



Food Bank Rotterdam improved: alternative systems and additional activities



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**Contact person:** Rob Boswinkel

**Commissioner:** Irene Gosselink

**Group number:** 2102A

**Contributors:** Fiona Brodie, Anouk van Duinkerken, Fiona de Mooij, Anna Ratsika, Marije Stoelinga, Karen Woortman

**Coach:** Huub Oude Vrielink

**Academic advisor:** Marga Ocké

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## Preface

Seven weeks ago, we, six students from different backgrounds started this ACT project for Food Bank Rotterdam. All of us were interested in different aspects of food banks, but we quickly came to the conclusion that we were all interested in the needs and wishes of the recipients and volunteers at the collection points. We were all excited to start with this project, and were up for a challenge.

We went through a long process to get to where we are now. As a team we went through ups and downs, but we are very proud of the final product we have produced. For this, we would like to thank Food Bank Rotterdam for its help. Firstly, we would like to thank Rob Boswinkel, the director of Food Bank Rotterdam, for his time and patience, and for providing us with the information necessary for our project. Secondly, we would like to thank Quirin Laumans for the information he provided. Next, we thank Carine Cassauwers, for organising our visits to Food Bank Rotterdam's collection points, and for sending our email interview to the collection point volunteers. Without this, we would not have been able to gather all of the information we needed to provide recommendations. Moreover, we would like to thank the contact persons of the collection points, for allowing us to interview recipients and volunteers. For privacy reasons, their names cannot be mentioned here, but we are grateful that they made this happen. We would also like to express our gratitude to the recipients and volunteers of the collection points for taking the time to answer our questions, and for providing us with the information that made it possible for us to formulate recommendations. Finally, we would like to thank Food Bank Arnhem and specifically Jer Snackey and Betty van den Akker, for taking the time to show us around Arnhem's supermarket style food bank and distribution center.

Next, we would like to thank our supervisors from Wageningen University. We would like to start by thanking our coach, Huub Oude-Vrielink, for his guidance and the regular meetings we had with him. Huub helped us to develop our learning path, and we would like to thank him for always pushing us to considering our project from another perspective and for providing us with feedback. We would also like to acknowledge the help given by our commissioner from the Wageningen Science Lab: we thank Irene Gosselink for being the intermediary person between us and Food Bank Rotterdam, and for providing us with feedback on our project proposal. Finally, we would like to thank our academic advisor Marga Ocké for her constructive feedback and motivation.

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## Report structure

The report is divided into three parts. Part A consists of a summary in both English (Chapter 1) and Dutch (Chapter 2), which provides an overview of the report. Part B presents and prioritises the recommendations (Chapter 3). Parts A and B are of most relevance to the food bank. Finally, Part C contains three chapters. The introduction, which makes up Chapter 4, provides the reader with information regarding the current food bank system in the Netherlands, as well as information about Food Bank Rotterdam and the problems it faces. Chapter 5 presents the results from the literature study, interviews and observations. An academic conclusion which answers the research questions is provided in Chapter 6. The references and appendices follow.

For the definitions used throughout this project, see Textbox 1.

*Alternative Systems* - refers to food bank systems in which volunteers do not hand out food packages to recipients, but rather, to those where recipients are provided with food in another manner. Examples: Supermarket model, coupons.

*Additional Activities* - refers to the initiatives that a food bank can implement next to providing food packages. The purpose of these additional activities is to improve recipient satisfaction and to help empower recipients to make healthy food choices. Examples: Cooking and nutrition workshops, trade tables.

*Current food bank system* - refers to the food bank system currently used in Rotterdam, in which food bank recipients are provided with a pre-packaged crate of food.

### *Textbox 1 Definitions*

# Part A

## 1. Summary

In the Netherlands, 1.2 million people live in poverty. Of these people, 132,500 are served by 168 food banks, which works to alleviate the effects of poverty. Food banks provide recipients with food that they would otherwise not have [18]<sup>1</sup>, play a role in the reduction of food waste, and promote social inclusion. Additionally, they are designed to be accessible and welcoming, and give people the opportunity to connect with others [20]. Food Bank Rotterdam does all of these things, yet it still feels that it has room to improve.

At Food Bank Rotterdam prearranged food packages are provided to recipients. The food bank wants to alter their current system in order to make it a “more efficient and sustainable organisation that meets the needs and desires of both the recipients and volunteers”.

### 1.1 Project problem development

At the start of the project the team established what it believed to be Food Bank Rotterdam’s primary problem. This problem was that of the knowledge gap of Food Bank Rotterdam regarding how to improve recipient and volunteer satisfaction, how to improve the relationship between these two groups, and how to empower recipients to make healthy food choices (project problem). A visualisation of this project problem is shown in Figure 1.

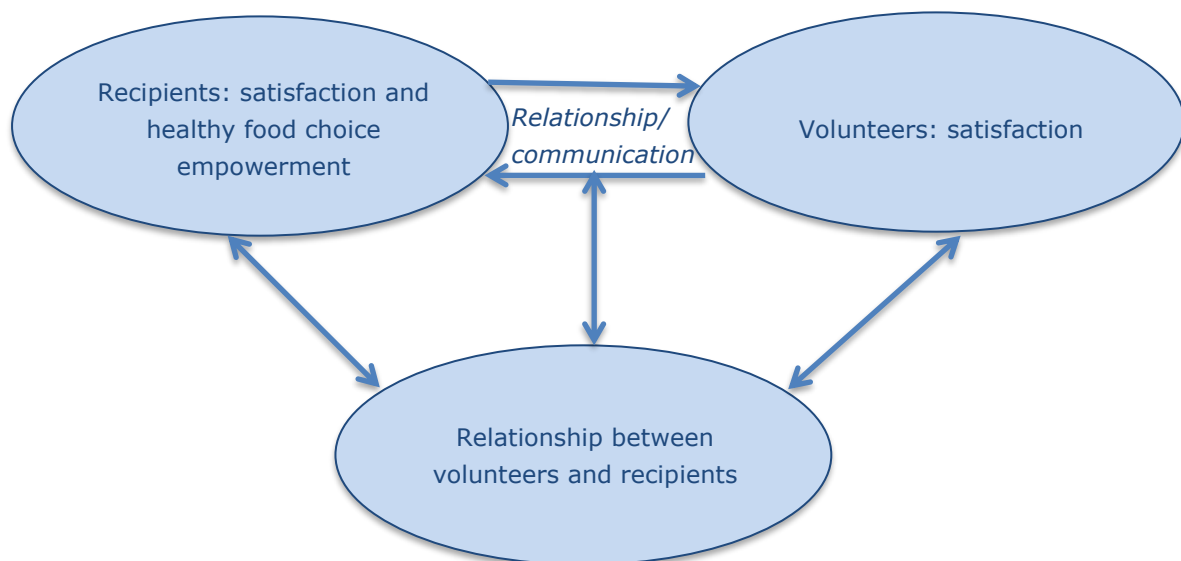


Figure 1 Visualisation of project problem

The team investigated whether the identified problem was a problem in the eyes of the recipients and volunteers of the collection points, and whether it was discussed in literature. To do so, observations at Food Bank Rotterdam were done and interviews with volunteers and recipients were carried out in person and through email. 21 recipient interviews were conducted. These were face-to-face and semi-structured. Additionally, 11 volunteers were interviewed. Nine of these interviews were face-to-face and semi-structured, and two were conducted via email. In addition, a literature study and visited a supermarket style food bank in the city of Arnhem. The main aspects of the problems identified throughout this project can be found in Textbox 2.

<sup>1</sup> All references used in the summary are listed in the reference section of Part C.

**Problems Stated in Literature:**

- Indignity (shame, guilt, etc.)
- Lack of empowerment
- Inadequacy (nutrition)
- Instability (variation in content)
- Expectations (entitlement/gratitude)
- Inappropriate (culture & diet)

**Problems Identified During Interviews with Recipients:**

- Recipients would like more choice
- People would like to make changes to the content of the food packages (missed certain products / received too much of certain products)
- Too little variation
- Recipients are dissatisfied about receiving expired food
- Some recipients experience feelings of shame

**Problems Identified During Interviews with Volunteers:**

- Packages are not identical
- Volunteers feel bad providing expired food
- Volunteers feel that not all the recipients are grateful
- The food collection points are smaller than optimal

**Problems Identified During Observations:**

- Nothing for children to do as their parents pick up food
- The food collection points are smaller than optimal
- The food collection points are not welcoming spaces (i.e. white walls, no decorations, no music, doesn't encourage interaction, no communal feeling)

*Textbox 2 Identified problems*

### 1.1.1 Recipient satisfaction

During interviews recipients stated that they were quite satisfied with the current food bank model. They did, however, express some dissatisfaction. While recipients were generally positive about the content of the food packages, they did have some wishes regarding the quantity and quality of the food packages. Some people stated that they were unsatisfied with the fact that they received products that were close to or past their date of expiration. This finding was in line with the information found in literature, which showed that some current food bank recipients experience feelings of indignity due to, amongst others, expired products. [16]. Also, some people stated that they would like to receive more fruits and vegetables, whereas others stated that they would like to receive less. The same was true with regards to meat and bread. With regards to dairy, however, people expressed that they would like to receive more milk and cheese, and less butter. Additionally, some recipients shared that they would like cleaning and self-care products to be included in packages more often. Finally, some recipients addressed their need for more diet-specific products in the food packages. This can be linked to the findings from literature, which showed that recipients feel they sometimes receive products they do not need, thus making them inappropriate [16].

Dissatisfaction toward the current food bank system is, according to literature, because recipients receive pre-arranged food packages. Therefore, they have almost no say in what they receive [16]. The system also makes them feel as if they have a lack of independence [16]. These topics were also expressed in interviews. Feelings of shame were mentioned in some interviews and many people stated that they would like to have more choice in the items that they receive. These statements about choice, however, were only shared after interviewers explained possible alternative systems and additional activities that would grant them greater freedom of choice.



### 1.1.2 Volunteer satisfaction

No literature was found regarding the satisfaction of food bank volunteers. Interviews, however, revealed that volunteers were generally satisfied with the current food bank system. Volunteers stated that some of this satisfaction stemmed from the facts that products are equally distributed amongst recipients, recipients can easily leave products they do not want behind, and recipients receive varied food products. Additionally they stated that there is plenty of opportunity for conversation with recipients.

Volunteers also expressed that they like this volunteer work and that they feel it is important work to do. Moreover, the volunteers indicated that they can share their concerns, opinions and complaints with each other and with Food Bank Rotterdam's management.

### 1.1.3 Relationship between recipients and volunteers

In literature it was stated that recipient dissatisfaction can stem from volunteers' expected gratitude from recipients and a potentially patronising relationship between these two groups [16]. Interviews with both recipients and volunteers did not reveal these things to be a problem. The recipients stated that they were very happy about their relationship with the volunteers and they perceived the volunteers to be nice, helpful, polite and sweet. Additionally, they mentioned that the volunteers always have time to chat, and that they can share their concerns with them. Volunteers also stated that their relationship with recipients was good. They elaborated that most recipients are very grateful, though they did mention that there are a few recipients who are not. Whether or not volunteers expect gratitude from recipients varied from person to person. The volunteers felt that there is time to chat with the recipients, which they viewed as important for their relationship.

Observations revealed the relationship between recipients and volunteers to be positive as well, though, not as positive as was expressed in interviews. Recipients and volunteers appeared to be familiar with each other, but no more than acquaintances. This observed lack of interaction may have had something to do with the environment of two of the three visited collection points, which were small and had little colour or decoration, and so, did not promote social interaction. Additionally, the current system of picking up pre-arranged packages of food, does not really lend itself to interaction between these two groups, as the volunteers are busy handing out the packages and the recipients are busy transferring the items to their bags.

### 1.1.4 Empowering recipients to make healthy food choices

Consistently providing healthy packages is difficult, as the current food bank system is disposal driven (instability), and the food bank can only distribute what it receives from suppliers. Additionally, the current food packages can be labelled as inadequate because they do not meet Dutch nutritional guidelines [28].

In general, volunteers feel that the food bank is responsible for the provision of healthy food to recipients. One volunteer, however, did mention that for variety, it is important that recipients receive unhealthy products as well. While volunteers expressed a desire to help improve recipient health, the team observed that this empowerment was not actually taking place. There was, for example, no nutritional information present in the collection points, in the form of flyers or posters.

In interviews with the recipients, health was not explicitly mentioned to be a problem. Recipients though, did express they would like to receive specific healthy products, such as fruits and vegetables. It is not clear what their reasons were for wanting these items. They could have been motivated by a concern for health, but also could have been driven by personal preference.

Literature revealed that multiple strategies for empowering food bank recipients to make healthy food choices exist. These strategies steer recipients to make healthier food choices and thus can contribute to healthier recipient diets, which can result in a reduction in diet-related diseases and nutrient deficiencies. Existing strategies include the introduction of nutritional regulations, nudges, ranking systems, nutritional education programs, and recipe software/apps.

All the information collected confirmed that the problem of Food Bank Rotterdam's knowledge gap (Figure 1), described previously, does in fact exist.

## 1.2 Possible solutions for the detected problems

The detected problems from literature, observations and interviews are in line with the previously established project problem (Figure 1). In order to address these problems, possible solutions were detected.

The alternative systems and additional activities, identified in literature and generated by the team, that the recipients responded positively to, were the following:

- A *coupon system* in which food bank users receive coupons, which they can use to buy products in a normal supermarket. With these coupons, people can purchase items from selected food categories. Recipients said in interviews that they feel this would give them more choice.
- A *client choice food bank (supermarket model)* in which recipients can select items, similarly to how they would in a normal supermarket, but with the assistance of volunteers. Recipients said in interviews that they feel this would give them more choice.
- An *allotment garden* as an addition to the food bank, where recipients could work together to grow fruits and vegetables. Recipients said in interviews that they would like working there.
- A *trade table* where recipients could trade unwanted items from their packages for other products they would like. Recipients said in interviews that they feel that this would make trading more convenient.

Recipients did not respond positively to the idea of cooking classes and a recipe app. Some of the recipients expressed that they were not interested because they already know how to cook.

- *Cooking Classes*: a class where cooking skills and recipes are shared in a group setting.
- *Recipe app* where recipients can find recipes which match the items in their food packages.

Recipients were not asked about their opinions regarding the implementation of food buying groups, mystery boxes, communal dinners and community fridges (additional activities found in literature). This is because these the team only read about these ideas after meeting with Hilje Van der Horst, an assistant professor at Wageningen University. A short description of each of these activities is given below:

- *Food Buying Group*: a group in which people can pool their money to purchase food in bulk. This group would allow people to buy products to supplement their food packages at a low price.
- *Mystery Box*: boxes containing a mystery array of 5-10 food and non-food items, which could be purchased by recipients for a low price (i.e. 3 euros).
- *Communal Dinners*: where recipients and other community members can share a weekly meal.
- *Community Fridges*: fridges placed in public spaces in which people can leave behind or take food for free.

Volunteers, like recipients, were asked for their thoughts regarding the implementation of alternative systems and additional activities. Half of the volunteers were open to implementing a supermarket model to provide more recipient choice. They stated that this system would enable the recipients to be more independent. Those not positive about the supermarket system, however, stated that this system may be chaotic, unfair, lead to less contact between recipients and volunteers, and that there will be too little space for it to be implemented. Their opinions, however, may have been influenced by the fact that the supermarket system was not explained thoroughly enough in the interviews.

Although there were no major problems detected from volunteers' point of view, as without volunteers a food bank cannot exist, it is important to support them, and try to make their experience even better. Also, though recipients and volunteers express that they have a good relationship with each other, it is important to keep up this good relationship and even improve it. The observations also showed that there is still room for improvement.

### 1.3 Recommendations

Based on these possible solutions, short, medium and long-term recommendations were formulated (short means the intervention will take a short period of time to implement). The short term recommendations include implementing mystery boxes, allotment gardens, trade tables, and transforming the physical space. The medium-term solutions involve implementing a food buying group and ranking system. The long term recommendation is to transition to a supermarket style food bank system. The recommendations are designed to improve recipient and volunteer satisfaction, the relationship between the two groups, and additionally, to empower recipients to make healthy food choices.

Interviews, observations, and the application of the Balanced Intervention Ladder to the alternative systems and additional activities revealed in literature (see Theoretical Framework), were used to formulate these recommendations. In this project, as the empowerment of choice is one of the main goals, all the alternative systems and additional activities suggested for implementation fall onto rungs 0 through +4 of this ladder, which indicates the level of autonomy they give to the recipients [36] (see Theoretical Framework for explanation, Chapter 5).

These recommendations have been prioritised by importance on the long-term, assuming that the food bank's ultimate goal is to implement the supermarket model. They have been ranked based on the number of people that are affected by the change, and the degree of impact on both satisfaction and the empowerment to make healthy food choices. For example, while the supermarket system and ranking system affect all food bank users, the food buying group, allotment garden, mystery boxes, and trade table would only affect those who choose to use them. This is why the supermarket system and ranking system are listed first in the list of priorities. The changes in physical space come last, because although it affects all food bank users, its impact is low.

#### 1. Supermarket system

We strongly recommend that Food Bank Rotterdam implement a supermarket system on the long-term. The supermarket model enables client choice, and this choice can reduce the shame felt by recipients. Additionally, the supermarket model may improve the relationship between recipients and volunteers, as recipients may be more satisfied, and thus more grateful. Gratitude was something that some volunteers mentioned to be a problem during interviews.

To transition to the supermarket model, we recommend that multiple collection points, as they exist now, merge and become one Central Collection Point (CCP), serving approximately 300 recipients. The volunteers from Rotterdam's current collection points can continue to volunteer in the new CCP,

although it is likely that their role will change. During interviews volunteers expressed concern that the supermarket model may not be fair. In order to address this issue, we propose that rules be used to regulate the number of products each recipient can select. More information (including consequences for human and financial resource management) can be found in Chapter 3.

## 2. Ranking system

We recommend that a ranking system, designed to empower recipients to make healthy food choices, be introduced. We recommend that Food Bank Rotterdam use the 'Traffic light system', which involves placing green (healthy), yellow (less healthy) or red (unhealthy) stickers on the products they distribute. We suggest that this ranking system be based on the Wheel of Five (Schijf van Vijf), to determine which products receive which label. This ranking system can be implemented in the current food bank system and continued in the supermarket model.

## 3. Food buying group

We recommend that a food buying group be implemented. Recipients can decide for themselves whether or not to participate in this group and can continue to be a member of the group even when they are no longer eligible to receive food packages. The group will allow recipients to buy products to supplement their food packages at a low price, as items are bought in bulk. Additionally, they can choose what to buy themselves. This can increase recipient's satisfaction regarding the products they receive. This additional activity, like the ranking system, can be implemented now, and continued after the transition to the supermarket system.

## 4. Allotment garden

We recommend that Food Bank Rotterdam contact De Voedseltoin in Rotterdam to explore the possibility of recipients working there. Allotment gardens improve access to healthy foods, thereby empowering recipients to make healthier food choices. Additionally, allotment gardens can increase the amount of fruit and vegetables that recipients receive, as they can take home the produce they harvest. Allotment gardens can also help to tackle the issue of shame, as they allow recipients to give something back, in return for what they receive. In this way, working in an allotment garden could lead to improved recipient satisfaction.

## 5. Mystery boxes

We recommend that Food Bank Rotterdam start selling mystery boxes at a low price. Mystery boxes allow recipients to supplement their food packages with food and non-food items. In this way, they can improve recipient satisfaction.

## 6. Trade table

We recommend that trade tables be implemented at the collection points on a short-term. These tables will not be continued after the supermarket model is implemented. Trade tables allow people to alter the content of their packages, by trading with other recipients, thereby giving recipients more choice, and improving their level of satisfaction. Guidelines for implementation, however, should be used to ensure that trading is fair.

## 7. Change physical space

We recommend that the physical environment of the collection points be changed into a more welcoming space. This can be in the form of decorations, a space for children and tables/chairs to socialise. These changes can be implemented on the short-term, as these collection points will eventually close when the food bank transitions to the supermarket model (but decorations for example can be reused). Implementing changes to the physical environment may improve satisfaction, as they can make spaces more inviting, and thus, make recipients feel more welcome

and their visits more pleasant. These changes may also lead to an improved relationship between volunteers and recipients, as people may choose to spend more time at the collection points. Additionally, informative posters can be used to empower recipients to make healthy food choices.

We hope that you find these recommendations inspiring and helpful. More information about all recommendations can be found in Part B.

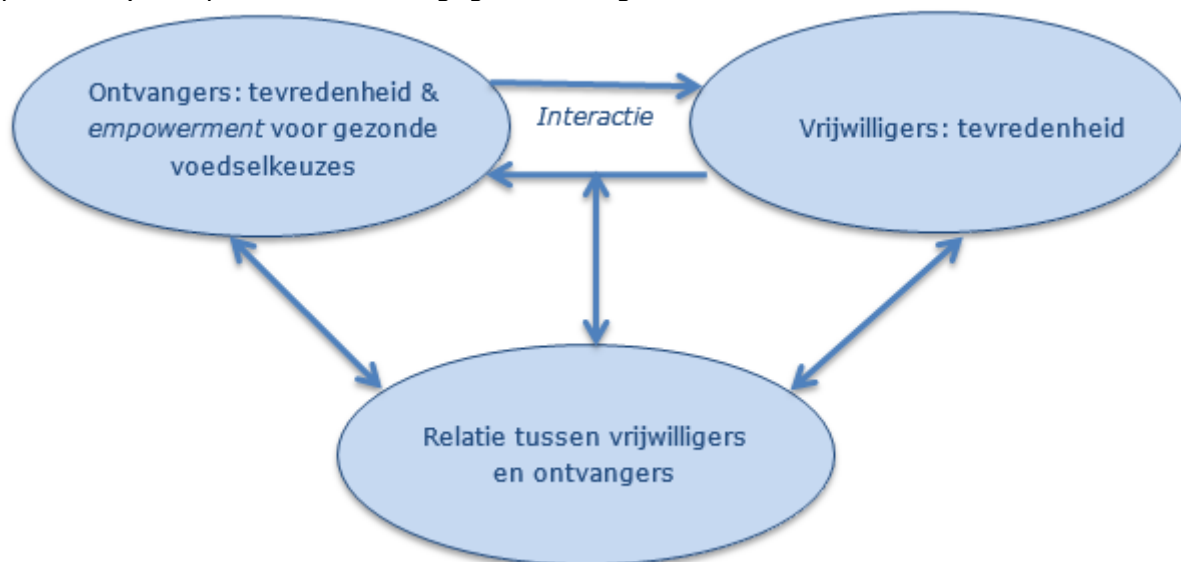
## 2. Samenvatting

In Nederland leven 1.2 miljoen mensen in armoede. Hiervan zijn 132.500 mensen klant bij een van de 168 voedselbanken. Het doel van deze voedselbanken is het verlichten van de effecten van armoede. Ze voorzien de ontvangers van voedsel dat ze anders niet zouden hebben [18], ze spelen een rol in het verminderen van voedselverspilling en ze promoten sociale integratie. De voedselbanken zijn op zo'n manier ingericht dat ze toegankelijk en verwelkomend zijn, en dat ze mensen de kans geven om contact te hebben met anderen [20]. Voedselbank Rotterdam volbrengt al deze taken maar ze hebben alsnog het idee dat er ruimte voor verbetering is.

Bij Voedselbank Rotterdam krijgen de ontvangers een voedselpakket dat van tevoren samengesteld is. Ze willen hun huidige systeem aanpassen, zodat het een "meer efficiënte en duurzame organisatie is, die voldoet aan de behoeftes en wensen van hun ontvangers en vrijwilligers".

### 2.1 Probleem ontwikkeling

Aan het begin van het project, heeft het team vastgesteld wat zij dachten dat het grootste probleem was bij Voedselbank Rotterdam, namelijk het kennistekort wat betreft de tevredenheid van de ontvangers en de vrijwilligers, de relatie tussen deze twee groepen en hoe zij ontvangers in staat kunnen stellen om gezonde keuzes te maken (project probleem). Dit probleem is weergegeven in Figuur 2.



