# 2018 U.S. Food Waste Investment Report:

*Special Report on Foundation Funding*

TECHNICAL APPENDIX  -  FALL 2018

**ReFED** | **Rethink Food Waste**
*Through Economics and Data*

# Contents

*This Technical Appendix describes the methodology used to create the ReFED Food Waste Foundation Investment Tracker which was used to develop the Special Report on Foundation Funding. This covers the data sources used, the process for identifying and categorizing funding, the scope of funding included, and the data gaps and data limitations identified throughout the process.*

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# Methodology

## Overview

ReFED used three primary data sources to develop the baseline:
1) Electronically-filed 990-PF Tax Form data made available by the Internal Revenue Service (IRS) on Amazon Web Services (AWS)
2) Paper-filed 990-PF Tax Form data collected from the Foundation Center's Foundation Directory Online Tool
3) Self-reported data collected through an interview process with several well- known food waste focused foundations and non-profits (where the non-profits provided insight into their total budgets)

The multiple data sources helped to ensure a comprehensive and robust baseline, as there is huge variation in the ways (i.e. electronic vs. paper) and level of detail that foundations report grant information.

ReFED searched these data sources for grants containing food waste related keywords and for grants given to food waste related organizations. These grants were then individually reviewed and categorized as directly related to food waste (prevention, recovery, recycling, or general), indirectly related to food waste (i.e. food banks and similar organizations), or out of scope.

Several limitations with the dataset are described in more detail below. With those limitations in mind, ReFED believes that this dataset should be used as directionally correct, but recognizes that it does not capture 100% of all food waste related funding in the sector. Additionally, there may be some grants included that others would not categorize as food waste related that ReFED chose to categorize as part of the baseline, or vice versa. Even with these limitations, ReFED believes this baseline provides strong insight into the current funding landscape, including trends and gaps.

# Data Sources

### Tax Form 990-PF

Most data for the ReFED Food Waste Foundation Investment Tracker originates from Tax Form 990-PF. *Most tax-exempt organizations are required to file a Form 990 of some type for each tax year.* Private foundations in particular are required to file Form 990-PF, which includes contribution-level detail such as recipient name, amount given, and a brief description of each grant or charitable contribution made. Data submitted via the 990-PF is available from the sources listed below.

**Electronically-filed 990-PF** - In the summer of 2016, the IRS made all electronically filed 990-PF data publicly available in XML format on *Amazon Web Services*.[1] This data source provides up-to-date, comprehensive coverage of all grants and contributions filed electronically with the IRS. According to the IRS, over 60% of 990 tax returns are filed electronically.[2] ReFED developed a web scraper to scan this data and export relevant grants in a consumable CSV format.

**Paper-filed 990-PF** - Since the dataset on Amazon Web Services does not include paper-filed tax returns, obtaining this additional data was essential for covering as much as possible of the roughly 40% of remaining returns. Data submitted via paper-filed forms is difficult to obtain in a bulk, consumable format. It is possible to obtain individual image copies of paper-filed forms from online sources such as *ProPublica's Nonprofit Explorer* or by purchasing individual DVD, thumb drive, or paper copies from the *IRS*. However, digitized data in bulk for paper-filed forms is only available via third-party services such as the Foundation Center.

Foundation Center is the industry standard for paper-filed grant data. Foundation Center collects and digitizes grant-level data from a variety of sources including digitized Form 990-PF's and a variety of tools where foundations can self-report grants made[3]. Together, these datasets cover the majority of high-dollar grants made each year.

