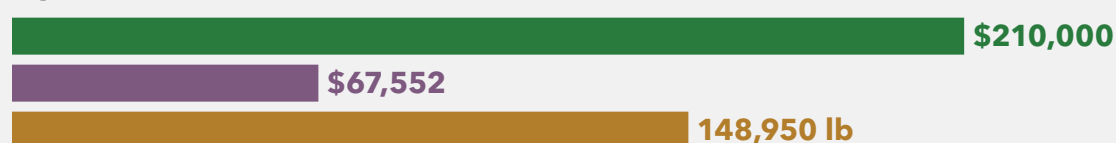
ON-FARM GLEANS



URBAN GLEANS



BOTH



PROPOSED SOLUTION

Because the benefits of these types of gleaning are so unique, we recommended that gleaners find a balanced approach to both types of gleaning. They may require slightly different tools and skill sets, but the benefits of each outweigh the added burden. By engaging in all types of gleaning you will be able to engage a diversity of volunteers and landowners in your organization, expanding your reach and impact.

BEARS AND GLEANERS

Gleaning is a great way to feed the hungry, but it is also an ideal way to keep unwanted wildlife out of residential yards. The unharvested fruit from urban trees attracts rodents such as rats, raccoons, skunks, deer, moose, and even bears. Due to the potential for encounters with bears to turn deadly for humans or for bears, the primary goal of some gleaning organizations is to harvest the fruit and remove the temptation for bears to venture into urban areas looking for a treat.

In many of these areas it is unlawful for homeowners to allow fruit to fall from their trees to the ground. Homeowners are often overwhelmed by the amount of fruit and will choose to cut down the tree. Gleaning organizations have stepped in to help with this problem. This frequently provides an additional source of funding for the organizations and alleviates some of the stress of relying solely on hunger relief grants. Because of the legal obligation to harvest the fruit, these gleaners often charge for their harvesting services, providing another revenue source.

Gleaners whose primary goal is to reduce human-bear interactions will focus on harvesting all the fruit from trees. This is different from gleaning a tree for human consumption. The latter may focus on harvesting only the best fruit in the city. Gleaners focused on reducing human-bear interactions focus on getting all the fruit, which often means shaking fruit from trees. Shaking results in bruised fruit that is usually not suitable for donation. These gleaners may send the fruit to farmers to use as livestock feed, to juicers, cideries or even to be composted. All gleaners gleaning for bear control make an effort to identify fruit fit for human consumption and to harvest it in a way that ensures it can be used for this purpose.

The following organizations have a focus on reducing human-bear interactions:

- Bella Coola Valley Sustainable Agricultural Society - Bella Coola, BC
- Community Fruit Rescue - Boulder, CO
- Hope Mountain Black Bear Committee - Hope, BC
- Kaslo BC Food Hub - Kaslo, BC
- Missoula Valley Fruit Exchange - Missoula, MT
- New Denver BC Harvest Share - New Denver, BC
- Pemberton Crabapple Project - Pemberton, BC
- Reno Gleaning Project - Reno, NV
- Squamish CAN Fruit Tree Project- Squamish, BC
- The Good Food Collective - Durango, CO



NETWORKS

Networks are a big part of growing the gleaning movement. Of the 12 states or provinces with the most gleaning organizations in North America, six have formal networks and two have an informal network. Networks help lobby for changes in local policies, share ideas and support, and help funders understand the importance of gleaning. Despite these benefits, only about 20 percent of gleaning organizations belong to a network.

We believe networking is one of the lowest hanging fruits that we can grasp to grow the gleaning movement. For a few thousand dollars a year, funders could have a tremendous impact on growing and strengthening the gleaning community in their state. Networks often just need funding for a few hours of staff time each month to coordinate and host member networking opportunities. This can often be added to the existing staff at a gleaning organization if funding is made available to compensate the person for their time.



There are 25 states and provinces where there are too few or no gleaning organizations for a statewide network to make sense.

They are Alaska, Utah, Texas, Rhode Island, Louisiana, Kentucky, Indiana, Idaho, Georgia, Nevada, Wyoming, North Dakota, South Dakota, Illinois, Kansas, West Virginia, Oklahoma, Alberta, Manitoba, New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island, and Saskatchewan.

However, this still leaves 27 states and provinces that could benefit from a formal network.