*Figuur 2 Visualisatie van het project probleem*

Het team heeft onderzocht of dit ook in de ogen van de ontvangers en vrijwilligers van de uitgiftepunten een probleem is en of dit besproken is in literatuur. Hiervoor zijn observaties en semigestructureerde interviews bij Voedselbank Rotterdam gedaan. Met de ontvangers zijn 21 interviews uitgevoerd, deze waren allemaal face-to-face. Er zijn in totaal 11 vrijwilligers geïnterviewd, waarvan 2 via e-mail en 11 face-to-face. Hiernaast is ook een literatuurstudie uitgevoerd en is een voedselbank met het supermarktmodel bezocht in Arnhem. De belangrijkste aspecten van het probleem die vastgesteld zijn staan in Textbox 3.

### **Problemen genoemd in literatuur:**

- Vernedering (schaamte, schuldgevoel, etc.)
- Gebrek aan *empowerment* om gezonde keuzes te maken
- Verwachtingen (*gevoel van recht hebben op/dankbaarheid*)
- Ontoereikendheid (voedingswaarden)
- Gebrek aan stabiliteit (veranderende inhoud van de pakket)
- Ongepastheid (cultuur en dieet)

### **Problemen uit de interviews met ontvangers**

- Gebrek aan keuze
- Inhoud van de pakketten is niet naar wens (te weinig of te veel van bepaalde producten)
- Te weinig variatie
- Ontevredenheid over het ontvangen van producten die over datum zijn
- Schaamte

### **Problemen uit de interviews met vrijwilligers**

- De pakketten variëren erg
- Vrijwilligers voelen zich slecht over het uitgeven van producten die over de datum zijn
- De uitgiftepunten zijn kleiner dan optimaal zou zijn

### **Problemen uit de observaties**

- Er is niets te doen voor kinderen als hun ouders hun pakket ophalen
- De uitgiftepunten zijn kleiner dan optimaal zou zijn
- De uitgiftepunten zijn geen gastvrije ruimtes (witte muren, geen decoratie, geen muziek, interactie wordt niet gepromoot, geen gevoel van gemeenschap)

#### *Textbox 3 Vastgestelde problemen*

##### 2.1.1 Tevredenheid van de ontvangers

Tijdens de interviews gaven de ontvangers aan dat zij tevreden zijn met de huidige voedselbank, echter waren er ook een paar punten waar de ontvangers minder tevreden mee waren. Hoewel de ontvangers over het algemeen positief waren over de inhoud van de voedselpakketten, hadden zij een paar wensen wat betreft de kwaliteit en kwantiteit van de producten in de pakketten. Zo werd er bijvoorbeeld aangegeven dat het niet prettig was om producten te ontvangen die dichtbij of over de houdbaarheidsdatum waren. Deze uitkomst komt overeen met wat er gevonden is in de literatuur, waar gezegd wordt dat het ontvangen van producten die over de houdbaarheidsdatum zijn kan zorgen voor een gevoel van vernedering. Sommige ontvangers gaven aan meer fruit en groente te willen ontvangen in hun pakketten, terwijl andere ontvangers juist minder van deze producten zouden willen. Dit was ook het geval voor vlees en brood. Wat betreft melkproducten was er meer overeenstemming bij de ontvangers, zij zouden graag meer melk en kaas ontvangen en minder boter. Ook zijn er ontvangers geweest die aangaven dat zij graag (vaker) schoonmaakproducten en

toiletartikelen zouden ontvangen. Er waren ook ontvangers die aangaven dat ze graag zouden zien dat er rekening gehouden wordt met specifieke diëten. In de literatuur wordt dit ook genoemd, dat ontvangers vaak producten ontvangen die zij niet gebruiken, waardoor ze ongepast zijn [16].

Volgens de literatuur komt de ontevredenheid jegens het huidige voedselbank systeem doordat de ontvangers pakketten krijgen die van tevoren zijn samengesteld. Ze hebben zo goed als geen invloed op wat zij ontvangen [16]. Ook hebben zij door het systeem het gevoel dat ze geen onafhankelijkheid hebben. Deze onderwerpen werden ook aangehaald in de interviews. Gevoel van schaamte werd genoemd in sommige interviews en veel mensen zeiden dat ze graag meer keuze zouden hebben over de producten die ze krijgen. Dit laatste werd echter pas genoemd nadat er uitleg werd gegeven over alternatieve systemen en extra activiteiten die ze meer keuzemogelijkheden zou opleveren.

### 2.1.2 Tevredenheid van de vrijwilligers

Er is geen literatuur gevonden over de tevredenheid van vrijwilligers bij de voedselbank. Uit de interviews kwam dat de vrijwilligers over het algemeen tevreden zijn met het huidige voedselbank systeem. Zij noemden verschillende redenen voor deze tevredenheid, zoals dat de producten gelijk verdeeld worden tussen de ontvangers, dat de ontvangers makkelijk producten achter kunnen laten die zij niet willen en dat de ontvangers gevarieerde producten krijgen. Hiernaast gaven de vrijwilligers aan dat ze ook blij zijn dat zij een praatje kunnen maken met de ontvangers.

De vrijwilligers vinden het werk dat zij doen leuk en belangrijk, en zij hebben het gevoel dat ze hun zorgen en klachten kunnen delen met het management van Voedselbank Rotterdam.

### 2.1.3 Relatie tussen ontvangers en vrijwilligers

In de literatuur werd genoemd dat ontevredenheid bij ontvangers kan komen omdat vrijwilligers dankbaarheid van hen verwachten, wat mogelijk de relatie tussen deze twee groepen kan beïnvloeden [16]. Uit de interviews bleek niet dat dit een probleem is bij Voedselbank Rotterdam. De ontvangers gaven aan dat zij blij zijn met hun relatie met de vrijwilligers en dat ze de vrijwilligers zien als aardig, behulpzaam, beleefd en lief. Ook noemden de ontvangers dat de vrijwilligers tijd hebben om een praatje te maken en dat zij hun zorgen met hen kunnen delen.

De vrijwilligers gaven aan dat hun relatie met de ontvangers goed is. Ze legden uit dat de meeste ontvangers erg dankbaar zijn, maar ze noemden ook dat er een paar ontvangers zijn die dit niet zijn. De verwachting naar deze dankbaarheid verschilde per vrijwilliger. Ook gaven ze aan dat ze tijd hebben om een praatje te maken met de vrijwilligers, wat ze belangrijk vinden voor hun relatie.

Uit de observaties is ook gebleken dat de relatie tussen de ontvangers en de vrijwilligers positief is, maar minder positief dan uit de interviews bleek. De ontvangers en vrijwilligers leken elkaar te kennen maar leken ook geen hechtere band te hebben dan die van kennissen. Er is een gebrek aan interactie geobserveerd, wat te maken kan hebben met de fysieke omgeving van twee van de drie uitgiftepunten. Deze uitgiftepunten waren klein, hadden weinig decoraties en stimuleerden sociale interactie niet.

Het huidige systeem, waarin voorverpakte pakketten worden uitgedeeld aan de ontvangers, is niet stimulerend voor interactie tussen de vrijwilligers en ontvangers. De vrijwilligers zijn druk met de pakketten uit te delen, terwijl de ontvangers druk zijn met de inhoud van deze pakketten over te dragen naar hun tassen.

### 2.1.4 Empowering voor gezonde voedselkeuzes

Het consistent verstrekken van gezonde voedselpakketten is lastig, omdat de voedselbank alleen kan weggeven wat zij ontvangen van hun leveranciers. De pakketten voldoen niet aan de Nederlandse voedingsrichtlijnen [28].



Over het algemeen gaven de vrijwilligers aan dat de voedselbank verantwoordelijk is voor het voorzien van gezond voedsel aan de ontvangers. Echter was er ook een vrijwilliger die aangaf dat het ook belangrijk is dat de ontvangers ongezond voedsel ontvangen, voor de afwisseling. Zij geven aan dat ze de ontvangers graag zouden helpen met het verbeteren van hun gezondheid, maar dit is uit de observaties niet gebleken. Er waren bijvoorbeeld geen informatie in de vorm van flyers of posters, aanwezig op de uitgiftepunten.

In de interviews met de ontvangers was gezondheid geen expliciet genoemd probleem. Er waren echter wel ontvangers die aangaven graag bepaalde gezonde producten te ontvangen, zoals groente en fruit, maar de redenen hierachter waren niet duidelijk. Het zou kunnen zijn dat de ontvangers deze producten graag zouden krijgen voor gezondheidsredenen maar het kan ook persoonlijke voorkeur zijn.

Uit de literatuur bleken verschillende strategieën de ontvangers van de voedselbank in staat te stellen om gezonde keuzes te maken. Deze strategieën sturen de ontvangers bij het maken van bepaalde voedselkeuzes, die bijdragen aan een gezonder dieet, resulterend in minder dieet gerelateerde ziekten en tekortkomingen aan bepaalde voedingsstoffen. Bestaande strategieën bevatten onder andere regulaties, nudging, rangorde systeem, educatie en software of apps.

De vergaarde informatie bevestigt dat de problemen die eerder beschreven zijn (Figuur 1), daadwerkelijk bestaan.

## 2.2 Mogelijke oplossingen voor de problemen

De problemen die geïdentificeerd zijn aan de hand van de literatuur, de observaties en de interviews komen overeen met het project probleem dat eerder vastgesteld is (figuur 1), maar gaan vooral over ontevredenheid vanuit de ontvangers. Om deze problemen aan te pakken zijn er verschillende oplossingen *bedacht*.

Er zijn verschillende alternatieve systemen en aanvullende activiteiten, uit de literatuur en ontwikkeld door het team, waar de ontvangers positief over waren in de interviews:

- Een *coupon systeem* waarin de ontvangers coupons krijgen die gebruikt kunnen worden om producten te kopen in een normale supermarkt. Met deze coupons kunnen de ontvangers producten kopen uit bepaalde categorieën. Ontvangers gaven in de interviews aan dat dit hen meer keuze zou geven dan het huidige systeem.
- Een *supermarkt systeem* waarin de ontvangers producten kunnen selecteren zoals ze zouden doen in een normale supermarkt, maar dan met behulp van vrijwilligers. Ontvangers zeiden in de interviews dat zij met dit systeem meer keuze zouden hebben dan nu.
- Een *moestuin* als aanvulling op de voedselbank, waar de ontvangers samen kunnen werken om fruit en groente te verbouwen. In de interviews gaven veel ontvangers aan dat zij hier graag zouden werken.
- Een *ruiltafel* waar de ontvangers de producten die zij niet willen kunnen ruilen voor andere producten, die achtergelaten zijn door andere ontvangers. De ontvangers gaven in de interviews aan dat dit het ruilen van producten zou vergemakkelijken.

De ontvangers waren niet positief over kookcursussen of een app met recepten. Sommige ontvangers gaven aan dat zij niet geïnteresseerd zijn omdat ze al kunnen koken.

- *Kookcursus*: een cursus waar de ontvangers kookvaardigheden leren en waar recepten gedeeld worden in een groepssetting.
- *Recepten app*: waarin ontvangers recepten kunnen vinden met de producten die ze ontvangen in het voedselpakket.

Er is niet gevraagd naar de mening van de ontvangers over de collectieve inkoop van voedsel, verrassingspakketten, gemeenschappelijke maaltijden of gemeenschaps-koelkasten. Deze activiteiten zijn gevonden in de literatuur nadat de interviews gedaan zijn, na een meeting met Hilje van der Horst (assistent professor aan Wageningen Universiteit). Hieronder zullen deze activiteiten kort toegelicht worden.

- Het *collectief inkopen van voedsel* geeft de ontvangers de mogelijkheid om samen met andere ontvangers producten te kopen in grote hoeveelheden, wat ervoor zorgt dat de prijs lager is per persoon.
- *Verrassingsdozen* bevatten 5-10 producten, waaronder ook non-food producten. Deze verrassingsdozen kunnen goedkoop gekocht worden door de ontvangers (rond de €3).
- Bij *gemeenschappelijke maaltijden* kunnen ontvangers en anderen uit de gemeenschap wekelijks samen een maaltijd eten.
- Een *gemeenschaps-koelkast* is een koelkast op een openbare plek, waarin mensen eten dat ze over hebben kunnen achterlaten en waar anderen gratis eten uit kunnen halen.

Ook de vrijwilligers zijn gevraagd naar hun mening over het invoeren van een alternatief systeem en aanvullende activiteiten. De helft van de vrijwilligers geeft aan open te staan voor het supermarktmodel zodat ontvangers meer keuze hebben en ze meer onafhankelijk zouden zijn. De vrijwilligers die niet positief waren over het systeem uiten dat zij denken dat het chaotisch en oneerlijk is, dat het leidt tot minder contact tussen ontvangers en vrijwilligers en dat er te weinig ruimte in het uitgiftepunt is om het te implementeren. Hun mening is mogelijk beïnvloed door het feit dat het supermarkt systeem niet uitgebreid uitgelegd is in de interviews.

Hoewel er geen grote problemen gevonden zijn wat de vrijwilligers betreft, is het toch belangrijk om hun mening mee te nemen in beslissingen, omdat de voedselbank niet kan bestaan zonder hen. De relatie tussen de vrijwilligers en de ontvangers is goed, maar het is belangrijk om dit te onderhouden en om het te verbeteren waar mogelijk is. De observaties hebben laten zien dat er verbetering te behalen valt.

## 2.3 Aanbevelingen

Op basis van de mogelijke oplossingen zijn er korte-, medium-, en lange-termijn aanbevelingen geformuleerd. Korte-termijn betekent dat de interventie een korte tijdsperiode in beslag neemt tot het ingevoerd is. De aanbevelingen zijn ontworpen voor het verbeteren van de tevredenheid van de ontvangers en de vrijwilligers, de relatie van deze twee groepen en ook om de ontvangers te *empoweren* om gezonde voedselkeuzes te maken.

De aanbevelingen zijn gebaseerd op de interviews, de observaties, literatuur en de toepassing van *the Balanced Intervention Ladder* op de alternatieve systemen en de aanvullende activiteiten. De ladder duidt het effect van de interventie op autonomie aan (voor meer informatie, zie Theoretical Framework in sectie C). *Empowerment* van keuze is een van de hoofddoelen van dit project, dus enkel de interventies die binnen sport 0 tot en met +4 van de ladder vallen zijn meegenomen in de aanbevelingen.

Deze aanbevelingen zijn geprioriteerd op de lange termijn, er vanuit gaande dat de voedselbank het supermarktmodel implementeert. Ze zijn geordend op basis van hoe veel mensen beïnvloed worden door de interventie en hoe veel impact de interventie heeft op tevredenheid en *empowerment* om gezonde voedselkeuzes te maken. Het supermarkt model en de rangorde-systemen hebben invloed elke ontvanger, terwijl het collectief inkopen van voedsel, de moestuin, de verrassingspakketten alleen invloed hebben op de ontvangers die ervoor kiezen om mee te doen. Dat is waarom het supermarkt systeem en het rangorde-systeem eerder genoemd worden in de prioriteitenlijst.

### 1. Supermarkt systeem

Het is sterk aangeraden aan Voedselbank Rotterdam om het supermarkt systeem te implementeren. Dit systeem maakt keuze voor de ontvangers mogelijk en het kan de schaamte van de ontvangers verminderen. Daarbij kan het supermarktmodel ook een positief effect hebben op de relatie tussen ontvangers en vrijwilligers, omdat de ontvangers positiever zijn over wat ze krijgen van de voedselbank. Deze dankbaarheid kan de relatie tussen de ontvangers en de vrijwilligers die dit ontvangen verbeteren.

Om over te stappen naar het supermarktmodel raden we aan dat meerdere uitgiftepunten samenkomen in een centraal uitgiftepunt (CUP), voor ongeveer 300 ontvangers. De vrijwilligers van de huidige uitgiftepunten kunnen ook werken in het CUP, al zou hun rol waarschijnlijk wel veranderen. Tijdens de interviews gaven de vrijwilligers aan dat het CUP misschien niet eerlijk is. Dit kan worden voorkomen door regels in te stellen over hoe veel producten van elke categorie de ontvangers mogen uitkiezen. Meer informatie over hoe het supermarkt systeem opgezet kan worden is te vinden in sectie B.

## 2. Ranking system

Wij raden aan dat er een rangorde systeem wordt geïntroduceerd, wat ervoor kan zorgen dat ontvangers gezondere voedselkeuzes maken. Voor dit rangorde systeem kan een stoplicht systeem gebruikt worden, waarbij groene (gezond), gele (minder gezond) en rode (ongezond) stickers geplaatst worden op de producten. We adviseren om hierbij de Schijf van Vijf te gebruiken, om te bepalen welke producten onder welke sticker vallen. Dit rangorde systeem kan gebruikt worden in het supermarkt systeem en in het huidige systeem.

## 3. Collectieve voedsel inkoop

We adviseren Voedselbank Rotterdam om een groep op te richten voor het collectief inkopen van voedsel. Ontvangers kunnen kiezen of ze willen meedoen in de groep en mogen ook lid blijven van de groep als ze niet meer de voedselpakketten ontvangen. Het geeft ontvangers de mogelijkheid om producten te kopen om hun voedselpakketten aan te vullen, voor een lage prijs. Ze kunnen zelf kiezen welke producten ze willen ontvangen, wat hun tevredenheid kan verhogen. Deze activiteit kan nu geïmplementeerd worden en doorgezet worden wanneer het supermarkt model geïmplementeerd is.

## 4. Moestuin

Om een moestuin waarin de ontvangers kunnen werken te realiseren, raden we aan dat Voedselbank Rotterdam contact opneemt met de Voedseltuin. Een moestuin geeft de ontvangers meer toegang tot fruit en groente, omdat ze de producten die ze oogsten mee kunnen nemen naar huis. Een moestuin kan ook het probleem van vernedering aanpakken, omdat de ontvangers iets terug kunnen doen voor wat ze ontvangen. Dit kan de tevredenheid van de ontvangers verbeteren.

## 5. Verrassingspakketten

Wij raden aan dat Voedselbank Rotterdam verrassingspakketten gaat verkopen voor een lage prijs. Deze verrassingspakketten vullen de voedselpakketten van de ontvangers aan met eten en toiletartikelen. Op deze manier kunnen ze de tevredenheid van de ontvangers verbeteren.

## 6. Ruiltafel

We adviseren de uitgiftepunten om een ruiltafel te plaatsen op de korte termijn. Deze tafels worden niet doorgezet naar het CUP. De ruiltafel geeft de ontvangers de mogelijkheid om te producten die zij ontvangen te ruilen met anderen, waardoor ze meer keuze hebben. Dit kan een positieve invloed hebben op hun tevredenheid. Voedselbank Rotterdam wordt wel aangeraden om regels vast te stellen bij deze tafels, zodat het ruilen op een eerlijke manier gebeurt.

## 7. Fysieke omgeving

Om de uitgiftepunten meer gastvrij te maken, raden we aan om de fysieke omgeving van de uitgiftepunten te veranderen. Dit kan in de vorm van decoraties, een plek voor kinderen om te spelen maar ook stoelen en tafels om interactie te vergemakkelijken. Deze veranderingen kunnen op de korte termijn ingezet worden, omdat de uitgiftepunten dicht gaan wanneer het CUP bestaat. Decoraties, meubels en posters zouden wel hergebruikt kunnen worden. Een gastvrije omgeving kan de relatie tussen vrijwilligers en ontvangers verbeteren, omdat mensen dan misschien meer tijd spenderen bij de uitgiftepunten. Daarbij zouden informatieve posters ook de ontvangers kunnen *empoweren* om gezonde voedselkeuzes te maken.

We hopen dat Voedselbank Rotterdam deze aanbevelingen inspirerend en nuttig vindt. Meer informatie over alle aanbevelingen staat in sectie B.

# Part B

## 3. Recommendations

Interviews, observations, literature, and the application of the Balanced Intervention Ladder to the alternative systems and additional activities revealed in literature (see Theoretical Framework), were used to formulate recommendations for Food Bank Rotterdam. In this project, as the empowerment of recipients to make healthy food choices is one of the main goals, all the alternative systems and additional activities suggested for implementation fall onto rungs 0 through +4 of this ladder (which indicates the level of autonomy each intervention provides to recipients) (see Theoretical Framework for explanation). Not all activities that fall on rungs 0 to +4, however, are included in the recommendations. This is because some of these interventions do not address the needs and wishes that were stated by the recipients and volunteers during interviews.

The recommendations are designed to improve recipient and volunteer satisfaction, the relationship between the two groups, and additionally, to empower recipients to make healthy food choices. Of course, each recommendation proposed, does not address all of these factors to an equal degree. The recommendations are divided into long-term, medium-term, and short-term ones. Long-term recommendations are not those which we recommend to be addressed last, but rather, those which will take the longest amount of time to be fully realised. Medium-term recommendations will take less time to be implemented, and short-term ones, even less. Medium-term and short-term recommendations, like the long-term ones, however, can also be addressed by the food bank immediately. This is described in further detail in the sections that follow.

We advise the food bank to begin working on the short, medium, and long-term interventions as soon as possible. We understand that many ideas for action are provided here, and that Food Bank Rotterdam may be unable to adopt them all. This means that the food bank will need to make decisions regarding what recommendation to address first. The prioritisation section of this report ranks the recommendations by effectiveness on the long-term. We recommend that Food Bank Rotterdam consults this section before developing a plan of action. A table with the advantages and disadvantages of all recommendations is presented in Table 1 (see end of the section).

### 3.1 Long-term recommendations

#### 3.1.1 Supermarket system (rung +3)

With regards to alternative systems, we recommend that the supermarket model rather than the coupon system be implemented by Food Bank Rotterdam on the long-term. Although recipients did express positive opinions about the coupon system, any recommendations that could be made regarding this system would not be for Food Bank Rotterdam, but rather for the Dutch government, Municipality of Rotterdam, and the participating supermarkets. For this reason, the coupon system will not be discussed in the recommendations section, as we aim to provide advice specifically for Food Bank Rotterdam.

#### Reasons to implement

We recommend that Food Bank Rotterdam implements a supermarket system to contribute to the fulfilment of the needs and wishes of the food bank recipients, by enabling recipient choice. We suggest this approach because it was discovered through interviews that most recipients are enthusiastic about this system as it provides more choice. Literature also shows that client choice is importance because only recipients know which products they already have at home, and thus, what

they still need. The supermarket system also allows recipients to read labels and look at the food products in the same way that they would in a normal supermarket.

With regards to the volunteers, during interviews, half of them expressed enthusiasm about this system. The opinions of the volunteers regarding the fact that the implementation of this systems would lead to a change in their tasks, varied from person to person. Some expressed concern about their changing role, while others were open to it.

Food Bank Arnhem is one food bank that has transitioned to the supermarket model. This switch was made in an attempt to better tackle the issue of food waste, as fresh products (such as dairy) that are approaching their expiration date at supermarkets, can be distributed amongst food bank recipients daily, rather than only one day a week. Preventing food waste is already a strength of the current food bank system, as it diverts 0,8-1,6% of food waste in the Netherlands [1]. The supermarket model, however, can increase this number. Additionally, the supermarket system is client-friendly [2]. Though this friendliness was not a reason for this system's implementation in Arnhem, in practice it did lead to improved recipient satisfaction. Therefore, in order to improve recipient satisfaction at Food Bank Rotterdam, we recommend that it implements a similar system. We suggest that a Central Collection Point (CCP) be arranged, as was done in Arnhem. This CCP will look like a normal supermarket with shelves (see Figure 3), where food bank recipients can use a shopping cart to collect their products.



*Figure 3 Food Bank Arnhem: Layout of the supermarket model*

We recommend that Food Bank Rotterdam does the following: merge multiple collection points, as they exist now, and become one CCP that is open five days a week. The transition to a supermarket system at Food Bank Arnhem consisted of 290 recipients joining the new CCP from six previous collection points<sup>2</sup>. We suggest that Food Bank Rotterdam also establish CCPs of around 300 recipients each, at which volunteers from Rotterdam's collection points can continue to volunteer their time.

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<sup>2</sup> All information mentioned about Food Bank Arnhem is from personal communication with J. Snackey (20-06-2018).



## Operation of supermarket

We recommend that the shelves in the supermarket be organised according to categories such as: breakfast foods, fresh produce, dairy (milk and yoghurt), meat, luxury products (cookies and crisps), cooking basics (pasta and rice), and bread. It became clear from the interviews with recipients and volunteers, that they are concerned that the supermarket model may not be fair. In order to address this issue, we propose that a star system be used to regulate the number of products that every recipient can select from each category (see Figure 4).



Figure 4 Star system for product selection (Food Bank Arnhem)

At the CCP of Food Bank Arnhem, the number of products one can take is based on family size, and the food bank differentiates between small (1-2 persons, first star), medium (3-4 persons, second star) and large (5+ persons, third star) families (See Figure 4). We recommend that this method also be used in Rotterdam.

