



# **How To End The Waste of Food That Could Feed 28 Million Americans**



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## **Case Statement**

A brief look at the problem addressed and the solution offered by AmpleHarvest.org

## **National Grower Survey Summary**

A summary of the 2015/2016 survey of nearly 2,500 home and community gardeners, looking back at the prior year's harvest - including select questions and the reason that question was included in the survey

## **Survey Analysis**

Analysis of the data by Christopher Reberger, Global Economics and Research Practice at Cisco Systems

## **White Paper**

Authored by Dr. Selena Ahmed and Dr. Carmen Byker Shanks from Montana State University



## The Scalable Nationwide Solution to Reduce Food Waste and Fight Hunger

**Goal: End the waste of billions of pounds of excess garden produce.**

**Vision: Excess garden produce should be donated to nearby food pantries**

**Mission: Inform gardeners about donating excess food *and* enable them to do it.**

**Reach: Nationwide.**

One out of every six Americans are hungry and malnourished. A quarter of all kids under six are hungry and malnourished. They are subject to food-related diseases such as diabetes, hypertension, and obesity. At the same time, 11 billion pounds of excess harvest from backyard gardens and community gardens are wasted annually.

AmpleHarvest.org was founded to change the waste of garden food into opportunity. To tell gardeners across America their food would be welcomed by pantries. To make it easier for the gardeners to find local pantries. And for pantries to tell gardeners where they are and how to donate their much needed produce.

*"As the number of families needing emergency food assistance continues to rise, food pantries are desperately working to keep their shelves stocked. When food does come in, it's generally canned or frozen. AmpleHarvest.org has done a masterful job at improving that reality by encouraging gardeners to share their extra produce with local food pantries."*

*Center for Food Action. Mahwah, NJ*

AmpleHarvest.org has big goals. We want to make sure 42 million gardeners don't turn their excess harvest into food waste. We want each gardener to be part of eliminating hunger and malnutrition in their community. We want to make sure over 5 billion pounds of fresh food is available for the food insecure people who need it.

### **The Challenge**

Over 50 million people in the United States live with food insecurity: either they don't have enough or are at real risk for not having enough food for their family. This, despite the fact that Americans waste 126 *billion pounds of food annually – enough to fill the Rose Bowl every day of the year!*

People facing food insecurity often rely on one of the estimated 33,500 local food pantries. Food pantries, for their part, rely on food distributed periodically by large regional warehouse operations called food banks. The deliveries consist of canned and boxed goods since most food pantries lack refrigeration and proper storage facilities.

At the same time, more than 42 million Americans grow vegetables, fruits, and herbs in their backyard, rooftop, patio and windowsill gardens. A typical gardener often produces a far larger harvest than they can use or give to friends. Most gardeners simply dispose of the excess produce, compost it, or leave it to rot in their garden. *Instead, AmpleHarvest.org gives gardeners the opportunity to easily find a local food pantry that is eager for their fresh produce.*

### **The AmpleHarvest.org Solution – Simple, Powerful, Proven**

AmpleHarvest.org, formed in 2009, is a nationwide non-profit that harnesses the power of technology along with the grower's frustration seeing their fresh food go unused to address the issues of food waste and hunger. The waste of an estimated 5 billion pounds of recoverable locally grown fresh food from America's 42 million home/community gardeners exists, ironically, side-by-side with a large population that is food insecure. Both problems can be solved, in part, by eliminating the disconnect between the local food pantries needing the food and the nearby gardeners who have excess.

AmpleHarvest.org is uniquely positioned to address this work -- it invented the solution -- and it has already demonstrated its capacity to implement and expand the model. It reaches out to food pantries across the nation, encouraging them to welcome the generosity of the local gardeners and appear on the AmpleHarvest.org registry.

At the same time, AmpleHarvest.org encourages millions of gardeners across America to find a local food pantry on AmpleHarvest.org and to be generous when they harvest their gardens. The outreach and awareness campaign for the gardeners is conducted by Master Gardeners nationwide, the media, social networking, and most importantly, gardeners telling other gardeners.

Currently, AmpleHarvest.org works with nearly 8,000 emergency food pantries across all 50 states, almost 1 out of every 5 in America, so that they are now able to receive millions of pounds of fresh, nutritious, locally-sourced produce that is immediately distributed in their respective service areas to low-income, hungry families and seniors.



Although many Americans are themselves suffering from economic difficulties, AmpleHarvest.org enables gardeners to help diminish hunger in their community by reaching into their backyard, not just their back pocket.

### **AmpleHarvest.org – The Unique Solution**

AmpleHarvest.org has managed to effectively address three critical problems simultaneously: eliminating food waste by America's 42 million gardeners; increasing the availability of fresh nutritious food for the needy; and, reversing the adverse environmental impact of rotting food in landfills.

No agency, non-profit or advocacy group has so thoroughly studied the problem or implemented a practical, resilient solution as AmpleHarvest.org. Foundations and non-profits have recognized AmpleHarvest.org's cumulative successes and are giving increasing support.

Its unique online platform ([www.AmpleHarvest.org](http://www.AmpleHarvest.org)) brings gardeners and pantries together virtually. By using and bridging resources that already exist – fresh produce, gardeners willing to donate and deliver it, and established pantries - important problems are being solved without investing in costly infrastructure and overhead.

AmpleHarvest.org's demonstrable results have increased its stature as an innovative food waste problem solver. Its methodical approach and intense focus devoted to expanding its online influence and outreach has created the most influential site devoted to citizen food waste on the internet.

### **The Impact**

- Since its launch in 2009, growers across all 50 states have donated millions upon millions of pounds of fresh produce that would have been lost to waste.
- Millions of pantry clients can feed their families fresh food, thereby reducing the likelihood of diet-related illness such as diabetes, high blood pressure and obesity.
- Gardeners across America enjoy the satisfaction of knowing that they are directly helping their neighbors in need.
- Nearly 8,000 food pantries across all 50 states are registered to receive a sustainable and recurring supply of freshly harvested, locally grown food from area growers – for free!
- Families are introduced to new varieties of healthy food to which they may have had no prior access.



*Garden Food Distributed At Food Pantry*

- Pantries are able to reduce their carbon footprint as they source more food locally by decreasing the amount of disposable packages being trucked across the country.
- The community waste stream is reduced as excess food is donated instead of being thrown away, and methane emissions at trash dumps are being reduced.
- AmpleHarvest.org name recognition enables an ever-growing number of gardeners to learn about the program. Currently, more than 22,000 blogs, articles and links from other sites all point to AmpleHarvest.org.

### **High Praise**

AmpleHarvest.org has received support and backing from Google Inc., the White House and the USDA, the National Council of Churches, the National Gardening Association, Feeding America and its member food banks, Garden Writers of America as well as numerous religious organizations.

Among its many accolades, AmpleHarvest.org's founder Gary Oppenheimer has been lauded for his invention of this unique solution. He has been nominated for the World Food Prize, named a CNN Hero, a Huffington Post Greatest Person of the Day and Game Changer for 2011 and won the Points of Light Award in 2013.

AmpleHarvest.org has been highlighted by First Lady, Michele Obama in "Let's Move" speeches, featured on such programs as PBS's "Growing A Greener World" and has been recognized by the USDA, the National

Council of Churches, National Gardening Association and dozens of other hunger fighting organizations in America. Even the EPA as part of its effort to diminish the environmental impact of food waste, has highlighted AmpleHarvest.org as a nationwide food rescue resource.

*"AmpleHarvest.org is one of the most innovative groups I've met."*

Jon Carson, Director of the White House Office of Public Engagement

**More information is available at**

**[www.AmpleHarvest.org](http://www.AmpleHarvest.org)**

**[AmpleHarvest.org TED Talk](#)**

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## Summary of Data Collected From Gardeners 2015 Harvests

For the past nine years, there has been an increasing awareness of the issue of the waste of food across the world. The data documented the “farm to table” losses.

