UNLOCKING THE ECONOMIC, SOCIAL, AND ENVIRONMENTAL BENEFITS OF USING SURPLUS FOOD IN MAINE

A Qualitative Survey of Challenges and Opportunities for Redistributing Maine's Food Surplus Into the Charitable Food System

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Food Rescue MAINE

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This report is based on research that was conducted between March and December 2024. At the time of writing this disclaimer, the recent drastic government transformations have rendered part of the observations and recommendations of this report less relevant. Still, we hope the reader will find that there is still useful information to help adapt to this new environment.

Executive Summary

Background: The 2024 Maine Food Loss and Waste Study found that approximately 361,000 tons of food loss and waste occur in Maine each year. At the same time, Maine households have the 6th highest proportion of total budget spending for groceries in the nation. Meanwhile, the amount of uneaten food wasted in America contains more than four times the number of calories needed to feed an estimated 35 million food-insecure Americans. Among this population are nearly 15% of all Mainers, the highest rate in New England, and a rate that has increased by 47% from 2021 to 2024. In addition, the uneaten food going into our landfills, incinerators, and wastewater is causing health issues while also harming air and water quality and hastening climate change. Solutions must be developed to stop the costly waste of our vital food resources and more effectively use those resources to benefit our state.

Objectives of the Study: Maine's charitable food system (CFS) stakeholders are already playing a major role in rescuing good, edible, wasted food and redirecting it to food-insecure households to provide environmental, social, and economic benefits. Considering the amount of food waste and loss still occurring in the state and the number of people in need of food, our project goal was to identify opportunities to grow sourcing and redistribution in Maine's CFS.

Methods: From March to December 2024, Louis Rivet-Prefontaine and Susanne Lee conducted interviews and did fieldwork to observe while giving a hand to charitable food actors across the state. On top of Maine's CFS actors, we also met with Maine CFS donors: farmers, grocers, distributors, restaurants, schools, and other food producers to collect qualitative research data. Finally, we conducted a literature review to understand and highlight best practices from across the U.S., Canada, France, and other European countries. In selecting interview subjects, our goal was to interview both food donors and food recipients with diverse sizes and geographical locations, but all are highly engaged in Maine's charitable food system.

Key Findings:

One might think that increasing food rescue and redistribution is simply about increasing the diversion of good, edible surplus food into the charitable food system. But our research showed that there are actually three key opportunities to expand the charitable food system activity: 1) Increase the donation of all good, edible food into CFS. (i.e., food sourcing); 2) Increase capacity for food "absorption" into the CFS; 3) Increase CFS food distribution pathways to get food to all those in need. Below are some recommendations for each of those areas.

1. Sourcing

- Continue education on the importance of building rapport and interaction between commercial food donors and CFS organizations. Think of such relations as "customer service".
- Continue education on the advantages of food donation for businesses (e.g., savings on waste hauling costs, corporate responsibility public relations, optimizing food management).

- Educate on the fact that unsold food is still good, edible surplus food, and not "trash" by consistently using proper terminology and actively promoting it.
- **Policy recommendations:**
  - Increase investment in CFS farm surplus purchasing programs (e.g., Mainers Feeding Mainers) to support farms, minimize food loss, and stock regional Maine food banks.
  - Require businesses to change good, edible food management practices to prioritize feeding people, especially in the case of power outages.
  - Ensure the effectiveness of food waste ban policies by equipping them with the appropriate infrastructure to ensure enforcement.
  - Prevent inedible food waste donation dumping on under-resourced pantries, or provide financial support to pantries and food banks for the handling of inedible (rotten, damaged) food surplus donations from businesses.

2. Absorption

- Develop CFS infrastructure and partnerships to process and upcycle excess food donations to minimize food loss and maximize feeding.
- "*One agency's trash is another agency's treasure*": Minimize waste and increase social impact by expanding collaborative initiatives. E.g., rural agencies may not need plantain bananas while pantries in multicultural Portland do, but have less demand for sweets.
- "*Think Big*": Increase capacities for storage, operating hours, volunteer and staff, and data collection for greater CFS impact and resilience.
- Harness "local talent": mobilize local community skills to save on paid services (plumbing, carpentry, web design, accounting, etc.).
- Diversify income streams: public funding, fundraising, social entrepreneurship, etc.
  - Educate private/individual donors on the fact that money donations have a bigger impact than food donations (because of economies of scale and buying power).
- Consider integrating food rescue service tech to increase food recovery and CFS impact.
- **Policy recommendation:** "Freezers don't feed people; people feed people": Increase infrastructure grants *and* public funding for day-to-day CFS operations.

3. Redistribution

- Increase dignity and access and reduce stigma for end users by considering "free choice" redistribution models (e.g. "market" redistribution models). Supervised/regulated self-service redistribution points (e.g. sharing tables, community fridges) are a less consensual option.
- Increase food absorption and access by instigating CFS or community-sponsored feeding solutions (e.g. community suppers, cooking classes).
- Increase end-user access by assessing and adapting services to meet the needs of the end-users: *who* they are, *what* they eat, *where* they live, and *when* they are available.
- Harness public/community infrastructures both for food rescue education and surplus food redistribution. (e.g. the Locker Project collaborating with schools, Community space offered at Harrison Food Bank).

    - e.g., schools: use year-round school-based programs to educate/restore an understanding of the value of food, and use school infrastructure (gymnasiums, schoolyards) as local hubs for hungry families and individuals.
- Improve food access and prevent waste by relaxing eligibility guidelines (income thresholds). To the extent that, as of right now, there is 2.5 times more food than what is needed to feed everyone, there should be more surplus food to source.
- **Policy recommendation:** Bolster poverty relief and buying power improvement policies to reduce some waste and ensure dignity in consumption

The CFS's Role In Question

These recommendations can increase food rescue and food redistribution in Maine's charitable food system. That being said, while the CFS tackles the problems of food insecurity and food waste, it cannot be a durable solution. The CFS historically developed *to address hunger*, not as an outlet for surplus food. As such, a significant portion of the CFS is first and foremost aiming to feed people, not save food. And this goal results in some agencies buying fresh food to fulfill their mission instead of prioritizing the sourcing of surplus food, and/or wishing for more consistency and predictability in the quantity and types of food they receive, which is hardly compatible with a food rescue mission that will always mean adapting to donation fluctuations.

Therefore, while charitable food agencies play a role in reducing food loss and waste, we should not lose sight of the fact that there will always be more food surplus available than stomachs to feed unless we solve the core problem of food overproduction and overbuying.

Next Steps

- Share and present report findings to key Maine charitable food system players to highlight best practice ideas, and to Maine policymakers to inform and educate on the best strategies to help the CFS achieve social, economic, and environmental benefits.
- Create and promote educational resources for CFS agencies about how food rescue can benefit them (considering that many agencies in the CFS prioritize food security and feeding people over food rescue).
- Assess what *types* of surplus are available in Maine to know how much is actually sought after by charitable organizations and end-users, *where* it is located, and how *accessible* it is (given limited sourcing resources available).
    - Assess how many more pick-ups in larger grocery stores could be scheduled to increase surplus food rescue, and see whether more resources should be allocated to this end.
- Produce a comparative food waste ban policy analysis *concerning its consequences on the CFS* (e.g., dumping inedible, wasted food on food security and food rescue agencies), and how to adequately enforce a ban while ensuring that the CFS won't suffer the consequences
- Produce a cost/benefit analysis on food rescue service technology implementation in Maine.
    - Assess the potential impacts of ending hunger and poverty on food waste.

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1. Introduction: How We Got to Where We Are Now

It is estimated that around 40% of all the food produced for human consumption in the U.S. and Maine is never eaten, even though a majority of that food would be good and edible. This report aims to present a number of challenges and opportunities to tackle this problem with the help of Maine's charitable food system (CFS). But before we get into that, it might be worthwhile to briefly go over the history of how we have become such a wasteful society, to see what we can learn from it.

Food waste as a widespread phenomenon emerged along with the expansion of industrial capitalist mass production and mass consumption. This great transformation impacted how human communities survive in their natural environment and how they interact with it. One of the consequences of this immense shift was that the mass production of goods sold on commodity markets created a thick veil between the consumer and all that goes into making the things they buy.

1.1 From a World of Community Subsistence…

In societies before our time, food was a scarce and precious resource. People lived in harsh environments where growing crops, picking fruits, and raising or hunting animals often did not bring consistent or sufficient results. Humans have survived in these conditions thanks to elaborate know-how, cultural, spiritual, and religious rites and traditions in which reuse and usage maximization were a core principle. In many tribal Indigenous societies, such as those that still exist in North America today, traditions consider animals, plants, and the land as beings you must engage in a proper relationship. Having an appropriate relationship with everything nature gives to these people means honoring it by using every part possible. A hunted deer must be thanked for its generous gifts; its meat shared among the whole community and thoroughly eaten, its bowels, skin, and fur transformed into clothing, its bones carved for tools and ritual objects. Whatever is left is "given back" to feed nature's soil.

In the Western world, even up until about 100-150 years ago, most folks could see and understand the work it took to grow and make produce, meat, dairy, or any other everyday consumer good. They understood where it all came from and what it was made of. Most families and communities were rural and thus had the space and skills to be largely self-sufficient in producing the goods they needed to live on. In sum, the food people ate either came from their own fields' crops and pasture animals, or from exchanging and bartering their surpluses (e.g., meat from a cow they had to put down, or extra produce) with their neighbors' surpluses. Maine's history certainly fits that picture. For a long time, and even up until now to a certain extent, our state has been known for its exemplary "culture of reuse". Mainers' scarcity mindset and valuing of food were kept alive by their sense of community and by the rugged and remote environment they lived in, away from commodity supply chains.

1.2 … To Contemporary Globalized Capitalism and the End of "Cheap Nature"

As the last two centuries saw the rise of industrial capitalism, the economy changed drastically. Today's agri-food system is complex. It is globalized, composed of specialized private industrial companies, and highly concentrated, with multiple intermediaries added between producers and consumers (e.g., manufacturers, distributors, and grocers). Technological progress, such as industrial fertilizers, agricultural machinery, and efficient means of transportation like trains, cargo ships, and freight trucks, allowed for significant improvements in productivity and long-distance transportation of goods and resources. Nature has become "cheap" and easy to exploit; food has become easy to acquire for more people.

Unfortunately, the result of this progress has also been that all along the chain, from resource sourcing to production, distribution, and consumption, it is now easier to dispose of undervalued or undesirable surpluses and by-products, rather than maximizing usage. This is because, in the current system, everyone is used to "cheap nature," and there are no incentives to utilize commodities of insufficient market value. For producers, distributors, and processors, it is often less costly to let food go to waste, whether in the fields or warehouses, rather than trying to find ways to distribute it to people who might want or need it. Food is "too cheap to care".

As for individuals, decades of marketing strategies and advertising that encourage "saving more by buying more" have resulted in considerable amounts of food waste, which they are often unaware of creating, as they buy more than they can eat, and their trash is landfilled or destroyed out of sight. People don't produce means of subsistence for themselves, and family and neighbors anymore; they are employees and consumers. They work for companies in exchange for money, which they then depend on to acquire food and goods they know little about from retail/grocery stores. As a result, a thick veil has dropped between them and the work, natural resources, time, and distances traveled that go into producing the food they buy, and how much waste is generated along the way.

1.2.1 The Contemporary Food System, Climate Change, and Consumer Exclusion

As much as this system has allowed the production of more food for a larger number of people in developed nations for decades, it is now contributing to a new set of problems, namely, for the environment and people's access to consumer goods.

Experts have been ringing the alarm about the considerable environmental harm caused by industrial food production and waste. Not only does food production require lots of resources (labor, fuel, water, land, fertilizers, etc.) that are wasted as a byproduct of food waste, but when food is thrown away, it has great environmental consequences. Incinerating food and food packaging creates gas and microparticles that pollute the air, while landfilling it creates fermentation, which, in turn, produces considerable amounts of methane gas.

Methane gas' greenhouse effect on the climate is 86 times more potent than CO2 in the short term. This means it is powerful but does not stay in the atmosphere long. Therefore, reducing methane emissions can have a rapid and considerable impact on the total harm caused by greenhouse gases. This makes food waste reduction even more important from a climate change perspective. Today, in the U.S., food scraps represent about a quarter (24%) of all the waste entering landfills, yet they account for more than half (58%) of methane emissions from landfills. Maine follows the national trend, too, despite strong and impactful food recovery partnerships between agri-food actors and food banks/pantries. About 40% of the state's waste stream is food, representing 361,000 tons per year, a good majority of which could have been eaten.

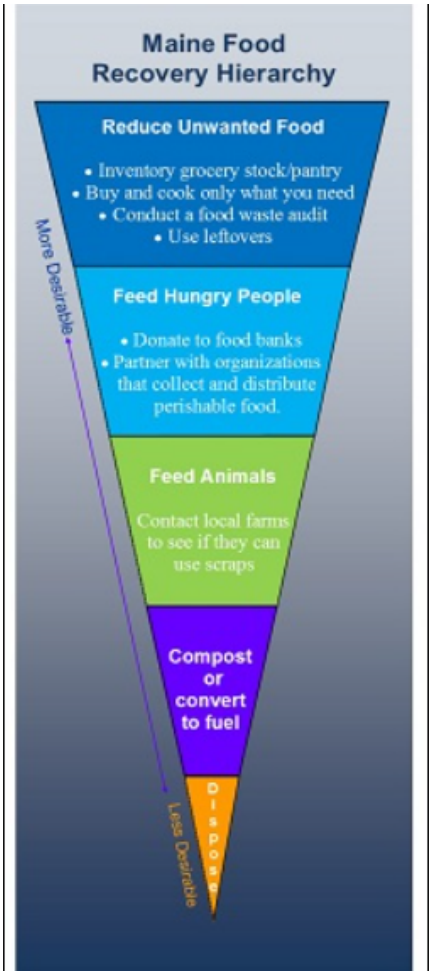
All the while, fewer people have enough buying power to experience the mainstream consumer role and purchase everyday goods by themselves. Food price inflation reached new heights during and after the pandemic, and the overall cost of living is increasing while wages stagnate, which amounts to record levels of food insecurity. Social isolation and shocks like the abrupt ending of the special pandemic SNAP benefits in March of 2023 also contribute to this growing problem. Nevertheless, the root cause of food insecurity is, first and foremost, poverty. Nowadays, we all depend on money to acquire most, if not all, of our food, yet fewer people have enough to do so. In Maine, households have the 6th highest proportion of total budget spending for groceries in the nation. Meanwhile, the amount of uneaten food wasted in America contains more than four times the number of calories needed to feed an estimated 35 million food-insecure Americans, including 13% of all Mainers, the highest rate in New England.

2. Rising to the Environmental, Social, and Economic Challenges of Food Waste Through Maine's Charitable Food System

Food waste reduction and surplus food recovery present immense opportunities for improvements in greenhouse gas emissions reduction, ensuring food security, and economic efficiency. People across the U.S. and the world have been realizing that our current agri-food system is unsustainable and have been developing solutions to the social, economic, and environmental challenges posed by food waste.

Today's most promising initiatives to tackle this challenge have two characteristics:

1. They draw inspiration from principles of the past, such as using the products we get from nature to the fullest and redistributing them across communities.
2. They pursue these principles through modern-day infrastructure and technologies, using complex networks of collaborating organizations, material resources, and sometimes even electronic technologies.



The principles have been mapped by the Maine Department of Environmental Protection (MDEP) in the Maine Food Recovery Hierarchy, represented in the figure below.

1. We can see in this figure that the priority should be to be more mindful of what we already have, what we need, and what we use, which may, in turn, make us reconsider how much more food we need to produce or acquire.

2. If there still is surplus food, then it should be used as much as possible by handing it over to the people who need it most, namely those who do not have the means to provide for themselves and their families strictly through conventional grocery shopping.

3. Only after having exhausted the first two options should we consider other solutions such as using leftover products to feed animals, or to produce compost and/or biofuels.

4. Landfilling or incinerating food should always be avoided.

Ultimately, the objective would be to put these principles into practice at all stages of the food chain, from production to grocery store distribution, and household food management. To do so, we now have many technologies, infrastructure, and collaborative partnerships between organizations. Furthermore, whole sectors such as Maine's Charitable Food System (CFS) have been innovating and steadily increasing their role as food rescue actors

since their early days in the 1980s. Yet, as shown above, enormous amounts of food are still being wasted in the state as much as in the U.S.

2.1 Goals Of the Project: Growing the Impact of Maine's Charitable Food System on Food Waste

To set the survey's objectives, we consulted and obtained the endorsement of various key stakeholders in Maine's CFS, including representatives from Good Shepherd Food Bank, Catholic Charities of Maine, and Wayside Food Programs. The goal we set for this project is to identify the current limiting factors for food rescue and redistribution in Maine's CFS, and its opportunities for improvement and growth. As such, it mostly focuses on the second step of the Maine Food Recovery Hierarchy [1].

To do so, from March to December of 2024, we conducted interviews and did fieldwork to observe while giving a hand to charitable food actors across the state. On top of food banks, soup kitchens, and pantries, we also met with farmers, grocery store representatives, and public actors involved in Maine's and America's CFS. Finally, we studied reports and other documents detailing good and best practices from other U.S. States, Canada, France, and other European countries.

There are somewhere between 600 and 900 agencies redistributing food in Maine today (food pantries and food banks, soup kitchens, meals on wheels, etc.). Of that total, we could only meet a small number, so we tried to choose charitable agencies that were in diverse geographical locations around the state, and well-connected and aware of their partners' situations[2]. This way, learning about one agency also gave us access to information about other pantries in the region.

