



Food redistribution in Germany: implementation and influencing factors

An empirical study based on "Tafel" food banks in Lower Saxony

Murielle Frerk, Christina Lünenborg, Sabine Bornkessel, Melanie Speck

Abstract

In Germany, large amounts of food are wasted, while at the same time many people are affected by food poverty. Food distribution is one possible way to mitigate both of these issues. To date, there has been a lack of reliable data that would allow conclusions to be drawn about the processes behind food redistribution and the factors that contribute to its success. This article presents some initial results on how food distribution processes are currently organized, the associated challenges and the factors influencing food distribution, based on "Tafel" food banks in Lower Saxony. The article particularly focuses on legal issues as a potentially limiting factor. One important legal aspect is the way Tafel food banks are currently categorized: as food businesses – with all the requirements that this categorization implies. Therefore, the focus of this article is not assessing the quality of the donated food, but rather examining the processes behind food redistribution. The qualitative data was collected using a mixed methods approach. In order to ensure that food redistribution remains viable in the future, it is necessary to tap into new potential sources of donations all along the value chain. One way of doing this would be to take a closer look at previously untapped sources of donations, such as catering outside the home, or underutilized sources, such as primary production. However, above all, the article argues that changing the way legal issues are handled will be key to increasing the amount of food that can be donated. It shows that the processes used by the various Tafel food banks are very heterogeneous, which means that tailored solutions are required.

Citation

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Murielle Frerk, M.Sc.¹

Christina Lünenborg, M.Sc.

Prof. Dr. Sabine Bornkessel

Prof. Dr. Melanie Speck

Hochschule Osnabrück

Agrarwissenschaften und Landschaftsarchitektur

Am Krümpel 31, 49090 Osnabrück

¹ m.frerk@hs-osnabrueck.de

Introduction

Reducing food waste and alleviating food poverty are increasingly important topics in current public discourse, including political discourse and scientific research [1]. According to estimates, around 3 million people in Germany are at risk of material food poverty [2]. The poverty rate in Lower Saxony is 17.9%, which is above the national average, and certain population groups increasingly find themselves without the financial means to eat healthily [3]. At the same time, every year, Germany alone produces 11 million metric tons of food waste [4]. Around 6.7 million metric tons of this food waste is avoidable food waste. 2.8 million tons of this avoidable food waste is generated in primary production, food processing and food retailing [5]. Redistributing surplus food that is still edible and fit for consumption is one possible way to reduce avoidable food waste while simultaneously alleviating food poverty. According to the food waste hierarchy, returning surplus food to the food value chain for human consumption is the next priority after preventing food waste [6]. Redistributing food for human consumption can also help to save resources and reduce environmental impacts in the long term by reducing primary energy consumption and greenhouse gas emissions [7, 8]. Organizations dedicated to the redistribution of food are increasing in number [9]. These include food banks, which have set themselves the global goal of reducing food waste by redistributing surplus food to socioeconomically disadvantaged households [10]. Similar organizations have been active in Germany since 1993 and are known as "Tafel" (meaning "table"). Today, the Tafel food banks are run by the umbrella organization Tafel Deutschland e.V., and together they distribute a total of around 265,000 metric tons of rescued food to up to 2 million people each year [11]. However, Germany's food banks are organized



differently from food banks in other countries. Examples of the differences include the fact that food banks in other countries receive government support and they often deliver large quantities of food to other charities [12]. Studies on the nutrition provided by food banks in various countries have shown that they do not provide sufficient energy [13] or nutrient-dense foods [14], especially fruit, vegetables and dairy products [13–16]. Even when the energy supplied is adequate, the supply of vitamins and minerals remains inadequate [13]. The food offered by Tafel food banks in Germany is not intended to meet all nutritional needs – instead, it is meant to be a supplementary source of food [11]. Initial research findings indicate that the food distributed by Tafel food banks can reduce food insecurity [17, 18]. The number of Tafel food banks varies from region to region, and only a portion of the population affected by food poverty uses the services they offer [14].

Food retailers are the Tafel food banks' largest source of donations, providing around 71% of all the food collected [19]. The most frequently donated food items are fruit and vegetables (41.4%), bakery products (19.9%) and dairy products (13.4%) [19]. In recent years, various waste reduction measures (such as apps and discounts) have led to a decrease in the amount of surplus food along the value chain [9, 20–25], with the result that fewer food donations are being made to organizations such as the Tafel food banks [26]. However, initial research findings indicate that there is still untapped potential for food donations along the value chain [27]. From a legal point of view, in Germany, Tafel food banks and similar organizations are considered food businesses¹ and must meet the requirements that go with that classification, e.g., with regard to food-related declarations and labeling [28]. The requirements for food-related declarations and food labeling serve to ensure that consumers are informed and protected, for example by indicating the amount contained in the package and any allergens that may be present. In addition to content requirements, there are also formatting requirements, such as font size. If the requirements are not met, the food is not allowed to be placed on the market (which includes food banks) [29].

