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Degree of Master of Science

Feeding the world from the bin:

The environmental and social transformative potential of grassroots social innovation initiatives in food waste reduction and redistribution

Dorottya OLÁH

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Budapest

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Dorottya OLÁH

CENTRAL EUROPEAN UNIVERSITY

ABSTRACT OF THESIS submitted by:

Dorottya OLÁH

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Approximately one third of the food produced for human consumption globally is wasted every year. In the meantime, over 800 million people experience food poverty. In the absence of a satisfactory solution provided by the state, grassroots initiatives are taking a stand by saving edible food waste and surplus food and redistributing it to people in need in the form of food aid, or offering it to people who are willing to take it in a pay as you feel basis. In doing so, they are consciously or unconsciously challenging the system. Transformative Social Innovation theory is assessing the transformative potential and impact of social innovations, placing and exploring them in their respective social-material contexts which they interact with. This study aims to show how the different contexts affect the processes and drivers of SI initiatives and their transformative potential. Education is a common denominator in all of the organizations work, and this study finds that the most pronounced and prevalent effects are reached through education and awareness raising. Transformative Food Politics theory is used to highlight the connections of consumer subjectivities, attitude towards food and food waste and transformative potential. Through education and community engagement, collective subjectivities replace isolated individual subjectivities, which coupled with deeper understanding of the whole food system potentially result in less wasteful, more conscious and more empathetic behavior. Further research is needed and suggested to assess the quantitative environmental impacts (emission reduction, saved economic, environmental and social costs, etc.) of the initiatives.

Keywords: transformative social innovation; transformative food politics; food waste; redistribution; food bank; education; transformative potential; pay as you feel; food poverty; community building.

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List of Abbreviations

EHIR	National Environmental Information System (Egységes Hulladékgazdálkodási Információs Rendszer)
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FNB BP	Food Not Bombs Budapest
FNB	Food Not Bombs
GHG	Greenhouse gas
GI	Grassroots (Social) Innovation
NÉBIH	Hungarian Food Chain Safety Office (Nemzeti Élelmiszerlánc-biztonsági Hivatal)
PAYF	Pay As You Feel
SI	Social Innovation
TFP	Transformative Food Politics
TRJFP	The Real Junk Food Project
TSI	Transformative Social Innovation
UK	United Kingdom
WRAP	Waste and Resources Action Programme

1. Introduction

We produce 1.3 billion tons of food waste globally and yet over 800 million people goes hungry annually (Gustavsson *et al.* 2011). Wasting food means wasting all the resources that were used to produce it. With the continued growth of the population, studies estimate that food demand will increase by 50-70 percent by 2050 (Gustavsson *et al*. 2011; Lipinski *et al.* 2013). Besides that, due to the effects of climate change and the intensive natural resource use of the past centuries, some resources are depleting quickly (Alexandratos *et al.* 2012). It is especially true for finite resources such as oil, which is an essential element of the current agri-food system. Climate change intensively threatens soil health and freshwater availability as well (Alexandratos *et al*. 2012; Finn 2014). Soil erosion and degradation is alarming, as well as the costs of acquiring new fertile land, for example by clear-cutting rainforests (Finn 2014). It is estimated that 198 million hectares of agricultural land is 'used' for producing the food that is eventually going to be wasted (Lipinski *et al*. 2013). .Agriculture is responsible for 70 percent of freshwater consumption globally, and with the increased need for irrigation, this ratio is likely to grow further (Alexandratos *et al.* 2012). Food waste clearly represents resource waste as well, thus reducing the wastage of food would mean conserving resources (Priefer *et al.* 2016). According to the waste hierarchy this should be the top priority, and where waste can not be prevented, the best utilization method would be redistribution, when the food can be consumed by the intended end-users, humans (Lipinski *et al.* 2013). The next best thing is animal feed, than anaerobic digestion and composting where some resources can still be recovered and recycled into the system (Lipinski *et al.* 2013; Papargyropoulou *et al*. 2014). The least desirable options are incineration and landfilling, where no value or resources can be recovered and additional economic and environmental cost appear (Papargyropoulou *et al*. 2014). Food redistribution thus is the most desirable option to manage edible food waste and

surplus food and while there are people in food poverty or people who are willing to consume it, it is unethical to send edible food to landfills.

Food waste arises at every stage of the supply chain in different quantities and composition and due to different reasons. In developed countries (like the United Kingdom and Hungary), the biggest contributors are the consumers (Bond *et al.* 2013). Consumer side food waste occurs mostly due to social reasons, such as lack of time and know-how of meal planning and the reuse of leftovers (Alexander *et al.* 2013). An FAO (2014b) study mentions that consumers in developed countries had become especially selective, consuming only specific animal parts or products, while the less favored food has to be sold elsewhere or thrown away contributing to food waste. Another contributing factor is the overcomplicated expiration-date labelling system which is rooted at the risk avoiding behavior of manufacturers and retailers and the overly high quality standards of retailers (Alexander *et al.* 2013). Marketing schemes such as cheaper in bulk or buy one get two makes consumers purchase more product than they need which will eventually land in the bin, resulting in economic losses up to 480 pounds per household in the UK for example (Alexander *et al.* 2013; Bond *et al.* 2013).

While food waste in the household level is relatively well researched, the retail sector is underrepresented (Evans *et al.* 2012). It only accounts for a small amount of the food wasted, but provides an excellent spot for reduction measures (WRAP 2017). A big part of retail food waste is actually fit for human consumption and could be utilized that way (Lipinski *et al*. 2013; Priefer *et al.* 2016). To this day, there are organizations and initiatives in place to save edible food waste and surplus from going to landfill and divert it instead towards people (in need). Yet there is a lot more food to save from landfills and there are a lot more people that live in food poverty or struggle to get food from time to time. The resource and the consumers are kept separated by geography, logistics, policy, institutions and social issues among others (Lipinski e*t al*. 2013). Another reason to target food waste with reduction measures and especially

through redistribution measures is because the waste stream of edible food waste and surplus is relatively condensed, regular and somewhat predictable (Lipinski *et al.* 2017). These qualities can simplify collection and transportation if utilized effectively thus resulting in increased amounts of food saved for redistribution. Legislative obstacles of saving food are prevalent in the current system, such as overly strict food safety regulations or arbitrary labeling as well as economic constraints associated with profit loss of food donation (Lipinski *et al.* 2017). The perception of food waste also plays into the limitations of redistribution (Evans *et al*. 2012).

Organizations and initiatives reacting to the shortcomings of the reigning institutional and agri-food system are often critical to these systems and by addressing issues the regime fails to attend to they have the potential to change or alter it (Levkoe 2011). These organizations can change people's perception of food waste and its value, raise awareness to the environmental and social problems associated with food waste and can potentially induce social and institutional change (Levkoe 2011; Haxeltine *et al*. 2016).

There are organizations and projects aiming to connect the edible food waste and the people, yet there is still food that ends up in landfills and people struggling to have food. I will use three distinctly different case studies in Hungary and in the United Kingdom to illustrate the operations of such initiatives across different cultural, historical and economic contexts. Food Not Bombs Budapest is the local cell of the international Food Not Bombs movement and collects fruits and vegetables that are supposed to go to waste and prepare and redistribute vegetarian meals to people in need (FNB BP website 2017). The Hungarian Food Bank Association is the Hungarian representative of a textbook food waste charity, working with manufacturing and retail surplus and distribute food aid through local organizations to people in need (Food Bank website 2017). The Real Junk Food Project is an organization primarily located in Leeds with over 200 locations worldwide. They collect food waste and surplus from retailers and distribute it as it is or serve as hot meals in cafés on a pay as you feel basis (TRJFP

website 2017). The three case studies are distributed along an imaginary spectrum of compliance with the system. TRJFP openly critiques the overproducing ways of consumerism, FNB BP opposes elements of the system with an underground movement and the Food Bank operates as an NGO and works by the laws. Hungary being a post-socialist country in Eastern-Europe and the United Kingdom being a leading economic power and long-time representative of the global North have different historical backgrounds of food (Gille 2007; Evans *et al.* 2012), waste and consumption and the differences in the current social-material contexts are affecting the transformative potential of the initiatives.