2.1.1 What is the Content of this Document

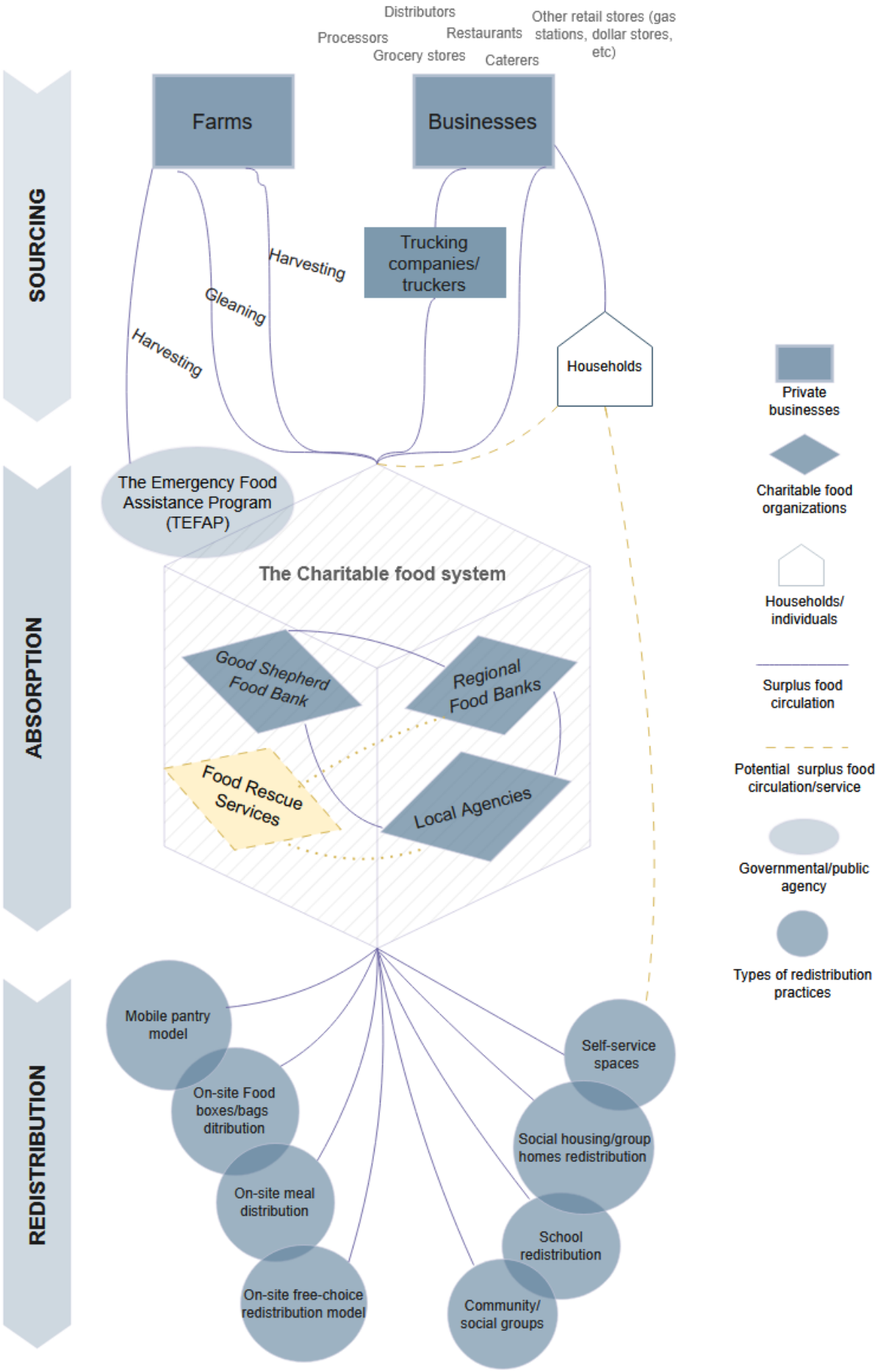
This document contains results from the research, organized in the form of observations and best practices recommendations at the agency level, with added policy, guidelines, and advocacy recommendations for every dimension of the system and its actors. More specifically, three key moments in the charitable food system's work are under study:

- How is food acquired (i.e., diverted from circulation streams that would have led it to not be eaten)
- How is food absorbed in the sector
- How is food distributed to those who need it and want it.

The graph below offers a visual representation of the way food circulates from one of these moments to the next and also summarizes the structure of the report.

[1] This project was made possible thanks to postdoctoral funding from the Canadian Social Sciences and Humanities Research Council (SSHRC). No American institution was involved in the funding.

[2] This number is based on estimates provided by Good Shepherd Food Bank, the Maine Emergency Management Agency (MEMA), and Maine 211.


SOURCING
ABSORPTION
REDISTRIBUTION
Distributors
Processors
Restaurants
Other retail stores (gas stations, dollar stores, etc)
Grocery stores
Caterers
Farms
Businesses
Trucking companies/ truckers
Harvesting
Gleaning
Harvesting
Households
The Emergency Food Assistance Program (TEFAP)
The Charitable food system
Good Shepherd Food Bank
Regional Food Banks
Food Rescue Services
Local Agencies
Mobile pantry model
On-site Food boxes/bags ditribution
On-site meal distribution
On-site free-choice redistribution model
Community/ social groups
School redistribution
Social housing/group homes redistribution
Self-service spaces
Private businesses
Charitable food organizations
Households/ individuals
Surplus food circulation
Potential surplus food circulation/service
Governmental/public agency
Types of redistribution practices

2.1.2 What Is the Intended Use of this Document

Agencies of Maine's charitable food system have developed unique ways to pursue their mission based on the various resources and know-how they have at hand. Therefore, the best practices and recommendations presented below are not to be understood as part of a one-size-fits-all type of model. It is a document through which any actor of the system can learn what their peers are doing and draw inspiration from them. It is a way to pass around ideas that have been implemented by some and not by others, and vice versa.

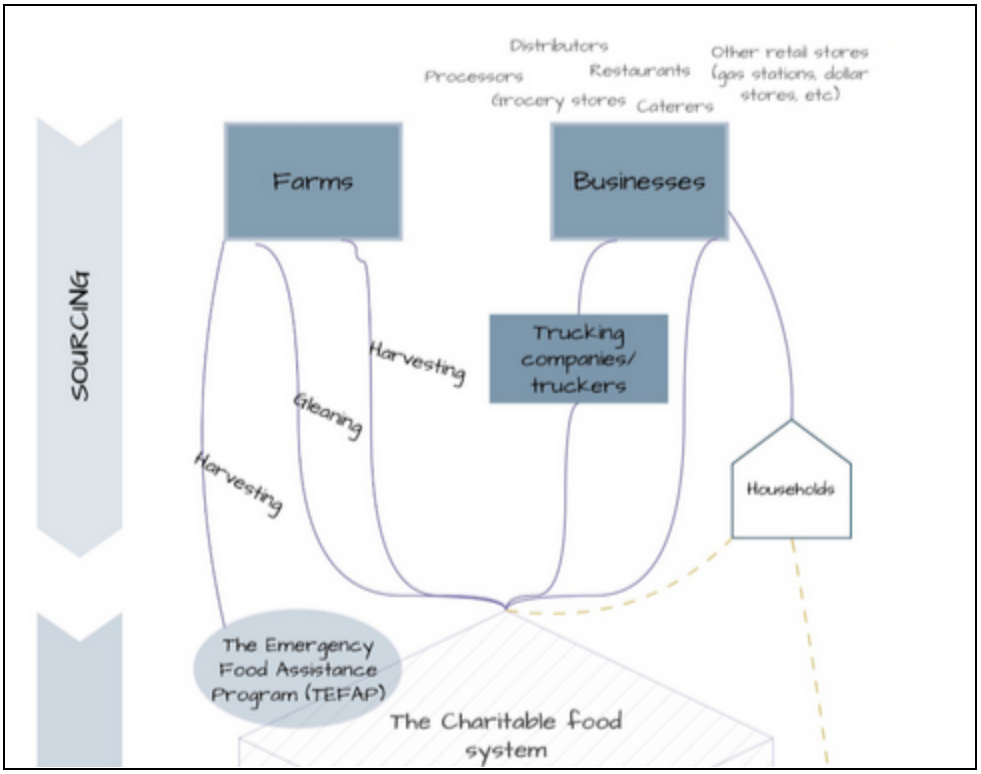
2.2 Aside: Changing the Narrative Around Food as Waste, Bringing More Food into the Charitable Food System

At this point in the report, it should be clear that food waste is a problem that needs to be solved. Rather than talking strictly about food waste, though, there may be benefits to thinking of this issue in a way that also highlights the value of food.

- Talking about food waste frames food as already lost; it is trash. By contrast, using terms such as surplus food, excess food, unsold food, available food, etc. implies that the food in question is still that: food that can be utilized to feed people.
    - Speaking in a way that highlights the persisting value of food may contribute to encouraging consumers and organizations all along the food chain to perceive food they don't plan on eating as food nonetheless, rather than waste.
- At a broader level, while framing the issue as a *fight against* food waste might be a cause without adversary in public opinion that has its worth politically, it doesn't point towards a solution the same way "surplus valorization" does. Valorizing surplus food can be seen as an immense opportunity for improvements in greenhouse gas emission reduction, food security, and economic efficiency.

Therefore, this report will mostly be talking about valorizing food surpluses, rather than diverting or mitigating waste, and it invites all actors of the food system (charitable orgs, businesses, and state agencies) to do the same in their communication and educational efforts.

3. Sourcing Practices



Let's begin by acknowledging that there will always be regional differences in sourcing practices, opportunities, and resources for charitable organizations. Therefore, the ideas mentioned in this section won't apply to every situation.

Rural and agricultural areas may have access to larger quantities of produce via local farms and produce processing plants. They may also have to cover longer distances to acquire food. Urban/semi-urban areas may have access to a broader concentration of businesses to prospect from, outside of main grocery store partnerships that are already in place, but might need to be more nimble to seize these opportunities. In any case, the distinction between rural and urban is not absolute and should not be utilized to pigeonhole charitable food organizations into one category.

3.1 Getting Surplus Food Out Of The Fields

Nationwide, about 30% of the food that is produced is left out in the fields, while 25% of Maine-grown food meets the same fate. This waste is not as environmentally harmful as that which happens further down the food chain, as it can be plowed under to feed back into the soil and won't produce methane gas the same way rotting foods trapped in landfills do. That being said, this food still represents costs in the form of labor, energy, and natural resources that

could have been better utilized. And more importantly, it could have gone toward alleviating hunger. Several solutions and opportunities to better tap into this potential surplus food exist.

3.1.1 On Gleaning, And its (Non)Prioritizing

Gleaning is an age-old practice that is alive and well in Maine, thanks to the efforts of dedicated communities of volunteers across the state, often to the benefit of local food-insecure populations. Yet, despite these valiant efforts, gleaning has several shortcomings, as reported by actors in Maine's CFS and elsewhere in North America.

- Some farmers are reportedly wary of volunteer gleaners damaging their fields and equipment because of their lack of training and/or experience with fieldwork.
- Certain groups' lack of training and experience, combined with their insufficient numbers relative to the amount of food to be recovered, results in lower productivity than what a professional team of field workers could reach.
    - Some charitable food organizations have partially or completely diverted their efforts from gleaning as a food sourcing practice, as it is not efficient. It requires considerable amounts of resources (time, volunteers) to obtain much smaller quantities of produce than what can be accessed via businesses, and trucking companies with less effort and time.
    - Some also argue that more energy and money have been invested in the production, harvesting, and transportation, which makes their waste even more dramatic from an economic and environmental perspective.
- While gleaning helps alleviate food insecurity, it does not contribute to alleviating farmers' often precarious circumstances.
    - Although it can be very advantageous for charitable food organizations to obtain free gleaned food, farmers can only give out so much of their produce; they need to get revenue.

Nobody argues for gleaning to be abandoned, let alone banned. But considering the amount of produce that remains to be valued statewide, farmers' need for financial support, and the environment of scarce labor power and logistical resources in which both farms and charitable food organizations operate, other sourcing options are being explored and should be supported.

3.1.2 Supporting Farmers and Local Food Sovereignty While Getting the Food to Those In Need

Food stays in the fields because of a lack of labor force, a lack of means to hire labor, or a lack of demand for produce. That is to say, "market inefficiencies" cause food to rot in fields while people can't afford groceries and go hungry. These inefficiencies can be solved by various types of funding to materialize hungry people's economic demand.

There are programs and initiatives in Maine that pursue that purpose in the form of support for local farms. This way, they help food insecure populations, with the added benefit of supporting

local farms. They help improve local food sovereignty, which the globalization of the food supply chain has undermined.

- The Farmers for Food Equity initiative purchases food from the farms and moves it to partner agencies. The purchase price varies from one farm to another (smaller farms sell at a higher price as they get less economies of scale). Farmers set the wholesale price, as the objective is to help them by offering a “safety valve”, not to have the best/lowest price from the buyer’s perspective.
- Good Shepherd Food Bank’s (GSFB) Mainers Feeding Mainers program commits to purchasing local produce and surplus produce, which is then redistributed to local agencies. Although the program doesn't pay as much as a commercial contract would, it still helps cover the production costs and, more importantly, it is an open contract, meaning that it can be fulfilled by providing the program (the farm’s buyer) with any type of surplus produce a given season might bring. Additionally, some agencies suggest that GSFB encourage farming partners to diversify their crops in the contracts they sign together. This would minimize the chances of having too many surpluses of one type of produce at one time, which risks causing more waste [3].
- Mid Coast Hunger Prevention Program also developed a similar open contract philosophy with their Farm to Pantry initiative. It aims to provide “area farmers with a predictable market even if faced with decreases in demand from their other buyers” and to offset seasonal surpluses [4].
- Federal USDA programs such as the Local Food Purchase Assistance Program (LFPA) also provide support for local farms in Maine. It gives The Emergency Food Assistance Program’s (TEFAP) Maine branch a supplemental budget to buy Maine-grown food to be used by GSFB and its partner pantries.
    - TEFAP in Maine also provides some funds to support local food security groups’ gleaning activities (e.g., transport, storage).

Finally, it is important to note that there is a fine line between agreeing in advance to buy surpluses, which prevents food waste, and ordering crops that have not yet been produced.

- While most of the aforementioned programs seem to fall in the former category, some programs such as the general USDA TEFAP are more ambiguous on that matter. Although farm food loss is averted by wholesale buyout contracts, such contracts are about produce that has not been grown yet. So they generate demand for more production, without addressing the food loss that happens on other farms.
- This may be explained in part by TEFAP’s need for product predictability to ensure compliance with its nutritional guidelines at scale.

That being said, expanding on these solutions would be outside of the scope of this report, as it focuses on the CFS itself, not the actors upstream from it. Suffice it to say that identifying ways to support both farmers and the CFS requires more dedicated research, and will need to take into consideration important issues such as:

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[3] That being said, this type of waste generation risk can be offset by improving processing and storage capacity. More on that below.

[4] https://www.mchpp.org/foodsourcing

- Identifying what size of farms can benefit from what types of support, as solutions suitable for large-scale industrialized farms, don't experience the same constraints as smaller ones do.
- Determine whether Maine farms lack funds to pay for wages, lack labor power, or both. Farmers lacking funds to pay wages can be fixed with dedicated funding. But labor shortages remain a challenge for many farms, and tie into issues of cultural (de)valorization of field labor, as well as temporary migrant work regulation.

3.1.3 Policy/Advocacy Recommendations

- Support to farmers could be expanded by using funds from Maine's TEFAP allotment of the Local Food Purchase Assistance to buy surplus food and help local farmers while also reducing food loss.
- Maintain and embolden financial support to help small farms invest in mechanization to save on labor costs and recruitment efforts.
- Maintain and embolden financial support to help small farms invest in processing and storage to maximize the utilization of produce.
    - Seasonal production cycles bring periods of wasteful overabundance and periods of relative scarcity. Processing and storage can help even out the offer of food throughout those fluctuations, whether it is for the CFS or commercial buyers.

3.2 Getting Surplus Food Out Of Businesses

Commercial donors, whether it's processors and distributors, grocery stores, or smaller businesses like restaurants, caterers, and institutional cafeterias, represent an important source of fresh and prepared foods for charitable organizations. However, navigating the complexities of these partnerships and their ties with different actors of the CFS can be a difficult and confusing task. The following pages shed some light on the whys and the hows behind successful strategies to engage with commercial donors.

3.2.1 Relationships Between Donors, Feeding America, Good Shepherd Food Bank, And Partner Agencies

The Complementarity Between Good Shepherd Food Bank/Feeding America and Local Partner Agencies in Dealing With Partner Donors

From the local agencies' standpoint, the purpose and mechanics of collaborations between Feeding America (FA), Maine's state food bank (Good Shepherd Food Bank (GSFB)), and large corporate donors may be difficult to understand, and so is their role in those partnerships. So let's begin by laying out how they work on paper to see how GSFB and local pantries have complementary roles in that matter, and how it can benefit all parties involved.

- Feeding America strikes donation deals with large corporate banners. GSFB then manages the way this corporation's individual stores in Maine are assigned to local partner agencies to complete weekly food pickups.