### Self-Reported Data

Even with the 990-PF Tax Form data in hand, many food waste related grants could be missed if the grant description was not sufficiently detailed enough to specify that the grant was related to food waste. Many grant descriptions, for example, say things like "Program support" without specifying that it was for a food waste reduction program. ReFED attempted to catch as many of these grants as possible by reaching out to several well known food waste focused foundations and non-profits to ask about their food waste grants made or received.
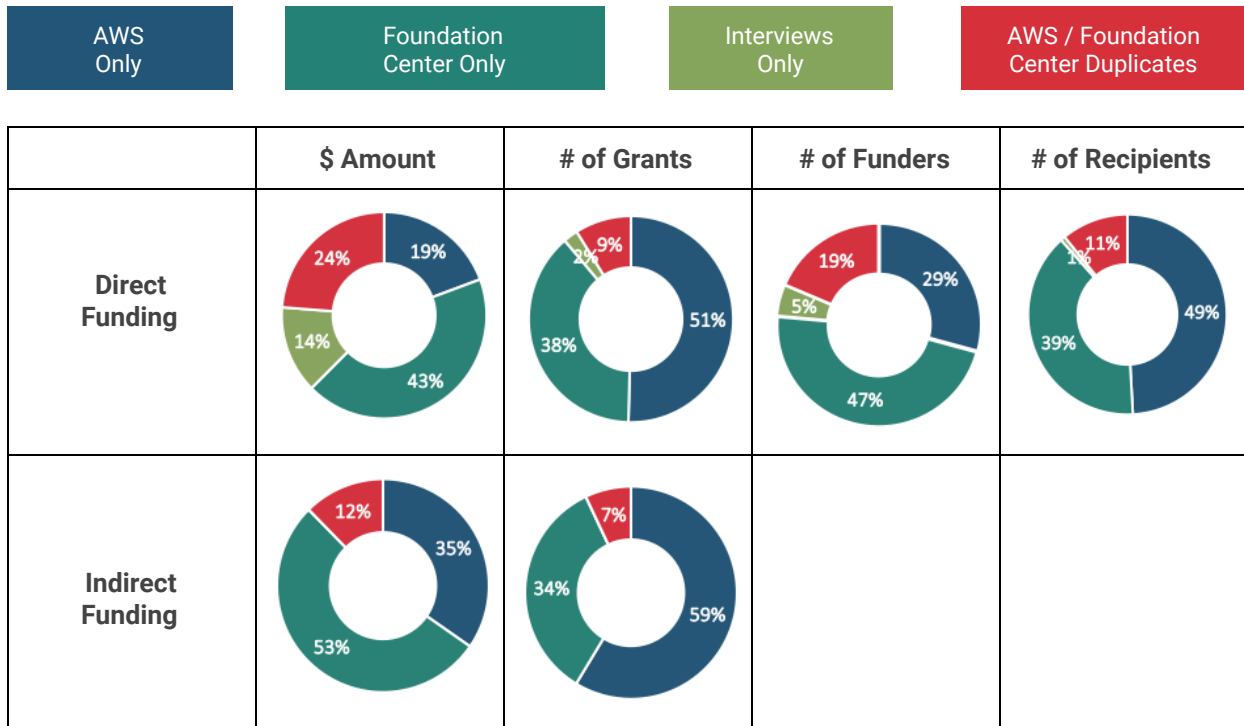
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[1] *https://www.irs.gov/newsroom/irs-makes-electronically-filed-form-990-data-available-in-new-format*
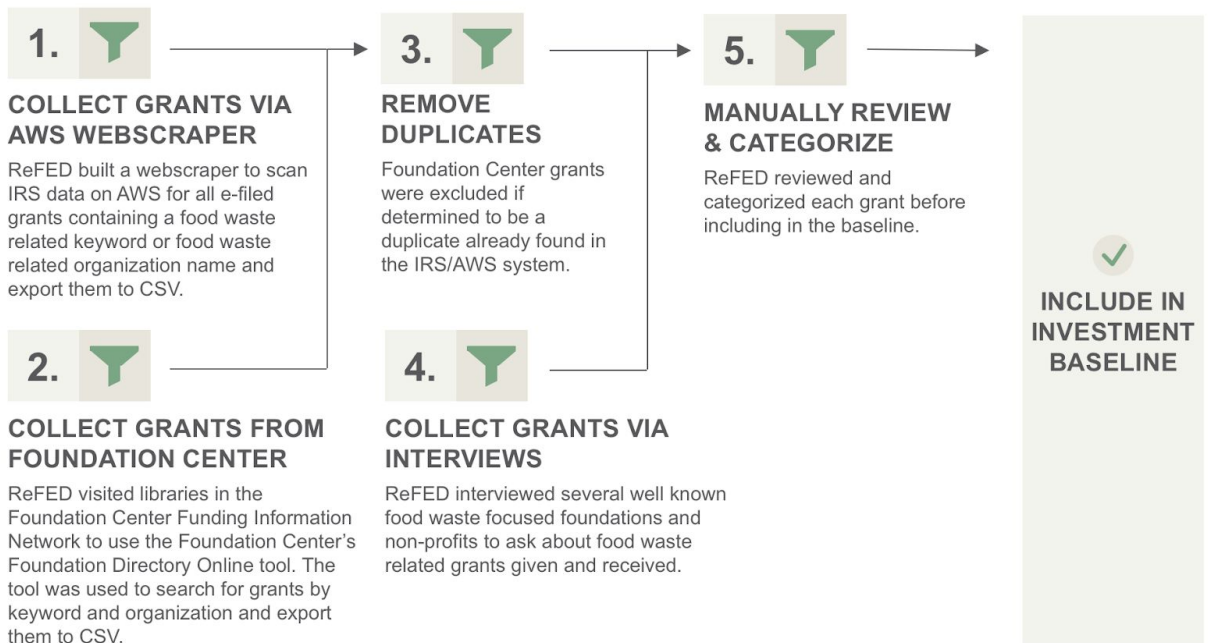[2] *https://www.irs.gov/newsroom/irs-makes-electronically-filed-form-990-data-available-in-new-format*
[3] *https://foundationcenter.org/gain-knowledge/foundation-data*