What has been missing from the discussion of the problem and potential solutions has been the loss that occurs closer to home - in tens of millions of home and community gardens.

AmpleHarvest.org was founded in 2009 to address the issue of that food loss by educating and enabling these gardeners to donate their excess food.

Until now, how much of that excess food was available for donation was anybody's guess.





## Summary of Data Collected From Gardeners 2015 Harvests

In 2015, AmpleHarvest.org surveyed home and community gardeners across America about their 2014 harvest to answer several questions:

1. Do you grow food in your garden
2. If you do, how much more food do you grow than you can use (i.e. how much is lost to waste)
3. If you had the opportunity to donate that excess food to a food pantry, would you?
4. If you had the opportunity to donate food, would you grow more explicitly to donate it?
5. Does AmpleHarvest.org influenced the behavior of gardeners towards donating food?
6. Do gardeners who donate food encourage others to donate food?
7. And lastly, gather some demographic information.



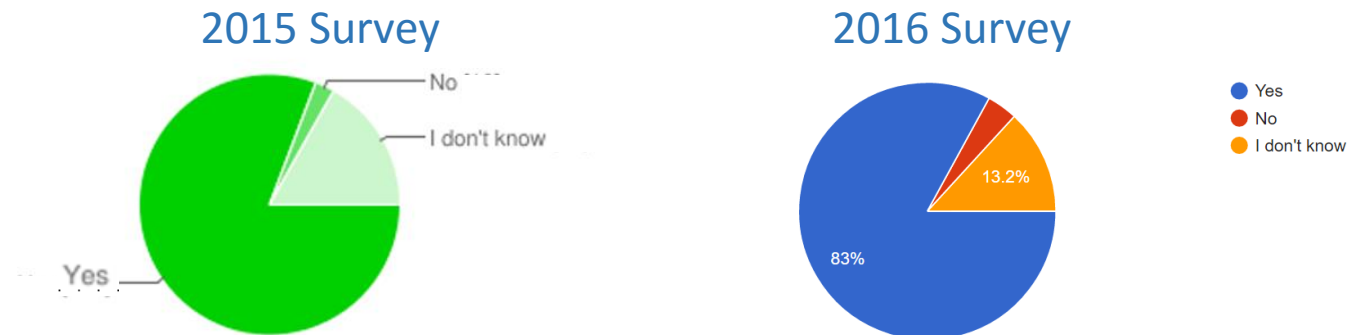


The result of the survey of so surprised us, that we decided to repeat the survey in 2016. In 2015, we surveyed about 660 gardeners. In 2016, we tripled that to nearly 2,000 gardeners. In both cases, the data were analyzed by Christopher Reberger of Cisco Consulting Services.

The 2016 data validated the 2015 data.

Example of data validation:

*If you knew that a local food pantry welcomed your excess garden bounty, would you donate it?*





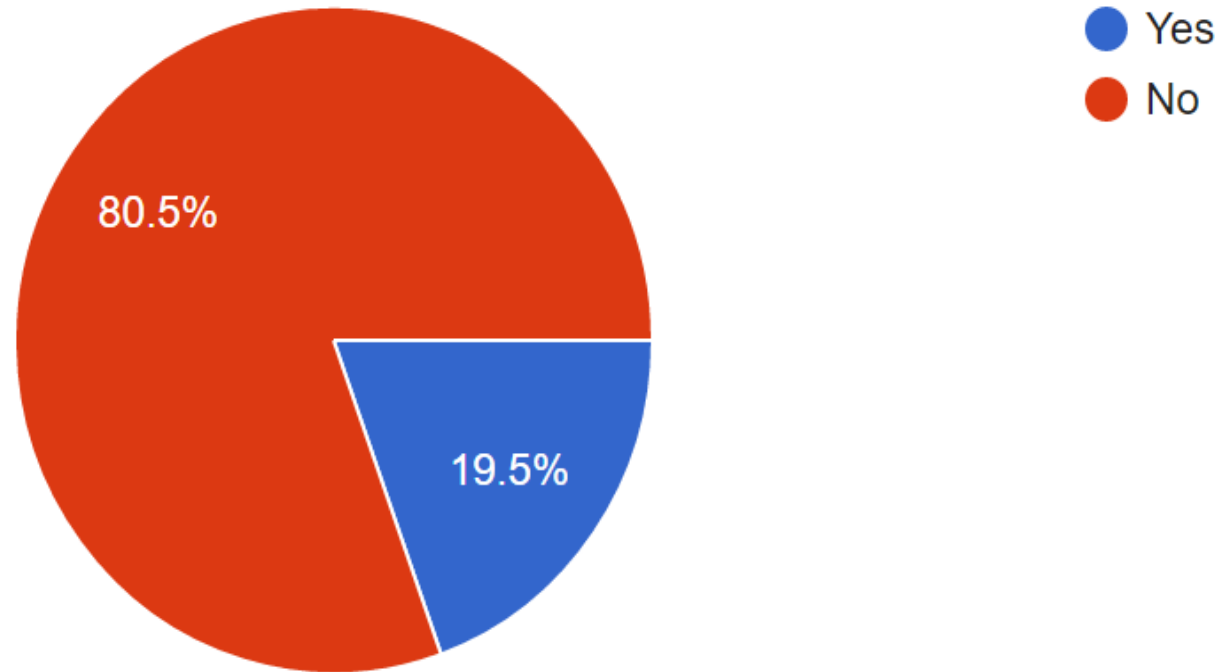
The graphics in this document help to illustrate the data in the accompanying white paper by Dr. Selena Ahmed and Dr. Carmen Byker Shanks from Montana State University and the data analyzed by Christopher Reberger, Global Economics and Research Practice at Cisco Systems

### Summary:

- Approximately 11 billion pounds of garden food loss occurs annually. That food would feed 28 million Americans.
- More than 80% of gardeners are eager to donate that food.
- The value of that food exceeds \$27 billion.
- Nearly 50% of gardeners would grow more explicitly for donation



# Had you heard of AmpleHarvest.org before taking this survey?

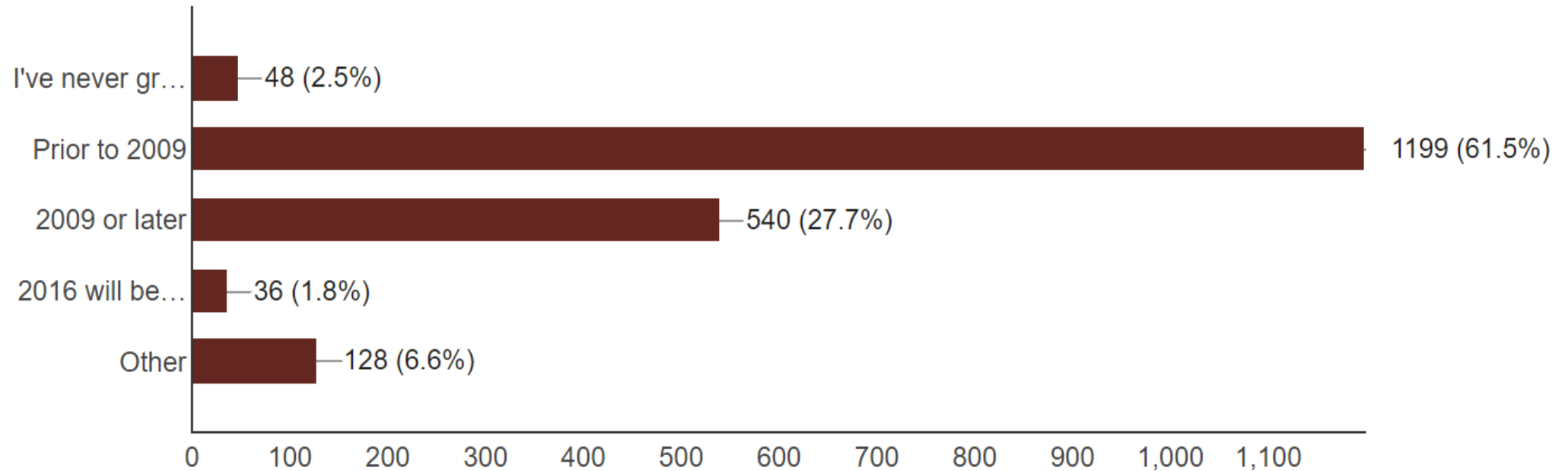


**Why this question is important:**

It shows that the awareness of AmpleHarvest.org by gardeners closely matches the percentage of food pantries already registered on AmpleHarvest.org