Wasting food is a missed opportunity on combating food security and mitigating environmental impacts as well as optimizing resource use. Technological solutions can only go so far in reducing food waste for example in manufacturing or with nanotechnology used in packaging to elongate the shelf-life of products (Gustavsson *et al.* 2011). We need to understand the connections and feedback loops between retail and consumer food waste and recognize that human based solutions can be used effectively to reduce food waste at both of these stages.

My thesis attempts to identify key challenges that such initiatives face in their respective social-material contexts as well as try to evaluate their social and environmental impacts. I argue that these social innovation initiatives can be considered transformative since their ways of addressing the issue of food waste reduction challenges and alters the established social welfare system as well as retail practices and regulations. I also argue, however, that their approaches can be drastically different and they employ different methods and emphasize different areas in their work. I partially attribute these to the differences in the histories and social-material contexts of the two countries. Finally I argue that while all three initiatives have not emerged from an environmental concern, they all are well aware of the interconnectedness of food poverty and food waste as well as the environmental cost of both, and it influences their values to some extent. Furthermore, the operation of these organizations results in

transformation in environmental relationships surrounding food, consumption and waste, even though it might not always be intentional.

1.1. Aims and objectives

The aims and objectives of this thesis are to analyze three different initiatives that deal with food waste redistribution in order to assess the roles of grassroots social innovation initiatives in attempting to redistribute edible food waste or surplus food in a sustainable food system. Using the frameworks of grassroots social innovation, transformative social innovation and transformative food politics I aim to identify the actors, the drivers, the purposes and the processes of each initiative, which will help to assess their environmental and social impacts that they have in their current state of operation. I will also explore the challenges and opportunities that the literature suggests in the case of expanding such initiatives. I will use the concept of transformative potential and impact from the TSI framework theory to evaluate the environmental and social effects of the initiatives.

1.2. Research questions

1. How are the food waste initiatives in the UK and Hungary creating transformative social innovations and food politics through their projects?
2. How do the different social, institutional and legislative contexts of the UK and Hungary differently affect the transformative potential of these initiatives?
3. How do the social innovation processes take environmental aspects into account and to what extent do they transform environmental relationships surrounding food distribution, consumption and waste?

2. Literature review

2.1. What is food waste? Definitions and concepts

2.1.1. Food, food waste and supply chain

Food waste is defined and used differently in different reports, studies and projects as well as for data collection. This results in inconsistencies and incomparability of data and databases collected by different agents (Östergren 2014). To resolve this issue, at least in the European Union level, FUSIONS project was launched to create a framework definition for food waste that would be commonly used on both EU and national level for research and data collection. It would support stakeholders and policy makers to understand the occurrence and estimate the levels of food waste along the whole supply chain and help measure the efficiency of reduction measures. Consequently, a commonly used framework would further the advances in ensuring food security and resource efficiency (Östergren 2014).

The Food and Agriculture Organization of the United Nations is among the leading institutions with wide scope that includes food wastage, food security, food safety and supply chain issues. It also collects data on food production and waste, thus makes it relevant to discuss the definition of food waste according to FAO. FAO's definition of food waste is broken down into two categories, food loss and food waste, which, besides referring to different reasons and kinds of wasted food, also usually cover different stages of the supply chain.

Food loss refers to the loss of food (either in mass or in nutritional value) intended for human consumption due to poor infrastructure, logistics, technological or supply chain inefficiencies, biotic and abiotic stress in production, lack of sufficient skills, management capacities or access to market.

Food waste refers to the loss of food appropriate for human consumption due to spoilage, oversupply, consumer habits, personal preference, or being discarded for any other reason.

Food wastage encompasses the above two and refers to any food destined for human consumption being discarded or otherwise diverted from human consumption (Gustavsson *et al*. 2011)

It is imperative to understand and clarify some terms relevant for this study as well. I will use the FUSIONS framework definitions throughout my thesis. In any case where a term is used with different meaning than the one specified in this section, a clarification will be given.

FUSIONS definitions are based on the resource flows in the agri-food system. Figure 1 shows these resource flows and the proposed elements included in the definitions of supply chain (A) and food waste (B-ii).

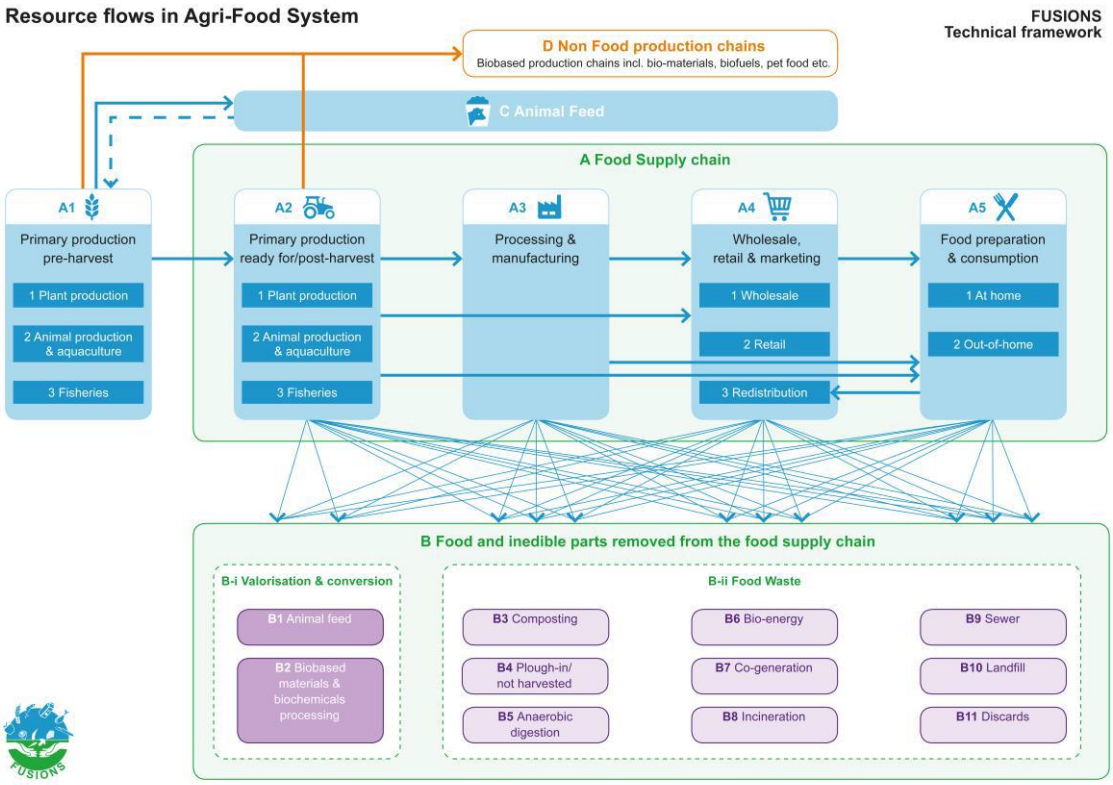

Figure 1 Resource flows in the Agri-Food System and proposed technical framework of 'supply chain' and 'food waste' (Source: Östergen 2014)

> "Food means any substance or product, whether processed, partially processed or unprocessed, intended to be, or reasonably expected to be consumed by humans. Food includes drink, chewing gum and any substance, including water, intentionally incorporated into food during its manufacture, preparation or treatment" (Östergren 2014: 8).