At Food Bank Arnhem, shop assistants (volunteers) accompany the recipients as they shop and only they can take items from the shelves. This rule was created to keep the shelves from becoming messy. We, however, propose that Food Bank Rotterdam begins with a system where recipients can 'shop' in the supermarket by themselves, and thus, also take the products from the shelves. If this is done, shop assistants will not be needed in Rotterdam. Before leaving, however, we suggest that the recipients be required to sign out with a volunteer, who will check whether the products that they have taken comply with the shop's rules. This operational method in which recipients have more freedom, could help to build a more trusting and less paternalistic relationship between recipients and volunteers, and lead to increased satisfaction in both groups. If proven not to work, however, Food Bank Rotterdam could always revert back to the shopping system used in Arnhem.

To ensure that Food Bank Arnhem has fresh products every day, its CCP has contracts with local supermarkets. Every morning, the food bank picks up products that the supermarkets would otherwise dispose of. An issue that arose in recipient interviews and literature, was that recipients receive products that are past the expiration date, which they did not like [6]. Collecting products in the morning prevents this, as volunteers at the CCP check the products according to food safety regulations (temperature and expiration date). If the products are acceptable, they are shelved. In addition, products with a longer shelf life are provided by the distribution center. In the afternoon, the recipients can come to the CCP to shop. Since only 5 recipients are allowed to shop at the same time, the host(ess) welcomes the recipients and gives them a number tag. The recipients then wait until their number appears on a screen. This indicates that they can begin shopping. We recommend that this morning/afternoon system, and the 5 person at a time rule, be used by Food Bank Rotterdam too.

Interviews with volunteers revealed that they feel the food bank is responsible for the health of the recipients. Some collection point volunteers already try to address the issue of recipient health by, for example, providing recipients with ideas regarding how to prepare certain foods. This can be continued when the supermarket system is implemented. To further empower recipients to make healthy food choices, however, we propose that after Food Bank Rotterdam transitions to the supermarket system, that it implements nudges. Studies have shown that nudges are effective [3; 4]. Nudges can take the form of placing healthy products at the front of the supermarkets, of exposing recipients to healthy products multiple times on their route through a shop, of placing healthy products at eye level, and finally, of placing unhealthy products at the bottom of the shelves [32]. These things can all be done in Rotterdam's CCPs. Furthermore, posters about healthy eating can be hung in the waiting areas of the CCPs to nudge people to choose healthy products. Another

activity that we recommend Food Bank Rotterdam use in order to empower recipients to make healthy food choices is a ranking system, in which products are ranked based on their nutritional value. We, however, suggest that this system be introduced on the medium-term, and so, will be discussed below.

### Human Resource Management

Within Rotterdam's CCPs, volunteers can take up the following tasks: head of the day, host/hostess, check-out volunteer, food collector and shelf re-stocker (see Textbox 4). In total, 35 volunteers per week will be needed, of which 30 will be needed to work only half days, and 5 to work full days. Less than 35 volunteers will be needed if some volunteers decide to work more than one half day per week. With regards to Food Bank Rotterdam's distribution point, less volunteers will be needed to work there, as the food products will no longer have to be pre-packaged.

### Financial resource management

Implementing the supermarket model at Food Bank Rotterdam will have its financial consequences. For these CCPs, a space larger than the current collection points will be needed full-time (for shopping and storage). Although renting buildings big enough for the supermarket model and its storage may be expensive, in Arnhem, the advantages of tackling food waste and providing recipient choice, far outweigh the costs. We recommend Food Bank Rotterdam consults Food Bank Arnhem about the financial organisation of the supermarket system and subsequently develop a financial plan.

In addition to rental costs, other resources will need to be purchased. These include trucks, fridges, shelves, shopping carts, computers, pallet jacks, forklifts and furniture. In Rotterdam, however, finding funders for tangible, one-time purchases has proven to be easy in the past (R. Boswinkel, personal communication, 24-05-2018). Therefore, we recommend Food Bank Rotterdam to find funders for these investments.



- **Head of the day:** The head of the day can rotate daily. This volunteer will manage the CCP for the entire day. He or she will be responsible for all volunteers working on that day and the recipients coming to shop. To fulfil this role, volunteers from the collection points who want to become the CCP head of day will need to be trained: they will need to be made aware of their tasks, as well as the rules and regulations that must be followed.
- **Host/Hostess:** This volunteer will be responsible for welcoming the recipients, providing them with a number tag (explained previously), and maintaining a smooth procedure. He or she will also be responsible for providing the recipients with tea and coffee upon their arrival. One of these volunteers will be needed on each afternoon that the supermarket is open.
- **Check-out volunteer:** This volunteer will check the products that the recipients select to ensure that their selection complies with the rules regarding how many products per category each recipient can take. One check-out volunteer will be needed on each afternoon that the shop is open.
- **Food collectors:** These volunteers will be responsible for driving to local shops and for picking up the products that are available for donation. Every day, two volunteers will be needed in the morning.
- **Shelf re-stocker:** This volunteer will check that the incoming products comply with food safety regulations (expiration date and temperature) and place the products onto the shelves. Volunteers who are not used to carrying out food safety checks will require additional training. No additional training, however, will be needed for volunteers who are familiar with this procedure. Every day, two of these volunteers will be needed in the morning.

*Textbox 4 Human resource management of the CCP*

## 3.2 Medium-term recommendations

### 3.2.1 Ranking systems (rung +1)

We recommend that Food Bank Rotterdam introduces a ranking system. From the interviews with volunteers, their belief that the food bank is partially responsible for the health of the recipients, became clear. The ranking system could be used to contribute to improved recipient health. Ranking the products would make clear to recipients which ones are healthier than others, thereby empowering them to make healthy food choices [5; 6]. We recommend that Food Bank Rotterdam uses the 'Traffic light system', which involves placing green (healthy), yellow (less healthy) or red (unhealthy) stickers on the products they distribute [5]. This ranking system could be based on the 'Wheel of Five' (Schijf van Vijf) [7]. The products included in the Schijf van Vijf could receive the green sticker, as this wheel includes the healthy options within the five food categories. Products that fall outside of the Schijf van Vijf could be divided in two categories: those that can be consumed daily in small amounts (yellow sticker) and those that can be consumed weekly in a small amounts (red sticker) [7].

To determine which products belong to which category of the Schijf van Vijf, and thus the label the should receive, knowledge on nutrition will be needed. We recommend that an intern of a nutrition-related study performs this task. In this way, implementation will be free. We suggest that this ranking system be implemented before the transition to the supermarket model, and that it be

continued even after the transition has taken place. In this way, the recipients will already be familiar with the method of ranking prior to the big change in food bank system.

### 3.2.2 Food buying groups (rung +4)

We recommend that Food Bank Rotterdam begins a food buying group. This group would enable individuals to collectively buy both the food and non-food items needed to supplement the supplied packages. Food-buying groups allow people to buy extra products for a low price, as products are bought in bulk and directly from suppliers [8]. This suggestion for implementation is based on existing information regarding food buying groups in other countries. Additionally it is based on various recipients' statements made during interviews regarding their dissatisfaction with the quantity of fruit, vegetables, dairy products, products for children, and self-care items currently included in the food packages.

We recommend that the food buying group be formed prior to Food Bank Rotterdam's transition to the supermarket system, but that it be continued even after this transition takes place. Additionally, we suggest that when a recipient's eligibility to be a food bank recipient expires, that they are still allowed to remain a member of the buying group. This continued membership will provide these people with some support as they transition out of the food bank system and will make it easier to fulfil bulk ordering quotas.

The items purchased by food bank recipients could be delivered to the collection points along with the food packages, and when the transition to a supermarket system has taken place, with the weekly food order to the CCPs. Those people who no longer use the food bank, could also pick up the food that they order at their old collection point (and later at the CCP). The implementation of the food buying group, however, would require a long-term, skilled volunteer to process the individual requests and make bulk orders, and would require other volunteers to pack the individual orders into boxes. Additionally, it would require space at the distribution center, in the food bank's delivery trucks, and at the collection points (later the CCP). In order for the intervention not to have any financial implications for Food Bank Rotterdam, we recommend that recipients pay for the products when they place their order. This would mean, however, that recipients have to wait for their products for a week without having the money in their bank account.

## 3.3 Short-term recommendations

### 3.3.1 Trade table (rung +0)

We recommend that Food Bank Rotterdam implements a trade table in all collection points. We suggest this because observations and interviews made clear that trading already happens amongst recipients, and because most recipients are positive about the idea of a trade table. It was mentioned in interviews with both recipients and volunteers that trading should be organised, to make sure that the process of trading is fair. The implementation of the trade table would lead to a decrease in food waste, as recipients would not throw away products that they do not want or like, but instead, would leave them behind for others. The products that are still left on the trade table at the end of the day could be taken by volunteers or given to non-recipients with a low income who live near to the collection points. The trade table would also enable recipients to better meet their personal preferences, thereby leading to the fulfilment of their needs and wishes.

We suggest that the following guidelines for implementation be followed. We propose that a recipient be able to exchange 1 product for 1 product, in order to deal with the issue of fairness raised by some recipients during interviews. Additionally, Food Bank Rotterdam could make a choice regarding whether they would like to allow recipients to leave meat on the trade table, or whether meat will be stored in the refrigerator. We recommend the latter.

The implementation of the trade table might require one extra volunteer to stand close to the table. This volunteer would make sure the trading is fair and would check for any meat being left on the table. The need for an extra volunteer, however, would depend upon the physical placement of the trade table. If the table is placed next to where packages are distributed, the current volunteers could choose someone to focus on the trade table and this person could also help to distribute packages if time allowed. Financially, the implementation would have minimal impact, as only one table per collection point would need to be acquired. The collection points may already have tables that could be used for this purpose. If they do not, however, these tables could be bought for a low price or even be donated.

### 3.3.2 Allotment garden (rung +2 and +3)

We recommend that Food Bank Rotterdam contact De Voedseltuyn in Rotterdam to explore the possibility of recipients working there to grow fruits and vegetables for personal use. Because De Voedseltuyn already exists (see Figure 5), this is a short-term recommendation. We make this suggestion because in the conducted interviews, the majority of recipients indicated that they would like to work in an allotment garden. By doing this work, recipients could help to grow products which they could then use themselves. This work then, would increase the availability of fresh fruits and vegetables.

If it is possible for food bank recipients to work in De Voedseltuyn, the recipients would need to be informed of this opportunity. The provision of this information could be done by, for example, placing informative flyers in the food packages or by hanging posters in the collection points. The volunteers would be required to design, print and distribute the flyers/posters, but this would require little time and money. The organisation of De Voedseltuyn would probably be more affected by the decision to allow food bank recipients to volunteer, as the current number of 45 volunteers working there now would increase [9].



*Figure 5 De Voedseltuyn in Rotterdam*

It should also be noted that although the majority of the recipients were positive about the prospect of working in an allotment garden, that it cannot be known whether these recipients will actually participate when given the chance. This additional activity could be implemented quickly as De Voedseltuyn already exists, but be continued even after Food Bank Rotterdam's transition to the supermarket model (when the supermarket model has been implemented).

If there is no possibility for food bank recipients to work in De Voedseltuyn, we recommend that Food Bank Rotterdam consider the possibility of creating an allotment garden for themselves on the long term. This would, however, have major consequences in terms of human and financial resources. First of all, a supervisor will be needed who possesses both managerial and gardening skills.

Secondly, middle level volunteers would be needed to explain and guide the recipients in gardening. Thirdly, a piece of land in the city of Rotterdam suitable for growing fresh produce would be required. On this piece of land, buildings like a shed would also be needed. Lastly, equipment for gardening would need to be purchased.

### 3.3.3 Mystery boxes (rung +0)

We recommend that Food Bank Rotterdam sells mystery boxes for a low price (i.e. 3 euros). We suggest that the boxes contain a mystery array of 5-10 food and non-food items. These will be food items that the food bank cannot include in the food packages themselves, due to a lack of quantity, and therefore the ability to include them in all packages. Additionally, donated toiletries and cleaning products (which some recipients stated in the interviews to miss in the food packages) could be included in the mystery boxes. Each box will state how many food and non-food items it includes, but the exact content of the box will not be revealed. We think the mystery boxes are a good idea, because we know that food bank recipients must purchase food to supplement what they receive in the food packages [10]. With the mystery boxes, they can do so in an affordable way. Additionally, in interviews, many food bank recipients stated that they appreciate any extra items that they receive.

Mystery boxes could also be used as a marketing technique, in the sense that they could be used to encourage donations from individual donors who cannot supply large quantities of a single good, but who do wish to contribute. Most importantly, however, we see these mystery boxes as being a method for providing a large quantity of goods to recipients at a low price, and at minimal effort on the part of the food bank.

For the implementation of the mystery boxes, space needs to be created in the distribution center of Food Bank Rotterdam, so that smaller quantities of donations can be stored and organised. This activity may require a greater number of volunteers which will need to be instructed on how to create these mystery boxes. The boxes used will need to be purchased by Food Bank Rotterdam. The costs for this, however, will be offset by the revenue made from selling the boxes, and the content of the boxes will be donated, so their acquisition will not have a negative financial impact on the food bank.

### 3.3.4 Physical space

We recommend that Food Bank Rotterdam makes simple changes to the physical space of the collection points, as it was observed that two of the three collection points did not look welcoming or promote social interaction. Changes in the physical space can include the implementation of decorations, a space for children to play, and the creation of a more welcoming waiting area.

Decorations could take the form of, for example, (fake) plants and (nutrition-related) posters. Adding plants can help to foster a more welcoming atmosphere at the collection points, and thus, make recipients feel more comfortable [11]. Nutrition-related posters can provide comprehensive information about how it affects health. This nutritional information can empower recipients to make healthy choices when they purchase additional food items at the supermarket. In addition to providing information, nutrition-related posters can also give colour to the empty walls. Normal posters could also be used for this purpose.

We suggest that a small section inside the waiting area of each collection point provide something for children to do whilst they are waiting. This recommendation is based on observations done at the collection points where many children came with their relatives. We suggest that some large sheets of blank papers be provided by the collection point with markers/pencils for children to use to draw.

Additionally, we recommend that newspapers and magazines be provided to make the waiting areas more welcoming. If collection points have the space, they could also provide tables and chairs for recipients to use. This would promote social interaction.

Changes to the physical space would be cheap and they would not demand large effort from Food Bank Rotterdam. This is because the collection points operate independently. Some effort would, however, be needed from the volunteers of each collection point, as decorations would need to be purchased and hung. Decorations may also need to be taken down at the end of each day, as the collection points serve dual functions.

### 3.4 Prioritisation of recommendations

The recommendations mentioned above have been prioritised on basis of effectiveness on the long-term (see Textbox 5).

The effectiveness is based on the following criteria:

- The amount of recipients that the intervention can reach.
- The effect that the intervention can have on the following problems:
  - Dissatisfaction of recipients regarding the content of the food packages
  - Dissatisfaction of the recipients regarding the current food bank system
  - Lack of recipient choice
  - Shame among recipients
  - Relationship between the volunteers and the recipients
- The effect that the intervention can have on the empowerment of recipients to make healthy food choices.

#### *Textbox 5 Prioritisation criteria*

The alternative systems and additional activities in order of priority for Food Bank Rotterdam, are listed below. These recommendations are ordered according to importance of implementation assuming that the food bank will make the transition to the supermarket model in the long term. Additionally, the problems tackled by each intervention are explained.

#### 1. Supermarket system

The most important recommendation is the transition to the supermarket model, which we suggest be started immediately. The transition will take the longest amount of time to be completed. The supermarket model is the most important recommendation, as its implementation will affect all food bank recipients and it is most complete with regards to addressing the problems identified. It is likely that by transitioning to a supermarket system, that the dissatisfaction of recipients regarding the content of the food packages and current food bank system will be reduced. Additionally, with this model the problem of a lack of client choice can be overcome. Also, as the supermarket system will give recipients the feeling that they are shopping in a normal supermarket, it may decrease their feeling of shame. Although the relationship between recipients and volunteers is already good, this system may make it even better.

From the interviews with the recipients it became clear that they have varying opinions regarding the content of the packages. A plausible reason for this is that people have different personal preferences. In the supermarket model, these personal preferences can be taken into account.

During interviews, some of the volunteers mentioned that not all of the recipients are grateful. Implementing the supermarket system may help to address this. This system may improve the relationship between recipients and volunteers, thereby making it even better than it already is. Within the supermarkets, nudges can be introduced to empower recipients to make healthy choices, and so addresses the final criteria regarding empowerment.

## 2. Ranking system

The ranking system is the next most important intervention to implement. This ranking system reaches all recipients and empowers them to make healthy food choices. We suggest that this system be implemented immediately, as it can take a while to be fully realised. This ranking system can be used in the current system, as well as in the supermarket model. Although this intervention initially only addresses two of the prioritisation criteria, this intervention will eventually become part of the supermarket model, where together they will empower all food bank users to make healthy food choices. This is why the ranking system comes second in the priority list.

## 3. Food buying group

The food buying group is the next priority, as it does not reach all recipients (not everybody may want to make use of this intervention), but can tackle three of the problems identified: lack of client choice, dissatisfaction regarding the content of the food packages, and dissatisfaction regarding the current food bank system. While the food buying group does not necessarily empower people to make *healthy* food choices, it does enable people to purchase healthy products for a low price. People can make the decision to participate in this group and it is accessible, meaning that people can collect their orders at the current collection points. Food buying groups provide recipients with choice. This can increase their satisfaction.

## 4. Allotment garden

Compared to the food buying groups, working in an allotment garden is less accessible to, for example, the sick or older recipients. This means that the intervention reaches less people. While the allotment garden does not reach everyone, it does address four of the identified problems. It can empower recipients to make healthy choices, provide more recipient choice, increase satisfaction regarding the content of the food packages, and can address the issue of shame.

The allotment garden improves access to healthy foods, and thereby empowers recipients to make healthier food choices. Some recipients stated that they would like to receive more fruit and vegetables in their food package. The garden makes this possible. The allotment garden provides recipients with a form of choice, since they can choose which products they do and do not want. From the interviews it became clear that recipients would like to work in the allotment garden. The gardens, too, can help to tackle the issue of shame, as they allow recipients to do something in return for what they receive. This means that allotment gardens can improve recipient satisfaction.

## 5. Mystery boxes

Mystery boxes can reach more people than the allotment gardens, yet they can only improve one of the identified problems, that of dissatisfaction regarding the content of the food packages. They allow people to get additional food to supplement their packages, for a low price. During interviews, recipients expressed that they missed non-food products in their packages. These would be available in the mystery boxes, which means that these boxes could lead to increased recipient satisfaction.

## 6. Trade table

One of the last priorities is the trade tables, which will not be continued after the CCP is implemented, and so their implementation is only a recommendation for the short-term. While trade tables can



affect all recipients, because they are only a short-term solution, they fall at the bottom of the priority list. Trade tables address the following two problems: lack of choice, and dissatisfaction regarding the content of the food packages. They can be implemented quickly and do not require much effort and time. These trade tables allow people to alter the content of their packages, by trading with other recipients, which provides them with a form of choice. From the interviews, it became clear that most recipients are open to this idea. Implementation of the trade table can improve satisfaction.

#### 7. Physical space

The last priority is changing the physical space of the collection points. The physical environment can affect all recipients but only has a small effect on the problem of the relationship between recipients and volunteers. It also empowers recipients to make healthy food choices. Changes to the physical space can be implemented quickly and do not require much time and effort. The changes will be disregarded when the collection points merge to form a CCP. Changing the physical space of the collection points can increase satisfaction, as it can make recipients feel more welcome and make their visits easier and nicer. Also, the relationship between recipients and volunteers is likely to be affected by changes in the physical space, because they can help to create a more pleasant environment in which people want to spend more time. If decorations take the form of nutrition-related posters, these decorations can empower recipients to make healthy food choices.

Table 1 Advantages and disadvantages of the recommendations

Approach	Advantages	Disadvantages
<b>Long-term recommendations</b>		
<b>Supermarket system (+3)</b>	More recipient choice	Expensive (rent, truck, shelves)
	Fresh products every day	Requires bigger space
	Reduces food waste <ul style="list-style-type: none"> <li>- Steers people</li> <li>- More likely to consume selected products</li> </ul>	Feeling of unfairness by food bank uses who still receive packages
	Less logistics <ul style="list-style-type: none"> <li>- No need to package food</li> </ul>	May require more volunteers
	Reduces number of collection points	Reduces accessibility
	More gratitude	Still dependent on suppliers
	More options for health promotion	Different volunteering role (can be hard for older volunteers)
<b>Medium-term recommendations</b>		
<b>Food buying groups (+4)</b>	Saves group members money	Requires someone to manage order
	Provides people leaving the food bank system with some support	Requires space (to place the food when it arrives)
	Reduces food waste at supermarket level	Requires space in the food bank trucks so that the purchased food can be distributed
	Creates a feeling of community	
<b>Ranking system (+1)</b>	Provides knowledge to recipients regarding healthiness of products	Effort needed to organise it
	Empowers food bank recipients to make healthy food choices	Recipients may not want to be told how to eat
	Prepares recipients for transition to supermarket model	Requires expertise on nutrition & health
<b>Short-term recommendations</b>		
<b>Trade table (0)</b>	More recipient choice	Might require one more volunteer
	Reduces food waste	Space scarcity
	Cheap	
	Promotes interaction	
<b>Allotment garden (existing) (+2/+3)</b>	Improves access to fresh produce	Requires education (from specialist/volunteer)
	Might increase physical activity	Not possible for recipients with physical problems (i.e. ill/old people)
	Social cohesion	Requires cooperation from De Voedseltoein
	Increases knowledge about gardening	
	Recipients feel they do something back for receiving food	
	Increases collaboration between different community groups	
<b>Mystery boxes (0)</b>	Reduces food waste	No choice
	Provision of cheap toiletries (and other products that are usually not in packages)	Extra work
	Marketing strategy	Unequal distribution between boxes
	Cheap way to obtain extra food for recipients	Limited number of boxes
	Profitable	Recipients need money to pay for boxes
<b>Altering physical space</b>	Provision of nutritional education	Recipients may be hesitant to pay for items they cannot see
	Provides kids with something to do while waiting	May not suit dual function of the space The information could possibly affect the choices of the recipients regarding the food packages. This could lead to more food waste.
	Cheap and easy to obtain	
	Contributes to a more warm and welcoming atmosphere	



# Part C

## 4. Introduction

As of 2017, there were 1.2 million people living in poverty in The Netherlands, of which 132,500 received food from a food bank [12]. Food banks are organisations which work to alleviate the effects of poverty by collaborating with companies, institutions, municipalities, and private individuals to provide people with financial difficulties with weekly food packages (For the supply process, see Appendix I). In 2017, there were 168 food banks throughout the country, at which 11,000 people volunteered [12].

The food that is donated to the food banks is often close to expiration, damaged, or has been discontinued by businesses, and so, would otherwise be thrown away [13; 14]. Because the donated food comes from many sources, the content of the food packages varies weekly [10]. These food packages provide only enough food to supplement people's regular diet for approximately 2-3 days a week [10]. This means that food bank recipients must purchase additional foods to complete their diet.



*Textbox 6 Food packages at Food Bank Rotterdam*

### 4.1 Food Bank Rotterdam

Food Bank Rotterdam receives and divides the food into food packages. It then distributes these food packages to 30 collection points and 27 connected food banks, making it one of the biggest food banks in the Netherlands [14; R. Boswinkel, personal communication, 24-05-2018]. Volunteers then work to distribute approximately 7,600 food packages yearly, to persons or families who meet the criteria set by the Association of Dutch Food Banks [15]. These criteria state that an individual may have a maximum of €215 monthly in spendable money after deducting fixed costs such as rent, other bills, and debt payments. For each additional person in a family this maximum is increased by €85 [15]. A couple with one child, for example, could have no more than €385 of spendable money monthly to be eligible for food packages. People can apply for these packages through one of six institutions which provide financial and social assistance.

Food Bank Rotterdam receives no public subsidies, and so, relies on monetary and food donations from both private companies and individuals [I. Gosselink, personal communication, 18-05-2018]. The Municipality, however, does provide the food bank with reduced rent. Most funding, though, comes from Food Bank Rotterdam's sponsors [15].