Food bank supply chains also differ significantly from commercial supply chains. This means that food banks face particular challenges, such as insufficient and irregular food donations, declining donation volumes, the short shelf life of donated food, rising transportation costs, a lack of networking between the various initiatives, limited IT infrastructure, and the limited availability and varying qualifications of volunteers [30, 31]. Crises such as the COVID-19 pandemic can exacerbate such challenges and lead to an increase in the number of clients seeking help, for example [32, 33]. Furthermore, crises can limit the activities of food banks and even force distribution points to close [32]. Experience to date has shown that food banks in different countries respond to challenges of various kinds with very different strategies [32]. One way of countering the decline in food donations would be to improve storage capacity and logistical efficiency by optimizing food banks' supply chain networks [26, 30, 34, 35].

Food redistribution is of particular environmental and social importance because of its potential to save resources and alleviate food poverty. It is therefore important to support food redistribution efforts so that more food can be redistributed. This leads to

the following research questions:

Q1: How can the donation trends at Tafel food banks in Lower Saxony be quantified?

Q2: What are the obstacles to food redistribution through Tafel food banks in Lower Saxony?

Q3: What factors and conditions influence food redistribution, based on a study of the Tafel food banks in Lower Saxony?

Methodology

The present study is based on a mixed-methods approach consisting of a review of the existing literature, expert interviews with representatives of Tafel food banks in Lower Saxony, a survey of representatives of Tafel food banks in Lower Saxony, and focus group discussions with representatives of Tafel food banks and value chain stakeholders². Transcripts [37] were prepared and analyzed using the Mayring method of qualitative content analysis [36]. The Tafel food bank representatives³ and the value chain stakeholders participated in the research process and were involved in the creation and final formulation of the recommendations for action (♦ Figure 1). Initially, desk research was conducted to gain an overview of the topics of food waste, approaches to reducing food waste, and Tafel food banks in Lower Saxony and across Germany. Existing literature and the websites of the Tafel food banks were examined for this purpose. The background knowledge gained from this preparation provided the foundation for the guideline-based

¹ According to Article 3 of Regulation (EC) No 178/2002, food business means “any undertaking, whether for profit or not and whether public or private, carrying out any of the activities related to any stage of production, processing and distribution of food” [28].

² The respondents who took part in the expert interviews were different from those who took part in the focus group discussions. Various representatives of the Tafel food banks in Lower Saxony also took part in the various focus group discussions. Only one Tafel food bank representative took part in all the focus group discussions. It is unclear whether the survey participants also took part in the focus group discussions or the interviews, as the questionnaire was answered anonymously.

³ This study focused exclusively on Tafel food banks. Other initiatives, such as Foodsharing, were not included in the data collection.



expert interviews. The nine guideline-based expert interviews with representatives of Tafel food banks in Lower Saxony were conducted between May 2022 and December 2022. The aim of these interviews was to gain insights into the current situation of the Tafel food banks and to understand the processes behind their activities.

To validate the results derived from these interviews as an initial step, a survey was then conducted at the general meeting of the Lower Saxony and Bremen regional association of Tafel food banks in December 2022. A partially structured questionnaire with ten questions (four closed questions, two open questions, four semi-open questions) was used. The questionnaire included questions about the origin of the food donations and trends in the amount of food donated. 27 Tafel food banks took part in the survey⁴. The partially structured questionnaires were analyzed using descriptive statistics [38].

The results of the expert interviews and the survey provided the basis for a total of four focus group discussions. Transcripts of these discussions were created and analyzed using Mayring's method of content analysis [36, 37]. The first focus group discussion involving four representatives of Tafel food banks in Lower Saxony in February 2023 focused on the challenges currently facing the Tafel food banks and possible solutions for improving and supporting food redistribution (transcript: 190,293 characters). In the three subsequent focus group discussions, representatives of the Tafel food banks were joined by value chain stakeholders, including primary producers, food logistics companies and food retailers. The topics of the focus group discussion in May 2023 were the redistribution of food in general and the measures that have already been successfully established for this purpose, as well as areas with potential for improvement and areas where support is needed (transcript: 126,729 characters). The topic of the focus group discussion in October 2023 was the legal aspects of food re-

distribution (transcript: 131,280 characters). Two lawyers were on hand during the discussion to answer questions about food-related legislation as it applies to food redistribution. Topics discussed in the focus group discussion in February 2024 included further ideas for unlocking food redistribution potential and a critique of the recommendations for action derived from the previous results (transcript: 123,155 characters).