    - GSFB collects partner pantries' reports on what/how much they picked up and transmits them to FA, who then shares these numbers with stores with their tax write-offs so that they can assess their performance relative to their sustainability and corporate social responsibility goals.
- GSFB also asks for reporting on private/local businesses, but does not transmit reports to FA.
- Who benefits from partner agencies' reporting to GSFB?
    - The stores for their write-offs and sustainability goals assessment, when applicable.
    - Maine's CFS as a whole because it helps assess the "Meal Gap", i.e., the gap between the quantity of food a vulnerable community needs and the quantity that is currently being distributed.
        - This data can then be used by GSFB to better allocate resources, where to put more efforts in developing new donor partnerships or funding opportunities, for example.
- The Mutual Interests In Large-Scale Partnership Agreements:
    - FA, Regional food banks like GSFB, and large corporate grocery store banners have a mutual interest in striking broad agreements. It allows for predictability and reliability at scale on both sides.
    - For example, when FA strikes a deal with the entire Hannaford banner in Maine:
        - GSFB now knows it can help pantries connect with any local store in the state, and be confident that the store manager/staff will collaborate in a fairly standardized way because their corporate policies and protocols request it. This is much easier than trying to get in touch with the hundreds of different independent stores and businesses and having to figure out each one's quirks and preferences.
        - The Hannaford HQ and stores can benefit from a reliable customer service partner to help them achieve their sustainability and social responsibility goals. They get help matching and meshing with local agencies and have support from GSFB representatives in case of a need for mediation, unsatisfactory collaborations, or a need for replacement. They also get more consistent data collection on the food they donate, and corresponding tax write-offs from FA.
- Meanwhile, it is local charitable food agencies that are on the field collaborating with donors and in their daily operations. They are most directly in charge of building and maintaining rapport with individual stores and their staff (more details on building rapport with donors below).
    - GSFB is there in a supporting role, via their community resource representatives. Local agencies also get support from GSFB to collect and report data on the foods being picked up, and to manage their relationships to stores.

- All that being said, while this streamlines and secures many aspects of the collaborative process, it may present a certain downside for local "organic" agreements: the loss of

pre-existing and sometimes longstanding relations that were deemed satisfactory for both local parties involved.

3.2.2 Prospecting And Onboarding New Donors

In the context of the growing demand for hunger relief, charitable food organizations are pressed to find and provide more food. This requires developing skills to find opportunities to acquire it and to navigate relationships with multiple donors.

Finding More Food Donors

GSFB provides considerable amounts of food to partner pantries, via its own warehouses, programs, and through partnerships with local corporate donors. But they cannot cover enough ground to prospect and onboard every local food business/store in every region of the state, nor are they looking to have that role. That is to say that local agencies don't have to, and should not limit themselves to the stores GSFB assigns to them as their sole food sourcing opportunity.

- Every region has various opportunities to collaborate with local donors that are not "claimed" by GSFB and other pantry partners, some more accessible than others. They can be small businesses like local butcher shops, cafés, and gas stations, or larger ones like processing facilities and dollar store-type organizations.
    - Many of these businesses may be open to donating surpluses but do not know how or who to reach to do so. They may be responsive to "cold calls", or better yet, in-person visits to meet the manager (This ties into relationship building, which we will touch on below).
        - Coopting individuals who are well connected in the local business world (as staff, board members, and volunteers) can be beneficial to attract new donors, as personal relations can oftentimes go a long way. More on that later (see below as well as sections 4.3.1 and 4.3.2 on growth for more details on the importance of being well-connected as an organization).
- The power of freight trucking companies and truckers:
    - In some rural regions, potential local donors might be fewer and far between. Thankfully, other opportunities exist. For agencies that can spare the funds, it can be much more efficient to spend money on hiring transport trucks to get large surplus food from industrial facilities far away, in neighboring states or beyond, rather than spending it on buying food. In other words, there are situations where long-haul trucking services are cheaper than food, which is a great opportunity for agencies.
        - El Pasoans Fighting Hunger Food Bank and San Antonio Food Bank, in Texas, are great examples of this strategy [5].
    - The food that truckers and trucking companies move will sometimes be rejected by the company it was meant to go to, despite it being perfectly good and safe. In those situations, truckers look to get rid of it, and charitable food organizations

[5] https://foodbanknews.org/how-some-food-banks-source-way-more-donated-food/

can be helpful to them because they can give a tax write-off, and therefore cut their losses on the rejected cargo.
    - That being said, to collaborate with truckers, an agency must have the capacity to handle large donations. This is one of the ways in which growing an agency's size provides more opportunities to gather food (See section 4.3 for insights on organizational growth).

Educating Businesses on the Advantages of Food Donation

Talking points on the advantages of food donation are already being communicated by various actors in Maine's CFS and at the national level. However, any agency interacting with potential donors or having a media presence can always help spread the message further.

- There are tangible economic benefits to surplus food donation for businesses, and some might not be aware of it.
    - Overall, according to recent research, grocery stores that donate expiring food make higher profits. Researchers found that food donations correspond to a 33% increase in profit margin [6].
    - Tax credits are given to businesses for food donations.
    - Even if tax incentives might not be sufficiently attractive for larger corporations [7], disposing of surplus food as waste has a significant financial cost, regardless of whether they decide to rely on composting services or conventional garbage disposal.
        - Businesses can offset a significant portion of these costs by donations to charitable food organizations.
    - Some business owners and managers might push back because of the added work that donating food represents for their staff. But, according to some private food sector actors, there may be even more staff labor involved in recycling it or disposing of it in the garbage compactor than there is in donating it to partner agencies. The main reason is that agencies' staff and volunteers do most of the work when picking food up.
- Food donation can be a great public relations tool for businesses to display their social and environmental responsibility values. They can often be offered public visibility for their charitable work in local media, or at the very least acknowledgment in the recipient organization's public communications.
- Food donation is also legally safe. Corporate headquarters (when applicable) and CFS staff/volunteers should make sure to educate and reassure local store managers and staff about legal liability protections for food donation, ensured by the Bill Emerson Good Samaritan Act.
    - There is a caveat to this though. The Good Samaritan Act Remains "unproven and untested in court", which may also be a reason for hesitancy [8].

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6 https://www.fastcompany.com/91198278/grocery-stores-food-donatations-expiring-higher-profits-research

7 This is because right now, tax breaks are null past a certain annual weight threshold. Any supplemental food donation past that threshold does not bring any financial benefit.

8 https://insights-engine.refed.org/solution-database/donation-education.

“It’s About Building Those Relations”

All that being said, reportedly, rational arguments about the advantages of donating food are not always enough to convince businesses to join the program. In situations like these, building rapport through repeated interactions with key personnel can make a difference.

Reportedly, many donors and potential donors are very receptive to seeing the impact of charitable organizations with their own eyes. Some charitable food agency leaders will therefore invite business owners, managers, and staff on-site to make them see what their donations do or to convince them to start donating.

Creating rapport is a crucial step in sourcing food and any other resources donors might provide. Successful agencies all seem to have a deep understanding of that fact and translate it into various insightful principles. As some see it, every interaction builds on the previous, whether it's in the direction of having a stronger relationship or a weaker one. Hence the importance of interacting with donors nicely.

On that matter, a recurring principle is to see the relationship with donors as customer service for them. Of course, this can mean reminding them that tax breaks, decreased hauling costs, and social/environmental responsibility visibility are valuable services to offer. But even for businesses that have already agreed to donate, maintaining and building the relationship can bring further benefits for both parties involved. For charitable agencies, this means trying to understand their donors’ needs and situations as much as possible.

- **Being Responsive, Reliable, Steady**: Many smaller businesses don’t have the space to store rescued food until pickup, and many larger ones simply don’t want to use their space to that end. Therefore, the faster and the more frequently agencies can pick up food, the better.
    - In fact, both agencies and donors often appreciate frequent, reliable, and steady pickups. Businesses are relieved of undesirable stocks, and agencies have a steady, predictable flow of food coming in.
    - Moreover, having as much predictability in pickups as possible frees up the agencies’ bandwidth to scout for supplementary sporadic and unpredictable donations.
- **“Always Say Yes”**: Speaking of sporadic and unpredictable donations, staff from successful agencies make a point of seizing these opportunities as much as possible. Moreover, they explicitly state that they very often say yes to large donations, even if they are bigger than what they can redistribute on their own, and sometimes even regardless of whether or not the donation is consistent with their agency's mission.
    - The main objective of this strategy is to build trust relationships with store managers and receivers by helping them out when they find themselves in difficult logistical situations. Donors who appreciate an agency’s service efficacy are more likely to have its name first in mind the next time they have surplus quality food to donate, and might even be open to offering other types of help, like corporate volunteer days and financial support.

    - The same principle applies when building rapport with truckers. Charitable food organizations can provide help when they need to dispose of rejected cargo, and helping them can lead to their helping move food to agencies when they have empty trips scheduled.
    - If the donation is too big to handle or to store at the recipient agency, partner agencies in their network will help them redistribute surpluses. Being connected to other larger agencies that can take in surpluses and even have the transportation means to come to pick them up (e.g., GSFB, TEFAP warehouse in Augusta, and other larger agencies) keeps donors satisfied while strengthening collaborative ties with other actors in the CFS, who might eventually send resources back your way.
- **"Accepting the Bad to Get the Good"**: some partner donors might give products they want to get rid of, but which are undesirable for agencies (ex.: because of impractical packaging format, poor nutritional quality, overabundance, unpopular among end-users, etc.).
    - While it can be tempting for agency staff to express grievances in that regard, or even to cut ties with them, they should always weigh this annoyance against the amount of precious fresh food they get from these donors.
        - For example, it might be frustrating to receive industrial bags of yogurt that are hard to use or redistribute, but it might still be worth accepting them and trying to find partner agencies that might have some use for them if it also allows to access large quantities of fresh eggs, which are much more sought after.
    - Being helpful to the donor, specifically to the persons you are cooperating with by relieving them of undesirable products, is a good way to make them want to reciprocate. Engaging in a virtuous cycle can pay off!

All of these principles and strategies have a point in common. Many interviewees from successful agencies have expressed that it is important to "think bigger". To be more reliable, steady, and offer frequent pickups, to be in a position to "always say yes", and to "accept the bad to get the good", charitable food agencies need sufficient capacity in terms of storage, transportation, staff/volunteers, and collaborative networks. This ties into matters of growth, which will be addressed in more detail in Section 4.3.

Handling Donor Emergency Situations

Most larger businesses, like big grocery store franchises, waste considerable amounts of food in situations of equipment failure, such as power outages. These events might increase in the coming years, as climate change will increase the risk of environmental disasters, which will put Maine's power grid under more strain. Therefore, learning how to make the best out of these events from a food rescue perspective appears crucial for charitable food agencies as much as for private donors.

Currently, grocery stores waste food in situations of equipment failure because of inappropriate protocols, which lead to bad food handling and insufficient communication with charitable food

agencies. In power outage situations, all cooling equipment stops functioning, which puts literal tons of food at risk of becoming unsafe. From that point on, the clock is ticking, as grocery store power outage protocols instruct store managers and staff to monitor food temperatures and to throw away the food once a certain safety threshold is passed.

Charitable food agencies can help mitigate these wasteful situations if certain conditions are met:

- Managers must know who to call,
    - Creating rapport with store managers *and* warehouse receivers, who are the staff food rescuers have the most interactions with.
- Agencies must have the resources to take in the food. Power outages are situations in which immense quantities of food must be picked up at once.
    - While they may serve as another example of the perks of having sizable storage capacity, they in fact represent an insurmountable challenge for any single organization - very few agencies have the storage and logistical capacity to rescue an entire supermarket's refrigerated and frozen products at once.
        - This then brings to again stress the importance of collaborating and coordinating with other agencies to redistribute surpluses (see section 4.3 for ideas on organizational Growth and Networking).
- Agencies must be able to answer emergency calls, which requires more than extensive opening hours. It requires outstanding commitment from staff and/or volunteers, considering such emergencies can happen on any day and at any time.
    - At the end of the day, there simply needs to be committed people on both ends. There needs to be people who take food rescue to heart enough to come to save the food, even if it's more trouble, even if it's outside of regular hours.

Brand directors, store managers, and staff also have to do their part and change some practices to facilitate this process and reduce overall waste.

- The amount of food to donate in such events is so immense that a good portion will almost inevitably be wasted, despite food rescuers' best efforts. A solution that might seem evident to some would be to prevent waste at source by requesting that stores be equipped with backup generators to power coolers and freezers. Yet, in the opinion of actors in the industry, no backup generator investment could realistically power lighting and security systems and all the refrigeration equipment, which has a very high energy consumption.
- While not perfect, the other, more realistic solution is changing the protocols:
    - Power outage protocols often instruct store managers to wait until the last minute in the hopes that power comes back and that the stock is salvageable. But in many cases, it ends up wasting everything. In other words, from the beginning of this process, their focus is on how long they can sell it, and then destroy it. At first glance, this is understandable from a business perspective.
    - Yet, they know what the temperature threshold is for food safety, they can approximate the rate at which temperature drops in their coolers and freezers, and they can know how long it will take for the power to get back on by

contacting the local electricity provider[9]. With these three variables, they should therefore be able to assess whether power will get back on before the temperature reaches the critical level, and if not, donate the food a lot sooner so that it can be safely picked up and stored by agencies.

- The other issue then is finding partners to pick up that food. There should be one or multiple "911" agency emergency numbers *in the protocol/guidelines* for that kind of food pickup.
    - Considering that a majority of large grocery stores in Maine are already in contact with GSFB and its partner agencies, these numbers should be easy to acquire.
- Considering that store managers are compelled by company headquarters to follow protocols in those situations, partially re-writing them would be impactful at a potentially large scale.

Dealing With Poor Quality Donations and Negligent Donors

Conceiving of the relationship to food donors as customer service does not necessarily mean that "the customer is always right", and that they can therefore dump rotten and expired products on partner agencies as they please. It should be understood by everyone involved that the donor-agency relationship is a mutually beneficial service and that, therefore, both sides deserve to benefit from it.

- Yet, reportedly many pantries are afraid to give feedback to store donors because they don't want to "bite the hand that feeds". In turn, this attitude gives little incentive or information to businesses on how to improve their donation practices, which perpetuates the problem.

There are levers that agencies can use to improve the quality of donations they receive without necessarily pushing donors away. Leaders from Maine and other states and countries typically use one or both of two strategies to tackle this issue:

- One is the aforementioned "Accepting the Bad to Get the Good" principle. Always weigh the annoyance of bad donations against the amount of sought-after fresh food they get from these donors.
    - Being helpful to the donor - specifically to the persons you are cooperating with - is a good way to make them want to reciprocate. Engaging in a virtuous cycle can pay off!
    - More broadly speaking, the more you build and maintain rapport with donor staff, the more leeway you have to voice ideas, concerns, and polite demands.
- The other strategy is to lean on GSFB, whose representatives are there to check in with the donor and remind them of their agreement to aim to donate edible food.

[9] Although this information would need to be further scrutinized, we have been told that some store managers may have an incentive to not give away the food even if they are going to lose it because, specifically in the case of power outages, they can count it as a loss and file an insurance claim when they dispose of it.

Giving Up On Certain Donors

Whether it is because of bad faith mal-compliance or because of incompatible practices, some agencies reportedly do end their collaborations with certain donors.

- In the case of restaurant chain franchises that are willing to give away surpluses, the format of their donations often requires too much work and processing by the volunteers and staff for them to be viable. For example, an enormous bagged block of frozen mashed potatoes requires too much work for volunteers to separate/portion it.
- On top of the packaging formats, another problem is that of the low nutritional interest of certain donations, e.g., a large industrial plastic bag of loose baguettes (bread being already overabundant in many agencies).
- Furthermore, these donations often don't respect the FA/GSFB food safety standards for prepared foods donations, i.e., they don't have tags with an ingredients list and expiration date, which makes them improper for distribution by agencies.
    - There might be solutions to this problem. In many states (e.g. Pennsylvania, California), food is picked up at restaurants by food rescue services (FRS) and redistributed without anybody flagging issues regarding food safety. Food rescue services operate on that model successfully nationwide, namely thanks to the Bill Emerson Good Samaritan act (for more detail on FRS, see section 4.4).
        - If guidelines such as proper labeling of donated processed foods only stem from FA/GSFB, then collaborating with donors outside of these agreements should bypass the problem.
        - The question that follows is then that of the agency leaders' comfort level with redistributing unlabeled food from various sources. This ties into the ethics and safety of certain types of food donations, which are further explored in section 5.3 through the case of self-service donation/pick-up locations.

3.2.3 Beyond Grocery Stores: The "Next Frontier" in Surplus Food Sourcing

As previously mentioned, despite current efforts, there is still lots of food to be rescued in Maine. But not all of this food is necessarily as sought after by agencies and end-users (e.g. bread, bakeries, cakes), and not all of it is as easily recoverable (see section 3.3 below on household food surpluses for example).

Like in our state, many regional charitable food systems have strong and comprehensive partnerships with main local grocery store banners, distributors, and farms. While not perfect, these are not the sectors that offer the most room for improvement anymore. Research conducted in Denver, CO, and Santa Clara, CA, rather identifies potential donors such as institutions, smaller retailers, and restaurants as the "next frontier" for food sourcing opportunities.

As of now, these potential sources are under-leveraged for multiple reasons:

- They would donate mostly prepared food, which is more complex to handle for rescuers because of safety and edibility window concerns (see section 4.4 for handling efficiency solutions, and section 5.3 for reflections on food safety).