> "Food Supply chain: The food supply chain (A) is the connected series of activities used to produce, process, distribute and consume food. The food supply chain starts when the raw materials for food are ready to enter the economic and technical system for food production or home-grown consumption (A2, Figure 2). This is a key distinction in that any products ready for harvest or slaughter being removed are within scope, not just those that are harvested and subsequently not used. It ends when the food is consumed (A5) or 'removed' (Section B) from the food supply chain" (Östergren 2014: 8)

> "Food waste is any food, and inedible parts of food, removed from the food supply chain to be recovered or disposed (including composted, crops ploughed in/not harvested, anaerobic digestion, bio-energy production, co-generation, incineration, disposal to sewer, landfill or discarded to sea)" (Östergren 2014: 6)

Much literature (for example Gustavsson *et al.* 2011; Lipinski *et al*. 2013) uses the terms 'food loss' and 'food waste' to differentiate between wastage of food before and after it reaches the consumer. Food loss is due to inadequate storage or transportation, refers to food that is spoils, spills, wilts or gets lost before being purchased by the consumer. Food that is fit for consumption and yet gets discarded for various reasons is considered food waste. The FUSION definition incorporates both of these categories and considers as food waste everything that leaves the supply chain regardless of the stage or the reason. It includes among others, crops and animals that are not harvested, that are harvested and later discarded because they don't fit quality standards or spoil in storage or transportation (Östergren 2014). It also includes the inedible parts of food that entered the supply chain and got removed before the end point. On the other hand, it excludes 'food and inedible parts removed from the supply chain' that are utilized otherwise. 'food and inedible parts' can exit the supply chain in three distinct ways

(Östergren 2014). One is becoming food waste (B3-11) by being recovered or disposed, another is to enter a different, non-food production chain (D) or to get reused or recycled through valorization and conversion processes (B1-2) (Östergen 2014). It also includes the redistribution of surplus food into the supply chain as it might get wasted after redistribution. Food waste is measured in mass and the total amounts are encouraged to measure due to practical reasons (Östergren 2014).

2.1.2. Surplus food

There is no commonly accepted and used definition of surplus food. In the retail sector it usually refers to store overstock due to ordering mistakes, fluctuation in demand, seasonal products stuck in stock (Östergren 2014; Gustavsson *et al.* 2011). Food with damaged packaging or below visual quality standards that is otherwise fit for human consumption also often referred to as 'food surplus' (Gustavsson *et al.* 2011). For this paper, I will use 'food surplus' and 'surplus food' interchangeably and in reference to food that occurs in any stage of the supply chain. For example in retail: overstock (any kind), damaged, visually impaired food fit for consumption but deemed not fit for sale. For production it can cover crops and animals that are not being harvested (due to change in demand or other reasons) but would be fit for consumption. For processing and manufacturing, 'surplus' could be mislabeled products, yogurts with a taste in-between strawberry and cherry due to the switch in production or not properly filled cans and bottles. In preparation and consumption, it can be applied to the leftovers when too much food is prepared in a restaurant, event or at home and it can be consumed given that the relevant food safety regulations are followed. Surplus food is therefore a sub-category of 'food waste' according to our definition and will be used accordingly throughout this thesis.

2.2. At the intersection of two fields: Food waste as an environmental and social issue

2.2.1. Environmental implications

Food production is a resource intensive process, it requires land, water and nutrients, human labor and fossil fuel. 37% of all land is under agricultural uses globally (Alexandratos *et al.* 2012) and roughly 1.4 million hectares are 'used' for producing the equivalent amount of food that is being wasted (Gustavsson *et al.* 2011).Continued intensive agricultural use drains the soil of nutrients and intensive fertilizing and irrigation results in erosion and salinization. Agriculture is the biggest freshwater consuming sector with more than 2700 km^3 of water used for irrigation annually (Gustavsson *et al.* 2011).

Mechanized agricultural production, transportation and processing represents notable fossil fuel use and the fossil fuel requirements of fertilizer production which all contribute to GHG emissions. The carbon footprint of global food waste is estimated to be around 3.3 billion tons in CO_2 equivalent, which makes food waste the third biggest emitter (Gustavsson *et al.* 2011) The impact of agriculture on biodiversity is clear and widely accepted (for example (Reidsma *et al*. 2006; FAO 2014a)

Change in land use patterns result in habitat degradation, fragmentation and loss, mono-cropping reduces biodiversity, because the reduction in the number of varieties cultivated results in the loss of many heirloom varieties (FAO 2014a). The use of genetically modified organisms threatens with hybridization and outcompeting of native species. Excess fertilizer washed into surface or groundwater contributes to the eutrophication of surface waters and the contamination of groundwater resources with potential threat to human health as well (FAO 2014a).

1. Table Main global environmental impacts of food waste (Source: FAO 2014b)

Table 1: Main global environmental impacts of food wastage

Environmental impacts	Unit	Global	OECD countries	Non-OECD countries
GHG emissions	Gt CO_2e	3.49	0.75	2.74
Land occupation	Million ha	0.90	0.21	0.70
Water use	km^3	306	24	282
Soil erosion	Gt soil lost	7.31	1.00	6.31
Deforestation	Million ha	1.82	0.16	1.66

2.2.2. Social implications

Wasting food in a world where food poverty is still prevalent is unethical (FAO 2014a). The wasted resources and labor jeopardizes food security in a world with growing population and increasing resource scarcity (FAO 2014b). Besides the clear paradox situation of wasting food in a hunger ridden and increasingly resource scarce world, hidden costs and implications of the environmental degradation caused by wasting food need to be taken into consideration as well. According to the FAO (2014a) study, soil erosion due to production of the wasted food and water shortages due to intensive irrigation increase the risk of conflicts over these resources. The same study estimates that the cost of health issues associated with exposure to pesticides are over 150 million dollars. Soil erosion and water shortage can also directly threaten the livelihood of farmers as well as the economic loss due to lack of market access or cancelled orders from manufacturing and retail (FAO 2014b). Wastage at the consumer level represents huge economic loss for the customers, in the UK for example, about 680 pounds per household annually (Bond *et al.* 2013).

2.3. Food waste in numbers

2. Table Summary of amount, value and GHG emissions of food waste in different regional categories (Data source: Bond et al. 2013; Stenmarck et al. 2016; Gustavsson et al. 2011; FAO 2014b)

Region/country	amount (million t)	value (billion euro)	GHG emission (million t CO_2 eq.)
World	1300	796	3300
EU-28	88	143	304
United Kingdom	10	19.4	20

2.3.1. Global situation

Despite the inconsistencies and gaps of data regarding food waste and food loss, the leading institutions and researchers do agree that a notable part of food produced for human consumption never gets eaten, but instead ends up in landfills (Gustavsson *et al*. 2011; Bond *et al.* 2013; FAO 2012). These estimates indicate that 1.3 billion, or one third of the food produced globally is lost or wasted annually throughout the supply chain (Gustavsson *et al.* 2011; Bond *et al.* 2013; FAO 2012). Table 2 summarizes the food waste amounts and the associated GHG emissions and economic costs. Comparable data for Hungary was not available. Food waste appears in different parts of the supply chain in developed and developing countries, however the amounts are nearly equal. In developing countries, food waste predominantly occurs at the pre- and post-harvest stages due to biotic and abiotic stress, inefficient agricultural practices or technological limitations, poor storage facilities or pest and disease infestations (Bond *et al*. 2013; Lipinski *et al*. 2013). Developed countries on the other hand generate more waste on the consumer end of the chain: abundance and availability leads to more waste (Lipinski *et al.* 2013). Overall the highest loss is experienced among root crops, fruits and vegetables with 40-

50% being lost, while this amounts to 20-20% of cereals, fish, meat and dairy (Bond *et al.* 2013).

2.3.2. European Union

Data collection on food waste in the EU-28 countries were unstructured and based on different definitions and methodology, which resulted in statistical uncertainties and data gaps, and the existing datasets are often poorly comparable (Stenmarck *et al.* 2016). Despite these limitations, during the framework project, FUSIONS attempted to draw an estimation from the data available. The total amount of food waste generated in the EU-28 countries are estimated to be around 88 million tons, with considerable uncertainty of 14 million tons, due to the aforementioned inconsistencies in datasets (Stenmarck *et al.* 2016).. The distribution among sectors is shown in Figure 2.