The data collected served as the basis for a qualitative network analysis that depicts and describes the factors influencing food redistribution. A positive impact means an increase in the amount of food donated and an increase in the ability of the Tafel food banks to redistribute these increased food donations.

The methodology used for the data collection and analysis is shown in ♦ Figure 1.

⁴ The Lower Saxony and Bremen regional association of Tafel food banks includes 106 Tafel food banks. Thirty Tafel food banks were represented at the regional association's general meeting.

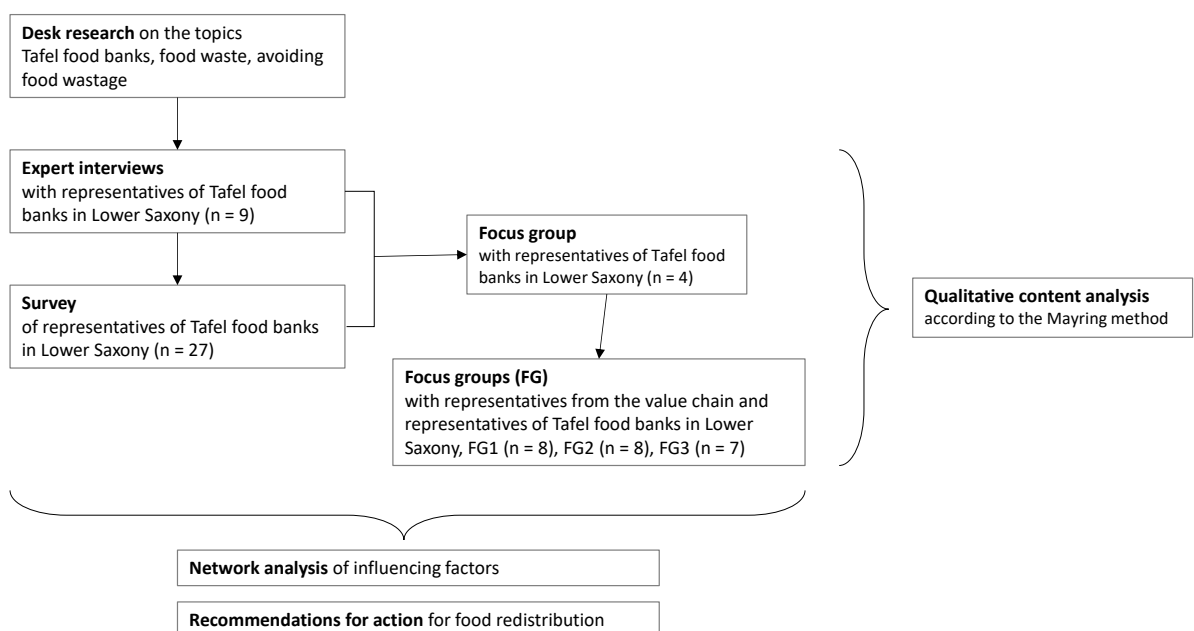


Fig. 1: Methodology for data collection and analysis (authors' own presentation)



Results

Structures, processes and differences between the Tafel food banks in Lower Saxony (interviews)

The results of the interviews with representatives of Tafel food banks in Lower Saxony show that Tafel food banks differ greatly in their structures and processes. For example, the Tafel food banks differ in terms of the storage capacity they have available to them. The way food is distributed also differs. For example, some Tafel food banks distribute pre-packaged boxes, while others allow users to select the food themselves when they pick it up. There are also differences in how the Tafel food banks are funded⁵. For example, two of the nine respondents stated that their organization received financial support from the local authority. During the interviews, the respondents reported that food retailers were their largest source of food donations in terms of proportion. Six of the respondents mentioned primary producers as a source of donations⁶. The majority (n = 5) reported a decline in the amount of food donated. With regard to food groups, respondents stated that fruit and vegetables, as well as baked goods, were donated most regularly and in the greatest quantities. According to the respondents, dairy products are often donated, whereas non-perishable foods such as frozen products, dry goods and canned goods are rarely donated. In conclusion, the survey shows that Tafel food banks are organized in very different ways, resulting in a need for individual or customized solutions. Due to their different infrastructures, not all Tafel food banks can accept large quantities of food donations that require refrigeration, for example, even if they have enough clients to make use of such donations.