    - Yet, on average, they have considerable nutritional value, the largest carbon footprint (because they contain carbon-dense foods such as poultry, fish, meat, and dairy), and they are in demand among end-users.
- Donations from institutions often come in large container formats that are not directly redistributable to end-users, and require additional handling by agencies that often don't have enough labor power to do it.
- They often lack the refrigerator space to store donations until they are collected, which creates a need for frequent smaller collections.
- They encounter more variation in available surpluses day-to-day and seasonally. This is harder to manage for the many agencies that might not be nimble enough to adapt to these fluctuations, and who generally wish for as much predictability in their sourcing as possible.
    - For example, institutions such as schools might have lots of surpluses during the school year, and little to none during the summer months. Restaurants in touristic areas might have similar variations from high to low season.

In sum, food is harder to source in those spaces because of less attractive formatting (packaging, cooked meals), surplus fluctuations over time, and donors' need for small but frequent pick-ups.

Part of the solution to these challenges can come from improving staff and infrastructure capacity (to process and/or repackage food) by fostering collaboration between agencies and investment in infrastructure (see section 4.3). But nimbleness can be difficult to achieve for agencies that are low on labor power, transportation means, and opening hours. This is one reason why exploring food rescue technologies and services as a complement to the existing system may be valuable for the sourcing of these unconventional food surpluses (see section 4.4 on food rescue services).

That being said, research on untapped potential surplus food sources appears to have been experimented with in densely populated urban settings for the most part, and food rescue technologies, too. Considering Maine is a mostly low population density rural state, there should be further investigation into the locations and specifics of Maine's own surpluses[10], as well as food rescue technologies' efficacy to handle them.

3.2.4 Policy/Advocacy Recommendations

- Encourage expiration date policy harmonization among state food banks to help partner corporate banners adapt their food donation guidelines.
    - Corporate banners' stores span multiple states, each with its own food bank system and regulations. This variation in regulation creates challenges for corporate headquarters to improve their stores' protocols and practices.

[10] At the time of writing this report, a state-wide Maine food waste characterization study is underway. It might bring some clarity to the question of the types of edible surpluses available, and where to find them.

        - For example, it is more difficult to settle on a corporate donation practice/protocol when one state food bank accepts cold-cut donations on the day they expire, and the neighboring state food bank does not.
- Maintain and expand efforts to educate businesses on the advantages of food donation, the low logistical barrier it entails, and the liability protections they benefit from.
- Incentivize food donations by improving tax incentives.
    - Apart from savings on waste hauling, the main economic tool to encourage surplus food donation from businesses is tax write-offs. At the moment, some larger actors in the industry seem to think that the current incentives are insufficient to make a significant difference in business decisions. There is a low ceiling threshold for the yearly amount of food being donated, and additional pounds make no difference past that threshold [11].
- Grocery stores should be incentivized or compelled to include food donation procedures in their power outage and cooling equipment failure protocols.
- Work on changing the narrative in communications on food waste and food rescue: framing food as unsold surpluses, or available food rather than framing food as waste.

On the (In)Effectiveness and Adverse Effects of Food Waste Bans

Legislation banning food waste is a key aspect of any plan to valorize surplus food. While such legislation must include mandatory or highly incentivized food donation to charitable food organizations, laws and regulations on that matter must take into account various factors to be effective without causing harm to actors of the charitable food system.

Will Maine's food waste ban cause more "dumping" on food banks?

- Some Maine agencies worry that a new state law progressively implementing a ban on food waste might cause businesses to use food security agencies to "get rid" of expired and unusable products.
    - If waste hauling has a cost for businesses, which they try to mitigate by donating, then it also has a cost for charitable agencies who have to dispose of some of their donations. The problem is they have much smaller funds to take care of that compared to stores.
- Additionally, without being categorized as dumping per se, a similar effect has been reported in France, where a strict ban was implemented in 2016. Because waste disposal was not as easy anymore, businesses developed more efficient handling and sales practices (e.g., keeping food on shelves longer, offering discounts for soon-to-be-expired products). In turn, this has reportedly caused a decrease in the quantity and quality of food donations to local food banks and pantries.
- While such risk is real, agencies might find some reassurance in the fact that larger stores in the state, which are also among the biggest wasters and the biggest donors, all already have agreements with composting/biomethanization companies. The waste ban should not affect these deals, and their daily practices already entail sorting

[11] That being said, it should be made clear that regardless of tax writeoffs, there may be a business case to be made for food donation because of the savings on waste hauling costs.

between food that is going in the composting bin and food that goes in the donation cart.
    - That being said, more potent risks may come from the businesses that had no prior composting or donation practices, and that will be compelled by the ban to implement them, for better or worse.

According to recent research, American food waste bans are not as effective as hoped [12]

- This is in good part because most bans have too few means to ensure enforcement. Effective bans must include a progressive rollout to give time to businesses to adjust their practices, but also the necessary infrastructure to enforce compliance.
    - Part of the enforcement efforts should be put toward preventing "waste dumping" on charitable food organizations, or at least compensating food security agencies for their waste disposal costs.
- Additionally, they should aim to be consistent with the EPA's waste hierarchy and prioritize human consumption. To that end, they should aim to help agencies absorb and redistribute the added surplus food following the ban rather than only investing in composting infrastructure (see later pages section 4.3.1 on funding).

3.3 Household Food Donations In Question

According to Maine's latest food waste generation study, the highest generators in terms of tonnage are, in descending order, households, farms, and businesses. The weight of household food waste in the total stream in Maine matches data from the U.S. as a whole and from other countries, too. Globally, household food waste happens because of inadequate meal planning, excessive food shopping, improper storing, preparation errors, overcooking, and date labeling (see sections 5.3 and 5.4 on date labeling and food waste). Most of the food discarded by households is edible meals or parts of food products, and could be avoided.

This data point is a reminder that we must continue ongoing efforts to educate households on consumption and domestic habits regarding food. More importantly in the context of this report, it also raises the question of what can be done to help channel more household surplus food into the CFS.

As of right now, their contribution to charitable organizations' food sourcing appears as that of farms, business partners, and federal programs. To make matters more complicated, it is currently hard to assess whether these household donations are actual surpluses or whether they are new food purchased specifically to be donated.

- A common example of the latter case is food drives, where donors are given lists of commonly needed pantry items to go buy and donate. Although food drives and other similar events offer better opportunities to quantify the amount of food that is taken in from households, they give no information on the amount of actual surplus donations an agency might receive.

[12] https://today.ucsd.edu/story/new-study-reveals-food-waste-bans-ineffective-in-reducing-landfill-waste-except-in-massachusetts#:~:text=%E2%80%9CWe%20can%20say%20with%20high,of%20marketing%20at%20the%20Rady

3.3.1 The Cost and Efficiency of Sourcing Household Surplus Food

As it stands, some agencies have reported generally not being interested in receiving household surplus and deem them undesirable, while others do find them useful, whether it's for end-users or their volunteer base. The question that remains, though, is whether growing this sourcing stream is worthwhile.

Before considering how to increase household surplus food donations, it might be worthwhile to ask if soliciting individual households is too costly and inefficient for the CFS to undertake. To answer this question, we must first imagine what consequences an increase in household food donations would have. If there was a considerable surge in household surplus food donation increase in local pantries, would these agencies be able to manage it?

- At first glance, it is unclear how appealing it would be for overworked and understaffed charitable organizations to have to sort through dozens of small, inconsistent, and widely diversified donations. Especially when compared to receiving larger stocks of more homogenous and at least sometimes consistent products from businesses/farms.
- From that perspective, just like gleaning, household surplus food donations might not be the most efficient source of food for agencies that are already understaffed and under-resourced.

Trying to valorize household surplus food through the charitable food system also presents practical and safety problems.

- Some products have been opened and sometimes only partially consumed (e.g., a bag of flour, a jar of sauce, or jam). Many agencies won't accept these products for food safety reasons, despite them being still usable, or because the quantities are too small for them to cook anything out of it.
- Charitable food agency opening hours are also sometimes limited, and happen during typical workweek hours, which limits the time windows when individuals can come and donate their surpluses.

Although imperfect, solutions to these problems might include self-service distribution points (community fridges, sharing tables) and food-sharing apps (Too Good To Go, Goodr, etc.). They contribute to waste mitigation without increasing the burden put on food security agencies (see sections 5.2.1 and 5.3 for more information on self-service locations).

3.3.2 Policy recommendations :

- Pursue work on product expiration date reform (e.g., adopting a double date model (freshest by/use by).
    - Households/consumers are also staff, business owners, and directors who might have an impact on food waste at the scale of their professional environment. Therefore, impacting individuals can be as important in changing business and organizational practices around surplus food.
    - That being said, considering the current consumer, business, and charitable culture around expiration date labeling, there is a chance that changing the date

system will lead to the same problem. Because people nowadays tend to fixate on the date that is written on the product they buy, sell, or redistribute, they might just follow the newer date format and discard products that are “freshest by”. Down the line, it might also still cause social justice issues for charitable food agency end-users (see sections 5.3 and 5.4).
    - Develop educational measures for the public on how to judge what is suitable for consumption and what is not, e.g. promote using senses (look, smell, taste). Changing regulations, such as date labeling without proper complementary education measures will limit the effect of said changes.
- Continue consumer education about over-purchasing, meal planning, expiration dates, and promotion of donation opportunities.
    - The root causes of household food waste are over-shopping, cooking mistakes, and bad planning and storage. Although these causes can never completely disappear, continuous education may help mitigate their effects.
    - Individuals should be informed about the various donation opportunities that exist and encouraged to use them when they know they won’t use some of the food they have: food banks, community fridges, sharing tables, “buy nothing groups” for sharing among neighbors, and household food rescue apps (Goodr, Too Good To Go, etc.).
        - Try targeting specific population profiles, such as Maine vacationers stocking up their secondary home or rental, and then wasting part of that food when they leave at the end of the season.
    - It may also help to work on changing the narrative in communications on food waste and food rescue: framing food as unsold surpluses, or available food rather than framing food as waste.
- Compel companies to rethink “buy more, save more” marketing strategies
    - Over-shopping has not always been such a problem among consumers. It grew in importance as companies developed elaborate strategies to incentivize this behavior. In other words, for decades now, consumers have been educated by companies to buy more than what they need, because that is what is most profitable for the latter.
    - Tackling the root cause of over-shopping and food waste means finding mechanisms to compel and/or incentivize businesses to produce less and stop “buy more, save more” types of marketing models.

3.4 Sourcing Through Inter-Agency Collaborations

As mentioned before, there are multiple advantages to building a large and strong network of partner agencies to collaborate with, one of which is access to other agencies’ surplus foods.

- Each agency’s partnerships with food donors give them various types of food that they might have no use for, whether it’s because it does not fit their mission, it is in an inconvenient format/packaging for them, or because it is not culturally interesting to its end-user population (for more details on cultural relevance, see sections 5.1 and 5.2).

- Considering the fact that agencies might have different missions and/or end-user population food needs and habits, one agency's undesirable products may be another agency's opportunity.
- Creating rapport with partner agencies is as valuable as it is with businesses. Over time, by fostering personal relationships with their staff and volunteers, one can remember what organizations might be interested in what type of product one has a surplus of, and vice versa.
- These types of exchanges can take place between charitable organizations as much as with governmental programs.
    - For example, The Emergency Food Assistance Program (TEFAP) redistributes surpluses from its Augusta warehouse (garnered from truckers, local processing plants, businesses, and agencies) to local agencies, and some agencies send their surpluses to TEFAP.

3.5 How Are Some Foods Prioritized Over Others? The Challenges of Balancing Safety, Nutrition, Cultural Relevance, and Food Rescue

There is currently more surplus food needing to be rescued and distributed than there are means (transportation, labor power) to do so. This means that actors in Maine's charitable food system prioritize certain foods over others, whether it's by default because they won't do more pickups than what they already have, or because they make choices based on explicit guidelines (safety, nutritional and cultural quality, logistics, etc.). On top of that, based on such guidelines, many agencies buy products out of pocket rather than solely relying on surplus donations.

Therefore, multiple factors must be taken into account to understand why and how surplus food is or is not sourced by charitable food agencies. These factors are important to consider when thinking of ways to improve the CFS' contribution to food rescue.

3.5.1 Acknowledging Charitable Food Agencies' Core Mission

Most of the food rescue infrastructure in the state (storage (cool/frozen/dry), transportation means, staff/volunteers) is operated by organizations of the charitable food system, whose primary goal is to feed people. Food rescue, while very common and of great importance in this space, is a means to this end, and not an end in itself.

- Even though this report is about the potential for improving surplus food rescue and distribution in the CFS, it can't ignore the mission many food pantries, soup kitchens, and food security programs have given themselves, which is to provide nutritious food in a humane/dignified way to those in need.
    - Reportedly, many agencies, big and small, wish they could have more regularity and predictability in the products they receive, whether it's to be able to have consistency and scale in their prepared meals or to help ensure nutritionally

balanced offers for their distribution activities. Yet, predictability is difficult to achieve when relying solely on food rescue.
    - This means that even though a bigger portion of an agency's funds could be committed to improving its food rescue efforts, some rather decide to buy certain foods that are missing from the shelves to have a more nutritionally complete offer, or decide to invest in other programs they might have.

- To be clear, food rescue efforts contribute to nutritional quality improvement for end users of the charitable food system, so there should be no dilemma between maximizing nutritional quality and maximizing food rescue. In the current state of affairs, maximizing food rescue can have significant positive nutritional effects anyway, because there are still large amounts of nutritious surplus food to be rescued.
    - As a matter of fact, some agencies are very successful at providing large quantities of nutritious foods to food-insecure households without spending any funds on food purchase.

3.5.2 Finite Logistical Resources Mean Choices Have To Be Made

There is reportedly still lots of room for optimization in the logistics and coordination of transportation, storage, and distribution of surplus food. And so, at least for the time being, this system infrastructure still represents a finite resource compared to the total amount of surplus food to be rescued. This means that choices have to be made; rescuing some food needs to be prioritized over others.

- Saving the most carbon-dense foods (i.e. that have the biggest environmental cost) typically also has the most social impact because they are in high demand (e.g. prepared foods containing eggs, meats and poultry, etc.).
- But ultimately, the agencies that directly tend to end users should be the ones making the call on what they need, based on their needs and wants.

3.5.3 Freedom of Choice for End Users

A principle shared by many in the food security and food rescue ecosystem is that having a dignified consumer experience means being able to choose what foods one decides to acquire and eat.

- It follows from that principle that everybody has the right to choose to eat ultra-processed foods, bread, and bakeries, as much as healthy fresh produce and other types of foods.
- This also means that, from a strict food rescue perspective, all foods are worth being rescued.
- But it still begs the question: what foods are more difficult to access than others for end-users?

3.5.4 What Foods Are the Most Inaccessible and Sought After by End Users

If an agency acknowledges end-users' right to choose, then they may need to investigate and see what foods their end-users most want and need. The answer to that question might not always be "healthy" foods over "unhealthy" ones.

- In urban regions, it might be ultra-processed "unhealthy" foods that are the easiest and cheapest to come by, and fresh produce, meat, and dairy might be harder to access for folks experiencing poverty and food insecurity.
- For some folks in rural areas, access to fresh produce might be somewhat easier, especially during the summer and fall seasons, thanks to neighboring farms and personal gardens. What they have a harder time accessing might then be less "healthy" comfort foods.

In sum, agencies stand to gain from knowing better what their end-users want and do not want. They will have a more positive impact on their community while diminishing the risks of users wasting food they do not want (see sections 5.1 and 5.2 for more details on the importance of end-user preferences).

3.5.5 Surplus Food Characterization and Safety

Not all surpluses are equally attractive[13]. This is true nutritionally and culturally speaking, but also in terms of *overall food safety and shelf life relative to an agency's typical turnaround time when handling food*. Some foods might not be recovered and redistributed in time by agencies, whether it's because of their logistical setup, opening hours, or lack of labor power.

- Is it fresh produce? Processed/packaged and frozen produce? Frozen cooked products and meals? Warm, cooked products and meals?
- While rotten fresh produce is usually easy to identify and discard, the freshness of prepared foods may be harder to assess (e.g., a tray of egg sandwiches that stayed at room temperature for a whole day). This leads to discussions around the safety and ethics of rescued food redistribution strategies, which we will touch on below (see section 5.3).