## 4.2 Primary problems of Food Bank Rotterdam

During the primary visit to Food Bank Rotterdam, the director and fundraiser mentioned what they believe to be the food bank's primary problems (see Textbox 7).

1. Potentially dissatisfied recipients due to:
  - a. Content of food packages (quality and quantity)
  - b. Current food bank system (where recipients receive food packages)
2. Lack of ability to carry out skilled labour due to lack of long-term, middle-level volunteers
3. Potentially ineffective relationship between recipients and volunteers due to:
  - a. Volunteers feeling dissatisfied, as they feel their work is not fully appreciated by recipients who they perceive to embody a sense of entitlement
  - b. Recipient frustration due to the content of the food packages and their relationship with volunteers
4. Knowledge-gap of what recipients eat, and whether or not they consume a balanced diet

Food Bank Rotterdam has also shown an interest in contributing to the improvement of recipient health and the empowerment of these recipients to make healthy food choices [R. Boswinkel, personal communication, 24-05-2018].

### *Textbox 7 Food Bank Rotterdam's primary problems*

The problems mentioned in Textbox 7 are not unique to Food Bank Rotterdam. Research has shown that recipients at food banks in both the Netherlands and the United States have also expressed feelings of dissatisfaction [3; 16]. Some food banks have experienced difficulties in recruiting skilled workers [17]. Others feel there to be an issue of a perceived sense of entitlement amongst recipients of food packages [16]. Finally, literature has shown that food banks are concerned about the quality of the food that they provide [3].

The problems described by Food Bank Rotterdam have led the food bank to generate its goal of establishing a "more efficient and sustainable organisation that meets the needs and desires of both the recipients and volunteers". While all of the problems identified by the food bank are of importance, unfortunately, they could not all be addressed within the 8 week period of ACT. For this reason, a few of these problems have been selected. The selected problems are detailed in the sections that follow.

### 4.3 Description of the project problem development

At the start of the project the team established what it believed to be Food Bank Rotterdam's primary problem. This was based on previous knowledge regarding food banks and conversations with Rob Boswinkel and Quirin Laumans from Food Bank Rotterdam. The problem identified was that of the knowledge gap of Food Bank Rotterdam regarding how to improve recipient and volunteer satisfaction, how to improve the relationship between these two groups, and how to empower the recipients to make healthy food choices (project problem).

To address the project problem, research questions were formulated (see Textboxes 8 and 9). After this, the team reviewed scientific and non-scientific literature. Next, observations and interviews with 21 recipients and 11 volunteers at three of Food Bank Rotterdam's collection points were carried out. After 9 volunteer interviews, however, it was felt that more information was still needed, and so this information was complemented by two additional email interviews. All the information collected confirmed that the team was on the right track and could move forward with the previously established project problem.

#### Main research question

What alternative systems and/or activities could be introduced at Food Bank Rotterdam to contribute to the fulfilment of the needs and wishes of the recipients and volunteers?

*Textbox 9 Main research question*

#### Sub research questions

1. What are the strengths and weaknesses of the food bank system in which food is distributed using food packages?
2. What do the current moments of interaction between food bank recipients and volunteers look like?
3. What are the needs and wishes of food bank recipients regarding:
  - a. Content of the food packages?
  - b. The current food bank system?
  - c. Relationship with volunteers?
4. What are the needs and wishes of the food bank volunteers regarding:
  - a. The current food bank system?
  - b. Relationship with recipients?
5. What alternatives and activities to the current food bank system exist?
6. What strategies could be used to empower food bank recipients to make healthy food choices?

*Textbox 8 Sub research questions*

## 5. Results

### 5.1 Results literature

The literature study uncovered the strengths and weaknesses of the current food bank system, in which pre-arranged packages are distributed. Additionally it revealed existing alternative systems and additional activities. To carry out this study, Google Scholar, Scopus, PubMed, and WUR library were used. The team began by searching the following terms: food banks; food bank recipients' satisfaction; food bank clients' satisfaction; food bank volunteers; content packages food bank; food bank alternatives; and nudges food bank.

With regards to the procedure, the literature study was done in pairs of two. Each pair was responsible for completing the literature review for one of the three literature-based research questions. The teams then double checked each other's work.

The strengths and weaknesses have been found in general literature on food banks, but those mentioned in the following section also apply to Food Bank Rotterdam. With regards to the strengths, these apply to the food bank, its suppliers, and the recipients of the food packages. The weaknesses of the food bank system mainly apply to the food bank recipients, however, the weakness of instability also affects the food bank as a whole.

#### 5.1.1 Strengths

The strengths of the current food bank system are that it provides supplemental food, diminishes food waste, and promotes social inclusion and compassion. Food banks provide recipients with food that they would otherwise not have [18]. This means that money they would have spent on this food, can now be used to purchase other items. Food banks play a role in the reduction of food waste [12; 19]. In the Netherlands, 1.9 to 2.6 million tonnes of food waste was produced in 2014, and the food bank system prevented 0.8 to 1.6% of this food from going to waste [1]. Schneider (2013) states that food banks are crucial as they play a role in 'urban mining', which indicates that products are used after economic gain has expired. Food is used in the same way that it was originally intended (human consumption) rather than thrown away [19]. Redistributing food via the current food bank system also has social advantages [20]. Food banks promote social inclusion. They are designed to be accessible and welcoming and give people the opportunity to socially interact and connect with others. The food bank system, as it operates now, is as a compassionate institution, in which recipients and the volunteers are seen as members of the same society [18].

#### 5.1.2 Weaknesses

While the current food bank system does have its strengths, it also has several weaknesses. These are addressed in Sweet Charity: Emergency Food and the end of Entitlement, one of the first publications to openly critique food banks [21]. This book details seven problems, or seven "deadly 'ins'", associated with food banks: inaccessibility, inadequacy, inappropriateness, indignity, inefficiency, insufficiency, and instability. Contemporary critiques of the current food bank system focus on recipients' feeling of indignity, instability, insufficiency, inadequacy, invisibility and inappropriateness [22]. These revised deadly "ins' are based on both Poppendieck's original "ins' as well as on new findings. The focus of this report will be on indignity, instability, inadequacy, and inappropriateness [22].

Insufficiency will not be addressed, because Food Bank Rotterdam has stated that it does not experience problems with gathering a sufficient amount of food to distribute to its recipients [R. Boswinkel, personal communication, 24-05-2018]. Additionally, invisibility will not be addressed. Some food banks imply that they address the problem of food insecurity in an adequate manner, which makes the issue of food insecurity invisible [22]. Food bank Rotterdam, however, does not make this claim.

## Indignity

Some current food bank recipients experience the negative emotions of guilt and shame [23]. Shame is the most prominently expressed emotion related to receiving food packages [16] and is related to the deadly 'in' of indignity [21]. Shame has several causes: the perceived positioning within the social hierarchy, the quality of the food in the packages and a lack of consumer choice [16]. According to literature, some recipients feel ashamed about using the food bank. This relates to the lack of independence, which people experience when they are dependent on food from the food bank [16]. Volunteers' expectation of gratitude from recipients can also lead to feelings of shame [16; 24]. Volunteers can express prejudice and can be patronising to the food bank recipients [25]. The distribution of food that is close to its expiration date, or even spoiled, can also cause shame [16]. Recipients can be made to feel that they lack value, as the food that they receive would otherwise have been disposed of. Furthermore, the fact that recipients do not have consumer choice leads to feelings of shame [16; 26]. Recipients of food banks have indicated that they would like choice regarding the ingredients they receive, so that they can make healthy meals. This is important as they have expressed that they feel ashamed when they receive unhealthy food [16].

## Instability

In general, the current food bank system can be unstable. This instability is due to the disposal driven supply chain and volunteer turnover [18]. Because the food that food banks receive is disposal driven, the content of the food packages always varies, so neither the food bank nor the recipients know what quantity and quality of food they will receive each week. A shortage of long-term skilled staff members is another cause of instability, experienced in the current food bank system [17].

## Inadequacy (nutritionally)

Food insecure persons are more likely to be obese, have diet-related diseases, and experience nutritional deficiencies [27]. These health problems result from the consumption of calorie-dense foods as opposed to nutritionally-dense ones [27]. Current food packages do not meet Dutch national nutritional guidelines [28] and recipient's diets are worse than the general and lower socio-economic Dutch population [10]. The packages lack important micronutrients, such as vitamin A, D and B12 [29]. For example, food bank users consume less fresh vegetables and milk than recommended [30; 31; 32; 33; 34]. The content of the food packages is therefore nutritionally inadequate.

## Inappropriateness (consumer choice)

It is difficult for the current food bank system to consider all consumer needs and wishes [22]. As the system operates now, people may receive products that they do not need. They may, for example, receive baby food when they do not have a baby, or receive products that are not personally dietary or culturally appropriate [25]. Next to their needs, a lack of consideration for personal preferences can also mean that some items people receive are inappropriate [22]. In addition to these causes of inappropriateness, almost 80% of the food packages contain an item that is outdated or damaged. These products create a dilemma for recipients regarding whether or not they should be consumed [35].

### 5.1.3 Theoretical framework

Alternative systems and additional activities can take many forms, and so, can promote or restrict individual autonomy to varying degrees. In this report, Griffiths & West's Balanced Intervention Ladder was used to assess the degree of autonomy that each alternative system and additional activity identified in literature promotes. Their placement was then consulted in the development of recommendations for Food Bank Rotterdam. This specific ladder was selected for use, because empowerment (one of the project goals) and autonomy (the focus of the ladder) go hand in hand. Empowerment cannot take place if an individual's autonomy is restricted.

The Balanced Intervention Ladder consists of ten levels (See Table 2). The ladder is balanced in that there are two rungs labelled “0,” with four rungs on either side: the ladder runs from “eliminating choice” to “enabling choice” [36]. Two rungs are labelled “0” because taking no action has no effect on an individual’s autonomy, and additionally, some actions taken can also have no effect (i.e. nudges) [36]. It is important to note that interventions placed on, for example, the +3 or +4 rungs are not always better than those placed on -1 or -2 rungs, as how “good” an intervention is, really depends on the goal of one’s project. In the case of this project, however, because empowerment is one of the project goals, it made the most sense to recommend only those interventions which fell onto rungs 0 through +4 (Guiding choices through changing the default policy - Enable Choice).

Table 2 Balanced Intervention Ladder [36]

Rung	Each rung explained Direct quotes from Griffiths & West, 2015, p. 1097	Alternatives & Additional activities
+4	<i>Enable Choice.</i> Enable Individuals to change their behaviours, for example by offering participation in an NHS ‘stop smoking’ programme, building cycle lanes	<ul style="list-style-type: none"> <li>• Community fridge</li> <li>• Food buying groups</li> </ul>
+3	<i>Ensure choice is available.</i> For instance, by requiring that menus contain items that someone seeking to maintain health would be likely to choose.	<ul style="list-style-type: none"> <li>• Client choice food banks</li> <li>• Coupons</li> <li>• Allotment gardens</li> </ul>
+2	<i>Educate for autonomy.</i> For example, through a media studies curriculum which shows children how to recognize the techniques used to manipulate choice through marketing, or by banning marketing primarily targeted at children.	<ul style="list-style-type: none"> <li>• Nutritional education</li> <li>• Allotment gardens</li> </ul>
+1	<i>Provide Information.</i> Inform and educate the public, for example as part of campaigns which inform people of the health benefits of specific behaviours.	<ul style="list-style-type: none"> <li>• Ranking system</li> </ul>
+0	<i>Guide choices through changing the default policy.</i> For example, in a restaurant, instead of providing chips as a standard side dish (with healthier options available), menus could be changed to provide a more healthy option as standard (with chips as an option available).	<ul style="list-style-type: none"> <li>• Nudges</li> <li>• Mystery boxes</li> <li>• Communal dinners</li> <li>• Trade table</li> </ul>
0	<i>Do nothing</i> or simply monitor the current situation.	
-1	<i>Guide choices through incentives.</i> Regulations can be offered that guide choices by fiscal and other incentives, for example offering tax-breaks for the purchase of bicycles that are used as a means of travelling to work.	
-2	<i>Guide choice through disincentives.</i> Fiscal and other disincentives can be put in place to influence people not to pursue certain activities, for example through taxes on cigarettes, or by discouraging the use of cars in inner cities through charging schemes or limitations on parking spaces.	
-3	<i>Restrict Choice.</i> Regulate in such a way as to restrict the options available to people with the aim of protecting them, for example removing unhealthy ingredients from foods, or unhealthy foods from shops or restaurants.	<ul style="list-style-type: none"> <li>• Nutritional regulations</li> </ul>
-4	<i>Eliminate Choice.</i> Regulate in such a way as to entirely eliminate choice, for example through compulsory isolation of patients with infectious diseases.	

#### 5.1.4 Alternative systems

By analysing scientific and non-scientific literature, several alternative food bank systems have been found, which could be implemented by Food Bank Rotterdam. These alternatives can be seen as a substitute for the current system of pre-arranged packages. Firstly, a system in which coupons are used will be described. Secondly, four different forms of client choice food bank systems will be elaborated on, namely the supermarket model, table model, window model and inventory list model.

##### Coupons (rung +3)

Coupons provide an alternative to the current food bank system. In the United States, these coupons are called food stamps. There, money is transferred by the government to a debit card, which individuals can then use to shop at a normal supermarket. Food Stamps can be used to purchase bread, grains, fruits and vegetables, meat, fish, dairy products, as well as plants and seeds that produce food [37]. For this reason, Food Stamps can be placed on the +3 rung (Ensure Choice is Available) of the Balanced Intervention Ladder. While Food Stamps provide recipients with the money



needed to shop at a normal supermarket, recipients can only select items from the food categories listed previously. Although food stamps provide low-income people with the ability to make their own food purchasing choices, they do come with their own problems: food stamp recipients, with the freedom the stamps provide, may not make, and may not have the ability to make, healthy food choices [38].

The implementation of initiatives which encourage recipients to make healthy food choices, in addition to the implementation of a food stamp service has been explored. These additional initiatives, too, can be placed on the intervention ladder. Restricting the type of food that can be purchased with food stamps is one option that has been considered [38]. This restriction falls onto the -3 rung of the intervention ladder, the rung of Restrict[ing] Choice, as this intervention limits what food stamp recipients are allowed to purchase with government money.

Providing vouchers for specific products, alongside Food Stamps, which lower the price of specific products, and thus encourages their selection, is another intervention option that has been explored [38]. This option falls onto the -1 rung of the intervention ladder, the rung of Guid[ing] Choices through Incentives, as the price reduction for healthy goods pushes people to purchase them. Additionally, some food stamp programs have recognised the importance of working with small supermarkets in low-income neighbourhoods to ensure that these shops provide healthy options and encourage their selection.

Nutritional education in combination with food stamps has also been considered as an option for improving food stamp recipients' health [38]. More information about this education can be found under the Nutritional Education heading of the Additional activities & Other Initiatives Section.

The implementation of the coupon system would enable recipients to buy the products they want, which could lead to increased recipient satisfaction with regards to content. In addition, this choice could lead to a decrease in recipients' shame, as they would be able to shop in a normal supermarket. This model does not involve volunteers and therefore would have no effect on the interaction between recipients and volunteers.

### Client choice food banks (rung +3)

Client choice food banks provide another alternative to the current food bank system. In these food banks recipients do not receive pre-arranged food packages. Rather, recipients are able to select the food items they would like to take home, within limits [4]. Enabling client choice shows care for people's dignity and reflects a desire to serve them in a personal way [2]. Providing clients with choice is important because only they know what food items they already have at home [2]. Additionally, people may not know how to prepare the food they receive, or may not be fond of the food they receive in their food their food packages. By giving recipients the choice in the form of client choice food banks, there is more chance that people are able to eat nutritious meals. Client choice food banks can take the following forms: supermarket model, table model, window model and the inventory list model.

All client choice food banks fall onto the +3 Rung (Ensure Choice is Available) of the Balanced Intervention Ladder, though each food bank which follows these models, establishes its own rules regarding the degree of freedom that recipients have to select the items that they want [4]. Recipients, however, are never completely free to select any and all items that they would like, which is why client choice food banks fall onto rung +3, and not +4 of the intervention ladder.

### *Supermarket model (rung +3)*

In the supermarket model, people are able to select food items as they would in a regular store. This gives people "shopping" a sense of dignity [39]. Products are placed on shelves according to the food group they are in. Food bank users can walk through the room and select products. There are, however, some guidelines set by the food bank that must be followed, that determine how much and what kind of products clients can choose [2]. The supermarket style food bank requires a room that is large enough to fit shelving and still provides people with enough room to walk. By making use of a supermarket model, food bank users are able to read labels and look at the food in the same way that they would do in a normal supermarket. This makes it a client-friendly system [2]. In the Netherlands, 10% of food banks have already transitioned to a supermarket model, so that recipients can put together their own food package, rather than it being arranged for them [40]. These supermarket model food banks can for example be found in Arnhem and Breda [41; 42].

Some supermarket style food banks use a point system [39], in which food bank users receive a certain amount of points to use weekly. Different food types are valued at a different number of points, and people can spend their points on whatever items they like. Other supermarket style food banks, sell food at token prices [43].

The implementation of the supermarket model would enable recipients to choose which products they take home. Therefore, it is likely that this system would lead to increased satisfaction with regards to content. This choice might also decrease feelings of indignity, because the environment would be similar to a normal supermarket. In addition, this system could improve the relationship between the volunteers and recipients, since recipients would probably be more grateful. It is likely that this would lead to higher satisfaction for both groups.

### *Table model (rung +3)*

In the table model, food is placed on tables and is categorised by food group [2]. Food bank users can walk past the tables, select the food they like, and place the selected items in the bags they bring. A challenge of this model is that it requires a space large enough for recipients to manoeuvre [2]. The table model enables users to touch and select the food, as they would if they were shopping in a normal supermarket. Additionally, many people can be served at once [2].

The table model would increase recipient choice, and therefore would lead to increased satisfaction with regards to content. As the volunteers could help the recipients and answer their questions regarding certain products, it is likely that the interaction between these two groups would improve.

### *Window model (rung +3)*

In the window model, users point to the items that they wish to take [2]. Volunteers then select these items from the shelves and pack them into bags. The amount of food that food bank users are allowed to select is determined by weight. Different sized households are allowed different weights. In this model, food bank users do not touch the food themselves. The strength of this food bank model is that they do not require much space. A downside to the model, however, is that quite some time is required to help each user [2].

This model would provide recipients with more choice, thereby leading to a higher level of satisfaction regarding the products they receive. Recipients, however, would not be allowed to touch the products themselves, so it is likely that their feeling of shame would not diminish. The relationship between the recipients and the volunteers might improve, because the contact would be longer and the volunteers would learn more about the personal preferences of the recipients.



### *Inventory list model (rung +3)*

In the inventory list model, recipients select the products they want from a list. They receive this list when they arrive at the food bank, and volunteers prepare their package based on these preferences [2]. The amount of items people can take home is determined by weight and household size. An advantage of this system is that it is accessible, and it can be used by people that are not able to stand or walk. To use this model, however, people must be able to read the list of food items available, and so, language can restrict access. A solution for this can be providing pictures next to the text [2].

In this model, recipients would be able to choose products according to personal preference, which could lead to a higher level of satisfaction with regards to the food items they receive. The volunteers have to prepare the packages on the spot, which would take time. This could decrease the satisfaction of the volunteers and the recipients, as the volunteers would be more busy, so the degree of interaction between both groups would decrease.

#### 5.1.5 Additional activities & other initiatives

In addition to shifting away from the current food bank system in which pre-arranged packages are provided to recipients, Food Bank Rotterdam could choose to implement one or more of the following additional activities: allotment gardens, food buying groups, mystery boxes, communal dinners, community fridges, and trade tables. These are described below.

#### Allotment gardens (rung +2/+3)

An allotment garden can be seen as an addition to the current food bank system. The creation of an allotment garden can help to increase the accessibility of fresh and healthy products to low income people [44]. In addition, the recipients can learn how to garden and can socialise. Allotment gardens, however, cannot solve all diet related problems. While they do provide recipients with fruits and vegetables, gardens cannot provide the products needed to make a complete meal. For this reason, allotment gardens should be viewed as additional activities that food banks can adopt, and not food bank replacements. In the Netherlands, several initiatives of food banks in combination with allotment gardens already exist. Food Bank Almelo, for example, has set up their own organic allotment garden to grow fruits and vegetables, which can be distributed amongst their recipients [45]. Also, Food Bank Enschede collaborates with an allotment garden in the municipality at which recipients and volunteers of the food bank can work. In exchange the garden provides Food Bank Enschede with approximately 10% of its revenue [46].

While allotment gardens for low income people have their benefits, the system does have its disadvantages [47]. Firstly, allotment gardens require many resources. Land, materials, and a management team with both organisational and gardening skills are all needed, and these things can be difficult and costly to obtain. Secondly, there are fluctuations in the quality and quantity of produce that can be harvested. And finally, the willingness and motivation of the recipients to volunteer can be a challenge. Additionally, experience has shown that allotment gardens have a high volunteer turnover rate, which can disrupt a garden's operation [47].

Allotment gardens can be placed on the +2 (Educate for Autonomy) or +3 (Ensure Choice is Available) rungs of the Balanced Intervention Ladder. This is because allotment gardens both provide users with a variety of fruits and vegetables to take home, but also, are places where members can learn to grow their own produce.

In order for Food Bank Rotterdam to adopt allotment gardens as an activity, pieces of land would need to be organised where different types of fruits and vegetables could be grown. Food bank recipients and volunteers could then work in the gardens. Food Bank Rotterdam does currently have

contact with a garden (De Voedseltuyn), where recipients can go to pick up bags of fruit and vegetables as an addition to their food package.

Allotment gardens improve access to healthy foods, thereby it is likely that it empowers recipients to make healthier food choices. Because of this, the satisfaction of recipients regarding the content may increase.

#### Food buying groups (rung +4)

Food buying groups are groups of people who live in close proximity to each other and who pool together money to purchase food in bulk [48]. This practice is cost effective, enables the consumption of high quality food that would otherwise be unaffordable, and eliminates food waste produced by retailers [8]. Each food buying group has its own degree of formality, organisational structure, and motivation. Open Food Network is an Australian website on which people can search for food buying groups near them, and on which food buying groups can both place orders and connect with suppliers [48]. Food Share, a Toronto based organization, is another example of a food buying group. Here, by buying in bulk, low-income communities can share a big batch of produce, resulting in lower costs per person. [49].

CoBuy provides a similar service to the Open Food Network. It is an app, designed by a team in New Zealand, which simplifies the cooperative buying process, by processing individuals' orders and sending payment reminders. This software is provided to food buying groups in exchange for a percentage of the cost of every group order placed [8].

All of these food buying collectives can be placed on the +4 (Enable Choice) rung of the Balanced Intervention Ladder, as buying as a group allows people to purchase food that they may have been unable to buy as an individual. Food buying groups, in essence, serve to increase individual choice.

Because the food that food banks provide is meant only to supplement recipients' diets, they do have to purchase additional food. Food buying groups could work to reduce the amount of money recipients must spend on these additional products. Food banks could provide recipients with a list of products to choose from. This list could include items such as eggs, oil, milk, and any other products that recipients tend to buy regularly. Recipients could then purchase products in bulk for a lower price and could collect them the following week. Food banks could implement this system by adopting an app like CoBuy.

Implementing such a group buying system, would lead to increased recipient choice. This is because they could decide themselves what additional products they would like to purchase. While the satisfaction of the recipients regarding the content is not affected directly, recipients' overall satisfaction would be higher. The volunteers at the collection points would have to do more work, as they would need to hand out the additional products ordered. This means that their satisfaction level might be affected.

#### Mystery boxes (rung +0)

Too Good To Go is an app focused on food waste prevention [50]. A lot of food from restaurants and shops gets wasted, as they have rules about when food must be sold by [50]. This app allows people to buy a 'mystery box' for a few euros. In this box, restaurants and shops can sell the food that they have left over at the end of the day, and it can be picked up at their location [50].

This service can be placed on the 0 rung (Guide Choices Through Changing the Default Policy) of the Balanced Intervention Ladder. This is because Too Good To Go guides consumers to make the choice to buy leftover food, by having restaurants box their excess food instead of throwing it out. Because the content of the boxes is a mystery, however, consumers do not get to choose the exact products that they receive.