Quantitative overview of food donations (survey)

As part of the quantitative survey, respondents were asked to name the five main sources of food donations to their Tafel food banks. All respondents named food retailers as a main source. About half of the respondents mentioned wholesalers and primary producers. Logistics centers were mentioned by six respondents, and food processing plants by five. None of the respondents men-

tioned out-of-home catering establishments as a major source (♦ Figure 2).

The respondents were also asked how they would describe trends in food donations in 2022 compared to 2019 (before the pandemic began). In line with what was previously mentioned in the interviews, around half (n = 13) of the respondents stated that food donations had decreased. Eight of the respondents indicated a decline of between 20 and 40%⁷. Nine respondents stated that this was because the amount that each institution was donating was lower. Three other respondents selected the option "Other" from the answer options⁸ and stated that food retailers in particular were providing fewer donations, for example because they were running special offers or selling off surplus stock or products that were about to expire. Five respondents reported an increase in the amount of food donated. The reported increases in food donations ranged from 10 to 30%⁹. Seven respondents stated that the amount of food donated had remained constant.

The respondents were also asked to indicate which foods they would like to be able to distribute to their food bank clients more frequently. Canned and dairy products were mentioned most frequently, followed by sides (i.e., carbohydrates), fruit and vegetables, and dry goods (♦ Figure 3).

Food redistribution challenges and opportunities

The focus group discussions identified challenges and solutions, which are shown in ♦ Figure 4. The challenges relate to aspects of management, storage and logistics and include, for example, the demands placed on Tafel food banks, even though they operate on a voluntary basis. The storage capacity and logistical capabilities of some Tafel food banks

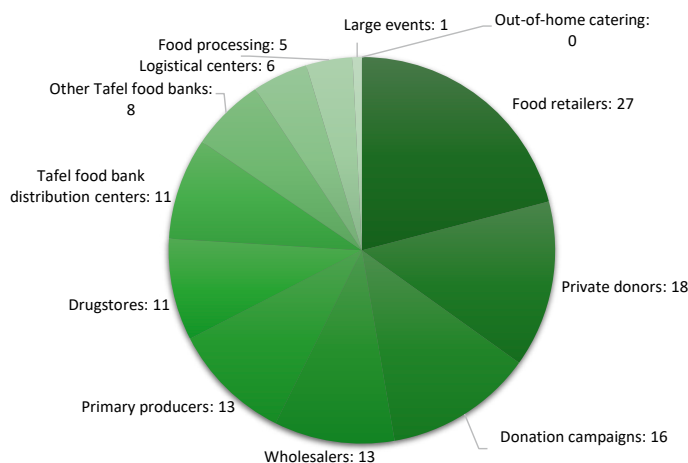


Fig. 2: Statements about the major sources of food donations (mentions given as absolute frequencies, multiple mentions possible, n = 27) (authors' own presentation)

⁵ The surveys did not reveal any differences between Tafel food banks that were independently run and those that were not.

⁶ With regard to primary production, it was noted that seasonality was a factor and that donation types and amounts changed and fluctuated accordingly.

⁷ This was an open question in which the respondents entered the percentage themselves.

⁸ The answer options were: "The number of donors is declining", "We are receiving fewer donations per donor", "Increasing competition from food rescue initiatives or start-ups" and "Other".

⁹ Respondents were not asked about the reasons behind the increase in the amount of food donated.



limit their ability to accept food donations. Because Tafel food banks are run by volunteers, they sometimes see offers of financial support as a threat to their independence. Different food donations require different levels of effort depending on their condition, quantity and type. For example, sometimes a large proportion of the food has to be separated out before the rest can be donated because it is in poor condition. Finally, there are some demographic challenges, because the majority of the volunteers are older and there is a lack of younger volunteers. In addition, more and more people are making use of the Tafel food banks, which ultimately

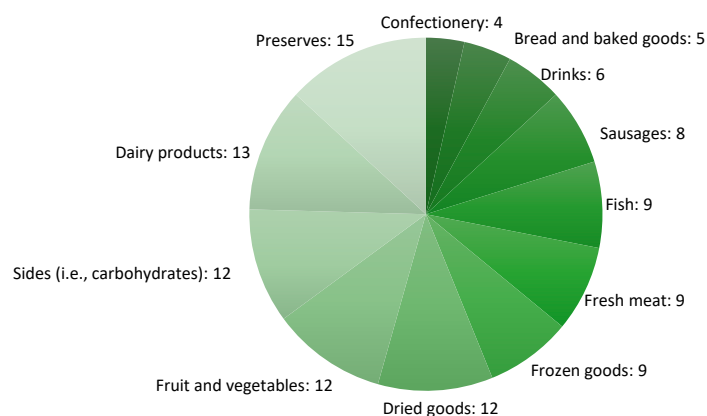


Fig. 3: Foods the respondents would like to be able to distribute to their food bank clients more frequently (mentions given as absolute frequencies, multiple mentions possible, n = 27) (authors' own presentation)

leads to more work and effort for the volunteers. The approaches to solving these problems can be categorized as internal or external. Examples of internal solutions include switching to more professional logistical and warehousing operations, which would allow central, Tafel-owned distribution centers to accept more and larger food donations. Keeping records of clients could help to ensure greater transparency and provide Tafel food banks with an objective basis for deciding whether to stop accepting new clients. Public relations campaigns could be a solution for attracting more volunteers and food donations. External solutions include political support, for example in the form of legal changes, and financial support, for example in the form of tax relief.