PROPOSED SOLUTION

We believe the large number of gleaners in three states could especially benefit from a formal network. California has 22 gleaning organizations, the most of any state in the US, and the San Francisco Bay Area has had an informal network that has operated sporadically for years. The state could benefit from a more coordinated network to bring the regions together. British Columbia has the second largest concentration of gleaners without a formal network. Unlike California, its 13 gleaning organizations operate in a much smaller geographical area, facing similar challenges and opportunities. Formalizing the informal connections in the area would help the gleaners in the region make better connections and support each other. New York and New Jersey, with six gleaners each, could form a very beneficial cross-state gleaning network. New York currently has an informal network that includes most of the state's gleaners. Formalizing this network could ensure its continuation when turnover happens in specific organizations. Other states with high concentrations of gleaning groups without a formal network are Massachusetts, Oregon, and Pennsylvania.

Below is an overview of the existing gleaning networks and their operations.

The Maine Gleaning Network is a loosely formed collection of gleaning organizations started by University Extension at the University of Maine. The collective is now run by Healthy Acadia whose paid staff uses some of their time to coordinate activities. The group holds monthly calls, shares best practices, and aggregates data to understand the role of gleaning in the state.

The New Hampshire Gleaning Collective was founded by the University of New Hampshire and an anonymous donor. The group provided small amounts of funding to nine organizations around the state to start gleaning operations. It provides technical support, advertising, and a backend website to the organizations. It currently represents eight of the nine gleaning organizations in the state.

The Vermont Gleaning Collective represents six of the eight gleaning organizations in Vermont. Salvation Farms was the driving force behind creating this collective and provides the backbone support for the organization. Members are provided web services that help manage volunteers, farms, and data collection. Members meet for a full day biannually. They also aggregate all the data from the collective. This data is used for end-of-year evaluation and fundraising. Lastly, the collective does a limited amount of joint fundraising.

The Iowa Gleaning Network was founded in 2020 through the efforts of Table to Table. With the support of the governor's office, they worked with AmeriCorps, the university extension service and other nonprofits to form a statewide network. This network has eight sites and serves 20 counties. The network is growing each year with the hope of reaching the whole state.

INFORMAL GLEANING NETWORKS

In 2019, efforts began in Wisconsin to form a gleaning coalition in the Milwaukee area. The work started as a conversation among farmers market managers about food waste at markets. This led to an effort to map out the gleaning work being done in the area. The membership base includes farmers market managers, food pantries, meals programs, donation gardens, community gardens, gleaners, university extension, master gardeners, and the medical college. The program is run out of the extension office with funding from the medical college. This coalition is still in its infancy.



Washington is not home to a formal network. The work of connecting organizations in the state is done by Harvest Against Hunger. This organization places AmeriCorps VISTA positions around the state to work on hunger relief programming. These VISTA placements have been instrumental in starting many of the gleaning programs around the state. This common history has helped to bond the organizations and created a culture of sharing and cooperation. Starting in 2018, Harvest Against Hunger began placing VISTAs in organizations nationally, as well as within Washington.

Cornell Cooperative Extension runs an informal gleaning group in the New York area that coordinates gleans, shares volunteers, and helps gleaners with problem-solving.

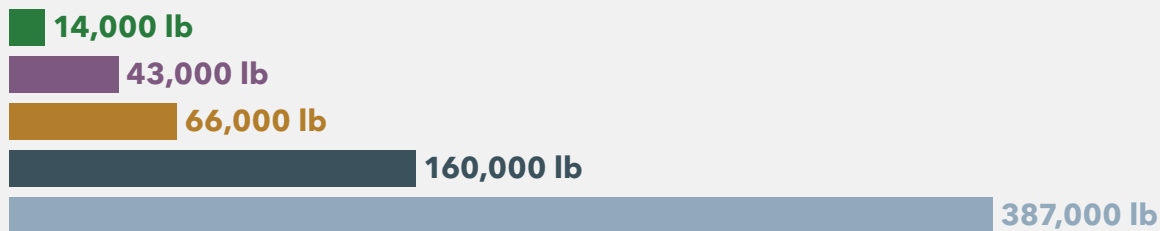
California does not have a formal network, but in the past there have been some efforts to organize gleaners in the greater San Francisco Bay Area. At its peak, members held an annual meeting and regularly shared ideas and information. In recent years this collective has been less active, but there are plans to hold the annual gathering in 2021 virtually. One of the reasons for the lack of activity is that members who were leading this work left the organizations and were not replaced.