**Figure 1**. Data Source Breakdown of Grants Used in Baseline

| | AWS Only | Foundation Center Only | Interviews Only | AWS / Foundation Center Duplicates |
|---|---|---|---|---|

| | $ Amount | # of Grants | # of Funders | # of Recipients |
|---|---|---|---|---|
| **Direct Funding** | 19%, 24%, 14%, 43% | 9%, 2%, 2%, 51%, 38% | 29%, 19%, 5%, 47% | 11%, 1%, 49%, 39% |
| **Indirect Funding** | 35%, 12%, 53% | 7%, 59%, 34% | | |

## Process

**Figure 2**: The following diagram summarizes the process used to collect, review, and include grants in the baseline:

**1.**
**COLLECT GRANTS VIA AWS WEBSCRAPER**

ReFED built a webscraper to scan IRS data on AWS for all e-filed grants containing a food waste related keyword or food waste related organization name and export them to CSV.

**2.**
**COLLECT GRANTS FROM FOUNDATION CENTER**

ReFED visited libraries in the Foundation Center Funding Information Network to use the Foundation Center's Foundation Directory Online tool. The tool was used to search for grants by keyword and organization and export them to CSV.

**3.**
**REMOVE DUPLICATES**

Foundation Center grants were excluded if determined to be a duplicate already found in the IRS/AWS system.

**4.**
**COLLECT GRANTS VIA INTERVIEWS**

ReFED interviewed several well known food waste focused foundations and non-profits to ask about food waste related grants given and received.

**5.**
**MANUALLY REVIEW & CATEGORIZE**

ReFED reviewed and categorized each grant before including in the baseline.