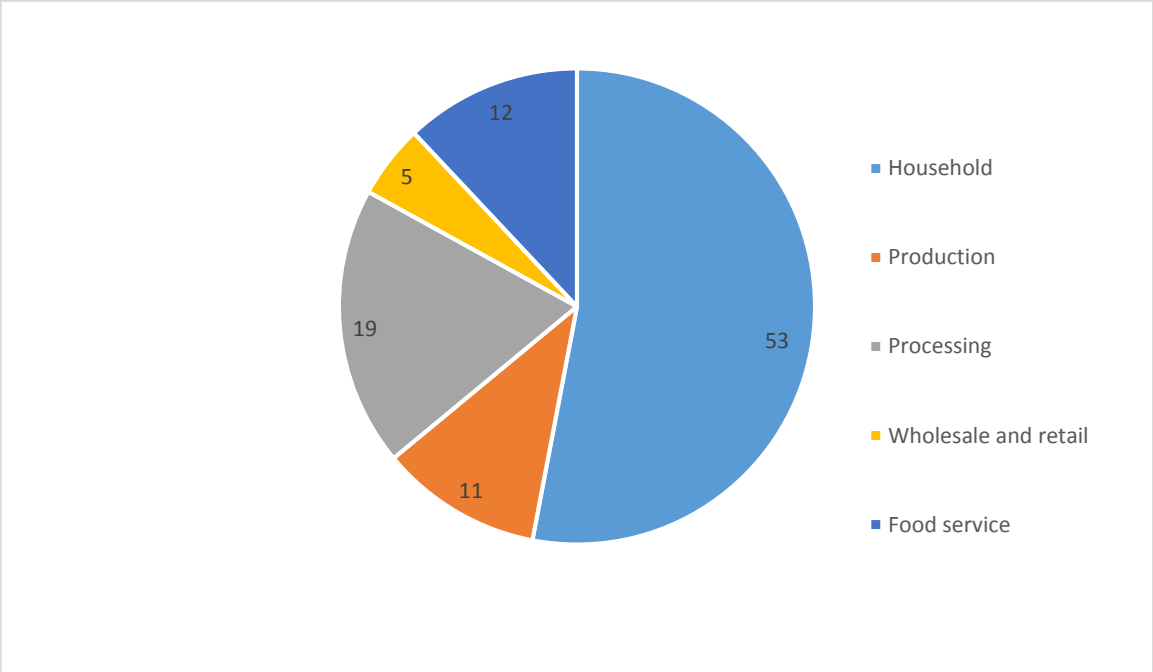

Figure 2 Distribution of EU-28 food waste among sectors (%) (2012) (Source: Stenmarck et al. 2016)

The associated cost of this food waste was around 143 billion euros in 2012 (Stenmarck *et al.* 2016). Households are responsible for about half the amount of the food wasted in the European Union followed by processing and food services, which is in line with the global

trends, with the EU-28 considered in the high-income range. While retail food waste represents only 5% of the EU-28, 3% of UK and 5% of HU food waste, it is worth for further inquiry for multiple reasons (Stenmarck *et al*. 2016; Bond *et al*. 2013). The value of edible retail food waste was estimated to be around 10 billion euros (Stenmarck *et al.* 2016). It is at the high-value end of the supply chain which represents higher economic loss compared to the same mass of waste on for example production or processing level (Stenmarck *et al.* 2016; Bond *et al.* 2013). Towards the end of the supply chain, products are more processed, went through many procedures (added value) and many 'middle-men' which all increases the cost and therefore the value of that product. External costs that are not usually incorporated into the price of products are usually environmental costs, such as emissions for the whole life-cycle of the product, the associated soil degradation and biodiversity loss (Finn 2014). The same is true for household food waste as well, but the waste stream is more dispersed and consumer behavior is hard to change (WRAP 2017; Lipinski *et al*. 2013). The waste stream is aggregated in space and time and fairly regular, which can make collection, transportation and further distribution easier, more predictable and more economic (Finn 2014; Galli *et al*. 2016).

2.3.3. United Kingdom

An example of the inconsistencies of data gathering and definition of food waste is the case of the United Kingdom (WRAP 2017). The Waste and Resources Action Programme (WRAP) was set up to coordinate efforts of knowledge building and reduction of food waste. The definition of food waste in WRAP studies differs significantly from the FUSIONS definition, since it only includes post-farm-gate waste but not ready-for harvest products wasted before leaving the farm. On the other hand the WRAP definition excludes redistributed surplus food, regardless of its destination being humans or animals (WRAP 2017). Pre-farm-gate losses are only estimated by WRAP and other sources as well, with significant differences ranging from 3 to 5 million tons (WRAP 2017; Bond et al. 2013). Therefore, post-farm-gate food waste

in the United Kingdom amounts to 10 million tons with an associated value of 17 billion pounds (roughly 19.4 billion euros) and is responsible for 20 million t of GHG emission in CO_2 equivalent (WRAP 2017). The distribution of this amount along sectors is shown on Figure Z.

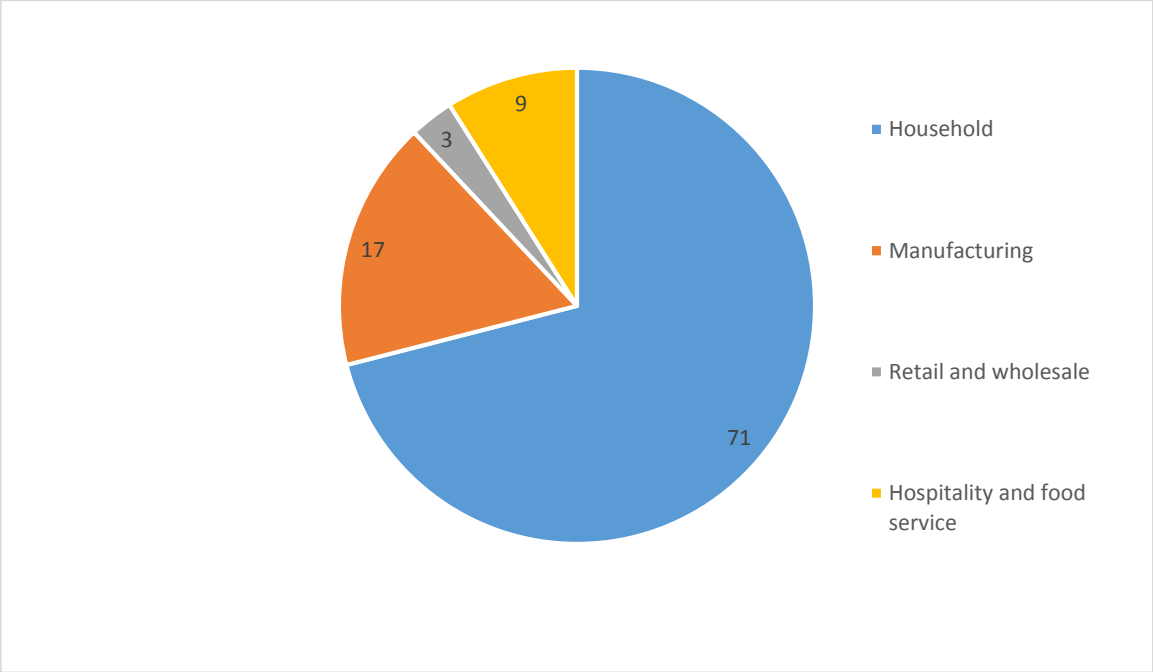

Figure 3 Distribution of post-farm-gate food waste among sectors in the UK (%) (varying years) (Source: WRAP 2017)

In the UK, food and drink industry is the largest manufacturing sector, employing 14% of the country's workforce while contributing almost 90 billion pounds (102 billion euros) to the economy (Bond *et al.* 2013). Food waste in the pre-farm-gate stage mostly occurs due to weather (15-15% yield loss), pest or disease (15-20% yield loss) related events and high quality standards of manufacturing and retail (up to 40% of yield) (Bond *et al.* 2013). Due to the competitiveness of the sector, retail has tolerated larger amounts of waste (food, packaging, energy, water) as a quasi 'by-product", and these waste streams appeared not only in the retail stage but in production and manufacturing as well (Bond *et al.* 2013).. As it is typical to high-income countries, the bulk of food waste occurs at the consumer end of the supply chain (Gustavsson *et al.* 2011; Bond *et al.* 2013). While retail sector contributes a relatively small amount, the value of that food waste can be high, because the cost and value accumulation towards the end of the supply chain (WRAP 2017). Household food waste is thoroughly

documented and researched in the UK, and WRAP also focuses most on this stage of the supply chain. Huge amounts of food waste is generated in the households due to varying reasons, most of them linked to consumer behavior, lifestyle or awareness (Bond *et al.* 2013). According to the studies of WRAP, 4.4 million tons of household waste could be avoidable (edible, fit for consumption food that is thrown away due to personal taste, lack of time or know-how to utilize it), which represents 470-700 pounds thrown away a year per household (WRAP 2017).