The decentralized nature of this collective allowed it to run without a budget but also resulted in the efforts ebbing and flowing with the ability and desire of new staff at member organizations to keep up the work.

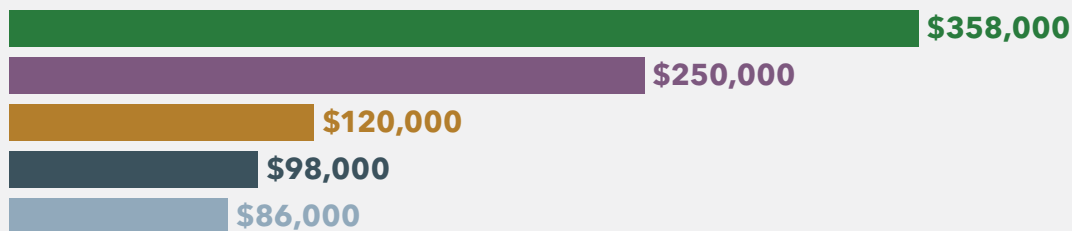
The Association of Gleaning Organizations, AGO, is a network of gleaners located in North America. Founded as a member-run association in 2019, they currently have 50 dues-paying members and interact with 75 gleaning organizations regularly.

POUNDS HARVESTED PER GLEAN

AVERAGE AMOUNT GLEANED PER YEAR



AVERAGE COST PER 100 TONS GLEANED



POUNDS HARVESTED PER GLEAN



Pounds of produce harvested per glean has a profound effect on the amount and cost of produce gleaned. As the chart indicates, the cost goes down as the pounds go up and cost per pound goes down. This is due to the large fixed cost that is associated with each gleaning event, including travel and logistical support. We also see that as yields per glean increase, the number of organizations only doing urban gleans decreases. This is because urban gleans do not provide the large amounts of produce found on farms with few harvests yielding over

500 pounds. This is one of the reasons we see higher costs associated with urban gleaning. In order to accommodate the larger amounts of produce, there is a general uptick in the number of staff and volunteers. The number of gleans held each year drops as well, but not dramatically until you reach more than 5,000 lbs. per glean.

PROPOSED SOLUTION

We believe one of the main things organizations can do to increase efficiency is to limit the number of gleans they hold and focus on gleans with larger yields per event. This means working with larger farms, focusing on high-yielding fruit trees and setting expectations with land owners on what types of gleans are worth your time. In order for this to work, gleaning organizations must be able to turn down landowners when the circumstances don't merit holding a gleaning event. Most gleaners do not reach all the locations available for them to glean each year and could benefit from focusing on recruiting and harvesting higher yield sites. With less than one percent of the projected on-farm food loss being harvested each year, gleaning orgs are a long way from being desperate for places to harvest.

Average Pounds Harvested Per Glean	1-200	210-500	501-1000	1001-5000	5000+
Average Number of Volunteers Per Year	Mean 155	Mean 283	Mean 210	Mean 329	Mean 1034
	Median 80	Median 105	Median 134	Median 200	Median 429
Average Staff Size	Mean 0.5	Mean 0.7	Mean 0.8	Mean 1.3	Mean 1.4
	Median 0.25	Median 0.4	Median 0.4	Median 1	Median 1.8
Average Number of Gleans Per Year	Mean 197	Mean 129	Mean 104	Mean 75	Mean 29
	Median 85	Median 91	Median 75	Median 50	Median 16

COST PER POUND GLEANED

We examined cost per glean by dividing the groups into six categories, in an attempt to find commonalities in lower or higher cost. We only found two commonalities. One was age. As the age of an organization increases, cost goes down. Lower cost per pound gleaned is also closely tied to the number of pounds harvested per glean. As the amount harvested per event goes up, cost comes down. The exception is organizations with a \$1 to \$2 cost per pound that glean on average 1088 pounds. The median is 644 pounds.