# To the best of your recollection, what year did you start growing food in your garden?

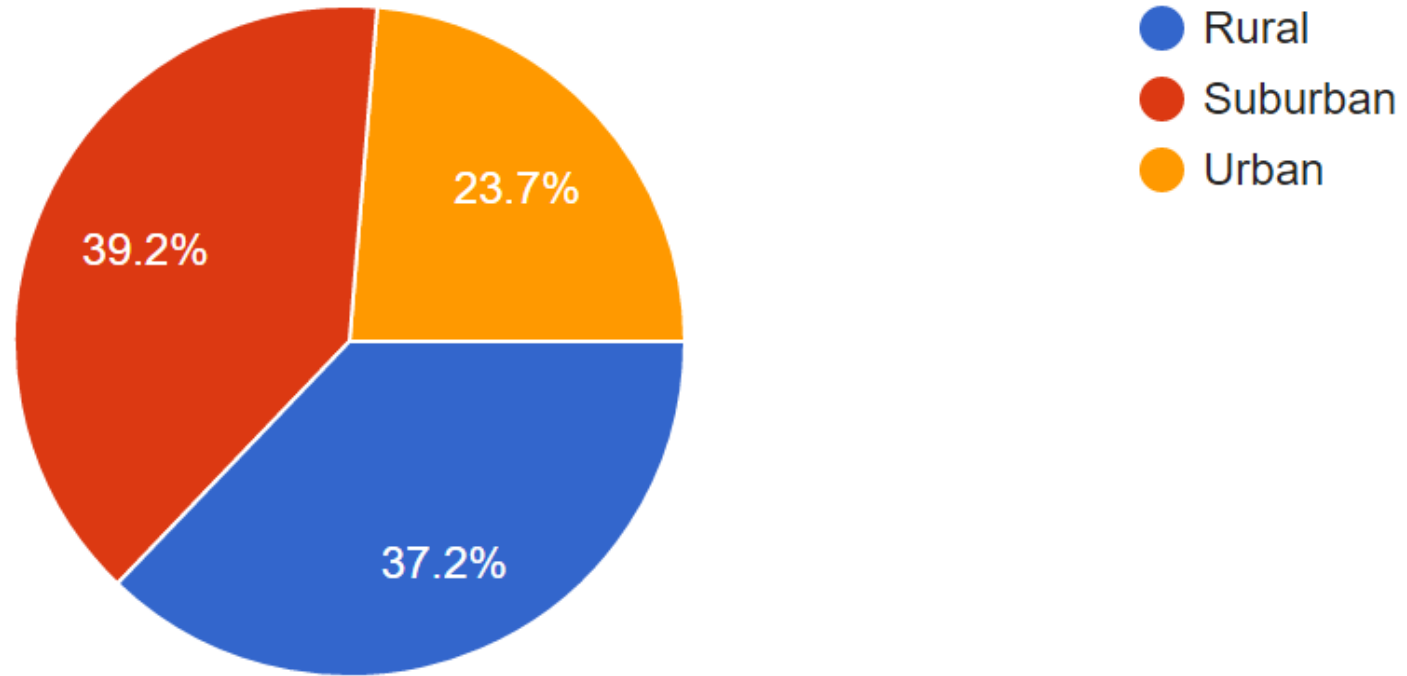
(1951 responses)



## Why this question is important:

It shows that a large number of growers have been gardening before AmpleHarvest.org started.

# Are you in a rural, suburban, or urban setting? (1951 responses)

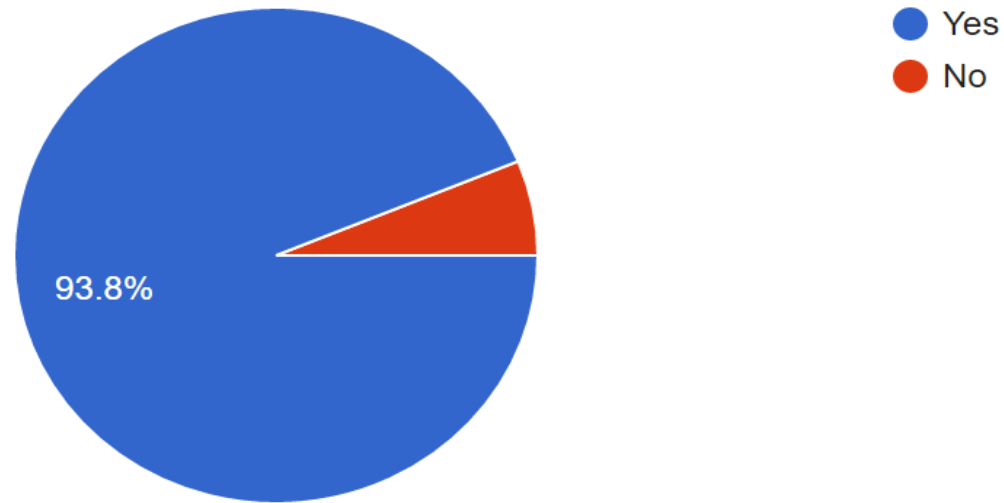


**Why this question is important:**

Significant urban food recovery/donation potential

In 2015, did you grow food (fruit, vegetables, herbs, nuts) in your home or community garden?

(1951 responses)



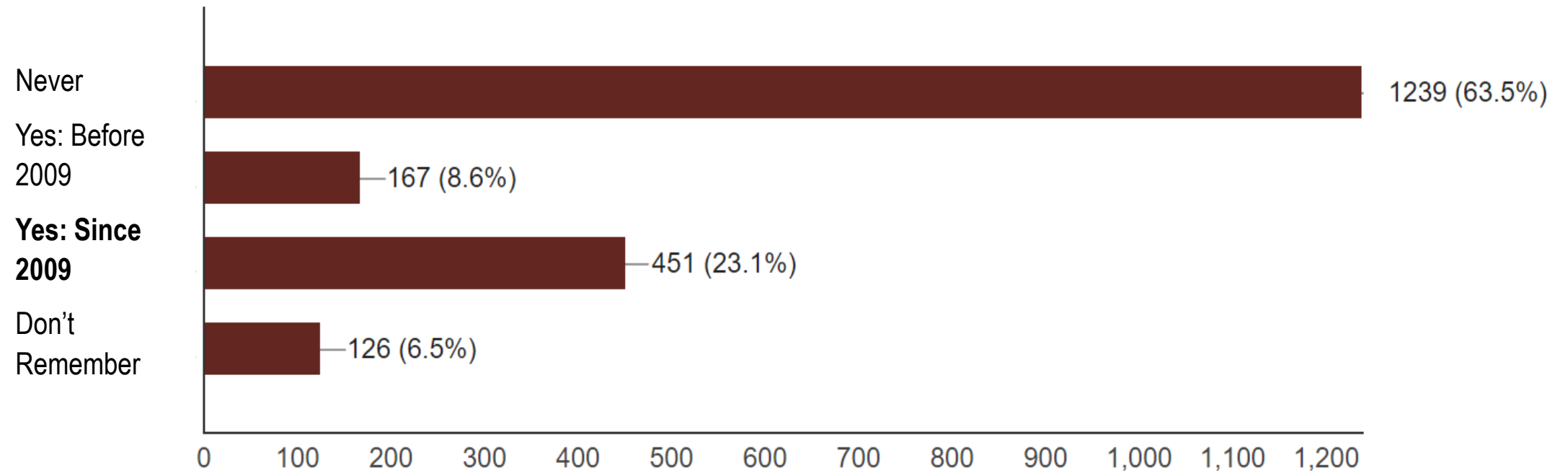
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**Why this question is important:**