2.3.4. Hungary

Despite the reporting of food waste data to EUROSTAT, it is still hard to measure food waste and the data gathered are mostly estimates and projected amounts. Due to waste management strategies, household food waste is often collected together with other household waste which makes it challenging to collect reliable data. In the retail sector, waste streams are usually separated but stores might not be willing to share information concerning their food waste (Gruber and Obersteiner 2016).

Data is scarce and inconsistent concerning food waste in Hungary. The Strategies to reduce and manage food waste in Central Europe project (STREFOWA) used information from the National Environmental Information System (EHIR), but the categories are not in line with any of the more comparable frameworks (FAO, FUSIONS) (Gruber and Obersteiner 2016). Their result is around 528000 t food waste per year for the whole supply chain (Gruber and Obersteiner 2016).

FoRWaRD was an EU co-funded project in their Lifelong Learning Program aimed to develop an educational platform, knowledge base and materials to enhance food waste reduction and food recollection for charitable distribution. In the data collection and scoping report, they mention similar limitations of data as seen before (Forward 2013).

The last official dataset is from EUROSTAT in 2006 which estimates food waste around 1.8 million tons, where over 1.1 million tons comes from manufacturing, about 0.4 million tons from households and 0.3 million tons from other sectors and stages of the supply chain (retail, wholesale, food services and hospitality) (Forward 2013; Stenmarck *et al.* 2016).

The National Waste Management Plan (2014-2020) (OHT 2013) presents baseline data on waste, where food waste does not appear as separate category but is distributed among multiple waste categories, such as 'Agricultural and food industrial waste' and 'Municipal solid waste'. Agricultural and manufacturing waste data is collected together, indicating non-food waste as well, and excludes everything that is plowed back to the soil, regardless of it being inedible or edible, produced for human or animal consumption. Household food waste is registered together with all household (municipal) solid waste, as it is collected together in practice as well (OHT 2013).

The National Food Chain Safety Office in Hungary recently conducted a qualitative and quantitative study on household food waste in order to establish baseline data for educational and awareness raising programs in the future, in line with EU requirements (Szabó-Bódi and Kasza 2017). Their representative study shows – after extrapolation to the whole country - that the amount of food waste per capita is around 68 kg a year, which represents 10-11% of all food purchases (Szabó-Bódi and Kasza 2017).. The study details that almost half (48.7% of this would be avoidable with more conscious consumer behavior (Szabó-Bódi and Kasza 2017).. Furthermore, almost 63% of food waste goes to the trash, which represents the most environmentally damaging disposal of high value food (Szabó-Bódi and Kasza 2017).

2.4. Historical context of food waste in the United Kingdom and Hungary

2.4.1. United Kingdom

Food waste scholarship is an emerging field in environmental-social sciences (Evans *et al.* 2012). (Food) waste was long made invisible in our societies but in the last two decades, it started to receive more and more attention, mainly in climate change context. Food waste was perceived as the final residue of stuff, of life, an end-of-pipe "by-products and outputs in linear processes of production, consumption and disposal" (Evans *et al.* 2012). Waste had to be dealt with, it had to be managed, disposed of, which made it culturally invisible, distanced from the society. It was purposefully marginalized, viewed as hazard, a risk for health, or lately, to the environment. Conceptualized as a metaphor, a condemning moral critique of being useless and unproductive, it was framed as valueless, dirty and unwanted, something that had to be hidden away from the 'decent' members of society (Melosi 2004). However Evans *et al.* (2012) claims that food waste was not always invisible, in fact, it emerged and disappeared over the course of the last 150 years. In their analysis, they apply the concept of 'waste regimes' developed by Zsuzsa Gille (Gille 2007). Waste regimes can be understood as 'the institutions and conventions that determine what wastes are considered valuable and the ways in which their production and distribution is managed, represented and politicized" (Evans *et al.* 2012). The different definitions of waste describe, constitute and sustain the regime at the same time (Gille 2007). Also 'waste regimes' vary from location to location and across time (Gille 2007). Evans *et al.* (2012) illustrate their theory with cookbooks from the 19th century, like various Mrs. Beeton's books, Economical Cookery or the world famous The Joy of Cooking. All of these books contain chapters, tips and tricks on making the most out of the ingredients, using leftovers, shopping efficiently. Saving, reusing and repurposing was encouraged and framed as a necessary and celebrated quality of a woman. World War II brought an even more pronounced promotion of saving and provisioning and wasting food was discouraged and very well present

in everyday life. The Cold War period, technological advancement, the consequently increased agricultural production and the food aids brought in by the Marshall Law resulted in maximized food production and excess food. Since food was abundant, it became cheaper, and utilizing every scrap and caring for leftovers seemed to be redundant. Food waste thus became distanced, invisible. Evans *et al.* (2012) argues that in the 21st century, food waste is becoming increasingly visible and he attributes it to "complex congruence of seemingly quite different and recently aligned dynamics" (Evans *et al.* 2012: 16). The first of the four identified dynamics is sudden crises, like the 2008 economic and food crises, where, surprisingly, food prices started to rise, economies built on credit and the purchasing power of the middle-class started to crumble (Rosin *et al.* 2012). In this environment, where food security becomes a real issue of everyday life, wasting food is less affordable and less desirable.

The second element would be a change in international policy and governance towards resource conservation, efficiency and consequently, waste reduction through mainly reuse and recycling (Evans *et al.* 2012). This shift started with the Landfill Directive (1999/31/EC) which contained legally binding targets to reduce biodegradable waste (which food waste is considered) by 35% by 2020. This directive spurted the foundation of organizations and programs to facilitate the change. In the UK, this was WRAP, tasked with data collection, monitoring, research, awareness raising and developing prevention and reduction initiatives (Evans *et al.* 2012).

This era also represents a change in the perception of food waste as an end-of-pipe issue and it was recognized that food waste arises at every stage of the supply chain and reduction measures are necessary not only at the consumer side (Evans *et al.* 2012). The increasing role of non-state actors in political change, the highlighting of food security and food poverty issues, and the recognized link between food waste and poverty also contributed to the rise of food waste discourse (Evans *et al.* 2012). Grassroots movements, protest, activist movements have

turned their attention towards the issue, often addressing cases where the ruling system seem to have failed to provide a solution (Evans *et al.* 2012). The result of these continuing movements are the food bank, redistribution organizations and numerous charities.

The fourth element is long-term trends in technology and environmental discourse (Evans *et al.* 2012). With the rise of information and communication technology, environmental issues, the threats of peak oil and climate change moved into the foreground of contemporary political and public discourse as risk, threats to society (Evans *et al*. 20112). With resource scarcity realized as a real threat, reducing waste had become a policy issue, and technological solutions for re-valuing food waste via composting or anaerobic digestion gave rise to a newfound techno-optimism (Evans *et al.* 2012).

2.4.2. Hungary

The social-historical context in Hungary was slightly different than the one described above by Evans *et al*. (2012). The late 1800s and early 1900s, pre-World War II period was similarly encouraging towards saving, thrifting and reusing than the situation in Britain or more generally in the developed North. In her extensive work on waste in the socialist Hungary, Zsuzsa Gille describes waste regimes, identifying waste as a social category, meaning that there are "social patterns of the social nature of waste" (Gille 2007). Waste regimes vary from across time and space and are dynamically change according to the "production, representation and politics of waste" (Gille 2007). It is important to consider how visible waste is for the society and for politics, what is taboo or stigma, what are the measures taken to deal with waste, and with what non-waste motives can hide behind these measures.