In addition, ideas for new ways of donating food for redistribution were gathered and discussed with representatives from the value chain. There are two types of untapped donation potential: donations from previously identified donors who do not donate due to obstacles, and donations from previously unidentified donors. Examples of reasons why food is not donated include labeling errors or products that are close to or have passed their sell-by date. The results of the focus groups show that both the donating institutions and the Tafel food banks are uncertain about legal issues and that legal constraints can restrict the donation of food due to legal aspects of food marketability, even if the food does not pose a health risk (e.g., due to incorrect labeling of fat content). This suggests that there is potential for more donations

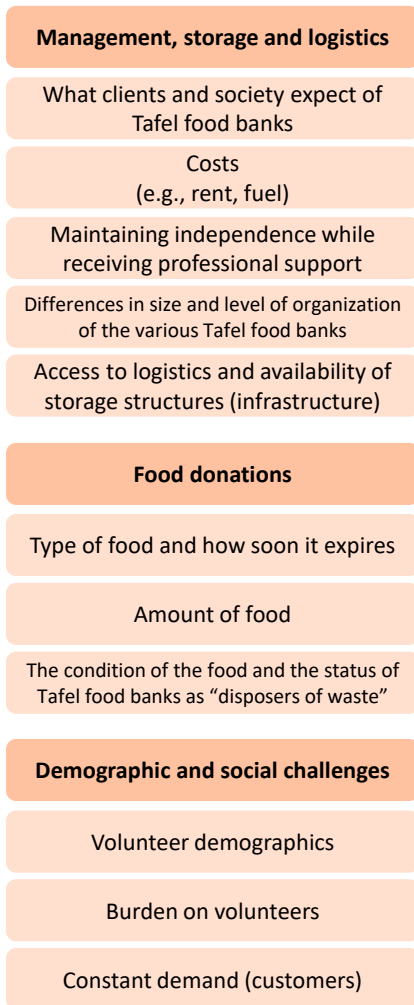
here and that this food could be made usable by simplifying the legal framework. Furthermore, the study revealed that the network of institutions donating food could be expanded and that the amount of food donations for redistribution could be increased by including new institutions in the network. New sources of donations that could be opened up include food delivery services or previously untapped sources of donations from out-of-home catering, such as surplus on-board catering from cruise ships and aircraft.

Draft definition of the term “food redistribution” and influencing factors

The German term used in this article, “Lebensmittelweitergabe” (meaning “food redistribution”), has not yet been defined, but it was used frequently in the “LeMiFair”¹⁰ project, a project focused on “fair food sharing instead of wasting”. Therefore, an initial definition was developed on the basis of the empirical data, with the focus being on reducing food waste. According to this definition, “food redistribution” is the redistribution of surplus food that would otherwise be discarded. It differs depending on the intention behind it, which may be ecological, social or economic in nature. In this context, a distinction is made between commercial and non-commercial food redistribution. In commercial food redistribution, there is an intention to make a profit. Non-commercial food redistribution may require a small fee in return for the donation, but this is not intended to make a profit – only to help cover costs. In addition, non-commercial food redistribution describes predominantly charitable food redistribution that relies on volunteers. Another differentiating factor is the degree of organization, i.e., whether food redistribution takes place through institutions or self-organized groups. For example, in the case of food redistribution through institutions, the food is passed from the institution to end consumers via an association such as a Tafel food bank. In the case of

¹⁰ The LeMiFair project was funded by the Lower Saxony Ministry of Food, Agriculture and Consumer Protection (project duration: January 1, 2022 – April 30, 2024). The aim of the project was to identify food waste along various value chains while also identifying ways in which social organizations such as Tafel food banks could be supported.