While we did not see many patterns in the groups, there were some highlights of organizations with costs under \$0.25 per pound of produce harvested. As mentioned above, volunteer organizations tend to have lower costs and 36 percent of all organizations in this group were volunteer-run. In addition, only 36 percent of organizations have staff at all gleans. This group does far fewer gleans than any other group, with 50 percent holding fewer than 30 gleans per year and an average of 60 gleans per year. At the same time, they have high yields per glean with an average of 3554 pounds. This group's average cost is \$0.11 per pound and is responsible for a large portion of the produce gleaned each year, at 35,585,289 pound gleaned per year.

DISTRIBUTION

A large part of the work gleaners do is distribute fresh produce in their community. While some distribute food via their local food bank, most do not. More than 8,500 unique locations receive produce from gleaners in North America. On average, food from gleaning organizations is distributed to 71 other organizations. These are often places that do not regularly receive fresh produce or do not have the ability to distribute it to their clients.

Gleaners distribute produce to schools, senior centers, churches, homeless shelters, assisted living facilities, libraries, recovery residences, rehabilitation centers, hospitals, meal kitchens, low-income housing, day cares, Meals On Wheels, youth centers, veterans' homes, food pantries, and more. Many of these locations do not typically receive food from the food bank. Gleaning organizations are reaching people not served by traditional hunger relief efforts. They are helping to improve the diets of those who cannot afford to purchase fresh produce.

Even the locations that do have food delivered from the local food bank may only get deliveries weekly or monthly. Most of these locations lack adequate cold storage, so they are unable to receive fresh produce, other than what can be distributed quickly. By delivering food on a regular basis directly to these locations, often in smaller amounts, gleaning organizations are helping these organizations ensure that their clients have access to fresh produce.

Forty-one gleaning organizations distribute food directly to hungry people. Fifteen are part of a food bank and 12 of those distribute the gleaned produce with their regular food distribution. The remainder have identified creative ways to meet the needs of their communities. Some of these organizations set up weekly farm stands outside local food pantries. These farm stands differ from the food bank in several ways. They usually do not ask about income or immigration status and they also do not limit how frequently people can receive produce. Other organizations deliver to homes, support reduced-cost CSAs, distribute directly from their office, or set up free farm stands at other locations in the community. Below you will find examples highlighting how organizations distribute produce.



Distribution Examples

Sharing Tables

Sharing tables are very common in Maine. These tables are set up at libraries, community centers, and government buildings. The tables are unmanned and run on a give/take model. Community members are invited to leave produce if they have extra and to take produce if they need some.

There are a few components that make sharing tables successful. First, they are placed in locations that are frequented by the community. These locations tend to be in neighborhoods with high food insecurity. Organizations placing a sharing table try to seek out locations that the community is already visiting, so recipients don't have to make a special trip. In most cases the staff at the institution where the table is located volunteer to verify that the produce is fresh, removing old items if no one takes them. If this task cannot be managed by the staff on location, the volunteers who fill the tables will come back and remove old produce.

The other key component of these tables is the anonymity they offer. Since the tables are not staffed, the stigma of receiving free food is removed. They allow anyone to take food if they need it and no one needs to see them doing so. This is very important in small communities where everyone knows everyone. If tracking the reach of your program is important, you can have a simple sheet where people check a box indicating that they visited the stand, without providing any personal information. With the right partners and volunteers to distribute the produce, this can be a great low-cost way to provide produce to a broader audience.

Free Farm Stands

Free farm stands are a common way for organizations to distribute produce to the public. They are run just like a regular farm stand only no one is expected to pay. One example is The Green Urban Lunch Box which partners with Salt Lake County's Aging and Adult Services, Utah State University Extension's Master Gardeners Program, and Salt Lake County Jail's Horticulture Program to host free farm stands for seniors at local senior centers. They work together to address food insecurity and create access to healthy fresh food for senior citizens in the community by growing food and distributing it through these markets.

The Green Urban Lunch Box uses food grown by local seniors in their backyards, as well as food grown by the other partners, and combines it with fruit from the gleaning program. These markets are staffed with a mix of volunteers and staff. If partners have excess food, they will share it with one another so that each organization can provide a variety of food at their markets. In 2020 they conducted 55 free farm stands. These pop-ups ensure that seniors are receiving nutritious foods that are essential to maintaining their good health.