After World War II, Hungary has become part of the Soviet Block, encompassed by state socialism. Gille (2007) divides this period between 1948 (the start of state socialism) to 2004, when Hungary joined the EU and truly joined capitalism into three sections, three waste

regimes, namely "The metallic waste regime", "The efficiency model" and "the chemical model". In the metallic waste regime, from 1948-1974, waste was practically equal to scrap metal, deemed as a 'free' resource which was collected by the state and re-used extensively. Between 1975 and 1985, reduction started to gain traction as waste was perceived as the inefficiency of production which needed to be reduced. After 1985, waste turned to be toxic, dangerous and useless, something that needs to be disposed of, which, with the collapse of the Soviet Union and Hungary's entrance to the free market and capitalism, transformed into a 'throwaway culture' (Gille 2007). In 2004, Hungary joined the European Union, and with that, a new markets and with that, new regulations concerning food and food waste, which sometimes forced to change deeply embedded habits, such as feeding food waste to livestock. There is however very little literature of food waste in the social-historical context of Hungary. In her thematic article for food waste, Gille (2012) extends her theory of waste regimes to food waste regimes and identifies that risk, or more like the avoidance of risk is a common denominator across countries considering food waste. She points out that the strategies (cultural, legal, policy) to avoid risk posed by food waste deeply affect food production and the generation of food surplus and food waste as well as the perception of them. Beck (1992) claims that environmental and health risks are more global than personal, more distanced and out of the hand of the everyday citizen. Being overly cautious and throwing away everything that is expired or not in the best shape, wilted or spotted can be viewed as a desperate attempt to be in control of the risks they take (Beck 1992). Avoiding risk contributes to food waste generation in every other stage of the supply chain as well. Crops remaining on the field due to withdrawn or modified contracts or higher quality and safety standards are the results of the retail and manufacturers sector trying to avoid economic loss due to purchasing later unsellable products (Alexander *et al.* 2013). Farmers also often grow more than the market demand to make sure they can meet their contracts or cater to the market in the case of extreme weather events or

pest damage, which results in leaving a sizeable portion of their crops on the field (Bloom 2011). Manufacturers secure themselves by using different kind of expiry dates, some of which has no connection with the safety of the food, but due to the many labels and lack of information, consumers do end up discarding produce on their best-before dates (Jackson 2010). Gille (2012) argues that food waste reduction measures need to address the production, the representation and the politics of food waste and should not resort to technological and economic measures only. The social aspects of food waste need to be attended to through more detailed analysis and the exploration of human-based solutions.

These events and actions show that the politics of food waste is complex and deeply connected to social-historical contexts of the country or region in question. Though waste is inevitable where there is production and consumption, the amounts and kinds of it is frightening and deserves to be put under the spotlight (Gille 2012).

2.5. Institutional and legislative context in the European Union, the United Kingdom and Hungary

2.5.1. The legislative and institutional umbrella of the European Union

Both the United Kingdom and Hungary are (still) part of the European Union, which means the harmonization of laws and regulations to a certain extent. The following regulations, directives and communications are currently in effect in the European Union and apply to both of the countries (Vittuari *et al.* 2015). There are policies directly dealing with donation of surplus and expired food products or food waste, and some addressing various incentives of donation (Vittuari *et al.* 2015). There are important policies on the implications of food waste to the environment and to resource use as well as framework directives with implications to food waste and food waste management (Vittuari *et al.* 2015). The following list of regulations,

communications and legislations were selected from the collection prepared for the FUSIONS framework report by Vittuari *et al*. (2015).

2.5.1.1. Waste management, environment and resource use

Directive 1999/31/EC (the landfill directive) on the diversion of biodegradable waste from landfills

Communication (2003) 301 on the negative environmental impacts of disposed biodegradable waste

Communication (2005) 666 on waste reduction, recycling with special attention to the redirection of biodegradable waste from disposal

Directive 2008/98/EC (Waste Framework Directive) on establishing the waste hierarchy

Communication (2011) 571 on sustainable resource use

Resolution 2011/2175 (INI) on strategies for more efficient food supply chain

Communication (2014) 398 on circular economy with special attention to food waste prevention

2.5.1.2. Prevention measures, redistribution and donation

Regulation (EC) No 178/2002 on harmonizing food laws among member states with implications to the donation of expired but suitable for consumption food

Regulation (EC) No 1308/2013 on encouraging the free distribution of fruits and vegetables withdrawn from the market

Directive 85/374/EEC on the removal of donor liability to encourage surplus donation

Directive 2006/112/EC on harmonization of VAT breaks on food donation

Regulation (EC) 543/2011 on marketing standards for fruits and vegetables

Regulation (EU) 1169/2011 on food information (expiration labels)

Regulation (EC) 589/2008 on minimum durability of products

Directive 2009/28/EC on encouraging AD as food waste treatment

2.5.2. United Kingdom

In the United Kingdom, food waste issues belong to the Department for Environment, Food and Rural Affairs. The key institution dealing with food waste is WRAP (Waste and Resources Action Programme) was established following the implementation of the Directive 1999/31/EC concerning the diversion of waste from landfills.

The Courtauld 2025 Commitment is a voluntary initiative launched in 2016 to reduce food waste in manufacturing and retail. The House of Commons, in light of the recent change in Government, published the results of their investigation (House of Commons; Environment, Food and Rural Affairs Committee 2017) on retail and household food waste earlier than planned. In this report, the two main weaknesses of the Courtauld Commitment is described as limited scope and the voluntary nature of the initiative. While numerous retailers signed the commitment, only a small number of manufacturers joined which could jeopardize the effectivity of the project. Critiques and many organizations call for regulatory measures to strengthen the Commitment, but, according to the report, the Ministry is opposed to this idea (House of Commons; Environment, Food and Rural Affairs Committee 2017). In order to provide more reliable data and achieve transparency, organizations call for a common reporting system and the public availability of the food waste data provided by supermarkets and manufacturers. A transparent data reporting scheme would contribute to devising targeted and more effective reduction measures (House of Commons; Environment, Food and Rural Affairs Committee 2017). The report also discusses the issue of date-labels and agrees with the ongoing process of revision and formulation of new guidelines on setting expiration-dates to replace the

current, confusing and often arbitrary labels that also lack any regulatory background. It is agreed among the actors in the UK that overly strict visual quality standards are contributing to food waste in both the production and retail stage (House of Commons; Environment, Food and Rural Affairs Committee 2017). Recent practices show that selling 'wonky vegetables' (fruits and vegetables that does not meet the cosmetic standards) on a discount is welcomed by consumers. However most actors call for the 'normalization' of wonky vegetables by modifying the cosmetic standards to be more enabling (House of Commons; Environment, Food and Rural Affairs Committee 2017).

Currently, redistribution in the UK is voluntary, and studies estimate that around 10000 tons of surplus is getting redistributed through charities with the potential of at least 110000 tons more from the retail sector only (WRAP 2017). This would mean over 260 million meals annually (House of Commons; Environment, Food and Rural Affairs Committee 2017). While there seems to be a will from the side of the retailers, there are still the logistical and administrative challenges with overly complicated contracts and regulations out-ruling certain food groups from redistribution (House of Commons; Environment, Food and Rural Affairs Committee 2017).

WRAP devised a food waste hierarchy similar to the waste hierarchy established by EU Waste Framework Directive (2008), which is used in the UK to analyze data and create targeted food waste reduction measures (WRAP 2017). According to this food waste hierarchy, redistribution is considered as the second best food waste reduction measure after prevention (Figure 4).