It shows nearly all gardeners grow food

# Have you ever donated food from your garden to a food pantry, and if so, when did you first do it?

(1951 responses)



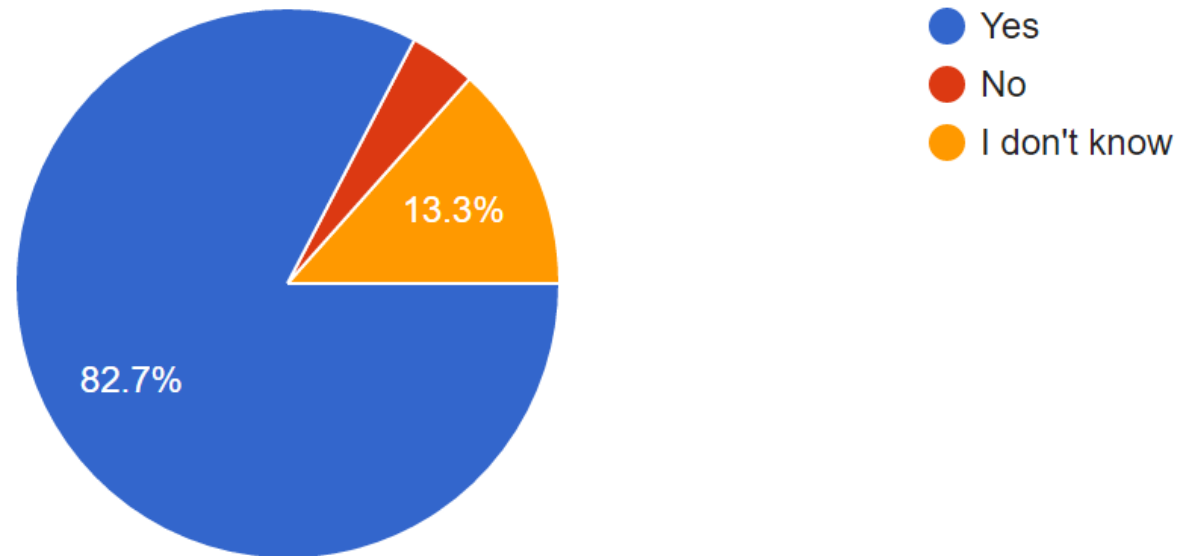
## Why this question is important:

It shows a significant increase in donating food since AmpleHarvest.org was founded in 2009



If you knew that a local food pantry welcomed your excess garden bounty, would you donate it?

(1951 responses)

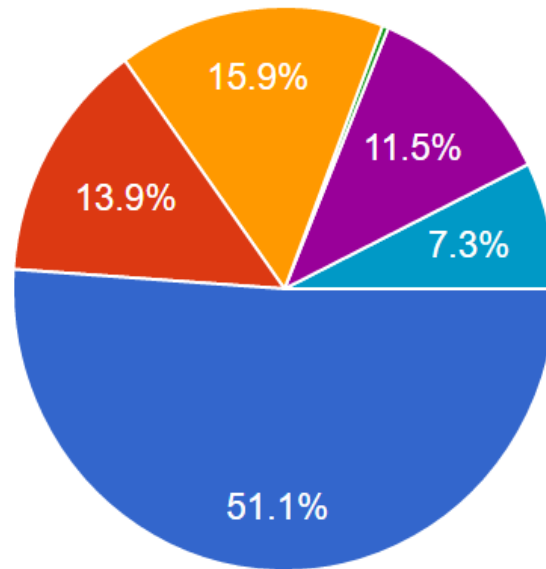


**Why this question is important:**

It shows 4 out of every 5 gardeners, given the opportunity, would donate excess food.

# If your neighbor grew too much food in their garden and told you about it, would you

(1951 responses)



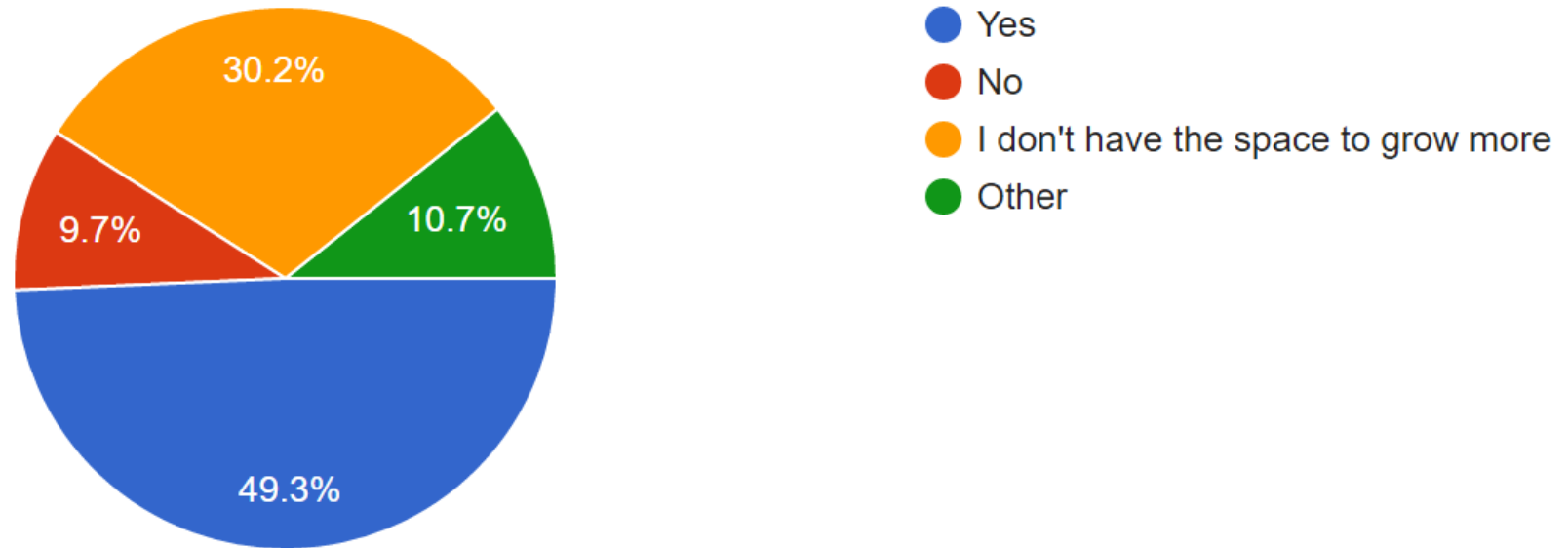
- Direct them to a food pantry in your community that you know accepts fresh food
- Direct them to AmpleHarvest.org to find a food pantry in the community
- Direct them to a food pantry in your community \*and\* tell them to get more food
- Not mention to them that they can possibly donate the fresh food?
- I'm not sure of what I'd do.
- Other

## Why this question is important:

It demonstrates the viral nature of AmpleHarvest.org – that half of the gardeners would “carry forth” AmpleHarvest.org’s information and send their neighbors to a food pantry.

If you knew that a local pantry welcomed your excess food, and if you had the space to grow more, would you grow **\*\*more\*\*** explicitly to donate it?