3.5.6 Food Rescue Services and Organizations to Complement the Charitable Food System

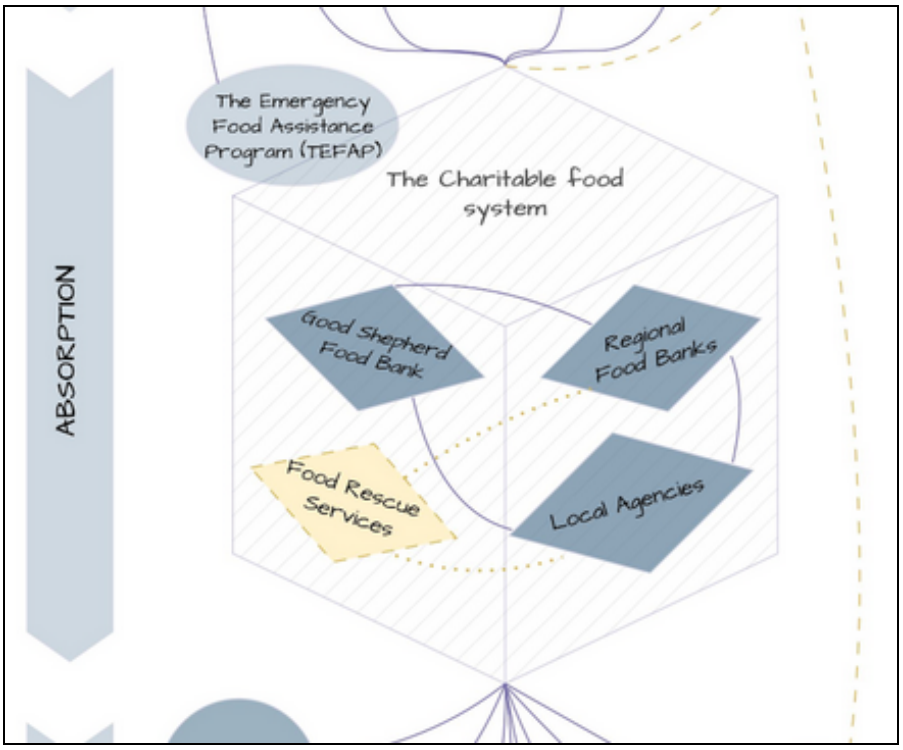
Considering all of the factors mentioned above (the CFS's core mission, logistical limitations, end-user preferences, and short shelf life), the CFS might benefit from organizations and services that are focused specifically on food rescue. They can have a complementary role to that of "traditional" charitable food organizations (see section 4.4 for more details on food rescue services).

- They can be more nimble for unpredictable, sporadic donations, and donations from smaller businesses and institutions.

[13] At the time of writing this report, a state-wide study is underway to identify what types of edible foods are wasted. This information is important as it may help determine where future food rescue efforts should be directed.

- They can pick up the foods that food security organizations don't wish to prioritize for logistical and/or nutritional reasons.
- They can do same-day pick-up and delivery to locations where very short-lived products can be eaten right away.

4. The Charitable Food System's Absorption Capacity



4.1 Seeing Charitable Food Agencies as Part of a System

When we talk about the "charitable food *system*" (CFS), we refer to all the ways pantries, food banks, soup kitchens, and other charitable food organizations interact and collaborate to bring food to vulnerable populations. But the CFS also has strong and inevitable ties with the broader agri-food system, as it provides much of the food that the food agencies redistribute. Therefore, thinking of charitable food organizations' role from a system's perspective also means taking into account how its current state has impacts upstream from it, on the donors, and then downstream from it, on the end-users.

One such impact is the potential total volume of food that could be donated. While this potential partially depends on how hard it is to *find* the existing surplus food, it also very much depends on how much the CFS and its agencies can take in. It will not be as beneficial to improve and increase the amount of sourced food if the system's absorption capacity cannot keep up.

- For example, as it stands, according to some producers, the main limiting factor to getting surplus food out of the farm fields to people is not a lack of logistical means on their end, it's the lack of capacity of partner pantries to take it all in.

In that sense, considering the amount of food that remains to be saved despite the huge amount of work that charitable food organizations put in, we need to explore strategies with which they can use the food better and absorb more. The next pages will explore processing and upcycling practices, organizational growth, and networking, as well as adding complementary food sourcing and redistribution channels such as food rescue technologies.

4.2 Processing and Upcycling

Processing (cooking, blanching/freezing) is a useful strategy for several reasons.

- It allows for more efficient use of the food that enters the system, as it can prolong the shelf life for foods that could have gone to waste, whether it's because they are partially damaged or on the verge of expiring/rotting.
- It allows the delaying and evening out the redistribution of foods that come in at once in bigger quantities than what can be distributed.
    - A frequent example: during harvest seasons, there is more surplus of certain crops than what end-users can eat before it rots. Cutting, blanching, and/or freezing and packaging these surpluses makes them valuable food to distribute in months when produce is more difficult to source.

Processing requires adequate infrastructure, both to transform and store the food, it can be labor-intensive for organizations that are sometimes short on labor power, and it entails complying with a host of food safety regulations.

Because this can be cost-prohibitive for many, agencies in Maine and elsewhere use various strategies to process food without each of them having to invest in processing infrastructure. For example, some agencies:

- Partner with local soup kitchens that can transform produce and products that are unredistributable as is, at no additional cost.
- Partner with a local processing and packing business that does the portioning and packaging of large donations for them.
    - Some processing industries have seasonal highs and lows. Low activity periods can offer opportunities to process food that is destined for the CFS.
        - Example: Jordan's farm processes undesirable parts of greens (broccoli stalks, leaves, Brussels sprouts) that are used in a program for African immigrant communities that appreciate it because it's culturally relevant to them. Atlantic Sea Farms makes seaweed during the season, and then in the low season, they use their processing infrastructure to process those green byproducts.
- Hunters for the Hungry and TEFAP partner with meat processors to process animal carcasses.

4.3 Scaling Up, Spreading Out

Approximately 70% of food pantries in Maine do not have paid staff and are strictly operated by volunteers, who are hard to find. And, reportedly, some organizations *want* to stay small because they don't want to burden themselves with grant applications. Yet, our research suggests that growth comes with many benefits, namely for the CFS and agencies' absorption capacity.

Growing an agency's overall size is a balancing act between increasing donation volume, storage size/capacity, staff/volunteers, means of transportation, and opening hours. To an extent, there is a "theoretical" virtuous circle in growing these dimensions: having sizeable storage capacity and good warehouse management allows higher food intake, which in turn creates interesting collaboration opportunities with grocery stores, processing companies, and other large food surplus generators (See below and section 3.2.2 about donors appreciating agencies who can take in large quantities at once)[14]. Larger food intake and handling also mean redistributing more food and achieving more impact, which also means more persuasive power in grant applications. Increased revenue opens up a budget to hire staff, which can make operations more efficient.

The abovementioned ways to go about developing processing capacity are one example of how agencies can grow more generally: they can grow their organization (storage, transportation means, staff, opening hours, etc.), and/or grow their network of collaborating organizations.

4.3.1 Organization Growth

Storage And Transportation Capacity

While organizational growth is a balancing act between various dimensions, storage capacity might be the linchpin. Before considering increasing product intake, staff and volunteer recruitment, redistribution expansion, etc., there needs to be enough space in which to take the food in, and store provisions in case of supply downturns and unexpected events [15].

"Think Bigger": a commonly shared principle among successful Maine charitable food agencies that have known significant growth is to "think bigger", i.e., to plan and anticipate growth by investing in larger equipment and infrastructure than what is currently needed when planning for storage and transportation, and accept larger donations. Their staff explicitly states that they very often say yes to large donations, even if they are bigger than what their agency can redistribute, and sometimes regardless of their mission. This is because:

[14] Many donors want to be able to give away to one organization and solve their problem (getting rid of loads of food at once).

[15] We have been recommended having about 30 days of reserves at all times in case of supply downturns, power outages, catastrophes etc.

- They are confident that partner agencies in their network will help them dispose of surpluses, hence the importance of having strong collaborative partnerships (see sections 3.1 and 4.3.2 below for more).
- The main objective of this strategy is to build trust relationships with store managers and receivers and make them understand that you are a useful asset to them. As mentioned before, creating solid, trusting relationships with donors is mutually beneficial (see section 3.2.2 about customer service mindset).

Aside: Storage Management Best Practices to Minimize Waste

This report does not aim to be a warehouse management guidebook. Still, some basic principles that are used by successful agencies are worth sharing:

- "If the warehouse is full, then it's because food is not being eaten".
    - The goal should be to have a clear warehouse at all times. Not by taking in less food, but rather by storing and redistributing it more efficiently and quickly.
- “First In, First Out (FIFO)”: ensure product rotation to minimize waste.
    - Larger organizations can use their space so that new products entering the facility do not block the way for “older products” to exit.
    - Smaller organizations that operate in tighter spaces can use special volunteer days (e.g., sporadic corporate or school groups) to manually rotate products on shelves and pallets.
- "Emergy Food Tetris": consolidate pallets (i.e. merge them) to create space for more food to come in.
    - It might not make an ideal organization, but it creates space.
    - It might be more compelling to do so when particularly valuable products (e.g. meat, dairy) come in.
- Writing down and displaying (on a billboard, in a manual…) basic procedures for good warehouse management makes for a more resilient team and processes in case of staff/volunteer absences or departures.

Expanding Opening Hours

Growing an agency’s operations means growing its opening hours. This can be beneficial for volunteer management and end users.

- More opening hours means more flexibility to accommodate potential volunteers’ schedules. It is also more interesting for various types of volunteers such as school groups or Community service sentences, who need to complete a certain amount of hours by a certain date.
- The face of poverty has changed; many food-insecure people have jobs and can’t access food donations because they are working during distribution hours. More opening hours or shifting part of the opening hours to other times of the day/week could improve access for them (see section 5.2 on increasing accessibility to end-users).

Increasing operation hours may also help reduce food waste. Waste at the agency level partly stems from schedule mismatches between the latest moment at which the product can be

distributed, and the agency's opening hours or distribution schedule[16]. Part of the rescued food has a short shelf life even in cold storage, and therefore, growing an agency's opening hours may also reduce the amount of rescued food going to waste.

- The challenge is aligning the frequency at which food is being rescued and in what quantities with the frequency at which food is being redistributed and in what quantities.
    - Some agencies have been able to reach such alignment and can pick up food, sort it, and redistribute most of it on the same day, Monday through Friday, which requires a sizeable operation in terms of staff/volunteers, means of transportation, and redistribution outlets.
    - Note: this may be easier to achieve in densely populated areas, where both volunteers and redistribution outlets might come in larger numbers. By contrast, many agencies in more rural areas have fewer opening hours, and end-users and volunteers travel longer distances, which limits the frequency at which they can come.

Staff and Volunteer Management, Engagement, and Recruitment

Regardless of how efficiently an organization can organize its operations, upscaling requires more work hours, whether they are done by volunteers or by paid staff. This leads to thinking of staff recruitment and volunteer mobilization.

Staff Recruitment And Job Attractiveness

Volunteers will always be an essential part of the charitable food system. Currently, approximately 70% of food pantries in Maine do not have paid staff and are strictly operated by volunteers. But relying exclusively on them limits an agency's impact on food rescue and food insecurity:

- In some areas, volunteers are hard to find.
- Even when an agency has access to a steady and reliable volunteer base, over-reliance on volunteers still poses a limit to the number of opening hours the agency can offer, to the time it can invest in food sourcing and financing, and thus to its ability to reach more food insecure people.

It should be clear that acquiring the funds to pay for wages is a difficult endeavor, and that not all agencies that use little to no paid staff do so by choice. Nonetheless, some still argue that the challenges that Maine faces regarding food rescue and food insecurity require more labor power than what volunteers alone can provide. Similarly to the limited efficacy of gleaning (SEE SECTION 3.1.1), improving the CFS's food rescue and food security performances may require financial investments to develop a full-time, professionalized, and dedicated workforce. And while volunteers are sometimes scarce, many people would be willing to take on roles in the CFS if there were paid positions, as they are looking for work to sustain themselves and their families. These matters tie into funding strategies and policies, which will be discussed below (see section 4.3.3).

[16] E.g. an agency that won't open again for multiple days might have to throw produce away or give it to pig farmers if it is very ripe and ready to be eaten in the next 24 hours.

That being said, even among agencies that do have paid staff, offering wages and benefits that are competitive with the private sector is often difficult. Yet, they may offer advantages in other aspects of work which are important to a lot more people in this day and age:

- Finding meaning in work by helping others and socializing.
- Better work-life balance.

As a matter of fact, some workers reportedly willfully took pay cuts to go from corporate positions to their current positions in the CFS for those reasons. Therefore, these advantages might be worth advertising when looking to hire staff.

Looking for "movers and shakers"

A common characteristic among successful agencies we encountered during this research is that directors and leaders have been very active in their community long before being considered for a leadership role in a food bank. More broadly speaking, when thinking of who to bring on board an agency, whether it's as a volunteer, board member, or staff, well-networked or networking-savvy people can help in many ways:

- Assembling a resourceful board,
- Facilitating funding,
- Facilitating infrastructure and equipment acquisition, improvement, and maintenance,
- Facilitating food sourcing,
- Bringing volunteer recruitment opportunities,
- Offer new outlets to circulate the agency's own surplus food

Moreover, these benefits can be multiplied by being intentional about recruiting individuals from a wide variety of professional and community backgrounds (religious, food business, trucking business, judicial system, government agencies, nonprofit sector, etc.) because they can each contribute complementary resources and insights.

When Key Staff Members Leave: Managing Role Transitions

A side effect of hiring highly connected and experienced individuals as agency leaders is that many are older and closer to retirement, if not unretired - and won't stay in charge for a long time. As a result, planning for leadership transitions should always be on the minds of board members, and agency leaders/directors themselves, and thought of far in advance.

- When hiring or prospecting new staff, volunteers, or board members, you should be looking for someone who has the potential to be proficient at the position they will be required to fill, *as well as* the potential to take a leadership position in a few years. Once they have sufficiently mastered their main role, their first years aboard should be spent learning and experiencing leadership tasks.
- What is more, role transitions are not just about mastering tasks and responsibilities, they are about transferring network connections with local media and donors. This is best done over a few years.

In any case, leaning on highly dedicated staff and volunteers to fill full-time roles is a risky strategy. While it might pay off in the mid-term, the more an organization is dependent on specific individuals' exceptional commitment, the higher the risk of facing major financial and organizational disruption when these people inevitably leave, whether because they retire or

because of burnout from being overworked for too long. Finding another person to fill their shoes for an insufficient salary will be difficult.

Ensuring volunteer engagement and recruitment

Volunteers are precious to charitable food agencies, and it is therefore important to ensure they stick around in the long run. To this end, it is important to understand what motivates them to participate and offer them what fuels such motivation, and to take this into account when planning tasks and activities:

- Obviously, volunteers appreciate being treated fairly and nicely and want to feel valued. Agency representatives should not act as if they were entitled to their help.
    - Many successful organizations organize various forms of volunteer appreciation events.
    - Agency leadership should consider offering opportunities for volunteers to add their grain of salt, to make them feel like they are welcome to give their opinion/suggestions regarding operations and rules, for example.
- Most people don't like busy work for busy work's sake. Volunteers generally appreciate feeling like their contribution can make a difference. This can mean organizing work in a way that makes them see the impact of what they do on people, or explaining to them the purpose of the task they are asked to accomplish.
- Some volunteers appreciate giving their time because it offers great opportunities to socialize and make friends. Organizing operations in a way that does not isolate volunteers from one another, or better yet, offering a variety of roles that might suit different volunteers' socialization preferences, may be warranted.

That being said, volunteer recruitment can be challenging.

- Rural areas have unique challenges: some people do not have the means of transportation to travel the long distances to the agency's site (no functioning car, or not enough gas). Although they have not been tested a lot yet, some solutions to this problem might be worth experimenting with:
    - Partner with gas station sponsors to provide gas cards to volunteers.
    - Promote carpooling to save on gas.
- Maine's volunteer population is retired and aging, while people who are still in the workforce don't seem to participate as much, even if opening hours match those at which they could be available.
    - Therefore, even if an agency has a core of dedicated and reliable volunteers, leaders should always be on the lookout, prospecting, because there will inevitably be some turnover eventually.
    - Moreover, diversifying recruitment opportunities is crucial. Volunteer recruitment opportunities include, but are not limited to:
        - AmeriCorps VISTA (Volunteers in Service to America)
        - Give users a chance to give back by volunteering; many want to
        - School groups
        - Community service sentences and supervised prisoners

        - Sizeable agencies have more opportunities for volunteers because they have more hours to fill, which is advantageous for community service sentences that need to complete many hours of work. Smaller pantries don't always have the space/capacity to host more than one volunteer at a time.
    - Businesses
        - Soliciting corporate volunteer days
        - It might be worth experimenting with approaching local businesses/corporations to drop volunteering promotion flyers in retirement/thank you packages that employees get when they leave.
    - Rotary clubs, Lions clubs, etc.

Data collection/metrics

Collecting good data is the first step to taking action, whether it's to improve sourcing, reduce food waste in an organization's operations, or offer better services to end-users. Metrics are the first step to knowing in what areas can an agency improve, assessing whether or not progress is made, and providing convincing impact reports to support grant applications. As such, they are an important asset for growth.

To be as beneficial as it possibly can, data collection should go beyond measuring strictly pounds and food types. Information on the nutritional value of the food collected, and on who the users are (gender, age, ethnicity, geographic location, family situation, etc.) will give a better idea of an agency's reach and impact. This information can then be leveraged when proving impact to donors.

Acquiring the means to collect data

Investing in software such as customer/volunteer management programs and platforms makes it possible to systematize and simplify the data collection process on what food is being taken in and out, and how much money each service program or distribution point costs relative to the impact it generates. While such an investment can be costly upfront, it provides crucial information that can result in increased revenue further down the road.

- Food rescue services also offer powerful data collection tools that are easy to use by volunteers of most ages and capabilities, and they offer analytics services to help agencies make sense of the data they collect. But they are a paid-for service (see section 4.4 for more details on food rescue services).

For agencies that can't spare the funds to invest in their own software, since 2023, GSFB has been offering its pantry partners an internet service platform called "Service Insights on MealConnect" (SIMC), created by Feeding America. It is a platform that helps pantries keep track of pantry users' information: things such as age, gender, race, etc., but also how often and when they use an agency's services, for example.

- This information is very valuable to improve aspects of the agency's operations and to support grant applications.