Challenges



Potential solutions



Fig. 4: Overview of the challenges and potential solutions (authors’ own presentation)

self-organized food redistribution, for example the “Gelbes Band” (Yellow Ribbon) harvest project, the end consumers themselves redistribute the food (♦ Table 1). These definitions can be used to classify and distinguish between different food redistribution systems, such as Tafel food banks, Foodsharing and Too Good To Go. This distinction is relevant given that Tafel food banks and other initiatives such as Foodsharing and Too Good To Go have a common goal – reducing food waste – but Tafel food banks also support people who depend on their help in the form of food donations. Furthermore, the Tafel food banks operate mainly on a voluntary basis, so their organization is fundamentally different. Based on these definitions, food redistribution by Tafel food banks can be categorized as non-commercial, institutional food redistribution with an ecological and social intention.

Tafel food banks in Lower Saxony can be used as an example to identify the factors influencing food redistribution and to depict and describe food redistribution networks (♦ Figure 6). In the food redistribution system as a whole, there is a legal context of rules

and laws that govern its operation. At the local level, food redistribution is influenced by the resources and capacities of the local Tafel food bank. These factors can be categorized further as either internal or external factors. The **internal factors** include the setup of the Tafel food bank itself, i.e., the infrastructure and the available resources such as staff and financial resources. The **external factors** include all aspects indirectly associated with the Tafel food bank and primarily related to the local food redistribution system, i.e., the value chain, local key players and stakeholders (networks).

The legal context

In view of the fact that Tafel food banks are considered food businesses under German food legislation, they must comply with the require-



Food redistribution			
Purpose		Level of organization	
Commercial	Non-commercial	Institutional	Self-organized
is characterized by an intention to make a profit	may charge a small fee to cover costs, primarily volunteer-run and charitable in nature	food is redistributed to end consumers via an organization such as a Tafel food bank	food is redistributed by the end consumers themselves

Tab. 1: Definition of food redistribution according to purpose and degree of organization (authors' own presentation)

ments for placing food on the market that are associated with this status. However, this also means that for example, food with labeling errors that do not pose any health risk (e.g., when the actual amount contained does not match the amount declared), cannot be donated to Tafel food banks and is not allowed to be distributed by them either. These higher level constraints affect all food redistribution processes. However, the focus groups discussed many possible ways of “simplifying” the legal requirements so that more food can be donated, provided that there is no health risk, such as in the case of food with the types labeling errors mentioned above. A legal opinion published after the survey on which this article is based also discusses legal obstacles to food redistribution and suggests solutions. The measures described in this document support the results of the present study and describe, among other things, the concept of a “charitable food business” that is designed to reduce legal obstacles [39].¹¹

Internal factors

The Tafel food bank **volunteers** are a key influence on how much labor is available and how much donated food can be accepted and distributed. At the same time, staffing requirements depend on the quantity and quality¹² of the donated food. The fact that the work is voluntary and the age structure of the volunteers also affect the working hours available. The skills that individual em-

ployees possess also determine where they can be deployed, e.g., only those who have driving skills can volunteer as drivers. Staff can also exert an influence on the network (see external factors), by contributing to its expansion through their own contacts.

Funding and financial support shape the infrastructure of the Tafel food banks, for example through rent subsidies. The infrastructure also depends on the city or municipality, on financial donations and on the users. Monetary donations help to ensure that Tafel food banks can, for example, rent suitable premises or fund the equipment they need, such as vehicles¹³. Local authorities may offer financial relief, such as an exemption from waste disposal fees.

The available **infrastructure** as an internal factor includes storage capacity and logistical capabilities and thus has a direct influence on the type and quantity of food that can be accepted and distributed (acceptance and delivery of goods). It also affects how the food can be distributed, since this depends on the spatial conditions (the premises).