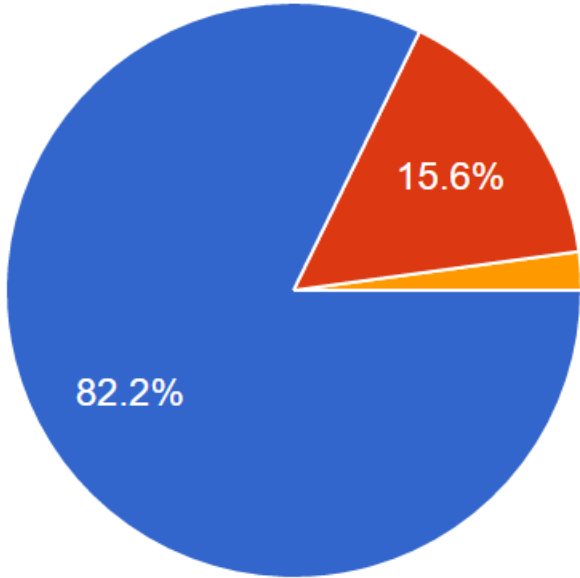
(1951 responses)



**Why this question is important:**

It demonstrates that half of the gardeners would engage in the act of charity (i.e. growing more food for donations above and beyond simply not wasting excess food)

# What is your gender? (1951 responses)

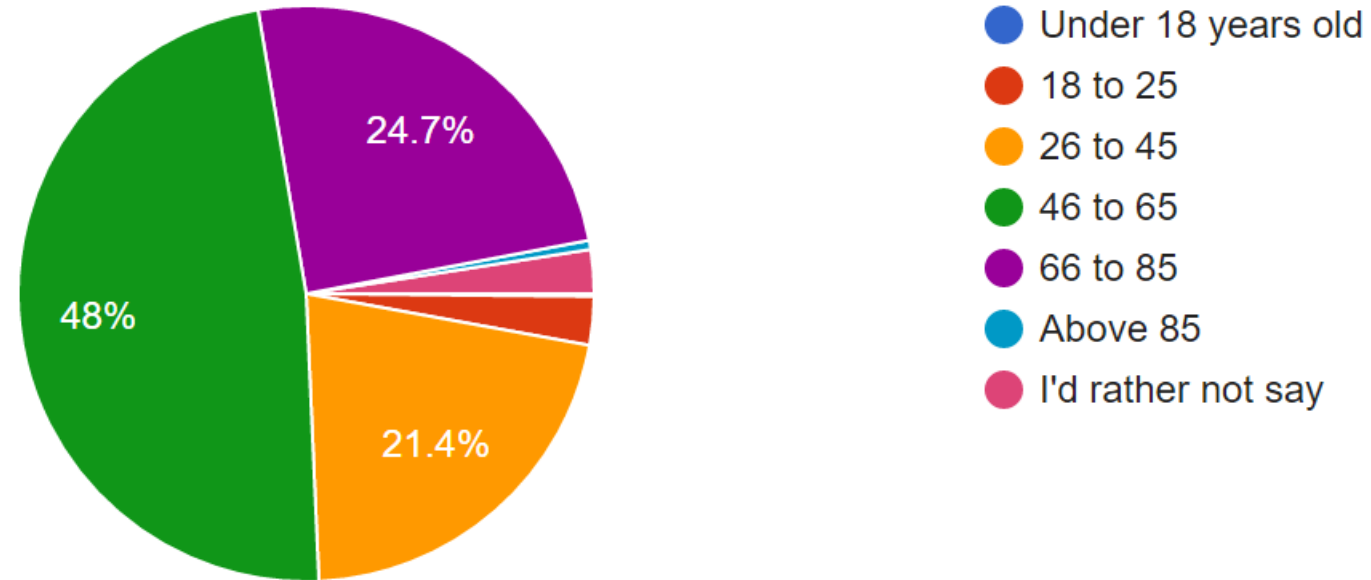


- Female
- Male
- I'd rather not say

**Why this question is important:**

Closely matches National Gardening Association Survey data

## What is your age range? (1951 responses)



### **Why this question is important:**

Closely matches National Gardening Association Survey data



## Learn More....

The complete study, an infographic and additional information is available for download at

[www.AmpleHarvest.org/GardenFoodWasteStudy](http://www.AmpleHarvest.org/GardenFoodWasteStudy)

Although the survey is completed, AmpleHarvest.org is keeping the survey online for additional gardeners to report their prior year harvest. If you would like to participate in the survey, click [here](#).

Contact [info@AmpleHarvest.org](mailto:info@AmpleHarvest.org) for more information. Press information is available at [www.AmpleHarvest.org/PressKit](http://www.AmpleHarvest.org/PressKit)







# AmpleHarvest.org

Preliminary Comparison of 2015 and 2016 surveys

**May 24, 2016**

# Brief Introduction AmpleHarvest.org

Since 2009, AmpleHarvest.org has been educating, encouraging and enabling millions of home/community gardeners across all 50 states to donate their excess garden bounty to a nearby food pantry. The theory is to provide gardeners a donation option for the excess harvest much as programs like Good Will Industries provides an option for gently used coats to get a “second life”.

The impact of the donated food is that it eliminates the waste of food and provides America’s food safety net with an annual supply of freshly harvested locally grown food thereby offering hungry families their first opportunity to get non-processed food.

The impact of this excess supply meeting demand is a reduction in hunger, the opportunity to prevent or reduce diet impacted diseases such as Type II diabetes and childhood obesity, a reduction in the waste stream and the creation of a long term, sustainable link between the gardener and the nearby food pantry.

Studies by the USDA, National Resource Defense Council and others looked at the amount of food waste from the “farm to the table”, and the National Gardening Association’s survey explored the growth of home/community gardening nationwide. Neither ever examined the scope of the excess harvest from these gardeners, so we did. The results of the 2015 survey were validated by the results of the 2016 survey which relied on three times the number of respondents of the prior survey (666 vs 1,926).

We are deeply appreciative of the support we have received from Cisco Systems.

Gary Oppenheimer  
Founder/Executive Director of AmpleHarvest.org



# Brief Introduction Cisco Systems



AmpleHarvest.org is a nationwide charity that addresses hunger and malnutrition by targeting a previously unexplored contributing factor: the historic waste of excess garden produce from America's 42M home/community gardeners who harvest more than they can use.

Until 2009, food pantries nationwide were unable to accept fresh food. Using education and technology, AmpleHarvest.org developed a solution that essentially flattened America's food safety net to enable the 33.5K food pantries nationwide to accept the food and to be found by gardeners who wanted to donate it. It's solving a significant "excess supply not meeting demand" challenge that is rooted in nearly every community in America.

This presentation incorporates two separate surveys that speak to the efficacy and efficiency of the AmpleHarvest.org model and solution: A 2012 survey of food pantries that were accepting fresh food thanks to AmpleHarvest.org's work and the recent 2015 survey of 660 home/community gardeners that wanted to donate their ample harvests.

The data clearly demonstrates the remarkably high ROI (viewing the food value and the wider community benefits) as well as the extraordinarily large opportunity represented by both the pent up desire for 42M gardeners to donate food and the amount of food they have available for donation.

Christopher Reberger  
Consulting Director. Consulting Services  
Cisco Systems

# Introduction and Data Cleaning

## AmpleHarvest.org Survey



AmpleHarvest.org is interested in assessing the results from two surveys that asked respondents about their produce gardens and behavior with surpluses. The survey received 666 responses.

Question 5 and 5a were the most important questions:

- 5. Do you grow more food than you can use, preserve or share with friends?
- 5a. If "yes", approximately how many **\*\*shopping bags\*\*** do you think you could fill with the extra food over an entire growing season?