Food banks can adopt and implement mystery boxes in a similar way to restaurants. If food banks do not have enough of a specific food or non-food item (ie. toiletries) to be able to use it in its packages, these items could be placed together in a food bank mystery box, which recipients could then buy for a low price. Recipients must always purchase additional items to complement their food packages, and mystery boxes could allow them to acquire these items at a low price. These mystery boxes could also be used as a sort of marketing technique by food banks to draw donations from individual donors. An individual, for example, may not be able to supply 300 of the same item, but could supply 15 of the same item. These 15 items then could be placed in the mystery boxes. The mystery boxes could then, enable smaller donors to make a contribution that they would not otherwise be able to make.

Mystery boxes would give recipients the opportunity to purchase extra products. This means that their satisfaction regarding the content of the food packages would not be directly influenced, but it is likely that their general satisfaction would increase as a result of these low-priced, additional items. Volunteer satisfaction might decrease, however, as handing out these boxes would be an additional task for them to carry out. The mystery boxes would not impact the relationship between the volunteers and recipients.

### Communal dinners (rung +0)

Buurtbuik is an initiative which exists in various cities in the Netherlands. It collects food from restaurants and shops that otherwise would be thrown away and uses these products to cook food for communities [46]. This initiative aims to prevent food waste and to bring people together. By providing free food, it caters to both food insecure people as well as people looking for social companionship. The dinners are not limited to specific groups, as is true of soup kitchens. Rather, everyone that wants to join for dinner is welcome. This non-profit organisation is entirely volunteer-based [51].

This initiative falls onto the 0 rung of the Balanced Intervention Ladder, that of Guid[ing] choices through changing the default policy. While individuals can choose whether or not they would like to attend one of Buurtbuik's meals, once there, they do not get to select what they are served.

Food banks could implement communal dinners by providing them for both community members and food bank recipients, who could choose whether or not they would like to attend. These dinners could potentially lead to greater recipient and volunteer satisfaction and additionally, provide recipients with an extra meal weekly. In addition to being a social event, these meals would help to reduce the amount of money that recipients would need to spend on additional food items.

It is likely that the recipients' satisfaction in general would increase due to the provision of an extra meal per week, and due to increased social interaction. The interaction between volunteers and recipients would increase if they cook and eat together.

### Community fridge (rung +4)

Community fridges are fridges placed in public spaces, in which people can share food [52]. People can place food that they have left over in a fridge and other people who want or need the food can take it for free. These fridges work to connect the community, as they encourage people to share their food amongst each other [52]. Community fridges can be placed on the +4 rung of the Balanced Intervention Ladder (Enable Choice). Organisations place these fridges in public places in an effort to encourage communities to share their food, and individuals can choose for themselves whether or not to use the fridges. Those people who do choose to use them, however, can only choose from the items that others have contributed. In the Netherlands, community fridges are placed in, for example, Utrecht [53] and Wageningen [54]. The community fridges can also be linked to an app or website so that people can check what is in the fridge without physically visiting it. For example, in Wageningen the community fridge is linked to a Facebook page, on which people can leave a

notification with a picture of what they have put in the fridge, so that others know when there is something to pick up [54].

Food banks could implement this additional activity by placing food bank fridges in public spaces. Community members and food bank recipients could place their leftover food in these fridges, and subsequently, could take food for free. This initiative is based on trust, and both food bank and non-food bank recipients can use the fridge.

This activity would create the possibility for recipients to acquire more food, which could lead to an increase of their satisfaction level. Nothing would change with regards to volunteer satisfaction or the relationship between the recipients and volunteers.

### Trade table (rung +0)

Besides the additional activities that the researchers found to already exist the researchers came up with their own idea for an additional activity, that of a trade table. This was based on literature, in which it became clear that recipients are not completely satisfied with the products they receive from the food bank in terms of personal preference and nutritional value [18]. In addition, it was mentioned by Food Bank Rotterdam that they have noticed recipients trading products amongst themselves [R. Boswinkel, personal communication, 24-05-2018]. However, at this moment, trading is not organised, and is neither prohibited or promoted by the food bank. Trade tables could be implemented at Food Bank Rotterdam's collection points. An organised trade table would mean that somewhere in the collection points, a table would be placed. Here, recipients could leave behind products that they received in their package but do not want or do not like, and/or take products that other people have left behind. This could be organised in such a way that a volunteer supervises the table, to ensure that trading is fair.

Trade tables can be placed on the 0 rung (Guide choices through changing the default policy). This is because they have no impact on people's autonomy. Food bank recipients already trade food amongst each other, but these tables would make this process easier and more formal.

Implementing a trade table would provide recipients with more choice regarding the products they take home, meaning that their satisfaction with regards to the content of their packages would increase. The interaction between volunteers and recipients might also increase, as there would be more interaction around the trade table. The volunteers would be required to perform an extra task (that of managing the trade table), which may decrease their satisfaction.

#### 5.1.6 Promotion of healthy food choices

Food bank recipients have a more unhealthy diet than people who do not use the food bank. This may be related to the food packages not meeting the national nutritional guidelines [55; 56]. In relation to this, food bank recipients have an increased risk of developing diet-related diseases and nutrient deficiencies [27]. Food banks have acknowledged this and recognise that it is important to empower recipients to make healthy food choices. Their efforts have taken the form of introducing nutritional regulations, nudges, ranking systems, nutritional education programs, cooking programs, cooking demonstrations and nutritional education apps. These interventions are discussed below. These interventions could empower recipients to make healthier food choices.

#### Nutritional regulations (rung -3)

Nutritional regulations can be used to ensure that food bank recipients receive healthy foods and can be made by national or local governments, as well as by food banks themselves [27]. These regulations focus on the distribution of healthy and nutritionally rich foods (i.e. fruits and vegetables) and the elimination of calorie-dense and nutrient poor ones (i.e. sugar sweetened beverages and candy) [27; 57].

There are, however, limitations to setting nutritional regulations in a food bank organisation. They can for instance negatively influence the relationship between food banks and suppliers [27]. In order to overcome this, suppliers can be informed about the benefits of eliminating unhealthy food products from recipients' diets, and thus about the need to donate healthier items. It is true that introducing nutritional regulations can restrict people's freedom to choose between healthy and unhealthy food products. Food banks, however, provide food to supplement peoples' diets. They do not provide all of the food that people need. This means that food bank recipients still have the possibility to purchase unhealthy foods themselves [27].

While nutritional regulations do promote healthy eating, they fall onto the -3 rung of the Balanced Intervention Ladder, as they restrict the choice that people have, by eliminating unhealthy options. While people may benefit health-wise from the implementation of these regulations, they do restrict individual autonomy. Food Bank Rotterdam, could use nutritional regulations as a way to promote healthy eating. It could for example, create rules about what types of food it will and will not accept from suppliers. While this could have a positive impact on the health of the recipients, it could also negatively impact the food bank's relationship with suppliers.

### Nudges (rung +0)

A nudge can be defined as a small change in the environment that steers people to make a certain decision, without prohibiting the other options [58]. Nudges can be used in client choice food banks, to influence the behaviour of recipients, and push them to make healthy food choices [4]. It is important that nudges are inexpensive and easy to implement [3]. In the following section, two types of nudges will be described: nudges related to product placement and nudges related to social norms.

Nudges related to product placement can be implemented in client choice food banks. By simply making an option more visible, one makes it more likely to be chosen. Increasing an item's visibility can be done by placing it on eye level or by increasing the number of times it appears in a store [4]. Nudges were implemented in the supermarket style North Texas Food Bank [3]. Here, brown rice and onions were the items selected for promotion. Brown rice was given double exposure and its selection rate increased from 14% to 44%. To promote the selection rate of onions, signs were used about the possibility of improving the flavour of meat by cooking it with onions. This nudge, however, did not increase the selection rate of onions, though, prior to their promotion, their selection rate was already high [3].

Nudges can also draw upon social norms to promote healthy choice, through means of social messages. For instance, placing the sign "In this store, most people choose at least 5 produce items", can increase the purchase of produce [59]. These kind of messages can be complemented with smileys and a thumbs-up, or with the number five, to strengthen the message. These messages aim to push people who do not typically buy healthy products to do so, and those who already do, to continue to do so.

All of these nudge types can be placed on the 0 rung of the intervention ladder, that of Guid[ing] Choice Through Changing the Default Policy. This is because, though nudges push you to make healthy choices, by making the healthy option the easy one, in doing so, the unhealthy option does not disappear. Nudges, therefore, do not limit your autonomy. They do not force you to make a decision you do not want to make. Rather, they enable you to make the choice that you would like to make, but have difficulty making without some help.

If Food Bank Rotterdam made the decision to shift to a client choice food bank model, it could use nudges to empower recipients to make healthier food choices. As stated previously, these nudges could take the form of signage or the double exposure of specific healthy products.

### Ranking systems (rung +1)

To get people to select products of high nutritional value, ranking systems can be used. In the UK, all major food retailers have to add a consistent way of ranking products, in the form of a 'hybrid system'. This system combines colour codes, a 'low-medium-high' indication and percentages of daily recommended amount/maximum [60]. A traffic light system can also be used to indicate the healthiness of foods. For this system, products are identified with green (healthy), yellow (less healthy) and red (unhealthy) colour codes. In past studies, this system has proven to be useful to increase people's awareness about the healthiness of products and to let them make healthier food choices [5; 6]. Such ranking systems are also used by supermarket style food banks [27].

Ranking systems fall onto the +1 rung (Provide Information) of the Balanced Intervention Ladder, or the Provid[ing] Information rung. This is because ranking systems are more than just a nudge (which fall onto the 0 rung of Guid[ing] Choice Through Changing the Default Policy), as colour codes, smileys, and numbers do not only push people to make healthy choices, but additionally, provide people with information regarding the nutritional value of certain foods.

In the current system of Food Bank Rotterdam in which food packages are handed out to recipients, ranking systems can be used to increase recipients' awareness regarding nutritional value. For such a system to be implemented, however, comprehensive nutritional knowledge is required. Using one ranking system for all food banks can limit the number of experts needed to implement this. Ranking systems can also make suppliers and donors more aware of the importance of providing nutritious food [27].

### Nutritional education programs (rung +2)

Nutritional education is a combination of different strategies that contain actions on individual, community and/or policy level. Nutritional education and communication is a field that can be covered by many specialisations of experts and tools which can work complementary or autonomously [61]. Therefore, nutritional education can be executed by many different ways, for example through cooking programs, cooking demonstrations, lectures, educating mobile apps and computer software. As technology develops in the contemporary world, many apps and software are established every day [62]. The approach of nutritional education can be either targeted or generic. Some education tools and approaches are described below. Nutritional Education, including Nutritional Education Apps can be placed on the +2 (Educate for Autonomy) rung of the intervention ladder, as it involves educating people so that they are able to make more informed choices about the foods they choose to eat. Through this education, their degree of autonomy is increased.

### Nutritional education apps (rung +2)

As mentioned above, apps/software on nutritional education are being developed in a fast rate. The purpose of these tools is to provide information about nutrition and general health. These apps/software, provide a large amount of targeted information about, for example, personal body weight, physical activity levels, tips for improvement, and information about the appropriateness of specific foods [63]. These apps, however, are not always aimed at the improvement of nutritional education. The lack of strict evaluation by scientific experts makes it more difficult for users and researchers to assess the appropriateness of apps and software for their specific purpose of use [63].

An example of an app for improving awareness on food consumption and promoting healthy choices is SmartAPPetite [64]. It is important to note that there are many apps and software that are cheap or even free and easily accessible on the web, without being evaluated by health experts. This is concerning because these apps may not only provide users with wrong information and increase the knowledge gap in nutritional education, but also worsen users' health condition by promoting non-targeted information to them [65].



Food Bank Rotterdam could promote the use of one or two evaluated nutritional education apps by placing posters with information about these apps in their collection points or flyers in the food packages. This would require minimal effort, and recipients may benefit.

### Cooking programs and demonstrations (rung +2)

The use of cooking programs in several food banks has proven to be effective in increasing knowledge regarding the nutritional value of certain foods and empowering recipients to use fresh products more often [66]. It has been shown that providing recipients with information about how favourable certain food categories are for one's health, can change the way that recipients eat [67]. Cooking demonstrations and sampling have been used in the past to promote healthy food selection [67]. Exposure to simple and healthy recipes can increase recipients' willingness to cook, which can lead to an improved diet. Additionally, it can lead to a reduction in the purchase of unhealthy food products (snacks, sweets, soda drinks, etc.) [67]. Training kitchens can also be used to provide cooking and nutritional education. In these practical classes designed to make recipients less dependent on the food bank, people learn not only how to prepare healthy meals, but also how to manage their food budget [68].

All of the nutritional education programs mentioned above fall onto the +2 rung (Educate for Autonomy) of the Balanced Intervention Ladder, as these programs serve to educate people on which products are of greatest nutritional value, and additionally, on how to cook them.

Currently Food Bank Rotterdam does not host cooking demonstrations or training kitchens. It could, however, use these activities to provide recipients with nutritional information, to provide cooking skills, and even to introduce recipients to new foods. However, the size of the collection points is an important factor that would affect such an activity to be held.

### Recipe Software/App (rung +1/+2)

Software/apps which provide recipes tailored to their users can also be used to empower recipients to make healthy food choices. Tailoring messages involves creating customised messages for a targeted population, and has proven to be an effective strategy for efficient health communication [69]. Recipients pay greater attention when the provided information pertains to them [70; 71]. Additionally, individuals feel that the act of cooking becomes less abstract [72].

An app called, 'Quick! Help for Meals,' was developed for phones, tablets, and computers to empower food bank recipients to make healthy food choices. This app allows users to find recipes that match the food items that they have available [72]. Within minutes, this app creates personalised plan of recipes and provide every recipient with information about the nutritional value and food-use tips. Recipients can create a personalised booklet with the recipes provided by the app that appeal most to them [73].

One can filter the recipes provided by food type, cooking method, number of people, and dietary restrictions. This app offers, for example, kid-friendly options, Asian and Latino recipes, recipes for one or more people, and recipes that are suitable for people with diabetes. This app gives information about preparation time and the number of servings. Additionally, there are illustrations. This app also provides information on the preservation of food, controlling portion size, and the consumption of fat, sugar and salt [73]. Food Bank Rotterdam could promote the use of this app by placing posters in their collection points or flyers in the food packages. This would require minimal effort, and recipients may benefit from it.

In general, recipe software/apps can be placed on the +1 (Provide Information) or +2 (Educate for Autonomy) rungs of the Balanced Intervention Ladder. Their placement, however, depends upon the nature of the program. 'Quick! Help for Meals,' however, falls on rung 2, as it provides users with illustrations showing the steps people can take to cook specific meals.

## 5.2 Results interviews

Interviews were used to complement the literature study, and to assist in answering the research questions. The interviews with volunteers and recipients were conducted at 3 collection points over two days (12th and 15th of June 2018). Recipients and volunteers were asked whether they were willing to volunteer a few minutes of their time to answer some questions. They were informed that the information they provided would remain anonymous, that participation was voluntary, and that they could end their participation at any time during the interview.

The interviews were semi-structured, leaving room for the interviewer to react to the answers given and to ask follow-up questions (see Appendices E and F). The questions asked were formulated by the researchers after the literature review was conducted. The results of these interviews and observations are described below.

### 5.2.1 Interviews recipients

The initial aim was to interview at least ten recipients, but a total of 21 recipients was reached. The recipients were approached as they were coming to collect their food packages and in two out of the three collection points visited, recipients were not aware that an interview would be conducted. Not all recipients responded to all questions asked. Due to time limitations, it was difficult to ask follow-up questions when the respondents did not always provide clear, explicit answers.

More women were interviewed than men (13 out of 21), but 52% of food bank users in the Netherlands are women [1], so our sample contained slightly more women than a representative one. Additionally, a majority of the recipients that were interviewed lived alone (12 out of 21). 42% of the Dutch food bank population lives alone [1], while 57% of the recipients we interviewed lived in a one-person household. One-person households, then, were slightly overrepresented in our sample. Since households between one and four members all receive one food package, household size is an important factor to consider. A family of four, for example, may have a different level of satisfaction with regards to the quantity and quality of the packages, than a family of one, as both these households receive the same food package. As we did not use the same age categories as used by the Dutch Food Bank Association, nothing can be said about the representativeness of the sample with regards to age. The characteristics of the recipients are shown in Figure 6.

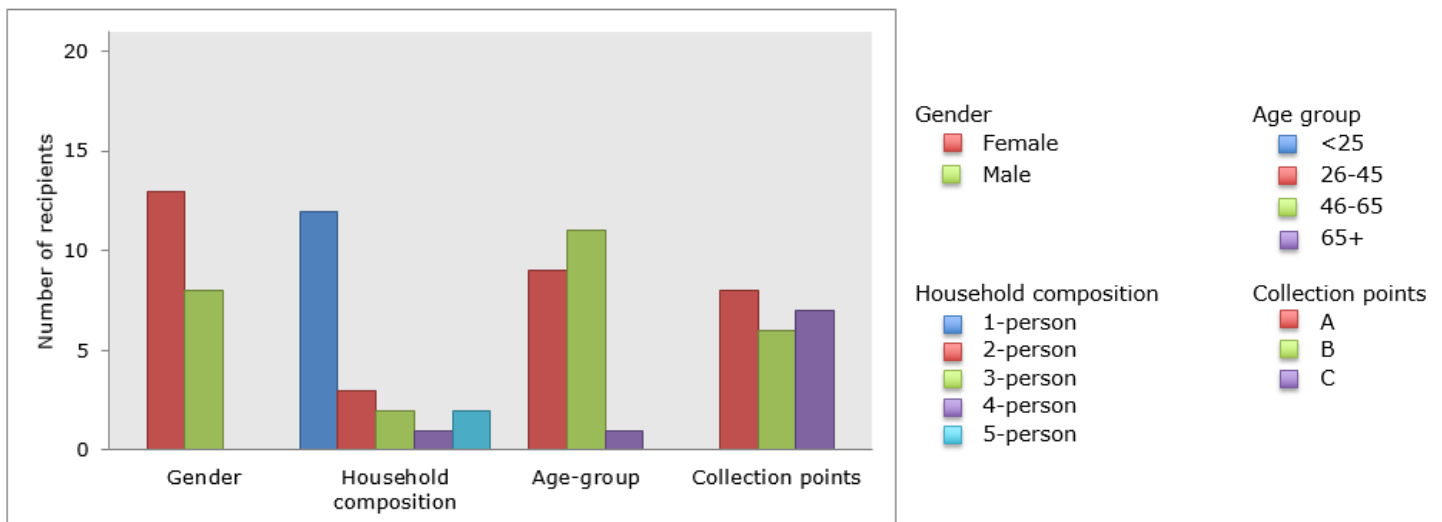


Figure 6 Characteristics of the interviewed recipients



## Content of the food packages

In general, 13 out of 17 recipients were positive about the content of the packages, while 3 out of 17 recipients were negative about the content, because they felt that it was not varied. Out of 17 recipients, 1 person was neutral about the content of the packages.

With regards to content, 4 people mentioned fruit. Out of these people, 1 was positive and 3 were negative about the fruit they receive. Of the recipients with a negative opinion, 2 mentioned that they receive too little fruit and 1 mentioned that he receives too much. An opinion about the amount of vegetables in the food packages was given by 10 recipients. 6 of these recipients were positive about the vegetables and 4 were negative. Out of the 4 recipients with a negative opinion, 2 stated that they receive too many vegetables and 2 stated that they do not receive enough. Bread was mentioned 6 times throughout the interviews, with 2 positive opinions and 4 negative ones being given. 2 recipients stated that they do not like the bread and 2 mentioned that they receive too much of it.

Recipients' opinions about meat were also divided; out of the 5 recipients that mentioned meat, 3 were happy with the meat they receive in their package and 2 stated that they would like to receive more. Dairy products were mentioned by 8 recipients, who were all negative about the topic. Out of these recipients, 5 stated that they would like to receive more dairy products (milk and cheese) while 3 stated that they would like to receive less (butter). The stated wish for more cheese, however, may have been influenced by the fact that the recipients (at least from 1 collection point) received cheese in their package the week before the interviews were conducted. When the interviews were conducted, no cheese was included in the packages.

In total, 7 recipients mentioned cleaning and self-care products, out of which 5 stated that they would like to receive more and 2 stated that they were happy that they received laundry detergent this week. The 2 recipients which mentioned the detergent were interviewed at the same collection point. Recipients stated that there are some products they miss in their packages, such as diet-specific ones (3 out of 3) and products for children (2 out of 2). For example, one of the recipients mentioned that he does not eat pork because he is Muslim, so he gives that pork away to others. The 3 recipients that mentioned product expiration dates, spoke about them negatively. They all mentioned that they would like to receive less products that are close to or past their expiration.

While generally people stated that they were happy with the content of the food packages, recipients shared varying opinions regarding changes that could be made to make them even better. First, recipients spoke about personal preference. Different recipients can have different consumption habits and thus have different preferences regarding what they would like to receive in their food package. Recipients also mentioned the variation between packages at different collection points. The content of the packages is different per collection point, which can influence both the recipients' opinions about the packages as well as the answers given. For example, people from the collection point that received laundry detergent may be more likely to say that they generally miss cleaning products, because these products are now on their mind. On the other hand, receiving this laundry detergent could have made their opinion about what they receive in the packages more positive. This can influence the results in the way that recipients from the collection point that received laundry detergent, have other opinions about the content of the food packages than recipients from other collection points.

The third reason can be that the packages vary weekly, so the recipients can miss a product in this week's package, that they received last week or be happier with the content if they received a product last week that they really liked. If the recipients were asked to give their opinion about the package at another time, their answer could be different as well.

## System

Out of all recipients, 14 were positive about the current system of receiving prearranged packages. 2 were negative about it, and 3 were neutral. It was mentioned by 4 recipients that they do not have any knowledge regarding other system types. Out of the 18 recipients who shared their opinion on the supermarket model, 12 stated that they thought it was positive. It was said to be negative by 5 recipients, and 1 recipient was neutral. Out of the 10 recipients who commented on the coupons system, 8 recipients stated that they thought it sounded like a good system. This system was said to be negative by 1 recipient, who thought it would be a mess, and the system was seen to be neutral by 1 recipient. The positive reaction to both the supermarket and the coupon model by 4 recipients can be explained by the fact that they both provide recipient choice.

5 recipients stated that they were open to the food bank providing additional activities. A recipient at a larger food bank mentioned that activities were sometimes already organised, such as a 'Sinterklaas' afternoon for children. Different additional activities were suggested to the recipients. In general, the idea of cooking lessons provided by the food bank was responded to negatively (10 out of 17). Out of the recipients who were negative about the cooking lessons, 6 indicated that they already know how to cook, and therefore, that they do not need these lessons. A website or app, which would provide the recipients with recipes was also responded to somewhat negatively (8 out of 15). 6 recipients were positive about the idea and 1 recipient was neutral about it. The recipients who responded negatively indicated that such recipes are not necessary for them. 1 recipient, however, did state that she would like to receive budget recipes.

Recipients responded positively to the idea of a trade table (11 out of 16). Only 4 of 16 people responded negatively to the idea, and 1 person was neutral about it. It was mentioned by 5 recipients that trading already happens amongst recipients. For some, this was a reason that the trade table was not necessary, whilst others thought it could make trading more convenient. Rules to keep the trading fair were specifically mentioned by 1 recipient. In addition, of the recipients who were negative about the trade table, 1 recipient stated that he thought it would lead to less interaction between recipients. In general, an allotment garden was also seen to be positive (13 out of 15), although some recipients mentioned that they would not be able to work in one due to physical limitations. Even though many recipients expressed interest in the allotment garden, it is uncertain whether these people would actually participate in one, if one was implemented.

Most recipients were positive about the current system of prearranged food packages. This could be due to a lack of knowledge of alternatives, as 4 recipients stated during interviews that they did not know of other options. Another reason could be that the recipients would, without the help of the food bank, not have enough food, and so are less concerned about the system of receiving food, and more concerned about whether they will receive food or not. Overall, most recipients who commented on the supermarket model and the coupons system were positive. Some of them, however, had a negative reaction. A reason for this could be the lack of knowledge that they had about those systems. In addition, the explanation the interviewers provided regarding these systems may have steered the recipients towards responding in a certain way. This is because the explanation they gave, emphasised the ability of recipients to choose their own products.