- On their website, GSFB offers lots of educational and informative material on how to best use this tool and the data it can provide and has dedicated staff to help pantry partners navigate its use[17].

Some agencies are also able to develop partnerships with local colleges and research institutes working on management, engineering, and data science to obtain data collection support. Enquiring what partnerships are possible on local campuses, when there is one, can be helpful and less costly, as programs and students are often looking for internship opportunities.

Funding and Financial Opportunities

Financial security is a sore spot for many charitable food agencies, let alone thinking about the financial implications of growing an agency. Yet, some strategies are worth considering to help balance a budget and even grow. As with any budget, there are two levers to achieve this: limiting how much money comes out of the agency by cutting costs, and increasing how much money comes in by sourcing more funds.

Cutting Costs, Becoming More Efficient

Optimizing food rescue operations will help make every instance of using transport vehicles as efficient as possible.

- For example, optimization can mean combining pickup schedules according to donors' geographic locations so that drivers' routes are streamlined. This means saving on gas while also freeing up time for more pickups or other important tasks.
- Optimization is easier to achieve when a majority of donations are set and recurring on a regular (daily, weekly, monthly) basis.
- Optimization is also made easier by having a visual representation of a week or a month's schedule to identify "gaps" where more could be done, and/or a geographic visual representation of where all donors are located.
    - This can be as simple as having a board or a poster on display to help with planning.
    - Digital technologies such as traffic and navigation apps (Waze, Google Maps) and food rescue technologies can also help tremendously (see section 4.4 for more details on food rescue technologies).

Harnessing community and partnership resources allows to:

- Acquire infrastructure, used or new. Successful agencies lean on their community's networks (board members and leaders/staff members' connections) to acquire anything from cardboard boxes to transport vans and trucks and even large refrigerators for free or at an advantageous discount.
- Do repair, maintenance, and improvements on infrastructure and equipment with qualified trade-trained volunteers, instead of hiring a paid service.
- Move food: trucking companies and truckers can be powerful partners in moving food around when their trailer is empty and needs to go somewhere (see section 3.2 about harnessing the power of trucking companies).

[17] https://www.gsfb.org/programs/research-evaluation/

Funding And Income Streams

Savings and efficiency gains can only take you so far. Growing funding can potentially impact all dimensions of an agency's operations, from equipment and infrastructure, to competitive wages and working conditions. To grow, it is crucial to have strategies to bring money in.

"Growing By Branding":

- An agency's branding can itself impact how likely it is to stick in people's minds. This goes for choosing its program names as much as its visual appearance. Many successful agencies seem to have invested in agency-branded decals to put on transport trucks/vans, which offer advertisement wherever they go.
- Some agencies have found success offering local businesses "advertisement spots" in their spaces and/or on their equipment. It provides the agency with funds, and it acts as an interesting public relations campaign for the donor/sponsor.

Public relations and visibility on traditional media and social media:

- Broadly speaking, using media visibility to display the agency's situation and needs to attract donors to fulfill them.
- A dimension related to branding is that of media visibility and public relations, in which there are also opportunities for mutually beneficial collaborations with donors. Business or corporate partnerships can grow through enhanced advertising. When a nonprofit gets media coverage, the spotlight can also be put on "major" donors and partners, which is an attractive public relations opportunity for them.
    - Testimonials and overall media coverage give visibility and attract both financial and food donors, sometimes from far away (out of state).
- Storytelling in public communications can also be a valuable tool.
    - This can mean using people-interest communication strategies such as writing inspiring and compelling stories about volunteers, users, donors, or staff. These stories might resonate with donors on a personal level and encourage them to give.
    - This can also be used when reporting on the real-world impacts that financial donations have (e.g. "for every dollar donated, 1lb of food is rescued and redistributed to those in need"). Impact reporting is made easier by good data on the agency's activities (see section 4.3.1 on data collection).

Educating donors:

- In turn, impact reporting may serve as an educational tool for donors. While donors may find it more enjoyable to donate actual food they buy for that purpose, money is often more impactful for agencies. This is because even if an agency provides a list of preferred goods, they most likely achieve economies of scale and buy more than what an individual can buy. This is mostly true of household/individual donors, and less so of small businesses and larger corporations.
    - For example, some agencies will advertise on their trucks and in their funding campaigns that "1$ donation = 3$ worth of food".

- Taking the liberty to educate donors is made easier the more rapport is built with them prior.

“Money’s transactional. We're trying to build relationships.”:

- Many agencies’ reliance on financial donations to sustain and grow their operations makes relationship building and maintenance with donors paramount.
- This can be achieved by personalized communications, such as handwritten thank-you notes and phone calls. Some call it “good stewardship”, which ties back to prior mentions of considering the relationship with donors as one of customer service (see section 3.2.2).
- Inviting donors on-site to “see their donation at work” and its direct impact is another way to make a compelling case for maintaining or increasing donations.
- Leaders and board members can also ask already enrolled donors what aspect of the agency’s work they like or resonate with the most. This information can then be used for more targeted funding campaigns to fund improvement projects for that particular aspect.

The value of diversifying income streams in the context of precarious grant funding:

- Agency leaders we interviewed reported that grant writing takes lots of time, does not always bring results, and is sometimes hard to trust because you can never know when budget cuts might abruptly end a program you were counting on.
    - While larger agencies may afford to have staff be in part or fully dedicated to grant writing, smaller ones therefore often opt for other funding options or operate with little to no funding.
- Then, instead of grants, many agencies here and abroad rely in good part on other strategies.
    - There is a strong thrift culture, some Maine agencies have developed commercial practices to fund their operations, whether in the form of garage sales with donated items or full-fledged thrift stores.
        - This is an instance where it can become advantageous to create partnerships with non-food donors and have the space to receive these donations.
    - Another adjacent strategy is encouraging people to donate plastic bottles, which can be redeemed at grocery stores.
        - Alternatively, people can redeem the bottles themselves and request that the money be put on the agency’s “tab”.
    - Many agencies also offer services such as space lending. This can mean spaces such as:
        - A community center and conference room with a kitchen
        - Office spaces
        - A commercial kitchen, shareable by multiple small organizations

4.3.2 Spreading Out: Coordination and Collaboration Between Agencies and Community Organizations

Growing infrastructure and equipment capacity help food rescue and distribution, but it is not indefinitely beneficial. It can also become inefficient.

- Cooling/freezing storage capacity is a good example of that. From a logistics point of view, having enormous capacity is a very attractive idea. It would offer free space to accept anything donors need help getting rid of, stock up for emergencies, and facilitate the movement of products inside the warehouse, for example. But growing this kind of capacity may become increasingly unviable given the financial burden that the maintenance and powering of this equipment represents.

Still, that does not mean there are no other ways for agencies, big and small, to grow their operations and impact. In that regard, taking part in a collaborative network of charitable, private, and public agencies is very important. There are many examples of this, in Maine, in the U.S., and internationally.

- Leverage existing food supply chain transportation and logistics:
    - A food service business serving hotels or institutions uses a small fleet of vehicles to bring meals to their clients (hotels, restaurants, etc.). Then, instead of leaving their drop-off points empty, they can bring unused prepared food from those locations back to their warehouse and then redistribute it to nonprofit partners. This is what Chefs to End Hunger accomplishes in California, Nevada, and Arizona by partnering with Vesta Food Services [18].
        - It is also an example of an initiative that can tap into the “next frontier” of unconventional surplus food sources (see section 3.2.3).
    - As mentioned earlier, trucking companies and truckers often do trips with empty trailers, which can be harnessed when going in a direction that agencies have a use for (see sections 3.2.2 and 4.3.1).

- Resource sharing among organizations: transport, storage, food, and volunteers:
    - As one interviewee puts it: "There is no such thing as getting stuck with something". For matters of circulating food and resources out of an agency, collaborating with multiple other agencies is very advantageous. As previously mentioned, this is also true for sourcing (see section xx on sourcing through collaborative networks).
        - Resource sharing, especially food, also ties into the importance of schedule coordination between agencies serving the same region(s). Pickups and distribution should not be scheduled on the same days for all local agencies. That way, one agency’s leftovers at the end of its redistribution day can be given to the next local pantry for its own operation. This kind of coordination is also very important for end-users, who need sources of food on a regular basis, and not just once per week or month (see section 5.2.1).

[18] https://www.chefsendhunger.org/

    - Pooling funds to acquire space: Larger storage might be somewhat easier to acquire in rural areas, whereas it may be hard to come by in dense urban areas because of higher costs and overall warehouse scarcity. In any case, provided all parties involved are willing to collaborate, developing partnerships and sharing storage resources can be more advantageous than having each agency spend a lot to acquire its own storage space.
    - If pooling funds is not a viable option, partnering with public entities and using public buildings can also be advantageous.
        - In Maine, The Emergency Food Assistance Program's (TEFAP) warehouse in Augusta is acting as a de facto food hub to store surpluses from local agencies, as well as very large donations from regional plants, and passing truckers. They then redistribute all that food according to local pantries' capacities.
        - More broadly, agencies from every region in Maine should assess what public infrastructure is available, at what time of the year, and to what extent it could be used for additional storage.
    - Some sources suggest using a common pool of volunteers for multiple local agencies.
        - In our state, for example, the Western Maine Gleaning Initiative uses a centralized volunteer contact database for all of the member gleaning groups' activities. A call to participation is sent out for gleaning events, and whoever is ready and able can come.
        - Volunteer sharing among gleaning groups that organize sporadic events is not the same as a charitable agency operating on a weekly or daily basis, though. Coordinating a common pool of volunteers across multiple agencies requires
        - But this hinges on the ability and willingness of volunteers to travel to various locations.
            - As seen in section XX, volunteer mobility can be a challenge in rural areas, and volunteers also find motivation to participate in the socializing and sense of belonging aspects of their involvement. These factors might make volunteer pooling difficult in some cases.

- With support from larger entities (regional, state-level), developing a shared data collection tool:
    - Feeding America and Good Shepherd Food Bank's Service Insights on MealConnect (SIMC) software program can, in part, serve that purpose
        - This saves organizations the trouble of developing their own evaluation tools, and they can use the data to support their grant/funding applications by showing their impact.
        - At a systems scale, the more organizations join the program, the richer and the more homogenous the overall portrait becomes regarding

performances in food rescue and security (see later pages of section 4.3.1 on data collection and SIMC).

4.3.3 Policy Recommendations

- Facilitate the assessment of which regional public infrastructure is under-utilized, when, and whether or not it could be used for the CFS. Facilitate access to that infrastructure.
- Make grant applications easier to access for understaffed and under-resourced agencies.
    - The EPA's Community Change Grant program may be a good example of a streamlined application process.
- Develop collective grant application opportunities to incentivize collaboration between local agencies.
    - To be effective, such programs will need to include training and education on proper communication and collaboration skills.
- Maintain/improve infrastructure/capacity grant.s
    - Namely to encourage the addition of drop-off locations in communities (social housing, retirement homes, community centers, etc.) (see sections 5.2.1 and 5.3 for more details on self-service distribution points).
- Improve public funding opportunities for day-to-day operations. "More freezers don't bring food to people; people bring food to people".
    - We will always need humans to do the work. It is crucial to offer recurring operations funding.
    - Agencies can only become so efficient and impactful while relying solely on volunteers, especially considering the challenges that Maine faces regarding food rescue and food insecurity. Volunteers will always be an essential part of the charitable food system. But relying exclusively on them limits an agency's impact on food rescue and food insecurity: it generally limits its opening hours, the time invested in food sourcing and financing, as well as its ability to reach more food-insecure people.
    - Improving the CFS's food rescue and food security performances requires financial investment to develop a full-time, professionalized, and dedicated workforce. They require a stable stream of income that is not attached to a project or a piece of equipment. Paid staff will allow agencies to operate longer hours, with more consistency and more impact both on food rescue and food security. And while volunteers are hard to find, many people would be willing to take on roles in the CFS if there were paid positions, as they are looking for work to sustain themselves and their families.
- Develop strategies to incentivize organizational growth in charitable food organizations.
    - Reportedly, some organizations *want* to stay small because they don't want to burden themselves with grant applications.
    - Recurring funding could serve to hire salaried personnel who would be tasked with undertaking the improvement and growth of an agency.

4.4 Food Rescue Technology Services

The last sections made a case for growing charitable food agencies' capacity and bolstering funds to support this growth. They are an important type of actor as they can store and transport more or less sizable quantities of food, which is necessary because food surpluses often come in amounts larger than the demand for it at a given time. Storage allows for even out surplus distribution over longer periods. Moreover, they can also serve as local community hubs, provide various forms of social support, and garner information on end-user needs.

Yet, reportedly, some actors in the CFS and the food rescue space still doubt that funding the growth of the current model could solve all of the food rescue challenges we are currently facing. This is because:

- As previously mentioned, some charitable food agencies are more concerned with food security than they are with food rescue. This translates into sourcing choices that sometimes prioritize buying fresh foods over rescuing surpluses (see Section 5.3.1 and 6 below).
- Overall, agencies don't have enough opening hours to rescue and handle all of the surplus food available, and it would be too costly for each of them to increase opening hours, as it might require unrealistic expenses (infrastructure and equipment, staff, etc.).
- In Maine, as in other states, larger grocery store chains have all been onboarded and have good collaboration with food banks and local pantries. The "next frontier" in food rescue expansion is smaller store chains, cafés, restaurants, smaller local stores, and markets (see section 3.2.3 on the "next frontier" of food surplus sourcing). These types of donors and donations pose two problems to the conventional charitable agency model: 1) the necessary turnaround time between pickup and redistribution, and 2) the low quantity of food contained in each of those donations [19].
    - 1) In a majority of situations, the conventional food bank/pantry/cupboard model creates an extra logistical step between surplus food donors and those who wish to eat the food. In between the two, food is stored until a later redistribution date. The issue is that some of the current unrecovered surplus food has a short lifespan and won't last in storage until the agency's next redistribution day. This type of food requires same-day pickup and redistribution, which the pickup-store-redistribute model of traditional charitable organizations might not be designed to accomplish [20].
    - 2) Growth in surplus food sourcing can happen by multiplying the number of small/medium-sized donations that may be either overlooked by larger organizations because they are not worth their time and resources or missed by small organizations that do not have the means (labor power, time, equipment) to do dozens of small pickups.

[19] As previously mentioned, there is also room to grow sourcing from farms.

[20] This is a generalization. Some agencies we studied achieve same-day pickup and redistribution, although certain conditions need to be met, e.g., having sufficient staff and volunteers to handle the food and to fill opening hours both for sourcing and distribution, and having a matching offer and demand for food on a daily basis.

In other words, although crucial to food rescue and food security efforts, the traditional charitable food agency model might need to be complemented by flexible and efficient approaches to fill in the gaps it cannot fill. Food rescue service technologies might be an interesting option to fill that role.

4.4.1 How Food Rescue Apps Work

There are different kinds of digital technologies to help connect unsold surplus foods to those who want them. Some are focused on individuals and households (e.g., Too Good To Go), while others are directed towards organizations and charitable agencies more specifically (e.g., Food Rescue US, Food Rescue Hero, Spoiler Alert, etc.). This section aims to present the latter kind.

- They are a three-way matching service, much like commercial food delivery services (Uber Eats, GrubHub, DoorDash, etc.). Instead of matching restaurants, paid drivers, and consumers, they match any surplus food donor (restaurants, stores, caterers, etc., or even charitable organizations) with volunteer drivers and recipient charitable organizations who aim to donate food on that day, or individuals in need directly.
- Volunteer drivers subscribe to the food rescue service and are matched via a user-friendly phone app to donors and receiving charitable organizations or households. They use their personal car to pick up and deliver the surplus food that is assigned to them.
    - Pickups can either be recurring on a fixed basis (ex., every Monday at 7 PM), with the same volunteer being assigned to it every time if they wish, or be one-off events.
- Food rescue technologies are a service that nonprofits, or larger state-level organizations[21], pay to use. The nonprofits in question can either be charitable food agencies that have other “standard” food sourcing and redistribution operations, or nonprofits that have been created specifically to rescue food, and who decide to use this kind of tech service.
    - The case made by these services is that, while costly, they allow for dramatic upscaling of food sourcing and redistribution, and that such positive economic, social, and environmental impact thrusts nonprofits’ ability to raise funds. The food rescue technology service then pays for itself and much more.
- The end goal is to have the most efficient use of everybody’s time and resources. In that regard, the app's role is to automate as much of the process as possible, so that food rescue dedicated staff (“dispatchers”) can spend more time finding new and one-off pickups, do volunteer support, manage pickup problems, etc.
    - With the help of the app’s data analytics and tech tools, dispatchers make sure matches made on the app go smoothly by taking into account who wants to donate and who needs what, when, and where. This way, routes are as convenient as possible for volunteer drivers, donors, and receivers.

[21] The Food Rescue Hero service has been implemented state-wide in Delaware via a partnership with Bayhealth hospitals, the American Heart Association, and the Food Bank of Delaware: https://foodrescuehero.org/delaware-health-network-bets-on-food-rescue-to-boost-health-of-patients/

- The service also comes with support and coaching on food rescue practices, on top of access to data and analytics to assess the client agency's performance.