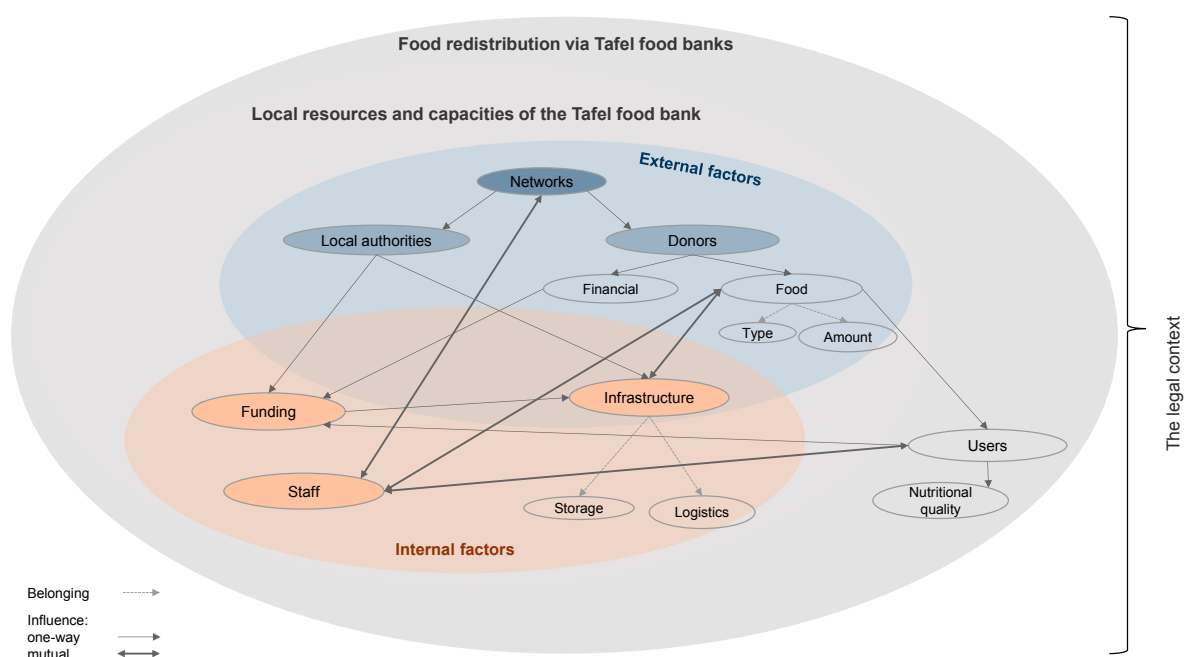


Fig. 5: Factors influencing food redistribution (authors' own presentation)



External factors

The external factors influencing the food banks include their individual **networks**. There are two main types of network: infrastructural networks, which are determined by the infrastructure of the environment in question, and informal networks, which are determined by the managers and staff. Networks and staff members influence each other. On the one hand, staff members can expand their networks through their own contacts and facilitate cooperation with local authorities or associations. On the other hand, a larger network offers more potential for recruiting staff. The infrastructural network can be divided into the sub-areas of local authority and donors.

The **local authority** – or even churches – can provide suitable premises for the storage and distribution of the food. Financial support or financial relief can help reduce costs.

The potential network of **donors** extends across the entire value chain. By donating money, donors can influence the funding available for expenses such as rent, energy and fuel. Donors primarily influence the type and quantity of food donations. For example, goods that come directly from the manufacturer are often available in larger quantities (pallets) than goods from food retailers.

At the **product level**, there is a two-way influence between food donations and infrastructure. On the one hand, the type and quantity of food that can be accepted depends on the storage capacity, e.g., for food that requires refrigeration. On the other hand, the infrastructure needed depends on the food donations that are available. In addition, there appears to be a mutual influence between the amount of food donated and the staff.

The food donated to the Tafel food banks primarily affects the nutrition of the **users**. In addition, the food distributed can have an impact on food literacy, for example when Tafel food bank clients receive unfamiliar foods and then learn how to prepare them. The provision of food influences the socioeconomic situation of the users. This can only be quantified by estimating the monetary value of the food donated. However, due to the limited scope of this research, this aspect was not explored in any further detail in the present study. Users can influence the funding of their local Tafel food bank, for example by paying a small contribution for the food they receive.

Crises such as the COVID-19 pandemic and Russia's war of aggression against Ukraine have an impact on influencing factors, such as staff and donors, and affect the downstream factors, which means they affect food redistribution as a whole.

Discussion

This article describes trends in food donations, the challenges involved in food redistribution, and the potential for opening up new sources of donations. It also discusses factors influencing food redistribution via Tafel food banks in Lower Saxony.

This study has shown that the food retail trade has so far been the most significant source of food donations. Simmet et al. [19] found similar results. In addition, primary production and food processing have emerged as relevant sources of food donations, whereas out-of-home catering is not yet a common source of donations, but it does have potential for increasing them. The empirical surveys show that food donations to Tafel food banks from food retailers have decreased. Reusken et al. describe a similar trend [26] and attribute it to various measures that have been introduced to reduce food waste, such as selling surplus food via apps. This makes it all the more important to tap into new sources of donations. In principle, the empirical results presented here support the view that there is potential for new sources of food donations, however, this potential cannot yet be quantified. The results indicate that there is untapped potential for food to be donated to Tafel food banks. Therefore, the aforementioned potential for donations from out-of-home catering businesses, primary production and food processing should be examined in more detail in order to counteract the decline in the amount of food donations from food retailers.