Even though recipients have stated to be willing to join activities, it is not certain if they will actually participate. For example, it is unclear under what conditions the recipients would want to participate in cooking lessons or in an allotment garden. Lack of available time, lack of accessibility, and the amount of obligations attached to the activity, could influence recipients decision to not participate. For the trade table, recipients have stated that trading already happens amongst recipients. However this might not be the case in all collection points, and some recipients might not know that they could trade their products or feel bad doing so. These people who do not trade their items, might end up throwing away these items. Therefore introducing a trade table could lead to a decrease of food

waste and recipients being more satisfied with the products in their food package. Most of the recipients who shared their opinion on the website or app for recipes have shared not to be interested in it, stating because the recipes are unnecessary. However, some recipients have also indicated not to have knowledge on some food within their package or do not know how to prepare it. Therefore such an app or website could provide specific recipes for what is in the recipients' package leading to less food waste.

### Relationship with volunteers

In general, the recipients only stated positive things about their relationship with volunteers, or did not explicitly state an opinion. They said that they perceive them to be nice (10), helpful (4), polite (4) and sweet (1). The recipients (11) think that the volunteers are open for a chat if they have the time. The question about the possibility of voicing concerns to the volunteers was answered by 12 recipients. Out of these, 9 stated that they feel like they can share their concerns, 1 said that she feels she cannot, and 2 stated that they do not know whether they can, because they have had any to share.

The results of these interviews may be influenced by a feeling of social pressure, especially as interviews were carried out face-to-face and with the volunteers close by. The recipients could have had the feeling that they needed to say something nice about the volunteers and that they could not be totally honest. They may have felt this way because they are dependent on the volunteers for their food package, and so not speaking about them positively could seem rude.

#### 5.2.2 Interviews volunteers

As with the food bank recipients, the aim was to interview at least ten volunteers. The volunteers were provided with the date of interviews (12th of June) by the Head of the Client Administration of Food Bank Rotterdam, with the hope that this information stimulate their participation. The recruitment strategy was proven to be insufficient. With regards to the volunteers, the aim of ten interviews was not reached. For this reason, contact details of a third collection point were requested from the Head of the Client Administration of Food Bank Rotterdam and interviews were conducted there (on the 15th of June). In total, 9 volunteers participated in the in-person-interviews. However, the number was still insufficient, and the Head of the Client Administration of Food Bank Rotterdam was contacted again. She was asked to forward the List of Interview Questions via email to the volunteers of all the collection points in Rotterdam. The result of this action was that two more volunteers replied to the questions via mail before the cut-off moment. In this way, a total of 11 volunteers was reached.

11 volunteers were interviewed through 8 interviews. Face to face interviews were conducted with 9 volunteers, at the same collection points as where the recipients were interviewed. Of these 9 interviewees, 4 spoke together in a single interview. An email interview was answered by 2 volunteers from other collection points.

The gender division of the volunteers was quite even, with male (6) and female (5). With regards to their age, there was at least one volunteer in each age group: younger than 25 (1), 25-45 (2), 46-65 (4), 65+ (4). The full characteristics of the volunteers are shown Figure 7. Accordingly to the format of the interviews the results are categorised by theme (System; Relationship with recipients; Satisfaction).

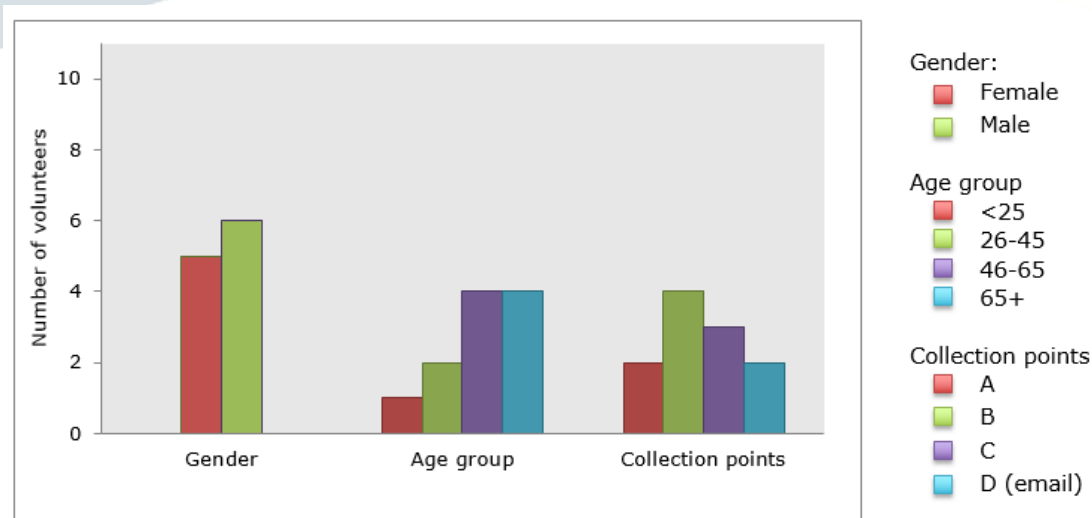


Figure 7 Characteristics of the interviewed volunteers

The fact that 4 volunteers all answered through one interview is a point of discussion. If these volunteers were all interviewed separately, they may have answered some questions differently, though not necessarily. The results could also have been influenced by the fact that a different number of volunteers were interviewed from each collection point. Volunteers from one collection point may have a similar opinion, as they work in a similar way and encounter the same problems. Finally, although every volunteer was asked the same questions, the interviews were conducted by different researchers. Additionally, some volunteers did not answer all questions, and some provided extra information.

### System

In general, 7 volunteers were positive about the current food bank system of prearranged packages. Some reasons given were that recipients can choose to leave certain products behind if they want to, and that there is lots of opportunity for conversation with recipients. The current food bank system was not addressed by 4 of the volunteers.

When several alternative systems were explained to the volunteers, half of them were positive about the supermarket system (4 out of 8). Additionally, volunteers were somewhat positive about using coupons in an ordinary supermarket (2 out of 3). Multiple reasons, however, were given for why volunteers think that a supermarket model would not work, for example, that it would be chaotic (1 out of 8), unfair (2 out of 8), that more space would be needed to implement it (1 out of 8), that it would lead to less contact between recipients and volunteers (1 out of 8), and that people would only select products based on their taste preference (and not health) (2 out of 8). The volunteers that were positive, however, mentioned that a supermarket would lead to more freedom in recipient choice. One volunteer mentioned that the supermarket model would enable recipients to be more independent. Freedom of recipient choice was also the reason why 2 volunteers expressed the opinion that coupons would be a good option as an alternative to the current food bank system. However, 1 volunteer did express concerns that also with the coupon system recipients may choose unhealthy products.

When asked about a trade table, 1 volunteer was positive about the idea. This volunteer mentioned that recipients already trade products amongst each other, but that it would be good if this trading were to be organised by the food bank. The other volunteers did not share their opinion on the trade table.

It was mentioned by 1 volunteer that it is difficult to work with the frozen products that are delivered separately from the food packages, because it leads to extra work. In collection point B, the volunteers stated that there is in general too little space.

Almost all volunteers (7 out of 8) mentioned, after being asked about this, that they feel it is the responsibility of the food bank to provide recipients with healthy food. It is found from the interviews that in order to do so, healthy food should be provided by Food Bank Rotterdam (although it is recognised that they are dependent on what is donated), expiration dates should be controlled more carefully, and the volunteers themselves can provide the recipients with tips on how to prepare certain foods. There was, however, 1 volunteer who had a more neutral opinion and mentioned that it is important for variety that recipients receive unhealthy products too.

There is one point of discussion with regards to the questions about the current food bank system. In order not to steer the interviewees, the interviewers only mentioned the supermarket system and said that this system enables recipients' choice. They did not elaborate on the fact that people would not be able to choose infinite amount of the same products, or that there would be rules regarding selection. Because the interviewers might not have explained the supermarket system well enough, the interviewees may not have understood properly how the system would work in reality, and this may be a reason why most volunteers were negative about this system.

### Relationship with volunteers

Volunteers were asked what they think about their relationship with the recipients. In total, 4 volunteers indicated that the relationship is good. This positive relationship was also indicated by the extra help that some volunteers offer to recipients. Examples of this extra help are offering financial guidance and providing special products such as diapers and (powdered) baby food for those who need it. Some volunteers did not elaborate on their relationship with recipients. Either they forgot to answer the question or they moved onto the next question. It was indicated by, 7 out of 8 interviewed volunteers that they have time to chat with the recipients, and that they also think that this is important. At one of the collection points, one of the volunteers is able to speak Arabic, which according to him, is helpful for communicating.

All volunteers gave their opinion about the gratitude of the recipients. It was mentioned by 6 out of 8 volunteers that recipients are generally grateful for receiving food from the food bank. As one of the volunteers mentioned it in the interview with volunteer 3-6: "90% of the recipients is grateful, and 10% is not". However, 1 volunteer only mentioned that some recipients are not grateful and did not mention any positive aspects about gratitude of recipients. Furthermore, there was 1 volunteer who had a neutral opinion about the gratitude of recipients. Out of 7 volunteers, 3 mentioned that they expect gratitude from recipients whereas 4 did not expect this.

With regards to the relationship between the volunteers and recipients, the results may have been influenced by the fact that some of the interviews were conducted in the same room in which recipients were present. In addition, it is possible that answers given were socially desirable. For example, volunteers might indicate they do not expect gratitude from recipients because this is more socially desirable than expecting gratitude.

### Satisfaction

Of the interviewed volunteers, 7 mentioned that they are generally satisfied working as a volunteer, as they feel that it is important work to do. Volunteer 10 stated: "I do it with love". Moreover, all interviewed volunteers indicated that it is possible to share their concerns, opinions or complaints with either the management team of Food Bank Rotterdam itself or with the coordinator of the collection point. This coordinator can subsequently share the volunteers' opinions with the management team of Food Bank Rotterdam. With regards to this, it is said that there is good contact and communication with Food Bank Rotterdam, although the organisation is not always perfect. The

volunteers of the collection points do, however, realise that the people working in the management team are also volunteers.

With regards to satisfaction levels of the volunteers, the results may be influenced by the fact that the volunteers of the collection points are dependent on Food Bank Rotterdam for the food they can hand out. They were aware of the fact that this research was done on behalf of Food Bank Rotterdam. It could therefore be possible that the volunteers gave socially desirable answers.

### 5.3 Results observations

Observations were carried out to complement the interviews and literature study. Observers used the observation checklist (see Appendix H) to guide their note-taking, though they were free to write down anything they felt was of importance. Like the interviews, the observations were carried out on the 12th and the 15th of June. Two collection points were visited on the 12th and one on the 15th. During the observations, the focus was on the interaction between recipients, between volunteers, and between these two groups, but also, on the physical environment and organisational structure of the collection points. The information gathered at the two observed collection points was compared. Notes taken on-the-spot are included in a table in Appendix G.

#### 5.3.1 Operations

Collection Points A, B, and C were similar in their operational method. At each of these collection points, recipients checked in with their name and collected products from a food package prepared at Food Bank Rotterdam's distribution center. At collection points A and C, after checking in, recipients could walk up to one of the pre-packaged crates and transfer the items into their own bags. At collection point B, however, only 4 people were allowed into the collection point at a time. After they checked in they were appointed to a specific crate. Recipients could then take the items from this crate and load them into their own bags.

In collection point C there was a total of 7 volunteers (4 from the food bank and 3 from the church). Collection point A and B had 5 and 4 volunteers, respectively, and all of them were volunteers of Food Bank Rotterdam.

Some of the collection points offered additional activities beyond simply handing out food packages. At collection points A and C, for example, recipients could have a cup of tea or coffee. At collection point C, coffee and tea was not exclusively for food bank recipients but also for other community members. Additionally, recipients at collection point C could purchase second hand clothing and shoes for 1 euro per item.

While the intention of Food Bank Rotterdam is for all recipients to receive essentially identical pre-packaged crates, this is not always the case. This is because the days on which the collection points distribute food differed, and because collection points B and C received additional donations from local groups, which they then included in their packages. On the days that the observations were made, recipients at point B were provided with laundry detergent donated by a local group, and at collection point C, recipients received additional bread supplied by a local bakery. At collection point C, parents, too, could take home baby food if needed. Birthday hats, balloons, a small gift, and a treat for school were also provided to recipients when their children's birthdays were approaching. While recipients seemed pleased with the additional items, it is important to note that these donations do lead to an uneven distribution of goods amongst Food Bank Rotterdam's recipients, which some people may view as problematic.

Even without additional donations, however, the food bank recipients seemed to be provided with both a diverse range of foods, and healthy options. It is worth noting, though, that none of the packages at any of the collection points contained dietary specific products. Just because this is what



was observed, however, does not mean that this is the norm. It should not be forgotten that only three collection points were visited over a two day period.

### 5.3.2 Physical Environment

With regards to the physical environment, collection points A and B were very similar to each other, but different to collection point C. Collection points A and B were both located in the hallways of buildings that served other functions. Point A was located in the hallway of a church, while point B was located in the hallway of a senior center. Because of their size, both collection points were crowded with people, and there was little room to socialise. The space was cramped and loud. Additionally, these two collection points lacked decoration. The walls were white, and there was no colour, music (observed to be a possibility in collection point A), or other physical features that would encourage recipients to stay and socialise.

Distribution point C was, like distribution point A, also located in a church, though in a room rather than a hallway. This collection point was far more spacious and welcoming than the others. The decoration was “happier” and there was a positive atmosphere. The walls were painted, and there were many coffee tables decorated with fake flowers. Like at collection points A and B, there was no music. There was, however, an electric keyboard available for use, though no one was playing it. It was also clear that the recipients of the distribution point C were familiar with each other and they interacted with each other more, as compared to the recipients of the collection points A and B.

The size and physical characteristics of the collection points appeared to impact the degree of interaction between the recipients and volunteers. At collection points A and B there was little interaction between recipients, volunteers, and these two groups, as compared to the third distribution point (C) where there was ample space and where people tended to stay for a longer period of time. The increased degree of social interaction at collection point C may be due to the space’s size and decoration. The activities (the second hand clothing shop and the coffee) offered at this point, however, may also have been what drew people to stay for longer.

In general, it seems that decoration, the presence of tables and chairs, and the provisioning of beverages (coffee, tea etc) may be important factors that cause recipients to stay longer and promote conversation between recipients and volunteers. The observations suggest that the more welcoming a space is (size, colour, presence of decoration and plants, etc), the greater the degree of interaction between people. It may be, however, that other factors influence the interaction between recipients and volunteers. Recipients’ feelings of shame or the attitude of volunteers, for example, may play a role.

None of the collection points provided space for children to play as they waited for their parents/grandparents to collect their food. This need to pay attention to their children/grandchildren may be one reason why recipients did not spend an extended amount of time at the collection points. Even at collection point C, where there was plenty of space and people did stay, no one with children stayed to socialise. Perhaps if there was more space and fun activities for children to do, these recipients would stay longer. Further research, however, would need to be conducted to determine whether these are the factors that influence the length of time that recipients spend at the collection points.

The spatial organisation is very important, considering the high amount of recipients that are coming to the collection points to pick up their food packages with small babies in pushchairs, or people in wheelchairs. The size and the organisation of the space is also very important for the work of the volunteers. Volunteers usually carry heavy items with big volume, therefore it is useful to have a spacious place to work and move easier.

Another important thing to note regarding the observations detailed above, was that all six researchers were present for observations at collection point A, while only three researchers were present during observations at collection points B and C. This means that at collection point A our presence was more noticeable, and may have had some effect on the behaviour of the food bank recipients and volunteers.



## 6. Academic conclusion

Several opportunities for improvement at Food Bank Rotterdam have been found. The answers to the research questions, shown below, were used to formulate the recommendations (Chapter 3).

The strengths of the food bank system, in which food packages are handed out to recipients, are according to literature, primarily: the supplementing of food, the reduction of food waste, and the promotion of social inclusion. Weaknesses of the current food bank system are the recipients' feeling of indignity, the instability of the system, and the inadequacy and inappropriateness of the food packages.

With regards to the current moments of interaction between food bank recipients and volunteers, based on the observations, it can be concluded that they are similar at all visited collection points. Recipients pick up their packages, which have already been placed on a table by the volunteers. They repack the products into their own bags and have short conversations in their free moments. Recipients and volunteers are familiar with each other, but are no more than acquaintances.

Furthermore, with regards to the needs and wishes of the recipients, the conclusions listed below can be made. These conclusions are based on the results of the interviews.

- a. Although recipients are generally positive about the content of the food packages, they do have some wishes regarding the quantity and quality of the packages (i.e. fruits and vegetables, meat, bread, dairy, diet specific products or non-food products).
- b. Recipients are mostly positive about the current food bank system, but would prefer to have a supermarket model or coupon system which provide more choice.
- c. The recipients are very satisfied with their relationship with the volunteers.

Moreover, with regards to the needs and wishes of the volunteers, the conclusions listed below can be made. These conclusions are based on the results of the interviews.

- a. Volunteers are completely satisfied with the current food bank system. Half of them would like to implement the supermarket model in order to provide more recipient choice.
- b. Volunteers are generally positive about their relationship with recipients, as most recipients are very grateful to them, and there is time to chat.

Next, from literature it can be concluded that many alternative systems and additional activities to the current food bank system exist. Existing alternative systems are: a coupon system and client choice food banks (supermarket model, table model, window model, inventory list model). The following additional activities and other initiatives exist, though have not yet been adopted by food banks: allotment gardens, food buying groups, mystery boxes, communal dinners, community fridges, and trade table.

With regards to strategies that empower food bank recipients to make healthy food choices, it can be concluded that introducing nutritional policies, nudges, ranking systems, nutritional education programs, and recipe software/apps can contribute to a healthier recipient diets, and a reduction in diet-related diseases and nutrient deficiencies. This conclusion is based on literature.

Finally, based on these results, it is recommended that Food Bank Rotterdam starts implementing the supermarket model as this will have most impact on recipient satisfaction and it reaches all food bank recipients. Besides, it is recommended that additional activities be implemented to contribute to the fulfilment of the needs and wishes of the recipients and volunteers.

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## Appendix A: Interview notes (recipients)

Note: Appendix A includes typed out notes from the interviews with recipients. Some statements may be unclear, but things are written as they were stated by the interviewees.

### **Recipient 1: Man, 46-65, living alone, Collection point A**

The first recipient is hard to understand due to language barriers.

The recipient is a man between 46-65 years of age, who lives alone. The recipient mentions that he is happy that the food bank exists and that he receives social help (not clear whether this social help is from the food bank or from another organisation). He also mentions that the content of the food packages does not matter to him.

The recipient would like to participate in extra activities, but does not have the time. He provides no further information regarding which activities he would like to join. He states that he likes to talk with the volunteers when they are available. In general, the recipient is happy that the food bank exists.

### **Recipient 2: Woman, 46-65, living alone, Collection point A**

Recipient 2 is a woman between 46-65 years of age, living alone.

#### *Content*

The recipient mentions that she is generally very happy with the food bank, and that it exists. She says that she is happy that there is bread and vegetables in the packages. She also acknowledges that it is not possible to receive everything one wants every time, but states that the most important products are always included. She mentions that she has received Becel Pro-activ for multiple weeks in a row, but that she does not use it often. She gives away the products she does not want, but uses most products herself.

#### *System*

The recipient is positive about the alternative systems (supermarket model, coupons), but states that she is already happy with the current system. She indicates that she is not interested in attending cooking classes, or in using a website/app for recipes, or a trade table. She explains that she already trades products with other people, and so feels that it is not necessary to organise this activity. She is, however, interested in an allotment garden, and indicates that she thinks it is a very nice idea.

#### *Volunteers*

She says that the volunteers are always kind and polite. She knows the volunteers a bit because they are always the same. She has only been a recipient of the food bank for 1,5 months. She does not expect anything special from the volunteers.

The recipient lives alone. At the end of the interview she mentions that she spoke with her brother who lives in Greece about being a recipient of the food bank. She told him that she is grateful that the food bank exists in the Netherlands, and her brother told her that she should not be ashamed of using the food bank.

### **Recipient 3: Woman, 46-65, living alone, Collection point A**

The third recipient is a woman between 46-65 years of age, who lives alone.

#### *Content*

She is very happy that the food bank exists, and is positive about its content food-wise. She states that she would like to see more products for cleaning, as these things are difficult to live without and she mentions that she sometimes does not have the money to buy them. Also, the recipient states that she would like to receive more vegetables. She uses almost everything in the packages; the only thing that she does not use is the bread. This is because she does not have a freezer. Recipients receive frozen bread, and she lives alone, so cannot finish it in time.

#### *System*

The recipient is okay with the system, as it is easy. When made aware of the other suggestions, however, she states that the coupon system and specifically the supermarket model would be better options. She states that she would be open to the cooking classes. She is also pleased with the idea of an allotment garden, but explains that her body would not allow her to work in it.

#### *Volunteers*

She really appreciates that she can always approach the volunteers if she has a problem. She explains that sometimes the recipients and volunteers of the food bank do activities together. She perceives the volunteers to be helpful and nice and up for a chat if they have the time. She feels like she can voice her concerns and complaints to the volunteers that are available, but states that this is almost never necessary.

Overall, the recipient is really happy with the food bank and the fact that it exists.

### **Recipient 4: Man, 46-65, living alone, Collection point A**

The fourth recipient is a man between 45-65 years of age who lives alone.

#### *Content*

He voices his appreciation for the fact that the food bank exists. He is happy with the content of the food packages, but states that compared to other regions, he finds it unfair that everyone receives a different amount and different types of products. He claims that he knows someone from a small town next to Rotterdam, where the food bank recipients get three packages of food. He feels that this is unfair and that there should be a more even distribution. He also states that within the location of the food bank, the content of the packages should be more evenly divided. He is a hobby-chef, so he really likes to experiment with the content of the package. He uses almost everything in the package, though sometimes gives things away that he really cannot use.

#### *System*

This recipient is really positive about the system. He says it would be nice to have choice, but that it would not go fairly. He believes that some people in the food bank would grab everything they could and would show no care for people coming later. For this reason, he is not completely positive about the supermarket model is positive about the prospect of coupons that could be used in 'normal' supermarkets. He states that he does not need cooking classes. Every once in a while, he gets together with other recipients and a chef to cook and eat together. He is really enthusiastic about the trade table, so long as there are rules and the process is fair. He thinks the allotment garden seems like a great idea, but explains that he would not be able to work in it because he is sick.

#### *Volunteers*

He is really positive about the volunteers and has respect for them. He explains that sometimes, people start yelling at the volunteers and they stay really calm and patient, and handle it well. They



are really helpful according to the recipient, and they like to have a chat if time allows. The recipient does not expect this of them: he believes that work comes first, and that chatting can come after. He states that he signed up to volunteer, but that he got sick, so cannot fulfil that role. He thinks this is a pity. He sees the volunteers as open to suggestions and that they always give good advice (at least, in this location). He explains that he did previously have a negative experience with a volunteer who he felt was obstructing his reapplication for no reason. He experienced her to be unhelpful. At this time, however, he contacted someone at the headquarters who was helped him with his reapplication.

He is really happy with the food bank and is really grateful that the food bank exists.

#### **Recipient 5: Woman, 46-65, living alone, Collection point A**

The fifth recipient is a woman between 46-65 years of age. She immediately shares that she had to stop working due to an operation.

##### *Content*

It is only the second time she has made use of the food bank, and she mentions that she is very pleased with the help that it offers. She states that she would not change anything about the food package, as she feels that it is good as it is currently. She states that the only thing she did not use from her previous package was the oil.

##### *System*

She recognises this system to be the normal one and has no knowledge about other systems. When asked if she would participate in cooking lessons, she answers that she would like to. With regards to the option of the food bank offering an app with recipes, the recipient says that this would not be useful. She is very open to the idea of implementing a trade table. Finally, she states that she does not see the need for an allotment garden

##### *Volunteers*

When asked about the volunteers, the recipient expresses that she is content with everything. She does not know how to answer the question about whether she could share her opinion, concerns or complaints with the volunteers, as she has only been to the collection point once before. In general, however, she is satisfied with the food bank as it is.

#### **Recipient 6: Woman, 26-45, living with 2 children (aged 2 & 9), Collection point A**

The sixth recipient is a woman between 26-45 years of age. She comes to pick up her food package together with her two year old daughter

##### *Content*

With regards to the content of the food package, she is positive about the amount of fruit and vegetables that she generally receives, although she comments that this week there is no fruit. She explains that she enjoys the desserts she gets from the food package, as she gives them to her children. In general, this recipient is very happy with the food bank. One thing she mentions is that she sometimes struggles to cook a complete meal using the products in the package, though she makes clear that she recognises that the food provided is meant to be supplemental to food she purchases. Still, as a thing she would like to change, she states that she would like to receive products that can be used together to create three full meals per week. She does not, however, mention specific products that she is missing or that she would like to see added to the food packages. She does, though, state that she would like to see some more products specifically for children. When being asked whether she uses all the products she receives, the recipient answers that she does not always. If she does not want, or can use the products herself, however, she gives them away to others.