4.4.2 How Food Rescue Technology Can Benefit the Charitable Food System

Complementarity in purpose:

- Compared to most charitable food security organizations, these digital services focus on supporting and growing food rescue specifically.
    - The surplus food that might be culturally or nutritionally irrelevant to some charitable organizations might still be picked up and redistributed by food rescue services using these technologies.
- Moreover, in the U.S., there is allegedly more fresh and nutritious surplus food available than what charitable food systems currently have the means to source. To the extent that it is the case in Maine as well, this means that there should not be any perceived competition between these two models of organization when it comes to food sourcing quality food[22].
    - Food rescue technologies are not meant to undo the collaborations that are already established between donors and "traditional" agencies of the charitable food system. They are there to fill the gaps.

Complementarity in sizes. "There are truckloads, and there are trunkloads":

- With food rescue service apps, smaller pickups that regular charitable food agencies don't wish to prioritize for logistical and/or nutritional reasons can be handled by volunteers using their cars. This way, charitable agencies can use their trucks and vans for larger donations.

Nimble and rapid food sourcing:

- Food rescue technologies can be more nimble to collect unpredictable and sporadic donations from smaller businesses and institutions. They can also facilitate connection and coordination with smaller donors who don't strike deals with FA/GSFB.
- They can still help bring food to charitable agencies. But as an added value, they provide the benefit of speeding up the distribution process for the most sensitive and short-lived foods.

Volunteer management and mobilization:

- Food rescue technologies may also be an agility tool to manage absenteeism among volunteers. If a volunteer driver calls in sick, another one can be easily dispatched.
    - Smaller agencies might not need an app to contact a substitute volunteer from their homemade contact list. However, app databases become advantageous when operating at larger scales, where the number of volunteers becomes harder to manage.
- Also, the variability in types of pickups (regular/scheduled and sporadic one-offs) makes participation easier for volunteers who have busy and changing schedules.

Data and analytics:

[22] At the time of writing this report, a Maine food waste characterization study is underway, and should bring clarity to this question.

- Food rescue technologies are offered by an independent organization that provides data collection and analysis, training, and support.
- A charitable food agency that would integrate a food rescue practice through these technologies would gain a data collection tool to help them acquire information on their operations and users. This data can then be leveraged to show the agency's impact on potential donors and funders as well as to improve its operations.

Inter-agency coordination:

- Considering how coordination and redistribution between pantry schedules can be important to prevent food waste (see section 3.4 above and 5.2.1 below), food rescue technology might help coordinate and channel food to the agency that is most likely to need and use it on a given day.

4.4.3 On the Socializing and "Human" Dimension of Food Rescue Work

Part of the pushback that sometimes happens against the implementation of food rescue services is that they dehumanize the work of food rescue. They match anonymous volunteers to organizations to pick up from and drop off to, the same way impersonal Uber drivers are assigned to clients, and this cancels out the sense of community and belonging that one might get from joining a charitable organization.

Interestingly, reports from food rescue app users seem to indicate that they too allow for community building, as volunteers can do recurring pickups at the same businesses, and dropoffs at the same charities. Thus, they often end up developing camaraderie ties with people in both spaces.

4.4.4 Caveats to Food Rescue Technologies in Maine

Investing in a Known Approach Versus Investing in the Unknown

Throughout this research, three attempts at implementing food rescue technology in Maine have been reported to us[23], none of which lasted. The exact reasons why each attempt did not pan out have not been fleshed out and divulged, but our research materials might give some indications as to what challenges and opportunities the state presents for implementing this kind of food rescue solution.

Food rescue technology representatives are confident about volunteer recruitment and engagement potential and are confident that apps can also work in rural areas. But, to our knowledge, it remains to be seen and experimented at scale. This question is especially important in Maine, given that most of the state's locations have low population density.

[23] One was implemented in a gleaning group, another one was piloted with a dozen farms in the Downeast region, and the third was implemented by a charitable food agency in Knox county. One project used Spoiler Alert, and the other two used Food Rescue Hero or Food Rescue U.S.

While food rescue services might be successful in some rural areas, it can't be *as* true in all cases because:

- Urban and peri-urban areas are a mix of more and less wealthy people and offer overall larger pools of potential volunteers and donors.
    - While rural areas also host a diversity of socioeconomic conditions, we have come across locations in Maine where people who would like to volunteer cannot do so because they do not have enough money to pay for their car's gas, for example (see section 4.3.1 on volunteer mobilization and recruitment).
- Internet consistency and access are also a problem in certain regions, which may pose important limitations to these apps.

- Regional social context must be taken into account when thinking of where food service technologies can be implemented.
    - Social networks exist in urban as well as rural areas. But one of the perks that apps offer in urban areas is to reach people who are close to you geographically, but who are not one's network.
        - In rural areas, more people "know everyone" in their community, so apps might appear more redundant to rural community leaders and volunteers who already know their neighbors, community members, donors, and users.
            - A food rescue app will feel redundant if used to manage volunteers when it might feel like a mailing list or WhatsApp group does the job, and the same goes for donor lists and routes.
- Organizational social context, in a rural setting or not, also has an important influence. Food rescue services can be harnessed by charitable agencies and collectives to grow their impact, but they require a change of operational mindset to show their potential. On the other hand, if the technology is only used as a supplemental sourcing tool, i.e., to bring more food back to the agency's warehouse until the next redistribution day, then it risks becoming redundant with the agency's pre-existing logistics and practices [24].
    - The question is, then, how feasible it is for an agency that has been working a certain way for as long as it has existed to change its operations to make way for something new.

In that light, and in the context of limited resources to invest, both financial and human, what direction would it be best to take to grow food rescue operations in the charitable food system? What costs more and what might bring the most improvements? Trying to improve on a model and practices that are already in place, or invest in a new complementary system that entails deeper re-organizing of the CFS?

- On one hand, staying in the same model and mindset will perpetuate the insufficiencies that this report is trying to highlight solutions to,

[24] Rather, they are used at their full potential when they dispatch food to multiple locations where the can be used on the same day. While the operating agency might be one of such locations, they can also be other organizations such as homeless shelters, elderly and/or immigrant centers etc, or even directly to households.

- On the other hand, trying to implement a new model might not produce a great return on investment if leaders and staff members don't find it useful and don't use it properly.

That being said, answering these questions will require a longer and more rigorous analysis of opportunity costs than what this report can offer.

"Nothing Works Without People": Technology is Not a Solution in Itself

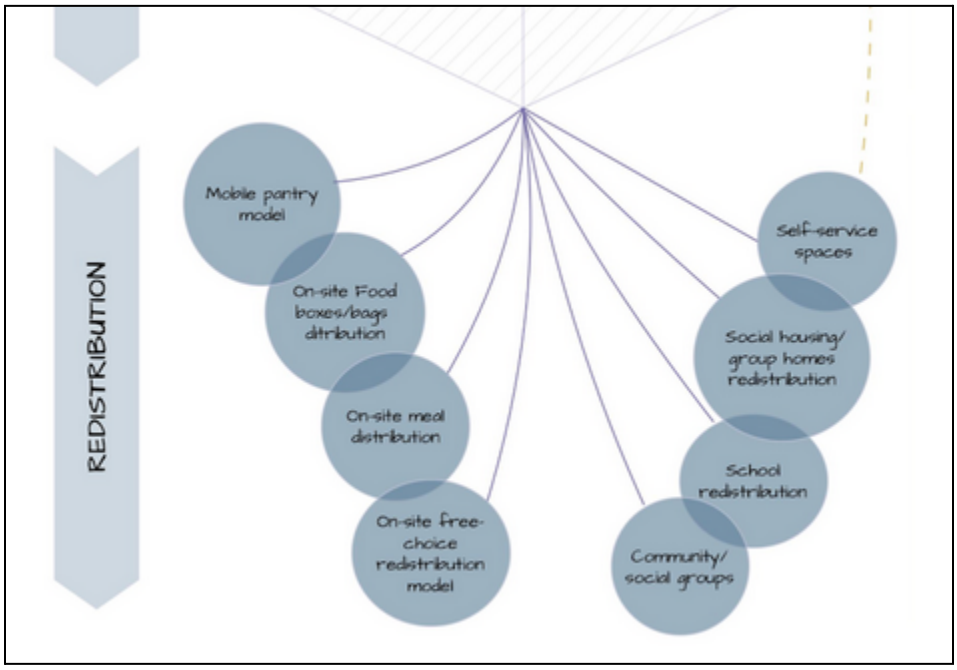
In any case, technological solutions to food rescue are not magical, autonomous AI tools that can swoop in and solve every logistical problem at no cost. They are a paid service, and they require humans to make them work. As a food rescue app representative put it, "Nothing works without people". People make things happen, technology is just there to make them more efficient.

4.4.5 Policy recommendations

- Consider funding pilot programs for food rescue and food security technology implementation.
    - Attempts have been made in Maine to implement such technologies by service subscription/payment with little success, due to cultural, geographic, economic, and demographic factors. If a pilot project is going to be set up in Maine in the future, it might find more success in urban sectors.
        - Besides, implementation was successful at a state-wide scale in Delaware, through a mix of public and philanthropic funding.
    - In low-density areas, a food rescue program may have a higher chance of success if there is no real prior functioning food rescue and food security operation that already has its ways and habits.

5. Distributing to end users

Once food has been sourced, processed, and/or handled by charitable agencies, it still needs to find its way to the people who need it. How agencies go about redistributing food is just as important as their sourcing practices when thinking about how they can better contribute to increasing surplus food valorization. Of course, this means we need to think about what strategies can be used to redistribute the food. But from a food waste prevention perspective, we also need to make sure end-users actually use the food that is given to them. The next pages will tackle these questions.



5.1 The Emergency Food Assistance Program (TEFAP) Product Usage Shortcomings

A recurring theme in our discussions with Maine charitable food agency staff and leaders has been the dissatisfaction many end-users seem to experience regarding the food they receive through the USDA's TEFAP. In the context of this report, this dissatisfaction is especially important considering it translates into added food waste, as end-users don't use some of the products they receive. Before we delve into the reasons for this dissatisfaction and waste, it is important to clarify how TEFAP functions, as there seems to be confusion in the CFS on that matter.

5.1.1 How TEFAP Works

- The USDA acquires U.S.-grown food following price parameters and nutritional guidelines.
- State-level TEFAP administrations (in our case, TEFAP Maine) then order products from what is made available to them via a platform, the same way Maine agencies place food orders on GSFB's platform. The vast majority of this food is delivered directly to GSFB warehouses and then redistributed to regional/ local agencies. TEFAP's Maine warehouse in Augusta also stores part of the food.
- There is *some* wiggle room for product choice at the state level TEFAP administration, but not a lot, as the offer and the composition requirements are fairly standardized nationwide. Notably, they must procure food from 7-8 different preset categories.
    - That being said, this still means that TEFAP offers a fairly wide variety of foods, some shelf stable, some fresh (frozen, perishables anyway).
    - There is also a new federal funding program called the Local Food Purchase Assistance (LFPA), which allows state TEFAP administrators to buy local produce. Maine TEFAP has maxed out its allotment for this program.
- Why is it, then, that many pantries and end-users experience discontent from always receiving the same foods that they don't know what to do with, can't eat, or are just tired of eating?
    - According to a Maine TEFAP representative we interviewed, about 25% of the food that pantries receive from GSFB comes from TEFAP, but not all of it is labeled as such. "Less desirable" and "overabundant" products such as dry beans, almonds, or peanut butter are often USDA-labeled, while meats, produce, and dairy are not.
    - This might create the impression that USDA/TEFAP foods are not diversified and overall misadapted to the various populations' needs, when at least part of it is.

5.1.2 The Causes of Food Waste Among End-Users

That being said, explaining how TEFAP works doesn't settle the matter completely, as there are still products that are undesired and not eaten by end-users, which may lead to more waste. It should also be noted that while TEFAP is taken as an example here, many of the causes and solutions presented below apply to all of the food charitable agencies that might offer to end-users.

The causes of the issue of end-user food waste have to do with consideration for cultural and situational appropriateness of the food offered.

- Cultural/habit reasons: for example, some recent immigrant communities reportedly do not trust prepared/transformed products because they don't know what is in them, while some white elderly rural folks aren't interested in eating/cooking dry legumes.
- Exhaustion/fatigue from receiving more of an item than one has appetite or desire for (frequent items cited include peanut butter and almonds).

- Lack of culinary skills: some end-users have never been taught rudimentary cooking skills and cannot be expected to use products that need specific know-how about certain foods or cooking equipment.
- Physical inability to eat the products. For example, some elderly impoverished folks don't have sufficient dental health to bite into hard foods such as nuts and seeds.

5.1.3 Solutions to Prevent End-User Waste From TEFAP Products and Foods in General

- Some users might benefit from education on the use of TEFAP products, as they reportedly sometimes think that they can't give away the food they receive because it has been assigned to them in the context of an assistance program. TEFAP/USDA dictates no such rule. Agency strategies to bypass these issues include suggesting to users that they :
    - Share/give the food to their relatives and neighbors.
    - Or, if not possible, donate the TEFAP food they do not want back to the agency that is helping them, the next time they meet. It then counts as a donation that can be handed to anyone.
    - Or identify and use self-service donation spaces like community fridges and sharing tables.
- TEFAP boxes could include a flyer or some form of mention that people can give away the items they do not want once they receive them.
- TEFAP products could be processed into more attractive or appropriate meals. This would require TEFAP to allow agencies to cook some of the products before redistributing them (or else do the whole circus of donating, receiving back the exact same product, cooking it, and then redistributing it again).
    - Agencies can also distribute pamphlets containing recipe ideas to help users familiarize themselves with new foods or add some variety. This can help with cultural relevance as recipe ideas can be used to transform unwanted foods into substitutes for food that are used in a given cultural dish.

5.2 Dignity and Access

Another part of the surplus food redistribution puzzle is food insecure people going to redistribution points to acquire the food. This means thinking of removing as many of the barriers that might exist between them and food redistribution spaces. Some are social and cultural, some are logistical.

De-stigmatizing and Making the Food Distribution Experience As Pleasant As Possible.

- For many, resorting to hunger relief programs and surplus food redistribution is a stigmatizing experience, as individual autonomy and self-reliance are pervasive cultural norms in our society. This stigma is sometimes made worse by agency staff and volunteers who treat end-users in demeaning or infantilizing ways.

- That is why being welcoming, compassionate, and non-judgmental of end-users' situations and circumstances is important.
    - The faces of poverty and food insecurity have changed a lot and are more diverse. From the perspective of many staff and agency leaders we interviewed, some people may “seem rich” or take “more than they should”, but it shouldn’t matter. The agencies’ mission is to provide food for everybody regardless.
        - In that perspective, it might be more harmful to donate less food or to fewer people out of fear of donating to a few “undeserving, not poor enough”, rather than accept that people with varying degrees of hunger will use charitable agency services.
        - In any case, one can doubt that the reason why few financially secure people come to food pantries is that they are not allowed or are “poor enough”; nobody goes there “for fun”.
        - Moreover, as mentioned before, there is more surplus food available than there are mouths to feed. So the challenge shouldn’t be to gatekeep access to surplus food as much as to find ways to source more.
- Another complementary strategy is to organize multiple social activities on the same day so that it isn’t obvious that a user is coming to the agency to receive a food box. Maybe they are there because there is a community meal or some other type of event.

Free Choice Distribution Models: Less Stigma, Less Waste

Giving end-users a choice over what products they take and which they don’t equate to a more dignified experience and probably causes less waste because people will tend to pick items they intend to eat.

- This can be done simply by laying out the products in a way that end-users can see them and choose.
- It can also be done via more elaborate practices, like affordable markets.
    - The visual and social aspects of the user experience matter as much for food charity end-users as it does for users in any other business or public space. In that regard, some agencies here and abroad are fighting the stigma through customer-like experience: they set up very affordable and pleasurable grocery/market experiences with shelves, signage, and appealing presentations, and calling users customers.
    - Affordable redistribution such as “pay what you can” market models allow end-users to feel more empowered by contributing something in exchange for the food they get, instead of receiving something unilaterally, which places them in a position of dependency and powerlessness.
- That said, adapting distribution to local geographies and means of transportation can sometimes be challenging.
    - Many pantries and agencies in more densely populated areas can organize free-choice models where people walk in and choose products.
    - Some pantries in more rural areas opt for a more “drive-thru” approach and hand out grocery bags or boxes to users directly in their car, for efficiency and scheduling reasons.

- That being said, a free choice model is not necessarily incompatible with car-dependent locations. Some seem to offset the “inefficiency” of the free choice model (less output) by being open more often than other drive-thru models. This then leads us back to matters of capacity and growth (see section 4.3).

5.2.1 Understanding Who the Users Are

For a charitable food agency to be accessible, it must understand the circumstances in which the populations it serves live. This goes back to the importance of acquiring data on end-users who do use an agency’s services, the ones who don’t, and why (see section XX on data collection). Agencies can gain such understanding by asking questions like: *where* are they, *when* are they available, and *what* can they eat.

Who are the users

Newly arrived immigrant households are more present in Maine now and might experience difficulties accessing food redistribution agencies if they can’t understand the information communicated to them in those places. Overcoming language barriers can be achieved by:

- Translating pamphlets and signs that an agency normally displays in languages that are commonly spoken among immigrant end-user communities in its area.
- Soliciting multilingual volunteers (e.g., university students or other end-users) to help end-users navigate services.
- When volunteers have sufficient digital literacy, use instant translation with smartphones and other digital tools.