Before the COVID-19 pandemic they also hosted similar markets at local hospitals for cancer patients. As an adaptation to COVID-19, in 2020 they moved their markets outside and served the seniors in a drive-through line. This model is used by several other organizations operating around North America and is a great way to ensure the product goes to those who need it most. If you have the resources this can be another excellent way to reach a wide audience that is not commonly reached by traditional hunger relief.



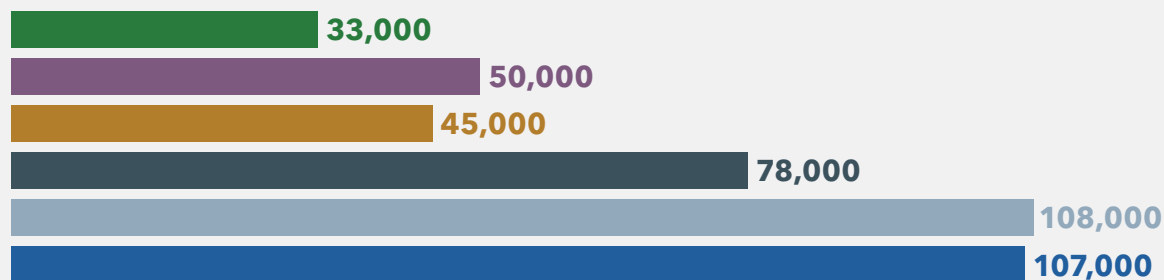
MONTHS GLEANED PER YEAR

Another factor that we believed would have an effect on organizations was the number of months that they gleaned. We divided them into groups by duration of the gleaning season, starting at 3 months or less all the way to year-round. We combined the 7–11-month organizations in order to have similar sized groups. The mean months gleaning is 7.2 while the median is 6 and the range is 1–12. Year-round gleaning does not necessarily mean year-round growing climates. In fact, only 13 of the 29 organizations gleaning year-round are located in a climate where produce is commonly grown year-round outside. The rest are gleaning storage crops or from greenhouses a few months of the year. For most of these organizations, the frequency of gleans slows down dramatically during a few months each year.

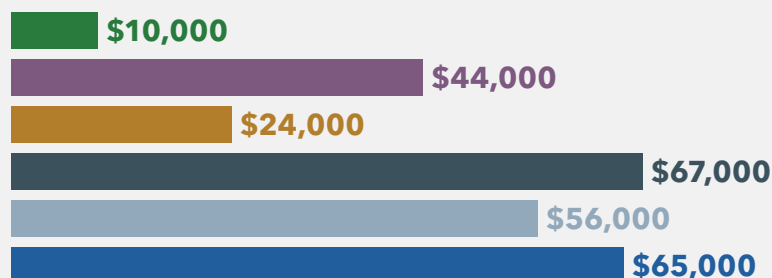
We were surprised to find that the organizations who glean six months out of the year have some struggles. Their cost per pound is quite high and their volunteer numbers are lower than other groups. This could be due to the fact that the season is long and the novelty of gleaning wears off for volunteers. Staffing could be a challenge at that season length, with too large of a gap for staff to work year-round but still having the need for consistent staff for half of the year. We see a drop in the percentage of volunteer organizations at this length as well. Volunteers running gleaning organizations often want and need a long break in between seasons, and volunteers struggle to run organizations with longer seasons.