### *System*

The lady mentions that she does not know about alternative food bank systems to the one currently used, but shows an interest in a coupon system. Additionally, she states that she would love to see a supermarket system introduced. She states that she does not have time to participate in cooking lessons or an allotment garden, but she does show interest in the recipe app. She also says that trading already happens at the food bank, but states that it would be made easier if a trade table were to be implemented.

### *Volunteers*

With regards to the relationship with volunteers, she mentions that she greets them when she arrives, but it is only the second time she is there. The participant finds the volunteers friendly, but does not expect anything from them apart from a greeting. She assumes that if she wants to share any concerns or complaints that she can easily do so, but in general she is satisfied with the food bank. She does, however, believe that having a choice of products would be even better.

### **Recipient 7: Man, 46-65, living alone, Collection point A**

The seventh recipient is a man between 46-65 years of age, who has been using the food bank for one year. He uses the food package for himself, but his brother often comes to help him cook.

### *Content*

He is extremely positive about the food packages he receives, as they are something he can rely on. He explains that if one does not have food, one can easily become homeless as well. The content of the food packages is, according to him, good, although sometimes he misses products and has to wait for the next week before he can get those products again. The food packages often contain pork. As he is Muslim, he cannot eat this, and so, gives it away to other food bank recipients. In return, they sometimes offer something back, though he does not expect this from them. 'Don't look a gift horse in the mouth', was the saying he used to describe his feeling towards the food packages. He typically uses all the food items in the package, because he does not want to throw anything away. If he can't use everything, however, he gives the items away to others.

### *System*

With regards to the system of prearranged food packages, he says it is fine and expresses his gratitude for it. When asked about the idea of a supermarket system, he states that not everything should be pre-thought of for you and a supermarket system would be a luxury. He states that this system might make people desire more and more. To the question of whether he would be open to participating in cooking lessons, the respondent answers: 'why not'. He is interested by the idea that everyone cooks very differently. He says that he would really like to participate in cooking lessons and then enjoy the meal together. The participant has never heard about the idea of an app with recipes before. With regards to the trade table, he mentions that it already happens spontaneously, but points out that if it was organised in the form of a table, that there would be less personal interaction between the recipients. He does not give an answer to whether or not he would make use of an allotment garden.

### *Volunteers*

With regards to the volunteers, the respondent states that they are nice and that he enjoys chatting with them. He expects volunteers to be open to interaction, which they are. He does not criticise any of the volunteers and recognises the obligations of their task. The recipient explains that in the beginning he did not know where to go to share his concerns, but that after a while he figured it out. For instance, he found out what to do with the products he did not want or need. In general, he is satisfied with the food bank, although he would change the atmosphere to make it more social. He finally mentions that it is important to stay positive.

### **Recipient 8: Woman, 26-45, living with partner, Collection point A**

The eighth recipient is noticed by the interviewers when a volunteer offers her extra products, and she accepts them. She is a woman between 26-45 years of age.

#### *Content*

With regards to the food packages, she is very positive about the content that she has received lately, as the packages have contained a lot of meat, sandwich fillings, bread and vegetables. She recognises that the food bank relies on the products they receive too, and so states that she cannot complain. If she could change anything about the food packages, she would add more milk, cheese, fresh products and self-care products. She does not specifically state which items she would like to receive less, but she makes clear that sometimes she has a lot of the same products. This recipient states that she always uses all of the products in the package.

#### *System*

The recipient finds the current system very easy, and does not know how else to organise it. She does not prefer the supermarket system over this system. The respondent says that she would not participate in cooking lessons, as she can cook well herself. Besides, she has become very creative throughout the years and does therefore not need an app with recipes. Although trading happens spontaneously, she thinks that adding a trade table at the food bank would be a good idea. Also, according to her, the idea of an allotment garden is fantastic. In relation to this, she states that she already grows her own vegetables at home.

#### *Volunteers*

Regarding the volunteers, the recipient says that she always finds them polite and open to conversation, though she does not expect anything of them. She feels that she would be able to share her complaints if needed, but in general she expresses that she is very satisfied and happy with the food bank.

### **Recipient 9: Woman, 26-45, living with 1 child and is pregnant, Collection point B**

The ninth recipient is a pregnant woman between 26-45 years of age, who comes to collect her food package with her daughter.

#### *Content*

What she finds positive about the food packages is that through them she gets to know new products. She does say, however, that many products are far out of date (up to three or four months). Although she realises that the food she receives in the packages is supplementary, she expresses that she would like to receive milk and more fresh fruit. Additionally, she shares that she uses the bread she receives to feed ducks, as she buys fresh bread in the supermarket. She does not use all the products in her food package, because she does not like or know them, but she gives some away. Examples she uses here are Brussels sprouts and chicory. Additionally she mentions that she has many tubs of butter at home, because she receives it so often, and cannot use it all. This, too, she gives away.

#### *System*

The respondent does not seem to have prior knowledge about other systems that could be implemented by the food bank, but when informed about the supermarket system she mentions that this would be convenient, as you could choose products yourself. This is something she misses in the current system. The recipient explains that she is a good cook and that she would therefore not participate in cooking classes and does not need recipes through an app. She would like to have an organised trade table, and is also open to an allotment garden.

#### *Volunteers*

When asked about the volunteers, the recipient is very enthusiastic, especially because they are nice

to her daughter. She expects the volunteers to be helpful and communicative. She states that she can share her concerns and complaints, and if she needs extra of a certain product, she can ask for it. In general, she thinks that the food bank is great. The only thing she would like to add is a food bank for pets, as products for pets are very expensive. She mentions that there is one in Rotterdam, but that it is too far away for her.

**Recipient 10: Woman, 26-45, living with son, boyfriend and mother, Collection point B**

The tenth recipient is a woman between 26-45 years of age, who is picking up her boyfriend's food package.

*Content*

A positive about the food bank, according to her, is that one always has food, though it varies per week how much and what you receive. She states that the additional laundry detergent this week is ideal. Some things that she would like to add to the current food packages, are meat, soya products (as her son is lactose intolerant) and more luxury products such as the laundry detergent provided this week. She explains that she would also like to see more variety. The recipient mentions that her family uses most of the products in the food package, and states that if they are not fond of a certain product, they give it away. Rarely do they throw things away.

*System*

The recipient states that she finds the system as it is now to be ideal, as she can place the products in her own bags and leave immediately. The recipient also states not to have any experience with or knowledge of other food bank systems. With regards to additional activities being offered by the food bank, she does not find cooking lessons necessary, as her entire family says she is a good cook. She does say that she would find an app for recipes, a trade table, and an allotment garden, useful and nice. Tomatoes, however, she would not grow, because she receives enough of them in the provided packages.

*Volunteers*

She states that the volunteers do their job well and are very nice. She feels that they know the recipients well. She has no expectations of them, as the work they do is voluntary. The recipient mentions that she can always ask for products if she would like something extra, and if the food bank has it, that it will give it to her. She has, however, only done this once before. In general, this recipient is satisfied with the food bank.

**Recipient 11: Woman, 46-65, living with son, Collection point B**

The eleventh recipient is a woman between 46-65 years of age, who shares the food package with her son.

*Content*

What she likes about the food packages is that she always receives vegetables and meat. If she would be able to change something about the food packages, she would like to receive cheese every week, to use in, for example, pasta dishes. Additionally, she would like to receive coffee and toilet paper more often. She would rather not receive so many foreign products, like the cassava provided this week, as she does not know how to prepare it.

*System*

The recipient states that the current system, in which a prearranged food package is provided, is good. After proposing alternative systems, she still feels that the current system is best one, though states that extra products are always appreciated. She mentions that she is too busy for cooking lessons, but that she would look at recipes if they were provided through an app. She is not open to trading, but would like to work in an allotment garden.

### *Volunteers*

The recipient feels that this collection point has good volunteers and that although they are busy, they are always open for a short chat. She does not expect anything of the volunteers and she states that they do their job well. She mentions, however, that she would be afraid to share complaints. In general, she is satisfied with the food bank.

### **Recipient 12: Man, 26-45, living alone, Collection point B**

The twelfth recipient is a man between 26-45 years of age. It is his first time back at the food bank today, but he has made use of this food bank and another one in the past.

### *Content*

When asked about the content of the food packages, the recipient says that he could not be ungrateful. For him personally, the food packages do not need to contain as much fruit and vegetables as they do, although he recognises that this is preferable for families. He would like to receive more meat. The recipient states that he uses almost everything he receives, and if he does not, that he shares it with his housemates.

### *System*

When asked about the current system used in the food bank, he elaborates on his experience with a food bank in Alphen aan den Rijn. He explains that they have a supermarket system with colour coded tags. According to the different colours, one can choose different products. He prefers that system to Food Bank Rotterdam's current system, because it provides more freedom of choice. This recipient would not participate in cooking lessons or use recipes from an app, as he is a good cook already. He states that a trade table, however, would be nice, but that he would not personally use it. Additionally, he is open to the idea of implementing an allotment garden.

### *Volunteers*

According to the recipient, the volunteers are very nice and he does not expect anything of them. He mentions that he is ashamed of using the food bank, especially since it is his second time in the food bank system. This is also the reason why he leaves as quickly as possible after collecting his food package. In general, he is satisfied with the food bank, and he states that it is good that it exists.

### **Recipient 13: Man, 26-45, living alone, Collection point B**

The thirteenth recipient is a man between 26-45 years of age, who cannot not speak Dutch, so expresses himself in English.

### *Content*

When asked about the content of the food packages, the recipient states that it is sometimes not so great, because the products are often very close to their expiration date. The recipient states that he does not know which products he misses or which he wants more of, as he has only been going to the food bank for a couple of weeks. He also states that he does not use all the products that he receives, for example the sweet potatoes. He gives these products to his neighbours.

### *System*

The recipient states that the current system of receiving prearranged food packages is good, although he shares that he does know about other systems. After the interviewers share possible alternative systems with him, he mentions that he once received a cash card that could be used at Albert Heijn in addition to the food package. He felt that this was very convenient as it enabled him to decide for himself what to buy. He used it to buy mobile phone credit and spent it on products that were not past the expiration date. The recipient states that he would not participate in cooking lessons,

because he is already able to cook, and that he would not use a recipe app. He also says that a trade table is not necessary. He is, however, open to the implementation of an allotment garden.

#### *Volunteers*

When asked about the volunteers, the recipient states that he feels that they are really helpful and that he can small talk with them. In addition, he shares that he does not expect anything of the volunteers and states that he, himself, never has complaints to share with them. In general, he states that he is satisfied with the food bank.

#### **Recipient 14: Woman, 26-45, living with four children, Collection point B**

The fourteenth recipient is a female between 25-45 years of age, who lives together with her four children.

#### *Content*

When asked what she finds positive about the content of the food package, she states that she is really happy with the laundry detergent she received this week. In addition, as a negative, she mentioned that a lot of the products in the food package are often past their expiration date. The recipient says that if she could change something about the content of the food packages, that she would like to receive different combinations of food, because the content is always quite similar. She specifies that she would like to receive less pasta and pasta sauce, as she has a whole cupboard of these products at home. She also states that she would like to receive self-care products, more dairy products like milk (for her children), and a variety of meat. She shares that the food package often contains beef or pork, which she does not eat, but that they never contain chicken or fish.

#### *System*

With regards to the current system of prearranged food packages, the recipient states that she feels the system is okay. After the interviewers elaborate on other possible systems, however, the recipient states that a supermarket or coupon system would also be really great. The recipient expresses that she would not be willing to participate in cooking lessons or use recipes provided through an app. She would, however, be open to a trade table or an allotment garden.

#### *Volunteers*

The recipient mentions that the volunteers are very friendly and that she can have a nice conversation with them. She expresses that she does not expect anything from them and feels she can share her complaints if she would have any. The recipient states that she is generally satisfied with the food bank.

#### **Recipient 15: Woman, 46-65, living with 2 children, Collection Point C**

The fifteenth recipient is a woman between 46-65 years of age.

#### *Content*

This recipient is satisfied with the content of the food package. Her son likes everything that she receives in the package. She does not miss anything but she would like to receive less of the products that she does not use, such as asparagus. The recipient uses everything that she receives in her package.

#### *System*

The recipient is satisfied with the system, but thinks that the supermarket model might be better, as it would allow one to select the products that one really wants. She says the same about the coupons. She is enthusiastic about the activities, and states that she would like to participate in all of them (cooking lessons, trade table, allotment garden and the app for recipes).

### *Volunteers*

This recipient finds the volunteers to be helpful and she likes chatting with them, though they do not always have time. She experiences some volunteers to be nicer than others. She has no expectations of the volunteers. When she complains, however, she feels that she can share them with the volunteers.

### **Recipient 16: Woman, 46-65, Collection Point C**

The sixteenth recipient is a woman between 46-65 years of age.

### *Content*

This recipient is happy about the content of the packages. She is satisfied with the packages and uses everything.

### *System*

The recipient states that it is good that the food bank provides pre-arranged packages. She also thinks the supermarket model would be nice. She also thinks that it would be nice to participate in activities. She states that she sometimes eats a sandwich with people at the food bank.

### *Volunteers*

She thinks the volunteers are friendly.

This interview got cut off because the recipient suddenly had to leave.

### **Recipient 17: Man, 46-65, living alone, Collection Point C**

The seventeenth recipient is a man between 46-65 years of age.

### *Content*

In the past he has not been happy with the content of the food packages, but his opinion has improved, especially with regards to the meat and vegetables that he receives. He would like to receive more dairy products like milk and yoghurt, but less bread. He uses everything in his package.

### *System*

The recipient experiences the current system to be a good one. He thinks that the supermarket model would be too messy and states that it is better if the packages are prepared and ready to go. About the coupons, the recipient states that they have an advantage as well as a disadvantage. The coupons would be nice because they would provide choice (they sometimes receive coupons already). The disadvantage, however, is that these coupons can only be spent at a certain shop, which means that one must travel to the shop where the coupons are accepted. He is positive about the additional activities, especially about the trade table and the allotment garden. He states that he does not need the cooking lessons or the app for recipes because he can already cook.

### *Volunteers*

The recipient is happy with the volunteers and he thinks they are nice and sweet. He explains that they are always up for a chat and that his expectations of them are always met.

Overall, this recipient is satisfied with the food bank.

### **Recipient 18: Woman, 26-45, living with husband and three kids, Collection Point C**

The eighteenth recipient is a woman between 26-45 years of age.

### *Content*

Overall, she is positive about the food package, as she feels that there is a lot of variation and that the content differs every week. She states, however, that sometimes she would like more fruits and vegetables. Additionally, she would like to receive baby products, since she does not currently get

any. There is no product that she would like to receive less of. 90% of the time, the recipient uses everything that she receives in her package.

#### *System*

The recipient experiences the current system to be easy, but says that she would like to have more choice. She sees the supermarket model as ideal and also thinks the coupons are a good idea. She states that it would be nice if there was a possibility to get the packages delivered to her house, since she cannot walk far. The recipient would like to see the cooking classes implemented and she would use the app for recipes if budget ones were provided. She does not see the use of a trade table, as she explains that people already trade. About the allotment garden, she states that she does not like gardens but that one could be nice for kids.

#### *Volunteers*

The recipient likes the volunteers. She says they are helpful and that they can always answer recipients' questions. She feels that they try their best. She also says that the volunteers are open for a chat. The recipient does not have any expectations from the volunteers.

Overall, she is satisfied with the food bank.

### **Recipient 19: Man, 46-65, living alone, Collection Point C**

The nineteenth recipient is a man between 46-65 years of age.

#### *Content*

This recipient sees the packages as nutritious because everything they need, nutrition-wise, is always included. He does not, however, like that they receive the same items every week. This recipient does use all the food that he receives.

#### *System*

He feels that the current food bank system is great, as it is quick and easy. He is satisfied with this system. Because it is so quick, he prefers the current system to a supermarket or coupon system. The recipient is not enthusiastic about the activities mentioned. He would only use the app for recipes. He already has his own allotment garden so the implementation of an allotment garden is not necessary for him.

#### *Volunteers*

The recipient thinks that the volunteers treat the recipients very well. Every volunteer is up for a chat. If he experiences complaints, he does not share them with the volunteers but directly goes to the superior volunteer, as he feels that this person can help the most.

The recipient is satisfied and happy with the food bank overall.

### **Recipient 20: Woman, living alone, 65+, Collection Point C**

The twentieth recipient is a woman older than 65.

#### *Content*

This recipient states that she does not eat everything that she receives in her package, and that she gives the items she does not use to her family members. She states that she does not eat whole wheat bread and she receives too much broccoli.

#### *System*

The recipient thinks the system is okay and prefers it to the supermarket model and coupon systems. She states that she would partake in activities, such as the cooking classes and allotment garden. She would also use the recipe app.



### *Volunteers*

She thinks the volunteers are nice and polite and always up for a chat. She does not have any complaints and so does not have to share them.

Overall, the recipient is satisfied with her experience at the food bank.

### **Recipient 21: Man, living alone, 25-45, Collection Point C**

The twenty first recipient is a man between 25-45 years of age.

### *Content*

He is happy with the content of the food packages. He states that the content is variable and always a surprise. He would not like to receive more of a certain product but he would like to receive less vegetables, potatoes, butter and applesauce. He does not use everything. The items he does not want, he leaves behind or gives away to someone else.

### *System*

The recipient is content with the current system, but thinks he would also like the supermarket model. He thinks the coupons would be a good idea. He has an open attitude towards the activities; he likes the idea of the trade table, he would participate in the cooking lessons and because he is a gardener he would like to work in the allotment garden. He does not need a recipe app.

### *Volunteers*

He experiences little contact with the volunteers and does not expect a chat with them, as he knows they are busy. He does not have complaints, so he has no idea if he could share them with the volunteers.

In general, the recipient is satisfied with the current food bank.

## Appendix B: Overview of interview results (recipients)

Table 3 Interview results

Category	Positive	Negative	Neutral
<b>Content of the food packages</b>			
Overall	13	Not varied 3	1
Presence of fruit	1	Too little 2	
		Too much 1	
Presence of vegetables	6	Too little 2	
		Too much 2	
Presence of bread	2	General 2	
		Too much 2	
Presence of meat	3	Too little 2	
Presence of dairy products		Too little 5	
		Too much (butter) 3	
Presence of diet specific products		Too little 3	
Presence of products specific for children		Too little 2	
Presence of cleaning and self-care products	2	Too little 5	
Expiration date of the products		3	
Other products	2	Too little 1	
		Too much 6	
<b>Food bank system</b>			

Current system	14	2	3
Supermarket system	12	5	1
Coupons system	8	1	1
Additional activities in general	5		
Cooking lessons	7	10	
Software/app for recipes	6	8	1
Trade table	11	4	1
Allotment garden	13	2	
<b>Volunteers</b>			
Helpful	4		
Nice	10		
Polite	4		
Conversations	11		
Possibility to voice concerns	9	1	2
<b>General opinion food bank</b>			
Satisfaction	14		
Happiness	10		

Table 4 Characteristics of the recipients

<b>Characteristics</b>	<b>Number of recipients</b>
Total interviewed	21
Men	8
Women	13
1 person household	12
2 person household	3
3 person household	2
4 person household	1
5 person household	2
Younger than 25 years old	0
26-45 years old	9
46-65 years old	11
65+ years old	1
Collection point A	8
Collection point B	6
Collection point C	7

## Appendix C: Interview notes (volunteers)

Note: Appendix B includes typed out notes from the interviews with volunteers. Some statements may be unclear, but things are written as they were stated by the interviewees.

### **Volunteer 1: Man, 46-65, not a recipient, Collection point A**

The volunteer is a man between 46-65 years of age. He has been a volunteer for approximately 8 years.

#### *System*

The volunteer indicates that the content of the packages can be distributed more equally. According to him, unequal distribution results in recipient dissatisfaction. In his opinion, Food Bank Rotterdam should pay more attention to the composition of the food packages. He indicates that a supermarket system would not work for the collection point where he is a volunteer, as there is not enough space. He states that it would become too chaotic. The volunteers of this collection point are from a church. The church sometimes collects money, which they use to buy supermarket gift cards to hand out to the recipients. With these gift cards, recipients can go to the supermarket themselves to buy food. The volunteer thinks that the food bank plays a very important role in the health of the recipients. He mentions as an example that the recipients often receive items that are passed the expiration date, which he believes not to be safe to consume. He indicates that the food bank should control the expiration dates more carefully. Also, he mentions that it is not always favourable for the products that need to be cooled to be stored in the freezer.

#### *Recipients*

This volunteer feels that the contact with recipients is excellent. When the recipients have problems, they raise them with the volunteers. He experiences that the recipients are grateful, although he does not expect this from them. He always has time to have a chat with the recipients during the regular hours of the collection point and also at other moments. Additionally, he helps and assists the recipients with other problems such as debt restructuring.

According to the volunteer, the contact with Food Bank Rotterdam is fine. Sometimes checks are carried out, for example the temperature of the fridge and freezer are checked. He says everything goes well with these controls.

#### *Satisfaction*

He mentions he is content with his experience as a volunteer. For this collection point, there are 8 volunteers who are all members of the church. They have a volunteer schedule, and every volunteer works about once per month. He explains that another collection point had to stop operating because there were not enough volunteers and that this is the reason why the number of recipients at this collection point increased from 60 to around 100.

### **Volunteer 2: Woman, 26-45, not a recipient, collection point A.**

The interviewed volunteer is a woman between 26-45 years of age.

#### *System*

The volunteer is a woman between 26-45 years of age. She states that she is happy with the current system of food packages, but when the other options like coupons or supermarkets are suggested, she is really enthusiastic about them. She says that it is better for the recipients to have choice regarding what they want to eat. The idea of a trade table, to her, also seems like a good idea, as people already trade, though not in an organised way. According to her, it is the task of the food bank to provide healthy food to the recipients, since they help the people that are in need of food, and specifically healthy food.

### *Recipients*

This volunteer feels that she has a good relationship with the recipients. Most of the time, she has enough time to chat with the recipients and enjoys doing so. Not every recipient is as thankful as she would like them to be. She expects some gratitude from the recipients, as she feels that the food bank is doing them a favour and providing them with assistance.

### *Satisfaction*

The volunteer feels like she can share all her concerns and wishes with the other volunteers who can also pass them along to the management of Food Bank Rotterdam. Overall, the volunteer is really happy with her experience as a volunteer. She thinks it is important work to do and she also enjoys doing it.

### **Volunteer 3/4/5/6: 1 Woman/ 3 Men, 65+(W) /65+/46-65/46-65, none are recipients, collection point B**

The interviewed volunteers include a retired (both 65+) couple, who have been volunteering at the food banks for 16 years, and two men (both between 46-65 years of age) who volunteer weekly. The woman is the primary interviewee, though the other volunteers add information when necessary.

### *System*

When the volunteers are asked about the current food bank system, they state that cooled products and bread are delivered separately to the rest of the food packages. They mention that it is a lot of work to put the products in the freezer upon receiving them and that they must later take these products out to give them to the recipients. This again is more work. They recognise, however, that these products must be cooled, and so the work has to be done. The volunteers also say they have their own sponsors, such as schools, which ask what products the food bank needs, and then supply them. These sponsors specifically request that the product they donate stay within the neighbourhood and so, send these products directly to the collection point. When asked if they would want to change something about the system, the volunteers state that if possible, that they would like to have a bigger space. They say that they are currently dependent upon people who are willing to offer them a location. The volunteers share that they are not positive about the supermarket system. They feel that it would not work and that it would be unfair if recipients could take whatever they want. In reference to the current system, they state that it is positive that recipients can leave behind items that they do not want. The volunteers state that they feel it is part of their task to provide recipients with tips on what to do with the products they receive, in the form of recipe ideas. They say that the content of the food packages is dependent on what Food Bank Rotterdam receives, and that the recipients may not always know what to do with the products provided.