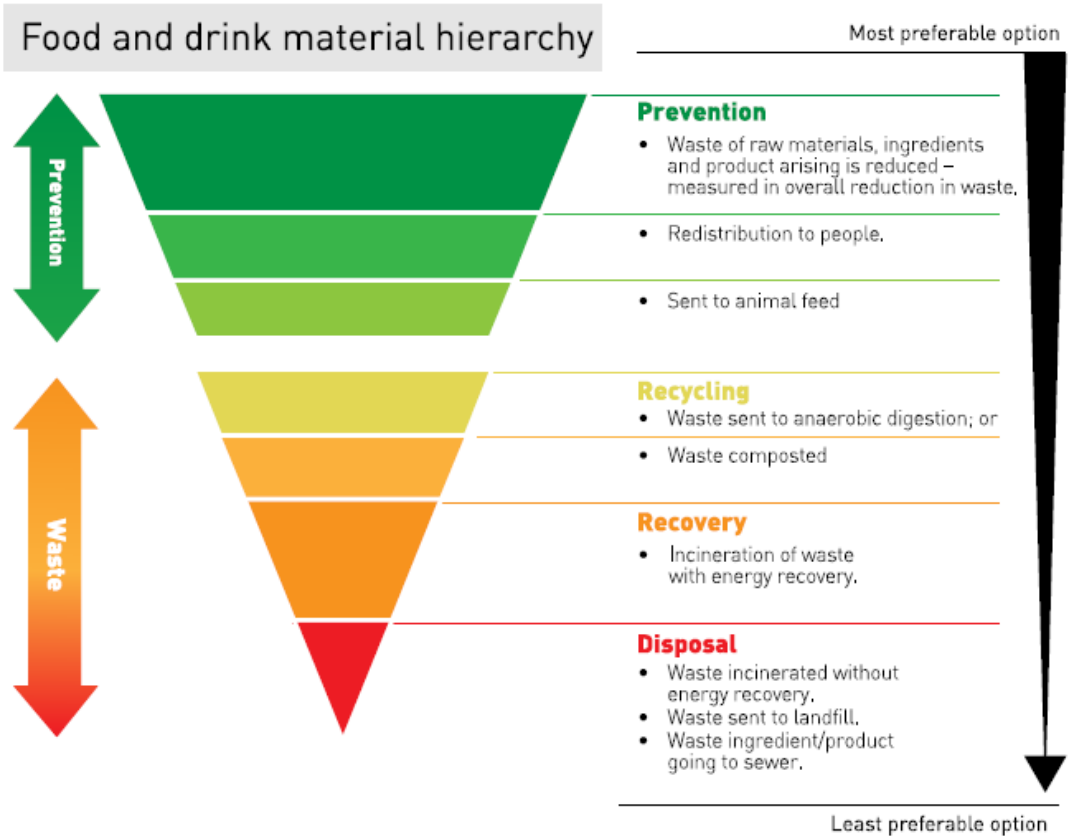

Figure 1: WRAP: Food and Drink material hierarchy

Figure 4 The waste hierarchy applied to food waste, designed by WRAP (Source: WRAP 2017)

In 2017, the British Government working together with WRAP and the anaerobic digestion industry devised an action plan (Food waste reduction action plan for England) to increase the amount of food waste going for composting and anaerobic digestion instead of landfills. In this plan, the sources of the feedstock (food waste) are households, retail and manufacturing, and it includes recommendations and measures on how to improve the quality of the feedstock to achieve higher efficiency. These attempt are to be treated with caution in order not to divert edible food away from donation and redistribution channels with the lure of higher economic benefits promised by AD. These measures pose the risk of moving food waste down the hierarchy thus losing more value if treated through AD rather than redistributed.

In an attempt to incentivize redistribution, the better communication and the expansion of fiscal measures such as tax breaks should be recommended. While the Government is in

favor of the voluntary reduction measures, the study also calls for setting mandatory targets over fixed time spans for the increase of redistribution and for the increased financial support of such voluntary initiatives and other organizations.

2.5.3. Hungary

In Hungary, food waste issues belong to the Ministry of Agriculture and the key institution is NÉBIH (National Food Chain Safety Office). It oversees the whole supply chain with all the related issues with special attention to food safety and hygiene, and also consults with the government on devising new policies and regulations.

Food safety, date-labelling and redistribution regulations are stricter than in other EU countries which act as obstacles in food waste reduction and especially for the redistribution of expired products that are still fit for consumption (Vittuari *et al.* 2015). The relaxing of date-labeling and donation regulations are not supported by NÉBIH, and some sources mentioned that tax breaks and other fiscal incentives also should be used with caution (Kalas 2017). Their approach to reduce retail food waste and increase donation is to support the working model of the Food Bank Association and to extend it further and incentivize more retailers to donate their surplus rather than to relax the regulations on the donation of expired products.

According to NÉBIH publications, the awareness concerning food waste and its economic, environmental and social impacts in Hungary is low, albeit slowly increasing (Szabó-Bódi and Kasza 2017). This makes it more challenging to get consumers and retailers interested in donation and prevention campaigns.

2.6. Food waste reduction measures in the European Union, the United Kingdom and Hungary

With the continued rise of global population, resources could become scarcer in the future (Priefer et al. 2016). Current technological advancements focus on resource efficiency and the

reuse of and recycling of materials (Priefer et al. 2016). These aspirations are getting more and more pronounced in governance and policy as well, a relevant example being the European Union's Circular Economy package or the landfill ban and food waste reduction initiatives on the national level.

The European Commission calls for waste prevention measures to be established by the end of 2013 in Waste Framework Directive, Article 29 (1) (European Environment Agency 2015). In context with the Circular Economy Package the Commission also established a knowledge sharing platform: EU Platform on Food Losses and Food Waste (EC 2016).

These preventive measures are incorporated in the National Waste Management Plan (2014-2020) in Hungary (Kalas 2017). In the United Kingdom, a separate food waste reduction Action Plan was accepted which aims to increase the utilization of food waste in composting and anaerobic digestion and divert the waste stream away from landfills (WRAP 2016).

Globally, high quality standards are causing edible food going to waste on the farms, because they do not live up to the cosmetic quality standards. It is pointed out by Bond *et al.* (2013) that in the UK, the competitiveness of retail and manufacturing sector tolerated more waste in order to remain competitive. To prevent these losses along with the retail losses associated with the same issue, the revision of the cosmetic standards and the increased redistribution seem to be clear solutions.

2.7. Redistribution: concept, approaches and challenges

Surplus food arises in many parts of the supply chain. In the production stage food that does not meet the quality standards of retail or manufacturing, or it's not economical for the farmer to harvest their produce because prices are so low (Lipinski *et al.* 2013). At manufacturing, withdrawn orders, visual quality rejects, under-filled bottles and cans are the most typical contributors to food surplus (Bond *et al.* 2013). In the retail sector, overstocked,

seasonal or packaging damaged products are a big part of surplus food (Bond *et al*. 2013; Gustavsson *et al.* 2011). Products that are approaching or are past their sell-by or display-by dates are not sellable anymore however they are still fit for human consumption are considered as surplus food and often appear in redistributions.

These products that are fit for human consumption can be donated to organizations that will redistribute it (most of the time) to the needy or utilize it for making meals that will be distributed among people in need. The most typical representatives of charitable food redistribution are food banks that operate all around the world and despite their contested existence, their numbers are still increasing (Galli *et al.*2013). While food banks are considered a treatment for a symptom rather than a cure for the illness, they still save considerable amounts of surplus food from landfills and feed a large number of people (Galli *et al.*2013). Yet there is still a lot more people than food packages and a lot more food to save. The key obstacles in collecting more food and feeding more people are mostly related to transportation, logistics, legal and economic issues and retailer's attitude towards donation (Lipinski *et al.* 2013). The source of the donations are often far from the destinations and transportation can become an issue of logistics and finances as well, especially in the case of chilled products which requires the continuity of the cold chain, practically transportation in cooling trucks. Common legal concern from the donor side is the question of liability in case of health problems arising from donated food. Besides the transportation and storage costs, especially in the production stage, if the surplus is still in the fields, it may not be compelling for the farmer to invest in harvesting it for donation. Some of these issues are easier to solve applying a community and volunteer based approach, like harvesting groups gathering, transporting and utilizing the crops or volunteers to collect and transport donations (Galli *et al*.2013). Tax incentives for food donation are already in place in some countries with ample room for improvement as well as the so called

‘Good Samaritan Laws’ that limit donor liability in case the donation turns out to be harmful for the consumers (Galli *et al*.2013).