Gleaning Organizations by Months Gleaned

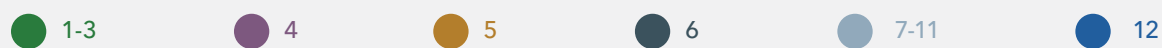
AVERAGE POUNDS GLEANED PER YEAR



AVERAGE BUDGET



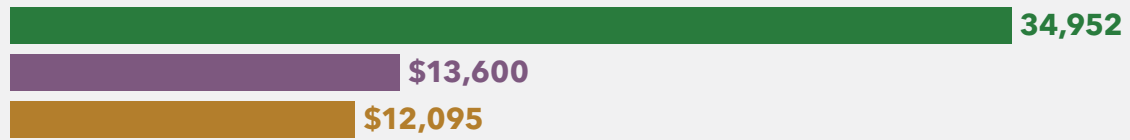
NUMBER OF MONTHS GLEANED



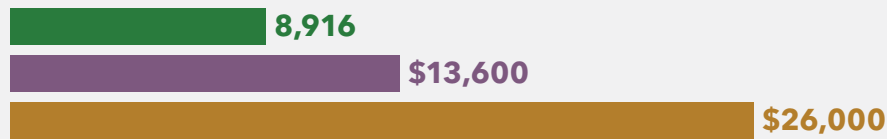
Months Actively Gleaning	1-3	4	5	6	7-11	12
Number of Orgs in the Group	4	16	30	19	24	29
Average Volunteers	Mean 815	Mean 246	Mean 196	Mean 101	Mean 224	Mean 997
	Median 120	Median 134	Median 100	Median 100	Median 100	Median 405
Volunteer Lead	75%	50%	30%	10%	13%	14%
Average Gleans Per Month	10	14	12	13	16	14
Average Pounds Per Glean	Mean 2097	Mean 925	Mean 946	Mean 1307	Mean 973	Mean 1069
	Median 717	Median 474	Median 275	Median 533	Median 491	Median 509
Total Pounds Gleaned	113,000 *90,000 is Seed to Need	2,326,000	1,205,126	1,482,092	3,692,897	24,832,562 *20 Million is SOSA

Organizational Data Per Month

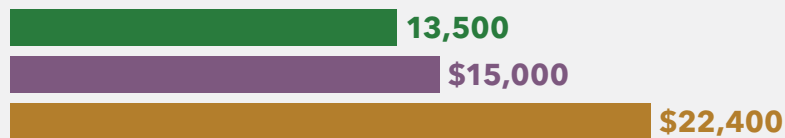
CITRUS



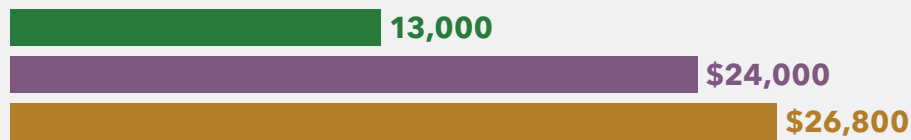
12 MONTHS OF GLEANING



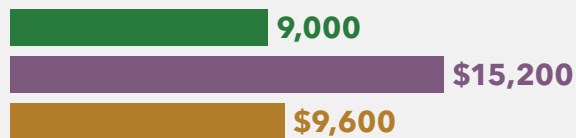
7-11 MONTHS OF GLEANING



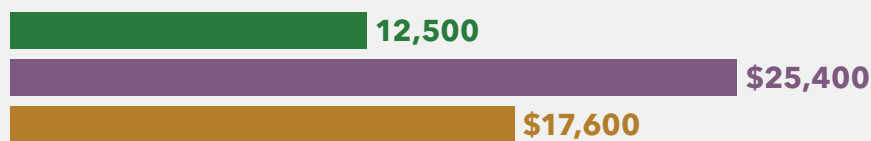
6 MONTHS OF GLEANING



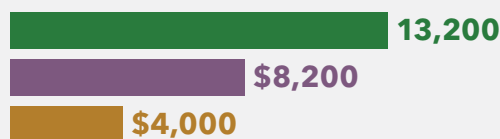
5 MONTHS OF GLEANING



4 MONTHS OF GLEANING



1-3 MONTHS OF GLEANING




● AVERAGE POUNDS GLEANED PER MONTH

● AVERAGE COST PER 10 TONS GLEANED

● AVERAGE BUDGET PER MONTH

As we were analyzing the gleaning season we also analyzed organizations that glean citrus.



This gives us a glimpse at organizations who are located in year-round gleaning climates. There are 18 organizations in this group and they glean an average of 10.5 months per year. They use an above-average number of volunteers with 1188 volunteers per organization. Only 16 percent of these organizations are volunteer-run, but their average cost per pound is very competitive at \$0.65. They also have slightly higher budgets and bigger staffs than the average organization. Surprisingly, despite the heavy weights of citrus, pounds harvested per glean are similar to other organizations surveyed with a mean of 989 and a median of 543. This group has an outsized impact and is responsible for harvesting 6,597,739 pounds of food each year.

PROPOSED SOLUTION

It appears that citrus-growing regions are a great place for gleaning organizations and there should be an effort to identify more locations to glean in this part of the continent.