### *Recipients*

The volunteers share that many of the recipients are also psychiatric patients and therefore that they must be careful in their interaction with them. They explain that they are not provided with this medical information, and that this is discovered through interaction. The volunteers feel that most recipients are grateful for the food packages, however, say that some people immediately complain about the content of the food package when they arrive. The volunteers mention that in these cases they do say something to the recipients about their attitude. They state that they feel that about 90% of the recipients are grateful and 10% are not. The volunteers indicate that they expect the recipients to be grateful. The volunteers also mention that they should make time to have a conversation with the recipients, as they feel it is important. In addition, they say that because the space is very small, the recipients have to wait outside in the winter, which can lead to friction. Then, good communication is important. One of the volunteers is able to speak Arabic, which the volunteers see as very positive, because it means that they can interact with the recipients who do not speak Dutch. They mention that this is a big relief for these recipients, as they can then also share their thoughts with the volunteers. The volunteers share that they also have a list of people who are not

in the food bank system. These people either used to be recipients of the food bank or are acquaintances of the volunteers, who are known to live just above the social benefit limit. These people are called to pick up food packages when there are some left over. In addition, the volunteers state that if recipients do not show up twice to collect their food packages, that they will be taken off of the list of recipients.

#### *Satisfaction*

The volunteers share that they have good contact with the headquarters of Food bank Rotterdam. For example they mention that one recipient caused an argument with the volunteers and after reporting this to Food Bank Rotterdam, they received its full support and the situation was dealt with. They also state that they have to arrange things themselves. For example, they had to work really hard for 1,5 years to arrange a newer and bigger location for themselves. In general, the volunteers say they are satisfied with their job. They stress that it is really important to have a good team of volunteers to work with and that trust is important. They state they are a team of four people who all trust each other and mention that the space is too small to have more volunteers. Lastly, the volunteers mention that they do not want to work with volunteers who are also recipients, because they do not trust them. They state that these people are tempted to take food because they are in need.

#### **Volunteer 7, Woman, 46-65, Collection point C**

The interviewed volunteer is a woman between 46-65 years of age.

#### *System*

The volunteer believes that the current system is a good one, because as a volunteer she can personally converse with the recipients and explain things to them. Additionally, she states that in this system, recipients are provided with varied food items and that this is positive as it forces recipients to eat somewhat healthily. When asked about the supermarket model, she replies that their current location would not be able to accommodate the supermarket system and that it would create a different kind of contact between the recipients and the volunteers. She states that she is afraid that their contact would lessen. In addition, she says that with the supermarket model, recipients would only choose products that they find tasty and these items may not be healthiest. She states that if an adult chooses items for themselves, that is okay, but that a lot of recipients have children and selecting unhealthy foods would impact the children as well. In addition, she feels that in the supermarket model not all of the items would be selected, meaning that the volunteers would need to find a way to deal with these excess items. With regards to the coupon system, the volunteer also says that she thinks recipients will choose the wrong products. She also mentions, that the food bank does provide recipients with coupons during the holidays that can be spent in at Albert Heijn. The church, too, she explains, gives Kruidvat coupons to the recipients around Christmas, so that they can buy self-care products and toilet paper. The volunteer says it is important that the food bank provide healthy food. She says that during summer there are more vegetables available. Additionally she states that the collection point does not organize food donations itself.

#### *Recipients*

The volunteer states that her relationship with the recipients is fine. She does say that some recipients are more patient than others. She mentions that she does have time for conversation and that this is important. She also says that people are grateful, although she explains that she does not expect this from them. She mentions, however, that some recipients do complain and feel that they are entitled to the food packages. The volunteer shares that if a recipient does not show up twice, that they are taken off of the list. Before removing people from the list, however, the volunteers do look at who the person is and the reason for not showing up to collect their package. The volunteer also mentions that when there are food packages left over, that these packages are



distributed to people in the neighbourhood who are not eligible for food packages, but who do live in poverty.

#### *Satisfaction*

The volunteer shares that she feels as though she can share everything with Food Bank Rotterdam's management team. She mentions that their communication is strong. She does, however, recognise that the office workers are also volunteers. This volunteer also mentions the cardboard boxes which are located near to the ordinary food packages. She explains that these boxes are donated by an organisation called 'Jarige Job', which provides the food bank with boxes full of garlands, presents and treats for the birthdays of children under 12 years of age.

#### **Volunteer 8, Woman, 26-45, Collection Point C**

The interviewed volunteer is a woman between 26-45 years of age.

#### *System*

The volunteer thinks that the current system is great, but also acknowledges its disadvantages: that people leave certain products behind or throw them away. She shares that all of the packages are the same and that this creates a sense of equality amongst recipients. She also states that recipients meet each other here, which means that this collection point serves a social function in addition to a practical one. She also thinks, however, that the supermarket system would be good, as it allows people to choose the products that they like. She also, however, sees this to be a negative, as she feels that recipients will choose products based on their taste preference and not nutritional value. She would be open to playing a different role as a volunteer if the system changed and this was required. She explains that she is there to help people and not for her own gain. This volunteer believes that the provision of healthy food is the responsibility of the food bank.

#### *Recipients*

She experiences the contact with recipients to be good and she tries to make time to chat with them. She thinks that the social component of this collection point is very important. She explains that some recipients are very critical and ungrateful and explains that she does expect them to be grateful for the food packages. This collection point tries to take religious dietary restrictions into account by, for example, providing halal food. This, however, is not always possible.

#### *Satisfaction*

The volunteer mentions that they do not have a lot of contact with Food Bank Rotterdam, but that they can share their concerns if they need to. In general, she is satisfied with her experience as a food bank volunteer.

#### **Volunteer 9, Man, 65+, Collection point C**

The interviewed volunteer is a man over the age of 65.

#### *System*

This volunteer says that the current system is in itself a nice system. He says that it is sad that it has to exist, but at the same time, he recognises that it is valuable for the recipients. When asked about the supermarket model, he says it would be an even better system, as recipients would be able to choose products for themselves. He does, however, think that this system could be abused. The volunteer says the coupons system would also be wonderful, as it would also provide recipients with choice. With regards to the role of the volunteers in providing healthy products to the recipients, the volunteer says that the packages always contain enough vegetables and some fruit. More recently, they packages have also contained meat. The volunteer states that he finds it important that the recipients receive healthy products.

### *Recipients*

The volunteer shares that it varies whether or not recipients are grateful. However, he states that generally most recipients are. He mentions that he does not expect that the recipients express gratitude, but states it is nice when people do say something.

### *Satisfaction*

The volunteer says he can share his complaints with volunteers and the management team. Overall he shares that he is satisfied as a volunteer and that he does it with love.

### **Volunteer 10 (email interview), man, 65+, Collection Point D**

This volunteer is a man, over the age of 65. He replied to the e-mail interview that was sent to several collection points.

### *System*

This volunteer is content with the current system. He states that sometimes the recipients do not appreciate the products that they receive and that they throw them in the closest trash-bin (he heard this from people in the neighbourhood), which he feels is really bad. He would be open to the supermarket model but he also expresses concern regarding this system. He feels that the volunteers would have to work much more and that their tasks would change. He also states that with the supermarket system that the products might not be distributed fairly and that this might cause problems between the recipients. The volunteer thinks that the food bank is responsible for providing healthy food, but also states that it is restricted by the food that is donated. If the food bank does not receive healthy food from its donors, it cannot provide recipients with healthy options.

### *Recipients*

He states that on average, the recipients are grateful for the packages that they receive. One recipient, however, is not grateful and does not always pick up the food package. This volunteer likes chatting with the recipients when he has time to do so.

### *Satisfaction*

The volunteer feels that he can share his concerns within the other volunteers at the collection point, as well as with Food Bank Rotterdam's management team. He also feels, however, that the organisation within Food Bank Rotterdam is not great, as several volunteers have quit. In general, this volunteer is happy with the volunteer work that he does.

### **Volunteer 11 (email interview), woman, younger than 25, collection point E**

This volunteer is a woman, younger than 25. She replied to the e-mail interview we sent out to several collection points

### *System*

The volunteer thinks the current system works well because all products are equally distributed amongst all recipients. She also indicates that handing out the food packages is easy and fast. She mentions as a disadvantage that recipients sometimes receive products that they do not want. Some recipients immediately give these products to others, but it may be that some products are thrown away at home as well. The volunteer thinks that a supermarket system would give recipients a better feeling than picking up food packages does. She indicates that recipients would be more independent and would be better able to make their own choices. She does, however, think that it would complicate the work of the volunteers, as they would need to keep an eye on how many products the recipients take home. She also indicates that there would be more choice for the recipients who come first, as compared to the recipients who come later. This would result in a more busy opening, and less structure. She indicates that a supermarket model, therefore, must be properly organised: it should not be too complicated, since there are many older volunteers (as they often have more

time for volunteer work). She indicates that the food bank plays an important role in providing varied food packages. She thinks vegetables and dairy play an important role in this, but explains that unhealthy products like cookies are also necessary for variety. Recipients also like to occasionally receive luxury food products. According to this volunteer, long shelf life products like pasta, rice and canned foods are also ideal.

#### *Recipients*

In general, this volunteer feels that the recipients are grateful. Some of them look in all the food packages to check if there is a fair distribution. She thinks that looking at products of other recipients is a disadvantage of a supermarket model. She expects gratitude from recipients, because in her opinion a food package is a gift. She does realise that recipients may feel ashamed about using the food bank. According to her, chatting with the recipients is important. This is why the collection point always provides coffee and tea for the recipients.

#### *Satisfaction*

She knows who she can contact when she wants to share her opinions, concerns or complaints. So far she has not experienced many problems. She is satisfied as a volunteer. The last thing she mentions is that it would be nice to take into account religion and culture. As an example she mentions that Muslims cannot eat pork and so it is best that chicken and beef are included in the packages.

## Appendix D: Overview of the interview results (volunteers)

Table 5 Interview results

Category	Positive	Negative	Neutral
<b>Food bank system</b>			
Current system	7		
Supermarket system	4	4	
Coupons system	2	1	
Trade table	1		
Delivery refrigerated and frozen products		1	
Space on location		1	
Responsibility for healthy food	7		1
<b>Relation with recipients</b>			
Relationship	4		
Gratitude recipients	6	1	1
Expectation gratitude	3	4	
Time to chat	7		
<b>Satisfaction</b>			
General satisfaction	7		
Possibility to share concerns	8		

Table 6 Characteristics of the volunteers

<b>Characteristics</b>	<b>Number of volunteers</b>
Total interviewed	11
Men	6
Women	5
Younger than 25 years old	1
26-45 years old	2
46-65 years old	4
65+ years old	4
Collection point A	2
Collection point B	4
Collection point C	3
Other collection points (email)	2

## Appendix E: Interview questions (recipients)

### Packages

1. What do you experience as the positive sides to the content of the food packages?
2. If you could change something about the content of the food packages, what would you change?
  - Would you like to receive more or less of a specific food group in the food packages?
    - If yes: why?
  - Do you use everything in your food package?
    - If no, why not?

### System

At the moment you receive pre-arranged food packages in a crate.

3. What do you think of this system?
4. If you could change something about the current system, what would you change or add to the system?
  - For example, some food banks use a model that is similar to a supermarket, or coupons to buy food in a regular supermarket,
5. If the following activities were offered by the food bank, would you participate?
  - Cooking session
  - A website that gives you recipes for the food that is in your food package
  - A trade table where you can leave food items you don't want and take items you would like
    - If people answer with "no," ask why

### Relationship with volunteers

6. Do you have anything to share about the volunteers of the food bank?
  - Are they helpful/polite/respectful?
  - Do you enjoy having conversations with them?
  - What do you expect from the volunteers?
7. Do you feel that there is space for you to share your opinions, concerns, complaints with the volunteers?
8. Overall, would you say that you are satisfied with your food bank experience?

### General information

- Gender
- What is your household composition?
- Age-group:
  - <25 years
  - 25-45 years
  - 46-65 years
  - 65+ years

Is there anything else that you would like to share, or know from us?

## Appendix F: Interview questions (volunteers)

### System

At the moment recipients receive food packages in a box.

1. What do you think of this system?
2. Is there anything that you would change about or add to the current system to improve the experience of the volunteers and/or recipients?
  - For example, some food banks use a model that is similar to a supermarket, coupons to buy food in a regular supermarket, a table where you can trade items from your food package, and cooking classes?
  - Would you be open to these alternatives, if it means that your role as a volunteer might change?
3. What role do you think food banks should play in ensuring the provision of nutritious food?
  - As a volunteer, would you be open to working together with a specialist who could provide the food bank with nutritional advice?

### Relationship

4. What do you think about your relationship with the recipients of the food bank?
  - Do you find the recipients to be grateful?
    - Do you expect this from them?
  - Do you have time to have conversations with the recipients?
    - If yes, do you enjoy having conversations with the recipients?

### Satisfaction

5. Do you feel that there is space for you to share your opinions, concerns, complaints with your colleagues and the management team?
6. Overall, would you say that you are satisfied with your volunteer experience?

### General information

- Gender
- Age-group
  - <25 years
  - 25-45 years
  - 46-65 years
  - 65+ years
- Are you also receiving food packages?

Is there anything else that you would like to share, or know from us?



## Appendix G: Table of observations

	<b>Collection Point A</b>	<b>Collection Point B</b>	<b>Collection Point C</b>
<b>Environment</b>	<ul style="list-style-type: none"> <li>• Located in church hallway</li> <li>• Situated in quiet neighbourhood across from a playground</li> <li>• Busy</li> <li>• Possibility to play music</li> <li>• White walls</li> <li>• 1 poster</li> <li>• A corridor, an office with chairs, fridge, freezer and shelves</li> <li>• Check in table</li> <li>• 3 big tables of food packages</li> <li>• Coffee/tea/cookies provided at standing tables off to the side of the collection area (only used by a few people)</li> <li>• 1 plant pot next to the tea/coffee tables</li> <li>• 2 toilets (male/female))</li> </ul>	<ul style="list-style-type: none"> <li>• Located in hallway of a caring home</li> <li>• Situated in a quiet neighbourhood</li> <li>• No music</li> <li>• White walls</li> <li>• 1 poster</li> <li>• 2 wooden tables</li> <li>• 2 food packages placed on each of the 2 tables</li> <li>• Not a lively space</li> <li>• Maximum line length of 4-5 people</li> <li>• Storage room with food packages, empty crates, and 2 fridges</li> <li>• Check in table</li> </ul>	<ul style="list-style-type: none"> <li>• Located in the meeting room of a church</li> <li>• Situated in a quiet neighbourhood</li> <li>• No music but there were speakers present</li> <li>• Painted walls (one red wall, the others were beige)</li> <li>• Several paintings on the walls</li> <li>• Electrical piano was not used</li> <li>• 8 big wooden coffee tables and many chairs</li> <li>• 3 wooden tables for food packages</li> <li>• 2 food packages were placed on each table</li> <li>• Large entrance</li> <li>• Coffee/tea/cookies provided by a volunteer (from the church)</li> <li>• 2 fake flower pots, several (religious) flyers, and newspapers on each coffee table</li> <li>• 2 toilets (male/female)</li> <li>• Maximum line length of 5 people</li> <li>• Storage room with 2 fridges and one freezer</li> <li>• Clothes and shoes available for purchase (1 euro)</li> </ul>
<b>Content of food Packages</b>	<ul style="list-style-type: none"> <li>• Bread, sauce for meat, frozen meat, nuts, potatoes, potato chips, pancake mix, taco shells, coconut yogurt, croissant dough, tomatoes, lunch meat, oranges, bell peppers, cucumbers, leeks, cereal, casava</li> <li>• The food packages are similar, but not identical</li> </ul>	<ul style="list-style-type: none"> <li>• Many of the same products as collection point A</li> <li>• Additional items: butter spread, pre-made soup, white eggplant, mini eggplants, apples, pureed baby food, laundry detergent</li> <li>• The food packages are similar, but not identical</li> </ul>	<ul style="list-style-type: none"> <li>• Bread (2 loaves), crisps, broccoli (2), eggplant, margarine, green asparagus, cabbage, meat (4 packages, one of each: bacon, burgers, minced beef, chicken), milk, butter, chocolate dessert, tomatoes, courgette, fresh green beans, apricots, celery (2 packages), cassava, waffles (2 packages), crepes (2 packages), strawberry flavoured yogurt (2 cartons)</li> <li>• The food packages are identical</li> </ul>

<b>Recipients</b>	<ul style="list-style-type: none"> <li>• Men and women</li> <li>• Mostly middle-aged, some small children, a few young adults (late teens, early 20s), 1 older man</li> <li>• Diverse group of people</li> <li>• 1 person in a wheelchair</li> </ul>	<ul style="list-style-type: none"> <li>• Men and women (more of the latter group)</li> <li>• Mostly middle aged, many small children</li> <li>• Diverse group of people</li> <li>• Some people come in pairs, but most people come alone or with a child</li> <li>• 1 woman with a small baby in a pushchair</li> </ul>	<ul style="list-style-type: none"> <li>• Men and women (more of the latter group)</li> <li>• Mostly middle aged, many young children, a few young adults (late teens, early 20s)</li> <li>• Diverse group of people</li> <li>• Children standing near their parents</li> <li>• 3 women with small babies in a pushchair</li> <li>• 1 person in a wheelchair</li> </ul>
<b>Volunteers</b>	<ul style="list-style-type: none"> <li>• 2 women, 3 men</li> </ul>	<ul style="list-style-type: none"> <li>• 1 woman, 3 men</li> </ul>	<ul style="list-style-type: none"> <li>• 4 food bank volunteers (1 man/3 women)</li> <li>• 3 volunteers from the church (1 man/2 women)</li> </ul>
<b>Procedure</b>	<ul style="list-style-type: none"> <li>• Pick-up - 9:30-11:00</li> <li>• Recipients check in with their name</li> <li>• Stacks of food packages in the back hallway and behind the church</li> <li>• A volunteer added flyers to the food packages</li> <li>• Prepared packages are brought out from the back room by volunteers</li> <li>• Food packages are placed onto a table along the hallway</li> <li>• Extra crates are situated below the tables, where recipients can place food that they do not want/need (these crates are mostly filled with bread)</li> <li>• People bring their own bags</li> <li>• Busy stream of people when we first arrived, but it eventually became less busy</li> <li>• People fill their bags quickly</li> <li>• The leftovers that need to be refrigerated are stored in the fridge and freezer. The rest is divided amongst recipients that are</li> </ul>	<ul style="list-style-type: none"> <li>• Pick-up - 11:30-12:30</li> <li>• A volunteer came outside to announce the opening of the collection point</li> <li>• People line up outside and only 4 people are allowed in at a time</li> <li>• Prepared food packages are brought from the storage room and hallway</li> <li>• Perishable goods are placed in front of each food package as they are placed on the tables (i.e. they are not pre-packed into the crates)</li> <li>• Everyone received laundry detergent (this too was placed in front of each crate as the crate was set on the table). Various brands and sizes of detergent.</li> <li>• People bring their own bags</li> <li>• People fill their bags quickly</li> <li>• No formal way of returning/rejection food. Recipients just hand it back to volunteers. Some people did do this. 1 woman returned bread, and 1 man returned</li> </ul>	<ul style="list-style-type: none"> <li>• Pick-up - 12:30-14:30</li> <li>• Recipients wait to be helped by a volunteer, they check in with their name</li> <li>• The food packages are stacked behind the tables in an open space and are visible by everyone</li> <li>• Prepared food packages are brought to the tables from the open space behind them</li> <li>• People bring their own bags</li> <li>• Steady flow of people (busy but not crowded)</li> <li>• People stay for coffee after they finish with packing their bags</li> <li>• If needed, the volunteers handed out bags for the recipients that didn't have their bags</li> <li>• One man returned the 3 packs of asparagus that were in the package</li> <li>• Constant effort on the part of the volunteers to attract the recipients to stay for coffee</li> </ul>

	there at the end of the day.	the taco shells and cassava. <ul style="list-style-type: none"> <li>• Constant active effort on the part of the volunteers (because only 4 crates are placed on the tables at a time)</li> <li>• Busy stream of people eventually slowed down</li> <li>• Left behind items added to other crates</li> </ul>	
<b>Relationship b/t recipients</b>	<ul style="list-style-type: none"> <li>• Essentially no conversation between recipients</li> <li>• Recipients tend to come alone (1 or 2 couples)</li> </ul>	<ul style="list-style-type: none"> <li>• Little conversation between recipients inside / lots outside</li> </ul>	<ul style="list-style-type: none"> <li>• Recipients interact with each other, they make jokes, they seem familiar with each other</li> </ul>
<b>Relationship b/t volunteers</b>	<ul style="list-style-type: none"> <li>• Volunteers interact, but their interaction is work related</li> </ul>	<ul style="list-style-type: none"> <li>• Volunteers interact, but their interaction is work related</li> </ul>	<ul style="list-style-type: none"> <li>• Volunteers interact with each other and their interaction with each other seems not to be only work related</li> </ul>
<b>Relationship b/t volunteers and recipients</b>	<ul style="list-style-type: none"> <li>• Some conversation between recipients and volunteers, and some laughing/joking, but not much</li> <li>• The recipients and volunteers seem to be familiar with one another</li> </ul>	<ul style="list-style-type: none"> <li>• Some laughing/joking between volunteers and recipients</li> <li>• Recipients often said thank you as they left</li> <li>• Volunteers initiated conversations (i.e. volunteers approached recipients)</li> <li>• Friendly to the point of touching during conversation</li> <li>• Volunteers chatted with the children</li> <li>• 1 woman greeted the volunteer at the check in table by name</li> <li>• 1 recipient asked a volunteer how to prepare the casava</li> <li>• 1 volunteer helped a recipient with a child to bring her bags of food to her bike</li> <li>• Volunteers and recipients seemed familiar with each other</li> </ul>	<ul style="list-style-type: none"> <li>• There is interaction between recipients and volunteers, they make jokes and they have coffee together</li> <li>• Volunteers initiated conversation</li> <li>• Friendly to the point of kissing as a welcoming gesture</li> <li>• Volunteers chatted with and offer candy to the children</li> <li>• Recipients greeted the volunteers by their names</li> <li>• 1 volunteer helped the recipients with small babies and the person in a wheelchair to put the products from the package into their bags</li> </ul>
<b>Willingness to Participate in Study</b>	<ul style="list-style-type: none"> <li>• Volunteers and recipients appeared willing to speak</li> </ul>	<ul style="list-style-type: none"> <li>• Volunteers and recipients appeared willing to speak</li> </ul>	<ul style="list-style-type: none"> <li>• Volunteers and recipients appeared very willing to speak</li> </ul>

<p><b>Other</b></p>	<ul style="list-style-type: none"> <li>• 2 women took food from 2 food packages</li> <li>• 1 couple received additional meat multiple times from 1 of the volunteers (this was later on in the morning as things were getting quieter)</li> <li>• 1 woman handed back tomatoes to a volunteer because there was something wrong with them and he brought her new ones</li> </ul>	<ul style="list-style-type: none"> <li>• 1 recipient arrived without bags, and a volunteer gave him some</li> <li>• 1 recipient had an extra bag, and so gave it to a volunteer</li> <li>• A volunteer handed out extra leeks and tomatoes to some recipients</li> <li>• 1 recipient said "wow" in response to the laundry detergent</li> <li>• Fewer researchers present at this collection point. This means that we were less visible/disruptive to the normal routine of the collection point.</li> </ul>	<ul style="list-style-type: none"> <li>• A few recipients didn't have enough bags, and the volunteers gave them some</li> <li>• Volunteers handed out extra meat at the end of the distribution process</li> <li>• One volunteer asked every lady with a small baby if they wanted baby food (powdered). One of them took it, the other two said that they don't really use it</li> <li>• Fewer researchers present at this collection point. This means that we were less visible/disruptive to the normal routine of the collection point.</li> </ul>
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## Appendix H: Observation checklist

### **Physical environment**

- Length of lines
- Spatial organisation of room
- Organisation of the food packages
- Presence of fridges
- Presence of decoration
- Presence of information/infographics
- Crowdedness
- Music playing
- Noise level

### **Organisational structure**

- Procedure of receiving food/what do recipients do to receive their package (i.e. ID/paperwork/coupon)
- Presence of conversations between recipients and volunteers
- Amount of volunteers
- Are the crates in which the food is packaged reused / do the recipients bring their own bags?
- Do the volunteers and recipients appear to know each other / is there familiarity?
- What is the social atmosphere amongst volunteers, recipients, and the two groups?
  - Familiarity (within these three groups)

# Appendix I: Flowchart of the processes, and parties involved in the food bank