The data were clean using the following protocol :

- Responses entered as <150 as assumed to represent shopping bags
- Responses entered as >150 divided by 25(lbs) to convert to shopping bags
- 23 survey responses excluded due to ambiguous data
- Averages were taken when a range was provided
- Outliers of 2,800 and 500 pounds were removed

# Exploratory Results

## AmpleHarvest.org Survey



"Willing" If you knew that a local food pantry would accept your excess garden bounty, would	Count	Percent
Yes	562	84%
No	15	2%
I don't know	89	13%
<b>Total</b>	<b>666</b>	<b>100%</b>

"Able" Do you grow more food than you can use, preserve or share with friends?	Count	Percent
Don't grow more than they need	249	37%
Grow more than they can use	390	59%
Other	27	4%
<b>Total</b>	<b>666</b>	<b>100%</b>

Willing and Able Statistics	Value
Average pounds per year willing & able	277
% of all respondents who are willing and able	49.4%

- A gardener needs to be both willing and able to contribute to a local food pantry
- 49.4% are willing and able and will contribute 277 pounds per year

# Introduction and Data Cleaning

## AmpleHarvest.org Survey



AmpleHarvest.org is interested in assessing the results from a May, 2016 survey that asked respondents about their produce gardens and behavior with surpluses. The survey received 1,926 (2015: 666 ) responses.

The most important questions to determine opportunities include:

- In last year's growing season (2015), if you grew more food than you could use, approximately how many **\*\*shopping bags\*\*** do you think you could have filled with the extra food over an entire growing 2015 season?
- If you knew that a local food pantry welcomed your excess garden bounty, would you donate it?

The data were clean using the following protocol :

- Responses entered as <150 as assumed to represent shopping bags
- Responses entered as >150 divided by 25(lbs) to convert to shopping bags
- Negatives were removed
- 3 outliers of > 10,000 were removed

# Exploratory Results



If you knew that a local food pantry welcomed your excess garden bounty, would you donate it?	Count	Percent
Yes	1,590	83%
No	75	4%
Other	261	14%
<b>Total</b>	<b>1,926</b>	<b>100%</b>

In last year's growing season (2015), if you grew more food than you could use, approximately how many <b>**shopping bags**</b> do you think you could have filled with the extra food over an entire growing 2015 season?	Count	Percent
0	371	19%
Other	1,555	81%
<b>Total</b>	<b>1,926</b>	<b>100%</b>

Willing and Able Statistics	Value
Average pounds per year willing and able to donate	273
% of all respondents who are willing and able	56%

- A gardener needs to be both willing and able to contribute to a local food pantry
- 56 % are willing and able and will contribute 273 pounds per year



# Exploratory Results Comparison



"Willing" If you knew that a local food pantry would accept your excess garden bounty, would	Count	Percent
Yes	562	84%
No	15	2%
I don't know	89	13%
<b>Total</b>	<b>666</b>	<b>100%</b>

If you knew that a local food pantry welcomed your excess garden bounty, would you donate it?	Count	Percent
Yes	1,590	83%
No	75	4%
Other	261	14%
<b>Total</b>	<b>1,926</b>	<b>100%</b>

Summary: The overall results between 2015's look-back with 666 data points at the 2014 harvest and the 2016 look-back with 1,926 data points at the 2015 harvest show nearly the same results – that about half of America's home/community gardeners were willing and able (i.e. wanted to donate food *and* actually had excess food) to donate, with an average annual excess harvest of over 275 lbs. This points to between 5.8 billion lbs. (2015 data) and 6.4 billion lbs. (2016 data) of heretofore wasted locally grown fresh food ultimately available for donation to a nearby food pantry.

Willing and Able Statistics	Value
Average pounds per year willing & able	277
% of all respondents who are willing and able	49.4%

Willing and Able Statistics	Value
Average pounds per year willing and able to donate	273
% of all respondents who are willing and able	56%

# Extending the Survey Results

## AmpleHarvest.org Survey

**5,739 billion pounds**  
Amount of excess food in America's home and community gardens that can be donated.

2015 analysis. Expected to be approx. the same for 2016

Scaling	Value
Number of home market gardeners (USA)	41.9 m
% willing and able to donate	49.4%
Average possible donation/year	277.3 lbs
Addressable donations	5,739 lbs m
Pounds currently distributed by Ample Harvest	17.0 lbs m
% penetration of addressable market	0.3%

Annual values scaled to the USA

Value of 1 pound of food	\$1.60
Vegetables required each year/person	415 pounds

**\$9,183 billion**  
Value of the excess food available for donation.

• \$9bn worth of food available for contribution

<b>Potential annual value (by value of food)</b>	<b>\$9,183</b> \$m
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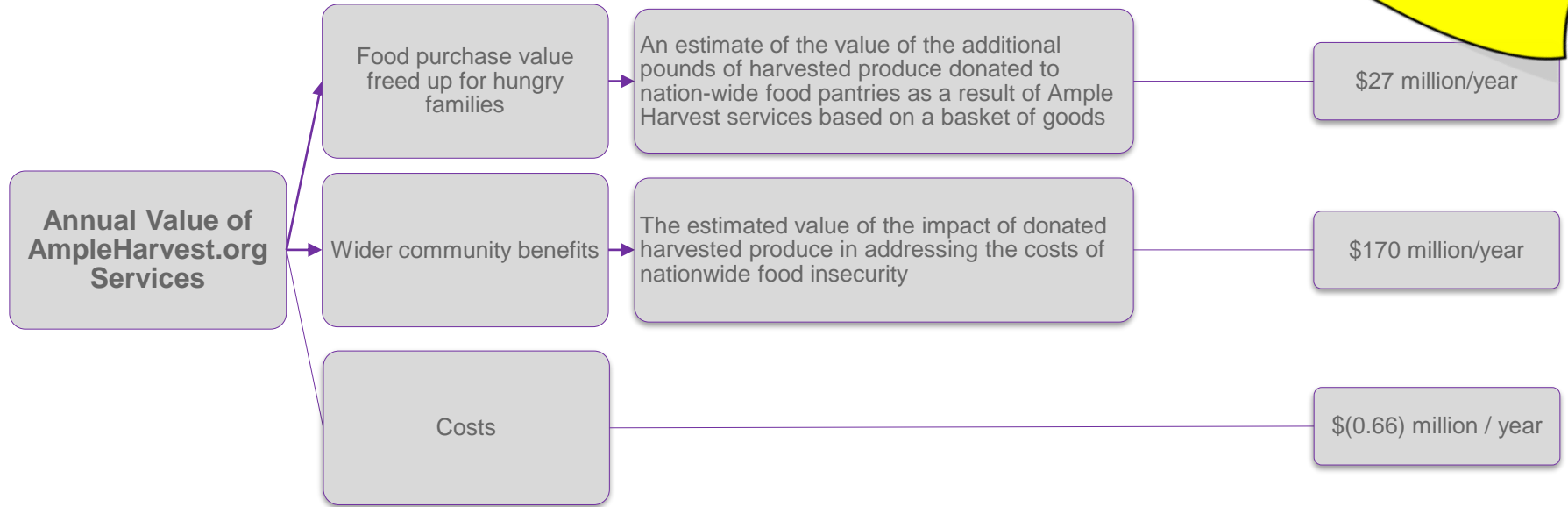
• \$58bn value for the community if all surpluses are contributed

Could provide nutrition to additional people	13,829,471 #
Annual cost of a hungry person	\$4,175
<b>Potential annual value (by value of improved health)</b>	<b>\$57,738</b> \$m

Almost 14 million hungry Americans could get access to fresh food.