REGIONS

We divided the gleaning organizations into groups based on location to see how that affected yields, costs, and budgets. We used the following regions: the Northeast, the Northwest, the Midwest, the mid-Atlantic, the South, the West, California, and Canada. There was some interesting data that shows that gleaning varies greatly across regions. For example, we found that California far exceeded the other regions in both funds raised and pounds recovered. The mid-Atlantic had the lowest cost per pound and was among the top performers in pounds harvested and funds raised. The Midwest performed well in pounds of produce recovered but is last in the category of funds raised. Canada and the Northwest have significantly higher costs than the other regions.

All of this data is important to understanding the larger gleaning landscape. Regions often share ideas and practices, especially in areas that have a higher concentration of gleaners. This means that good and bad habits spread. This, combined with differences in climate and farming practices, leads to differences in gleaning organizations' operational practices across the country. Identifying the differences is the first step to understanding and improving the gleaning movement. The chart below outlines some of these findings.

Location	California	Canada	Mid-Atlantic	Midwest	Northeast	Northwest	South	West
# of Orgs.	15	10	9	14	46	25	12	12
Budget	Mean \$170K	Mean \$28,000	Mean \$67K	Mean \$29K	Mean \$84,000	Mean \$43,000	Mean \$52 K	Mean \$50 K
	Median \$280K	Median \$15K	Median \$57K	Median \$3,000	Median \$37,000	Median \$20,000	Median \$38K	Median \$26K
Pounds	Mean 374K	Mean 16,000	Mean 280K	Mean 66k	Mean 86,000	Mean 54,000	Mean 201K	Mean 55,000
	Median 254K	Median 8,000	Median 150K	Median 24K	Median 50,000	Median 40,000	Median 53,000	Median 39,000
Cost Per Pound	Mean \$0.69	Mean \$1.52	Mean \$0.21	Mean \$1.11	Mean \$0.90	Mean \$1.48	Mean \$0.71	Mean \$0.70
	Median \$0.47	Median \$0.91	Median \$0.09	Median \$0.64	Median \$0.66	Median \$0.80	Median \$0.28	Median \$0.43
Total Harvested	5.2 mil	163K	3.2 mil	918K	4 million	5.3 million	2.2 mil	703K

While the gleaning movement is still young, we hope this data will help it grow and find its place among food waste reduction efforts overall. While more research is needed to fully understand the impact and effects of gleaning, we believe the data presented here make a strong case for gleaning as part of every community's efforts to reduce food waste and increase food access for all community members.

Baseline Data

	YES	NO	UNKNOWN
Founder Involved	55 (37%)	73 (49%)	20 (13%)
Founded By a VISTA	15 (10%)	109 (73%)	24 (16%)
Founded By a Farmer	10 (7%)	117 (79%)	21(14%)
Part of University Extension	9 (6%)	100 (68%)	39 (26%)
Have Staff at All Gleans	52 (35%)	70 (47%)	26 (18%)
Allow Kids to Glean	84 (57%)	12 (8%)	52 (35%)
Part of a Food Bank	27 (18%)		
Part of a Regional Network	33 (22%)		
Access to Cold Storage	52 (35%)	66 (45%)	30 (20%)
Distribute Produce Directly to the Public	41 (28%)	79 (63%)	28 (19%)
Make Value-Added Products	22 (15%)		
Recipients Help Harvest	20 (14%)	98 (66%)	30 (20%)
Sell a Product or Products Made From Produce	12 (8%)	103 (70%)	33 (22%)
Volunteers Help Distribute Produce	52 (36%)	59 (40%)	37 (24%)
Volunteer Lead	22 No Staff	13 Less than 0.1 FTE	22%

Baseline Data

	MEAN	MEDIAN
Year Founded	2009	2011
Volunteers Per Year	418	155
Budget	\$106,000	\$30,000
Staff	1	0.5
Pounds Gleaned	150,000	38,000
Field Gleans	117,000	30,000
Pre-harvest Produce Recovered*	71,000	30,000
Farmers Market Rescue*	62,000	20,000
Grown on Organization's Farm*	65,000	55,000
Gleans Per Year	133	72
Locations Gleaned	58	30
Months Gleaned	7.2	6
Locations Distributed To	28	14
Cost Per Pound	\$0.84	\$0.57
Pounds Harvested Per Glean	21,016	500

* Only includes organizations that perform this activity and track the data.



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