The challenges identified are consistent with previous findings by Akkerman et al. [30], which identified challenges such as food availability, rising costs and limited volunteer availability. The solutions that have been proposed focus on networking with potential donor institutions and providing the Tafel food banks with suitable infrastructure in the form of storage and logistical facilities. The literature also points out that food banks supply chains would benefit from improved IT infrastructure and data availability [26]. From this, it can be deduced that comprehen-

¹¹ The legal opinion "Identification, assessment and recommendations for action on legal obstacles to the avoidance of food waste and redistribution via food donations", published by the German Federal Ministry of Food and Agriculture (BMEL) in January 2024, includes an explanation of the concept of the "charitable food business", which is intended to help charitable organizations that accept food donations to meet legal requirements by simplifying the associated measures and processes.

¹² The condition of the donated food may necessitate more staff if, for example, food needs to be re-sorted or re-packaged.

¹³ The Tafel food banks emphasized in their responses that financial donations were not used to purchase food, as this would contradict the principle of "rescuing food".



sive professionalization could facilitate the workflows of the Tafel food banks, e.g., through the structured recording of the flow of goods. However, the independence of the Tafel food banks should still be maintained despite this professional support.

Uncertainty about legal issues can also lead to food not being donated. This suggests that there is further potential for increased donations here, provided there is no health risk. Given that food donations are not going to be bought by customers who are making a purchase decision, it could be argued that they should be given special treatment in terms of being allowed to be placed on the market (i.e., made available at food banks).

Capodistrias et al. [32] showed that food banks in various countries adopt their own individual strategies to respond to challenges such as supply shortages. This pattern is also found in the Tafel food banks in Lower Saxony. This means that there are many individual solutions, i.e., measures cannot be applied uniformly to all Tafel food banks in the sense of a “template”.

This study was the first to focus on the processes and factors influencing food redistribution. The results show that there are key influencing factors that can have a positive effect on the amount of food donated, but that these factors often come with clear limiting factors. For example, a good infrastructure can help make it possible to transport and store larger quantities of food, but a lack of volunteers can limit the amount that can be distributed. What emerges is a web of influencing factors that should ideally mesh well with each other to ensure that food is redistributed in a way that meets needs. Finally, food redistribution affects the quality of the clients’ nutrition. In a systematic review, Bazerghi et al. [15] showed that food banks (in the USA, Canada, Australia and the Netherlands) do not distribute enough fruit, vegetables and dairy products to cover nutritional needs. In contrast, Tafel food banks predominantly distribute fresh food such as fruit and vegetables, with baked goods and dairy products being the next most common items [19]. Furthermore, initial results suggest that food redistribution by the Tafel food banks may reduce food insecurity [17]. Taking this into account, it can be assumed that the food offered by the Tafel food banks can have a positive effect on the nutritional quality of the food consumed by the Tafel food bank clients and that it is also relevant from a socioeconomic perspective given rising food prices. No valid data on which to base scientific conclusions about this is available to date. Simmet et al. [17] also point out the need for further studies.

Conclusion and recommendations for action

Food redistribution through Tafel food banks is one way of reducing food waste. Furthermore, it can help alleviate material food poverty. As described in this article, various factors can influence food redistribution.

Recommendations for action in the area of food redistribution along the value chain can be derived from these findings. In order to increase the amount of food donated, new donation sources, e.g., out-of-home catering businesses, need to be exploited and legal clarity needs to be created by simplifying the legal requirements for institutional food redistribution, provided the food is

safe to eat. Furthermore, networking and sharing ideas at the local level should be encouraged to make local resources more available and put them to use. To date, there is no quantitative data on the food redistribution processes. Switching to professional logistical structures to manage the flow of goods should create a more transparent data pool that can be analyzed. This should pave the way for scientific and unbiased data analysis.

Further research should focus on quantifiable data and should examine the results of this qualitative survey and any change in food redistribution resulting from the implementation of the recommendations for action given here, aimed at increasing the amount of food donated. Data collection for future research should be organized at the national level and, unlike this study, not be limited to just one federal state. An independent scientific database should be created for the processes.

The question of whether food redistribution has the potential to alleviate food poverty remains to be answered. In this context, the extent to which the food distributed by Tafel food banks covers nutritional needs could be investigated, e.g., by means of a qualitative assessment of the composition of the food packets given out. Even though fully supplying people with all the food they need is not the aim of the Tafel food banks, a study of this kind could show what role the Tafel food banks are playing in Germany.

Food redistribution via Tafel food banks provides food for socioeconomically disadvantaged households and thus makes a significant contribution to the welfare of the population. This raises the question of whether it is viable for this work to continue to be done by volunteers in the long term, and also raises the question of the extent to which the state needs to continue taking responsibility for providing for such basic needs.

Disclosures on Conflicts of Interest and the use of AI

The authors declare that there is no conflict of interest and that no AI applications were used in the preparation of the manuscript.



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