# Valuation Estimate Logic based on 2012 data survey

AmpleHarvest.org 2012  
valuation with nearly a  
300 to 1 ROI





## Stop Wasting Food

# Ending Hunger by Donating Excess Garden Produce

Summary Report

**Report Authors:** Selena Ahmed & Carmen Byker Shanks,  
*Montana State University Food and Health Lab*

**Data Analyst:** Christopher Reberger,  
*Global Economics and Research Practice Cisco Consulting Services*

**AmpleHarvest.org Founder:** Gary Oppenheimer, *Survey Design*



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*The generation of food waste is everyone's problem and calls for every individual in the food system to contribute to a solution.*



## I. INTRODUCTION

Food waste is generated in virtually every sector of the food system and, if appropriately redistributed, can be part of the solution in addressing food security for individuals with poor access to adequate and healthy foods. We globally waste approximately 1.3 billion tons of food each year (FAO 2013) while a notable percentage of the world's population does not have access to adequate and nutritious foods. In the United States (US), more than one-third of all consumable food or 1 in 4 food calories is wasted and never eaten (World Resources Institute 2013). At the same time, approximately 14% of the US population is food insecure (USDA 2015) and 13% of the world population is considered undernourished (FAO 2015).

The generation of food waste is everyone's problem and calls for every individual in the food system to contribute to a solution. Food waste is the uneaten edible portion of food that is lost or thrown away in the food system during production, storage, or consumption. Each day, thousands of tons of edible and nutritious food are wasted on the farm, in home gardens, factories, and at food processing plants due to issues of lack of distribution and storage. Foodservice enterprises including supermarkets, restaurants, dining halls, hospitals, prisons, and schools generate food waste because of large portion sizes, expiration or sell by date regulations, and challenges in menu forecasting. Consumers and households waste food from uneaten leftovers, issues in meal planning, and spoiled food.

Food waste is a pressing problem for sustainability in the United States and globally with negative implications for food security, the environment, and socio-economic factors. From a food security perspective, food waste represents a dietary loss of 1,249 calories per capita per day (Buzby et al. 2014), along with a loss of nutrients. We can feed more people with nutritious diets if we waste less food. Environmentally, food waste has a detrimental ecological footprint with consequences for water, land use, biodiversity, and climate (FAO 2013). Food waste takes up space at our landfills, utilizes energy and resources to process, and also produces the green house gas methane released to the atmosphere as it decomposes. The energy utilized in producing food including labor is lost with the generation of food waste. Economically, food waste represents a loss of approximately \$161.6 billion annually (Buzby et al. 2014) including the cost of the lost food resources and the cost of trash disposal. We are essentially throwing away resources when we waste food.

## **II. FOOD WASTE SOLUTIONS**

In recognition of the need to address food waste, major international and national organizations have initiated campaigns to reduce food waste. For example, the United Nations Sustainable Development Goals (2016) call for the world to reduce food waste by 50% per capita by 2030. In the US, the US Department of Agriculture and US Environmental Protection Agency have partnered to set the nation's first food waste reduction goals through the Food Waste Challenge to reduce the amount of food wasted by 50 percent by 2030 which they seek to achieve through a series of programs and policies (USDA 2015).

Numerous strategies exist as well as are being created to better manage food resources from farm to table to prevent food waste. Some restaurants are finding innovative ways to use edible “ugly” produce in recipes that hide the flaws of fruit and vegetables such as soup. Stakeholders across the food system are composting rotting or leftover food into nutrient rich soil to cultivate new food. New tools have emerged to help households better plan meals in efforts to save costs and reduce food waste. Organizations such as farms, supermarkets, and restaurants, have engaged in donating extra food to food banks and pantries. Composting food scraps is used to create nutrient rich soil. All of these efforts help to redirect food waste, and the organic matter that it represents, away from the landfill.

**AmpleHarvest.org Enabling Donation of Produce from America's Gardeners to Food Pantries:**

Food donations to food banks and pantries have typically involved food enterprises such as farms, supermarkets, restaurants and community food drives and have not generally involved fresh food from gardeners. However, there are over 42 million home and community gardeners in the US (National Gardening Association 2014) that generate an abundance of fresh fruits and vegetables; some of this produce is ultimately wasted. Until recently, there were no networks for these individuals to donate extra produce not utilized or given away to family and friends.



In recognition of this need, the non-profit organization AmpleHarvest.org was launched in 2009 with the goal of creating a new avenue via technology to redirect excess fruits and vegetables grown by America's gardeners to nearby food pantries. Specifically, AmpleHarvest.org helps eliminate food waste and hunger in communities around the United States through both education and awareness programs to help gardeners learn how they can donate their food as well as a web-based platform that links home and

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community gardeners to nearby pantries that are accepting fresh garden produce. AmpleHarvest.org maintains a free, searchable, online registry of opt-in food pantries, soup kitchens, and other food distribution agencies in all 50 states nationwide in order to enable home and community gardeners to find a nearby location to donate their excess garden bounty.



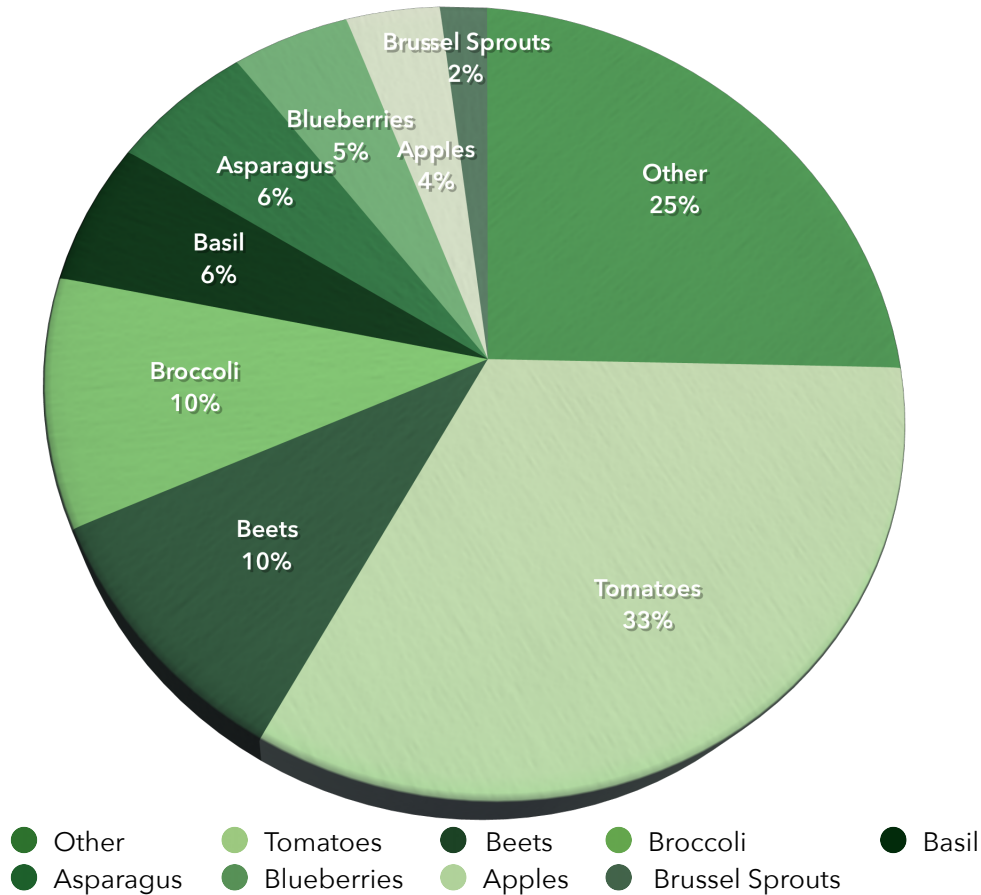
While there are many sectors in the food system that generate food waste, AmpleHarvest.org focuses on the home and community gardener segment, a traditionally untapped resource in regards to food waste strategies. To date, AmpleHarvest.org has provided opportunities for America's 42 million home and community gardeners to donate excess fresh food to nearly 8,000 of America's 33,500 pantries. As the benefits of consuming fresh fruits and vegetables for human health become more recognized, food pantries are increasingly demanding fresh produce donations for providing food insecure households with nutritious foods.