✓
**INCLUDE IN INVESTMENT BASELINE**

**Table 1**: Grants were individually reviewed and categorized into one of the following categories:

| Grant Categories | | Description<br>Grants where the description calls out: | Examples<br>Grants given for: |
|---|---|---|---|
| Direct Funding | Prevention | Food waste prevention solutions | • Standardized date labels<br>• Consumer education about food waste prevention |
| | Recovery | Food waste recovery solutions | • Refrigerated storage at a food bank<br>• A truck to pick up surplus food donations |
| | Recycling | Food waste recycling solutions | • A composting program<br>• Biodigesters |
| | General | Food waste in general, but did not specify prevention, recovery, or recycling | • A food waste reduction program |
| Indirect Funding | | General funding for food banks or other organizations that distribute primary and/or recovered food* | • General support for a food bank<br>• A commercial kitchen that uses both primary and repurposed, surplus food ingredients |
| Out of Scope | | Anything that does not fit in one of the categories above, including multi-use grants and zero waste grants | • Refrigerator for vaccine storage<br>• Composting toilets |

*When it was clear from the description that the grant was for food recovery, the grant was categorized under recovery. However, many food banks and social enterprises distribute both primary and recovered food. While the grant descriptions may not reflect the food recovery aspect, there is a large overlap between general food bank funding and food recovery funding.*

## Scope

**Table 2**: The following table lists what is and is not included in the scope of the ReFED Food Waste Foundation Investment Tracker:

| Included | Not Included |
|---|---|
| <ul><li>Grants made by private foundations</li><li>Grants where the benefitting region is in the US*</li></ul> | <ul><li>Grants made by organizations that are not private foundations</li><li>Donations by individuals</li><li>Regrants (to avoid double counting)</li><li>Grants where the benefitting region is NOT in the US*</li></ul> |

*\* Grants made to non-US recipients were not included, assuming that these grants benefitted non-US regions. Grants made to US recipients were included unless the grant description indicated the benefitting region was outside the US or the recipient organization was known to focus their work outside the US. A few exceptions were made after verifying the benefitting region with grantmakers and recipients.*

# Data Gaps and Limitations

## Data Gaps

Any food waste related grants that were missed by the methodology described can be attributed to one of the following data gaps.

### Keyword search

**Grants that did not contain a keyword** - As previously mentioned, ReFED used a set of keywords to search for grants related to food waste. These keywords included food waste themed words (e.g. food waste, food recovery), partial words (e.g. refrig to cover multiple words such as refrigeration, refrigerated, refrigerating), as well as the names of grant recipients known to focus on food waste related work (e.g. ReFED, Feeding America, City Harvest). ReFED will continue to update and improve the list of keywords, but it is possible that some food waste related grants were missed because they did not contain one of the keywords used for searching. More commonly, however, food waste related grants were missed because the grant description was extremely vague (e.g. "General support") and did not provide enough information to know that it was related to food waste. While the list of keywords can be constantly improved, the only way to identify vaguely described grants in the future is to obtain this information from the grantmaker or recipient on a one-by-one basis. ReFED intends to use our network of food waste grantmakers and recipients to be informed of as many of these grants as possible going forward.

**Grants returned via Foundation Center Online tool keyword search** - In addition to the keyword gaps described above, we also found that the keyword search function on the Foundation Center Online tool did not always return the full number of relevant grants. Searching for grants with the keyword "compost", for example, did not return 100% of the grants that Foundation Center has in their system that contain the

word "compost" in the grant description. It is impossible to know how many paper-filed grants may have been missed by this approach. In the future, this could be addressed by having Foundation Center prepare a custom dataset that is more comprehensive than the data returned by the online keyword search function alone.

**Paper-filed grants not included in the Foundation Center Online tool** - While Foundation Center maintains the most comprehensive dataset of paper-filed grants made, there are some grants and some organizations that are not available in their system. If a food waste related grant was not submitted electronically to the IRS and Foundation Center does not have the grant in their system, it was missed by this process.

**Manual error** - It is possible that some food waste related grants were excluded due to human error. This can be reduced by increasing the quality assurance and review by multiple parties over time.