What can users eat

Through the case of TEFAP food presented above, we have already touched on the cultural relevance of foods. It has many facets:

- Many tend to think of cultural relevance as a matter specific to ethnic minorities and their specific needs and culinary cultures. Efforts to better accommodate immigrant culinary cultures should be maintained and bolstered while also acknowledging that any human community has a culinary culture, including American-born or Maine-born food-insecure folks. It all comes down to understanding what populations are using charitable food agencies’ services, and trying to adapt to their culinary culture, no matter what it is.
- Cultural relevance is also an opportunity for better redistribution. A product that is undesirable to some might be interesting to others. Therefore, knowing the culinary habits and cultures of various end-user populations may help with redistribution strategies.
    - Therefore, offering culturally relevant foods is facilitated by a strong network of collaborators (See section 3.4 for an example of organizations exchanging products that best fit each’s community needs).
- As mentioned before, transforming undesirable foods into meals can help make them culturally relevant.

Access to cooking equipment also dictates what end-users can and cannot eat:

- While fresh produce is very valuable, redistributing vegetables that cannot be eaten raw will cause issues to any individual or family that does not have the means to cook them (e.g., homeless people, but also those who live in hotels/motels or other temporary arrangements).
    - In that regard, from 2020 to 2023, Maine has seen a 103% hike in its homelessness population[25].
- Pantries must enquire as much as possible about the living situations of their end-users, and try to adapt their product offer accordingly with appropriate processing, cooking, and packaging.

Changing perceptions around expiration dates:

- Reportedly some end-users voice concerns and grievances regarding the distribution of expiring products, even if they are still safe to consume.
    - Some food banks across the country think that there is a social justice and inequality problem with expecting food-insecure people to accept the "expired" food we give them, while the same isn't asked of financially secure people.
    - Yet, from a food waste perspective, expiration date labeling is a universal problem requiring us to change the perceptions of the whole population regarding food safety. If everybody were invited to change their behavior through policy change and education, for example, ultimately, we could reach a certain level of equality in date perceptions where people wouldn't see certain "expired" foods as a hazard, regardless of their level of food security. Regardless, in the current landscape, food security agencies could develop initiatives to educate people about expiration date labeling with practices such as:
        - Distributing information on flyers with certain "sensitive" items and engaging in conversations with users
        - Cooking meals with "expired" foods for people to try on-site when they come to the agency's activities, and advertising the meals as such to normalize the practice.

When Can They Access Agencies

The face of poverty and food insecurity has changed. Many work lots of hours and still cannot make ends meet. These people might not be able to come to get food if a pantry is only open at midday on weekdays, for example. Pantries need to expand or shift part of their opening hours.

- Reportedly, many end-users go to multiple pantries in a week or a month, and some even travel out of their home county to do so. This is because no single agency can provide for a household's needs for a whole week, let alone a month.
- Yet, in some parts of Maine, most pantries' distribution days are on the same day of the week, which means lots of food is available at once, and not everyone can access all pantries on that same day.

[25] https://www.huduser.gov/portal/sites/default/files/pdf/2023-AHAR-Part-1.pdf

This ties back to the issue of pantry schedule coordination we touched on before, but from the perspective of end-users (see section 4.3.1). How to solve this collective action problem? Who moves their schedule to what day/hours?

- Local leading agencies might be best poised to initiate collective conversations on that matter.
- More broadly, current efforts should be maintained to educate local pantries on the importance of assessing whether their opening hours reach enough food-insecure people.
    - Pantries might have to think of either expanding their opening hours or keeping the same number but shifting it to a more appropriate time of the week.

Where Are They Located

Transportation has a financial and time cost that many vulnerable populations cannot afford because of their living circumstances. Many agencies and reports therefore recommend reaching more food-insecure households by bringing food closer to them.

- This can mean locating refrigeration units in affordable housing locations. These drop-off points make food more accessible by making it available anytime. That being said, they spark some debate over safety, which we will tackle below (see section 5.3).
- Another way to achieve this might be to develop partnerships with local public institutions to use their infrastructure as redistribution hubs.
    - For example, we know that schools are spaces that lots of households use, and frequently so. They can therefore serve as an “organic” hub from which surplus food can be redistributed efficiently.

5.3 On the Practicality, Safety, and Dignity of Self-Service Distribution Locations

5.3.1 Improving the Dignity, the Where, and the When of Food Redistribution With Self-Service Locations

Self-service donation and pick-up locations such as community fridges (whether in public spaces or housing units, for example) and sharing tables have proven to be great complementary solutions for both food security and food waste. In a context of scarce volunteer and staff hours,

- They require little work, except for cleaning and maintenance.
- They offer another way to reach people in more geographic locations and/or outside of charitable food agencies' opening hours.
- Their self-service nature allows for a more discrete and dignified experience for users who otherwise feel too much shame to resort to emergency or complementary food assistance.

5.3.2 Food Safety Conversations Around Date Labeling And Concerns About Self-Service Distribution Locations

Self-service food distribution locations (community refrigerators, sharing tables) are legally safe, thanks to the Bill Emerson Good Samaritan Food Donation Act, and many in the CFS would like to see these options be explored more.

- Still, regardless of their protection against legal liability, the perception of the food safety of self-service drop-off points among CFS leaders and workers is not as consensual as one might think.
    - Some people are not comfortable with this type of redistribution because nobody controls the quality of what is being put in, which leaves the door open to ill-advised or malicious donations from unidentifiable individuals.
    - Moreover, they wouldn't want to be personally responsible for unwillingly harming someone with products *they* have put in. This would be adding insult to injury for vulnerable populations, to begin with.
    - Considering the uneven quality of the food brought to self-service points, doubts and concerns have been expressed regarding their potential for improving end-users' dignity.

The conversation around the safety of self-service food donation/distribution points might benefit from engaging with the conversation on expiration dates policy reform, as there is an overlap between the two: they both address concerns over the health hazards of using "expired" foods.

Expiration date labeling reform:

- In its current state, expiration date labeling generates waste because there is confusion between different formats (e.g., "exp", "best use by", etc.) and incentivizes the discarding of food that is objectively still safely edible.
- There is a nationwide (federal and state-level, including Maine) trend of reform proposals to address this problem. These proposals don't ask to do away with any type of date labeling. In Maine, they rather propose a voluntary opt-in model that would use both a "best by" and a "use by" date.
    - That being said, this format has its problems. As it stands, its voluntary nature creates a risk of only multiplying the variations in date formats, which would create more confusion. Moreover, it does little to solve the social justice issue of having a category of people (i.e., vulnerable, food-insecure people) who are given less "fresh" food than others, instead of "expired" foods.
- Moreover, there are also calls for educational efforts to encourage consumers and donors to rely more on their senses (look, smell, taste) to assess whether a product feels edible or not and to judge when expiration dates are important (e.g. meats, fish, and poultry products) and when they are less important (e.g. canned and dry goods).

In sum, when comparing the two conversations, it seems one side calls to relax regulations around labeling that are deemed confusing and over-precautious in terms of safety, to the benefit of reducing food waste. On the other side, some express concerns over the safety

hazard that unregulated and unsupervised locations represent, especially for vulnerable populations, despite offering more opportunities to reduce waste. The former argues that everyone needs to be taught to judge for themselves, while the latter claims that exposing end-users to food safety risks is a moral problem. In what ways are expiration dates and self-service locations different? Do vulnerable populations need specific food safety precautions compared to the general public?

Comparing Expiration Dates and Self-Service Locations

First, the difference between risks stemming from self-service food distribution and risks stemming from businesses or institutions might be a matter of degree, rather than two completely different categories of situations.

- Self-service food locations are somewhat riskier than commercial/institutional distribution points because they lack regulation and control. But no situation removes all risks.
- Whether it's in small businesses, corporations, public institutions, or charitable organizations, every step of food handling and processing also represents a risk of generating food safety hazards, despite food safety protocols and regulations. Malicious intent, negligence, and unforeseen food safety problems exist in all types of organizations (e.g., E. coli outbreaks, cold chain handling malpractice, mischievous employees inserting dangerous objects in commercial food preparations, etc.).

Second, some of these risks are then inevitably passed on to consumers, who have always been required to assess the safety of some of the food they acquire. It is in good part this basic skill (look, smell, taste) that makes people throw away some of their food, and keep the rest.

- Food safety assessment is a skill that everybody develops to a degree, regardless of their socioeconomic situation. For example, individuals sometimes cook meals and buy products, forget them in the refrigerator for multiple days, and then have to assess how safe they still are and whether they should be disposed of.
- In that light, food that is sitting in a residential refrigerator might need the same kind of safety assessment as that which food sitting in a self-service location needs, although not as frequently or thoroughly.

In this way, safety concerns about self-service distribution of surplus food also tie back into matters of dignity. Although it is well-intentioned, preventing food-insecure individuals from having to bear the incurred risk of unsafe foods and the responsibility to assess them also results in negating their capacity for judgment. Part of the experience of food insecurity is having limited or no opportunities to experience freedom of choice when acquiring food. In that regard, this experience is not improved by deciding in their place that they should not have access to foods - often nutritious - that they could have used to alleviate their hunger.

That being said, none of this changes the fact that vulnerable end-users experience inequality by having to sort through and poke around more dubious foods in those locations, while financially secure people don't. If poverty were not as pervasive as it is today, more people could access fresh food in stores instead of having to assess the safety of "secondhand" food.

Yet, would this solve the issue of food waste? This is the last question this report will touch on (see section 6).

Improving the Safety of Self-Service Distribution Points

Self-service locations can entail more food safety hazards for end-users, and no charitable organization is obligated to use them. That being said, there may be ways to preserve the good aspects of self-service (i.e., increased geographical and schedule access, freedom of choice, less stigma) while mitigating the bad aspects (i.e., higher food safety risk). There are multiple supplementary precautions to choose from to make self-service points safer. Here are a few examples:

- Only accept donations from pre-authorized donors, evaluated with criteria determined by the entity managing the distribution point.
- Include a visible disclaimer recommending that users with food allergies are exposed to increased risk if they decide to use the refrigerator.
- Include a visible logbook where donors can:
    - Identify the origin of their donation (e.g., “lasagna tray from x event”), or be requested to do so by the entity that manages the distribution point.
    - For cooked products, share an ingredients list, or be requested to do so by the entity that manages the distribution point.
    - Provide a drop-off and a production date for cooked products, or be requested to do so by the entity that manages the distribution point.
- Restrict/control the types of food that can be donated. E.g., the freshness of prepared foods may be harder to assess (e.g., a tray of egg sandwiches that stayed at room temperature for a whole day) compared to fresh produce.

5.4 Policy and Guidelines Recommendations :

- Relax safety regulations and guidelines around self-service redistribution points:
    - Some charitable food organization leaders wish FA and GSFB to relax their regulations regarding where their food can and cannot be redistributed so that they can expand their end-user reach.
    - Feeding America and Good Shepherd Food Bank partner agencies are required to comply with certain safety regulations and guidelines (e.g., redistribution points must be locked/lockable, supervised by staff when they are open, and food must be redistributed to eligible users).
        - This creates situations where some food - a crate of zucchini squash, for example - can't be distributed in certain non-compliant locations, while another crate of that very same product and freshness level could be distributed because it was acquired outside of FA/GSFB partnership agreements, without any apparent food safety risk.
        - This means that, if there is surplus food at the end of an agency's weekly opening hours, they can't bring the food to locations that are non-compliant such as sharing tables or community fridges.

        - As a result, some agencies resort to buying produce out of pocket to run certain activities/events or programs, while some of their donated produce is at risk of expiring because it cannot be distributed soon enough.
- Eligibility Regulations for charitable food agencies:
    - Some regulations about end-users' eligibility (e.g., income thresholds; having a "sufficiently insufficient" income level) restrain the amount of rescued food that pantries/banks can redistribute.
        - One can doubt that the reason why few financially secure people come to food pantries is because of those rules; nobody goes there “for fun”.
        - It may be more harmful to exclude potential end-users from services they would have wanted and needed than it is to let other individuals access these services despite being in a somewhat more secure situation.
- Encourage food waste reduction by advocating better poverty relief/buying power policies. This will also contribute to offering a dignified consumption experience to all.
    - Grocery stores won’t necessarily waste less because they will still want to display full shelves, which will still lead to waste. But there will be less waste from the extra steps of handling so much surplus food to a food bank, and then to a pantry.

6. Ending Poverty and Hunger, Ending Food Waste, and the Charitable Food System's Role in Our Society

The charitable food system exists at the intersection of the two major contemporary societal problems of hunger and food waste, but does not address their root causes. Hunger is a matter of poverty, while food waste is a matter of overproduction and overconsumption. Still, in the context of the current advocacy push to alleviate hunger by ending poverty, one might ask what impact solving hunger would have on the CFS and food waste.

In a world where we mostly depend on money to acquire food from private businesses, hunger is fundamentally a matter of economic poverty, meaning having insufficient buying power relative to the cost of living (housing, utilities, transportation, and other basic necessities). This is acknowledged by many in the charitable food system as much as in policy and research spaces here and abroad, who advocate for anti-poverty measures as a way to end hunger. These measures consist of giving people the financial means to sustain themselves, whether it's by direct financial aid, cost-of-living support measures (e.g., rent price control), or minimum wage policies, for example.

In an ideal scenario where poverty would become a marginal phenomenon in America, the need for a charitable food system would drastically diminish. In that context, there might be some waste reduction from not relying as much on the charitable food system to distribute food, insofar as any extra step of food handling and transportation is bound to create waste. There might also be some waste reduction stemming from the fact that more people would have the means to eat their fill. But overall, food-insecure people would essentially shift from acquiring food from charitable agencies and hunger relief programs to acquiring food from grocery stores and other businesses like the general population.

In that sense, eliminating poverty would represent an immense improvement in people's food security, overall health, and dignity. But it would not by itself address the root causes of food waste, i.e., overproduction and overconsumption. As mentioned before, the amount of uneaten food that is wasted in America contains more than four times the number of calories needed to feed food-insecure Americans. That is to say that if every food-insecure individual in the country ate what they needed, there would still be too many surpluses. There is more food than what people could eat nationwide, geographic and nutritional disparities put aside.

Currently, the CFS mostly exists *because* of poverty, not because of food waste. While there are ways to improve its food rescue efficiency, which this report has tried to put forward, it was not designed as an outlet for food surpluses. As such, a significant portion of the CFS is first and foremost aiming to feed people, not save food. And this goal results in some agencies buying fresh food to fulfill their mission instead of prioritizing the sourcing of surplus food,

and/or wishing for more consistency and predictability in the quantity and types of food they receive, which is hardly compatible with a food rescue mission that will always mean adapting to donation fluctuations.

Therefore, while charitable food agencies can certainly play a role in reducing food waste and valorizing surplus food, we should not lose sight of the fact that there is more food to valorize than there are stomachs to digest it, because the core problem is food overproduction and overconsumption.

7. Possible Next Steps to Better Identify Food Rescue Improvement Opportunities For Maine's Charitable Food System

Although lengthy, this report leaves many stones unturned. By way of opening, here are some fields of inquiry that further research could explore to better understand the potential food rescue and redistribution through Maine's charitable food system.

Assess what *types* of surplus are available in Maine, and *where*:

- We know from the latest Maine food waste generation study that lots of food is wasted, and in which sectors. But it is still unclear how much of that waste is edible, and more importantly, how much is actually sought after by charitable organizations and end-users, or for nutritional, cultural, and logistical reasons (e.g., lots of waste from restaurants and grocery stores comes from bread and bakeries, which are already saturating charitable food agencies).
    - Access to this surplus is also worth assessing, given the limited resources (labor, time, energy) that actors of the system have for sourcing food.
        - Some surplus food is simply not desired by sufficient people, while some is desirable but might be too difficult to obtain (e.g., fresh food that is attractive but in small quantities, dispersed and far apart from one another).
    - Quantify the "saturation rate" of pickup schedules for surplus food in bigger banner grocery stores. Of all the main GSFB/FA-affiliated donor partners in the state, how many have pickups scheduled seven days a week? How many more pick-ups could be fitted in to help increase surplus valorization?
        - This would help assess what room there is for improvement for those partnerships, and whether more resources should be allocated.

Survey Households about their donation practices.

- How much of the actual household food waste is edible surplus?
- When households donate food to charitable organizations, do they mostly donate their food surpluses, or food they bought with the intention of donating it (e.g., food drive events)?

Survey actors of the charitable food system.

- Would Maine charitable food agencies be ready/willing to manage a significant increase in sporadic, unplanned, *surplus* household food donations if it were to materialize?
- How do Maine charitable food agencies apprehend the increase in donations coming from businesses following a food waste ban?

- Since many agencies in the CFS prioritize food security and feeding people over food rescue, maybe there is an education/communication opportunity about how food rescue can benefit agencies.

Produce a comparative food waste ban policy analysis *about its consequences on the CFS.*

- Despite the current financial and tax incentives, many businesses still don't make donations because it's too burdensome, they are still wary about the liability potential, and they might not understand the financial advantages.
- For better or worse, a ban will force those types of businesses and organizations in the CFS. Then, the question is, will they maliciously comply or comply in bad faith (e.g., dumping inedible, wasted food on food security and food rescue agencies)?
    - If so, what mechanisms can adequately enforce a ban while ensuring that the CFS won't suffer the consequences?

Produce a cost/benefit analysis on food rescue service technologies implementation in Maine.

- Make more or less drastic changes to an organization's operations to implement FRSs,
- Or invest in the improvement of the large infrastructure that is already there (e.g., add cooling space in a warehouse, move materials to a larger warehouse…).
- The two could be done at the same time, but the question needs to be asked considering the finite financial resources available.

Assess the potential impacts of ending hunger and poverty on food waste.