### III. SURVEY ON EXCESS FOOD GROWN IN AMERICA'S GARDENS

**Survey Purpose and Methods:** AmpleHarvest.org, with support from Christopher Reberger of Cisco Consulting Services, carried out a survey with home and community gardeners in the US to evaluate the potential impact that local gardeners can have by donating excess produce to local food pantries. The objectives of the survey were to determine the amount of excess food that home and community gardeners grow beyond what they can use and to use this information to assess the potential impact of connecting gardeners with food pantries. The survey instrument included multiple choice and open-ended questions regarding respondents' produce gardens and behavior with surpluses including foods grown, size of garden plots, years of gardening, approximate amount of excess food grown and harvested, knowledge of whether local food pantries accept donations, food pantry donation history and practices, and perceptions on willingness to grow more food. The survey was administered online via the AmpleHarvest.org website twice including in May 2015 and May 2016 with questions regarding the previous growing season. The online survey tool was distributed through three means to elicit responses from gardeners including the following: (1) The 50 state Master Gardener organizations reached out across their networks; (2) AmpleHarvest.org social media and; (3) other bloggers and networks in the food and gardening realm. Results from each year's survey were separately analyzed and compared. Here, we focus our discussion on the most recent survey results followed by a brief comparison of survey data from the two survey years.

**2016 Survey Results:** A total of 1,926 gardeners from all over the US responded to the 2016 survey on the AmpleHarvest.org website. Of these respondents, 19.5% had heard of the activities of AmpleHarvest.org prior to the survey. The majority of respondents, 61.5%, had grown food in their garden prior to 2009 while 27.7% of

## Produce Grown by AmpleHarvest.Org Survey Respondents, 2016



respondents starting gardening after 2009. These findings highlight how there is a stream of new home and community gardeners entering food production in the US. While the majority of gardeners grow food in suburban (39.2%) and rural (37.2%), a notable percentage also grows food in urban settings (23.7%). Respondents represented a mixed age group with 48% being from 46 - 65 years old, 24.7% being from 66 - 85 years old, and 21.4% being from 26 - 45 years old. The most prevalent produce cultivated by the home and community gardeners taking the survey were tomatoes (grown by 34% of producers), beets (10%), broccoli (8%), basil (6%), and asparagus (6%).

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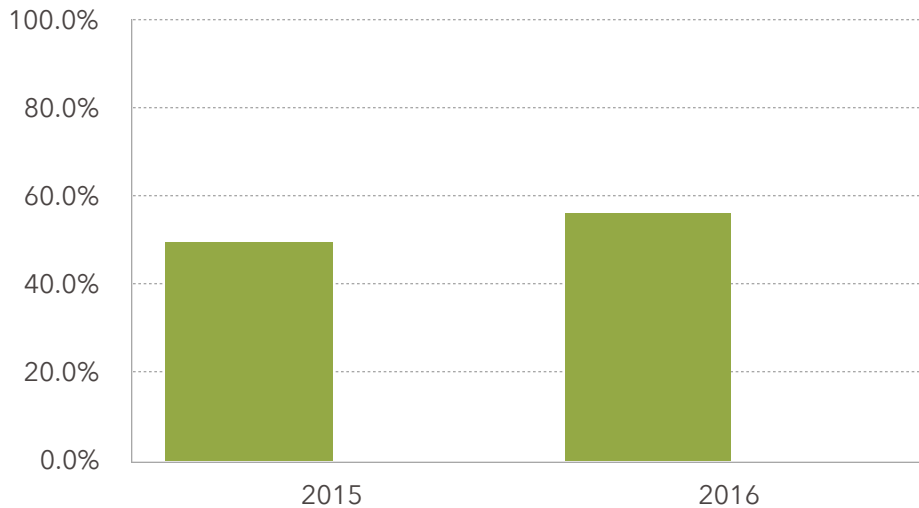
Findings indicate that an increasing number of gardeners have started to donate food since 2009 when AmpleHarvest.org was founded. Specifically, only 8.6% of gardeners reported donating food before 2009 and 23.1% of gardeners reported donating food since 2009. A total of 83% of all respondents, or 4 out of 5 gardeners, reported that they were willing to donate their excess garden bounty if they knew that a local food pantry welcomed their excess.

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A total of 56% of respondents reported that they were both willing *and* able to contribute their excess garden bounty to a local food pantry. Specifically, the home and community gardeners that participated in the survey reported that they are willing to donate excess produce from their gardens totaling 337,625 pounds annually, or an average 273 pounds per person annually based on the 2015 growing season. For the approximately 42 million home and community gardeners in the US, excess produce donations could add up to 11.47 billion pounds annually. At an average estimated price of \$2.41 per pound of fresh produce, these excess produce donations represent a value of \$27.63 billion. In addition, using the estimate that individuals should consume 415 pounds of vegetables per year, the excess produce that can be donated by gardeners in the US annually has the potential to provide the annual vegetable recommendations of 27,638,554 people and thereby addressing a notable percentage of the food insecure population in the nation.

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## Percentage of Gardeners Willing and Able to Contribute to a Local Food Pantry, AmpleHarvest.org Survey 2015 and 2016



In addition to the majority of gardeners being willing and able to donate excess garden produce, 49.3% reported that they would grow more produce explicitly to donate if they knew there was a local pantry that would accept it and they had the extra space. 30.2% of respondents indicated that they do not have more space to grow additional produce. Only 9.7% of respondents stated that they would not grow more produce explicitly to donate if they knew there was a local pantry that would accept it and they had the extra space. Overall, the issues in the US of greatest concern to the respondents are the environment (22%), hunger (22%), and food waste (21%).

**Comparison of 2016 and 2015 Survey Results:** A comparison of 2016 and 2015 survey data shows similar findings during both years that the survey was administered, thereby further validating the findings from the 2016 survey. A total of 666 gardeners from around the US responded to the 2015 survey on the AmpleHarvest.org website. Of these respondents in 2015, a total of 49.4% were both willing *and* able to contribute to a local food pantry (compared to 56% respondents in 2016). Respondents that participated in the 2015 survey reported that they are willing to donate excess produce from their gardens totaling an average 277 pounds per person annually based on the 2014 growing season; these findings are very similar to the 2016 findings of an average of 273 pounds per person annually based on the 2015 growing season.

**Survey Result Implications and Broader Opportunities:** Results of the survey highlight the potential of distributing food from America's gardeners to food pantries to mitigate both food waste as well as food insecurity. Donating excess produce from home gardens and community gardens serves to redirect food waste from the landfill and thereby mitigate the negative environmental and economic externalities of food waste. The excess food waste that can be donated by gardeners in the US annually has the potential to provide the annual vegetable recommendations of millions of hungry people nationwide representing a notable percentage of the food insecure population in the nation. Donating a diversity of foods to food pantries helps support food security and nutrition outcomes of households with poor access to nutritious foods while further supporting healthcare costs. Furthermore, by connecting gardeners to their local pantries, food waste travels a relatively short distance meaning that it has a reduced ecological footprint while staying fresher with a longer shelf life. Based on our findings, we estimate that upwards of a few million home and community gardeners presently participate in donating excess food to food pantries. However, there are still millions of more gardeners that throw away excess food that could be nutrition for hungry families in the US. Thus, we support an expansion of food pantries to participate in the network of accepting local fresh produce to feed America's hungry families with nutritious foods while reducing food waste. We further support awareness campaigns for home and community gardeners on food waste strategies including donating garden produce as well as educational programming for consumers of food pantries on how to prepare fresh produce and time management for cooking fresh produce. In this way, donating excess garden produce can help end food waste and hunger.

***We support an expansion of food pantries to participate in the network of accepting local fresh produce to feed America's hungry families with nutritious foods while reducing food waste.***

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