## Limitations

**Time Lag of Tax Returns and Grant Reporting** - Even with extensions, private foundations must file the 990-PF within 12 months of the end of their fiscal year[4]. This can, however, lead to almost a two-year time lag between grants being distributed and when they are reported to the IRS. For example, a foundation could make a grant contribution on December 1, 2016. If their fiscal year ends on November 30, 2017, that grant may not be reported to the IRS until October 15, 2018. This is why the fiscal year 2016 data in this report is only partially reported.
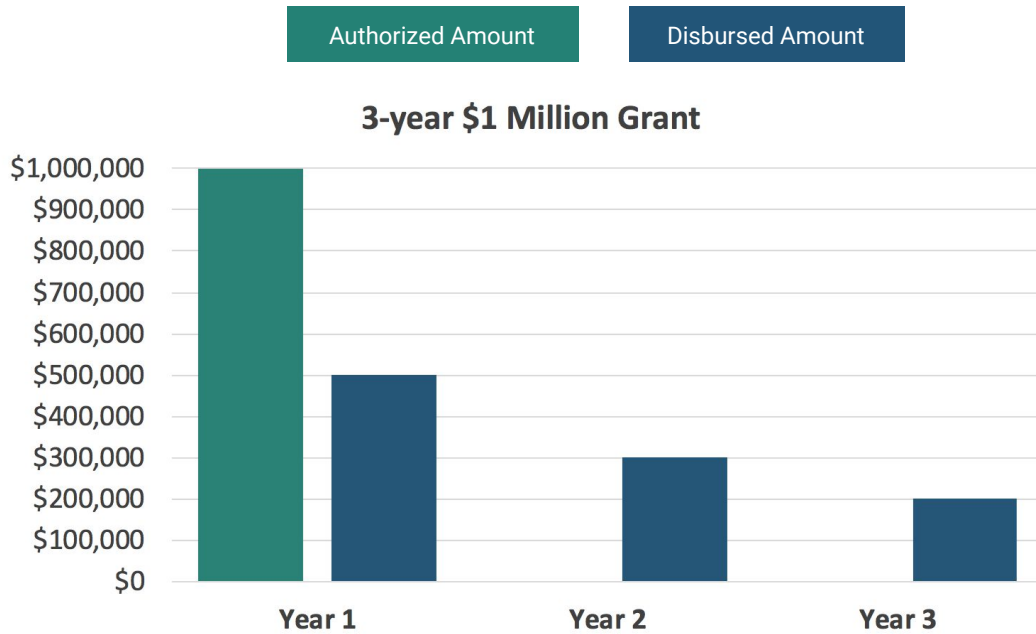
**Grant Authorized Amount vs Disbursed Amount** - For multi-year grants, there is a difference between the full grant authorized amount versus how much is paid out each year to the recipient. Form 990-PF's capture the yearly *disbursed amount*, not the *authorized amount*. Foundation Center's self-reporting programs typically capture the *authorized amount*, as this is what participants typically provide through the manual process. The ReFED Food Waste Investment Tracker attempts to capture the *disbursed amount* of grants by tax year, but in certain cases when a grantmaker did not electronically file and Foundation Center's manually-reported data was used, it is typically the *authorized amount* that is used. This results in some multi-year grant dollars being tracked in the first year they were awarded, rather than the year the funds were paid out.

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[4] *https://www.irs.gov/charities-non-profits/return-due-dates-for-exempt-organizations-annual-return*

**Figure 3. Illustration of Grant Authorized Amount vs Disbursed Amount**



Authorized Amount    Disbursed Amount

**3-year $1 Million Grant**

**Table 3. Data Sources and Method of Grant Amount Reporting**

| Data Source | | | Grant Amount Type |
|---|---|---|---|
| Electronically-filed 990-PF grants available on Amazon Web Services | | | Disbursed Amount |
| Paper-filed 990-PF grants available from the Foundation Center | Digitized 990-PF Forms | | Disbursed Amount |
| | Manual programs | Self-reporting platforms (e.g. eGrant Reporter) | Typically the Authorized Amount |
| | | Manual research (e.g. public websites and reports) | Typically the Authorized Amount |
| Interview process | | | Typically the Authorized Amount |

# Acknowledgements