3. Theoretical framework

The following chapter will introduce the frameworks I will use to analyze and understand my case studies. Social innovation (SI) and Grassroots (social) innovation will set the more static foundation and background about the initiatives by identifying actors and drivers, pronounced and underlying motivations and processes. Transformative social innovation (TSI) framework will help to break down and see the causes and effects of those processes in the sub-systems of the social-material contexts these initiatives operate in. It will also help highlight the differences of these contexts in Hungary and in the U.K. as well as the different nature of the challenges they face. Lastly, Transformative food politics, together with TSI will be of aid to explore their transformative potential.

3.1. Social Innovation (SI)

The word innovation concerning sustainability and environmental issues is almost exclusively connected with business and technology. Just think of renewable energy, electric cars or carbon trading schemes, these new ideas build on a niche, an unmet need in technology. But often there are unmet needs that cannot be filled by technological solutions only, since they are so called social needs. Needs include community engagement, social capital, healthcare, access to proper food, combat alienation or the disconnection from nature and the environment, among others. These social needs, if they are not satisfied or solved by the current regime, call for social innovation aiming to improve wellbeing, the state of public goods and provide progressive solutions for social issues (Pellicer-Sifres et al. 2017). According to these definitions, technological or business innovation is also often rooted in a social need or issue, and they can indeed go hand in hand with social innovation towards a solution.

Social innovation appeared as a concept in the mid-1900s with the thoughts of an economist, Schumpeter. Neumeier (2012: 50) summarizes his ideas during his review of the evolution of the term as

> "new form of cooperative enterpreneurial acting leading to new forms of organization and resulting in […] innovations."

Over the years, the general idea remained while the definition got more detailed and specific, with many authors sculpting the term, like Zapf (1989) cited in Neumeier (2012: 51):

> "new societal practices, especially new forms of organizing and new forms of regulating new lifestyles that change the direction of social change, solve problems better than the former practices and are worth being imitated and institutionalized",

which Mumford (2002) complements with the importance of attitude change resulting from the social innovation. According to Pol and Ville (2009), social innovation includes institutional change, the consideration of public goods and social purposes. They note that social innovation and business innovation is not necessarily mutually exclusive, while identifying the goal of social innovation as helping to create better futures.

Adams and Hess (2008) add to the pool the idea of social innovation being a new way of addressing unmet needs be creating new opportunities and capabilities for change. Social transformation, participation, social and public goods, progressive solutions, marginalized groups or empowerment are some key words that characterize social innovation.

To this day, there is no universally formulated and accepted definition, but for this study, I will consider Neumeier's (2012: 53) definition (as a summarized and distilled version of the evolution of the term) of social innovation as

> "a new form of civic involvement, participation and democratization […] contributing to an empowerment of disadvantaged groups and leading to better citizen involvement which may, in turn, lead to satisfaction of hitherto unsatisfied human needs."

Four key dimensions of social innovation are identified by Grimm et al. (2013) are agents (who participates), purposes (what they want to achieve), drivers (what motivates them) and processes (how actions take place). Bottom up SI are carried out by members of civic society or the non-profit sector to improve well-being and living conditions of usually marginalized groups, to tackle local and global social, economic or environmental challenges not addressed by the market or existing institutions through collective action and attempted social transformation (Pellicer-Sifres et al. 2017).

3.2. Grassroots Innovation (GI)

Seyfang and Smith (2007: 585) defines grassroots innovation as

> "networks of activists and organizations generating novel bottom-up solutions for sustainable development; solutions that respond to the local situation and the interests and values of the communities involved. In contrast to mainstream business greening, grassroots initiatives operate in civil society arenas and involve committed activists experimenting with social innovation as well as using greener technologies."

For our case, we can consider GIs as a specialized form of social innovation, distinguished by the special group of actors and drivers, and we can use the four key components of SI for the framing of GIs as well. The actors are members of the community, individuals, groups, activists or NGOs, the purposes and drivers are more focused on the local issues of the specific community, and often contesting the existing system or regime, while the active involvement of citizens, alternative means of production and distribution of goods characterize the processes. Table 1 summarizes and compares the characteristics of GIs and SIs.

The aim of this thesis is to evaluate and assess the case study subjects as well as explore their potential to induce social transformation and provide environmental benefits. Bergman et al. (2010) notes that while small initiatives may not have significant impact in the grand scheme of things, if they work in small-scale, there is chance that in aggregate form, they can contribute

to significant change. They identify these 'aggregations' as upscaling, mainstreaming and replication, as it appears in other frameworks, like transition theory as well.

Table 3 Comparison of key characteristics of SI and GI theory (Source: Pellicer-Sifres et al. 2017)

Table 1. Agents, purposes, drivers and processes analysis from three perspectives.

Dimension of bottom-up innovation	Ideas from SI literature	Ideas from GI literature	Ideas from the CA
Agents	- Civil society	- Committed activists involved, NGOs	- People with agency, which intrinsically entails that they participate
Purposes / objectives	- To meet social needs - Oriented to the social and public good. Non-profit - Social inclusion and social justice	- Individual, intrinsic benefits: meet people's demands, which are contextual and local, in the communities - Collective, diffusion benefits, alternatives to the hegemonic regime, to social relations	- Expansion of capabilities to reach the things people have reason to value, at an individual or a collective level
Drivers	- Social demands that are traditionally not addressed by the market or existing institutions - Local and global social, economic and environmental challenges	- Demands and processes, which are local and contextual	- Not just demands, but personal, social and environmental conversion factors (context)
Process	- Role of users/people - Participation - Contextual and path dependent	- Bottom-up initiatives and processes, ruled and managed by citizens, active role of citizenship, direct participation (control of processes) - Through the production of alternative means of production and distribution of goods and services (social economy)	- Through deliberative democracy

GIs are driven by an unmet social need and are backed by a strong ideology of social and environmental justice, ethics and priorities, they aim to change the existing regime, and

formulate alternative ways of doing thing that the system cannot accomplish. They often place themselves outside of the system, or operate in a gray zone, which leads us the two remaining elements of the framework, which focuses on the transformative characteristics of innovations.

3.3. Transformative Social Innovation (TSI)

Transformative social innovation is a still-developing framework that focuses more on the interactions with the specific social-material context and considers SI as a process. The concept and framework is developed by the TRANSIT Project and they define TSI as

> "process in which social relations, involving new ways of doing, organising, framing and/or knowing, challenge, alter and/or replace established (and/or dominant) institutions in a specific social-material context. Rather than as a 'type' of innovation, we consider TSI as a process that alters existing patterns of structuration (in local practices) resulting in varying degrees of institutionalisation as a *TSI journey* unfolds across time and space." (Haxeltine et al. 2016: 21)

TSI framework elaborates on the importance and the varying nature of drivers (which were introduced in context of SI earlier). In order for an action or initiative to become transformative, one key element is sustained involvement and motivation. By complementing the basic SI framework elements (actors, drivers, purposes, processes) with the four components of TSI (doing, organizing, framing and knowing) I will attempt to paint a more detailed picture about my subjects. I hope to use this combined approach to determine more specifically the motivations and practices and how these are different from the existing institution. I also hope this approach will take me closer to identifying the transformative ambitions, potential and impact of these initiatives. These last three terms were introduced by Haxeltine et al. (2016) and they reflect the trajectory of a successful TSI, which makes it worthwile to apply to my case studies. They define these terms as follows:

> „Transformative ambition to signify when a SI-agent holds a vision or ambition to achieve/contribute to an identified transformative change;

> Transformative potential to signify when an object, idea, activity or SI-agent displays inherent and/or intended qualities to challenge, alter and/or replace dominant process in which social relations, involving new ways of doing, organising, framing and/or knowing, challenge, alter and/or replace established (and/or dominant) institutions in a specific social-material context;
>
> Transformative impact to signify when a SI-agent shows evidence of having achieved a transformative change." (Haxeltine et al. 2016: 23)

Transformative social innovation theory places SIs into their specific social-material context, which constitutes of the existing institutions, norms, rules and values, every other entity (individuals, networks, initiatives, etc.) and the "broad societal framework conditions" (Haxeltine et al. 2016:13).

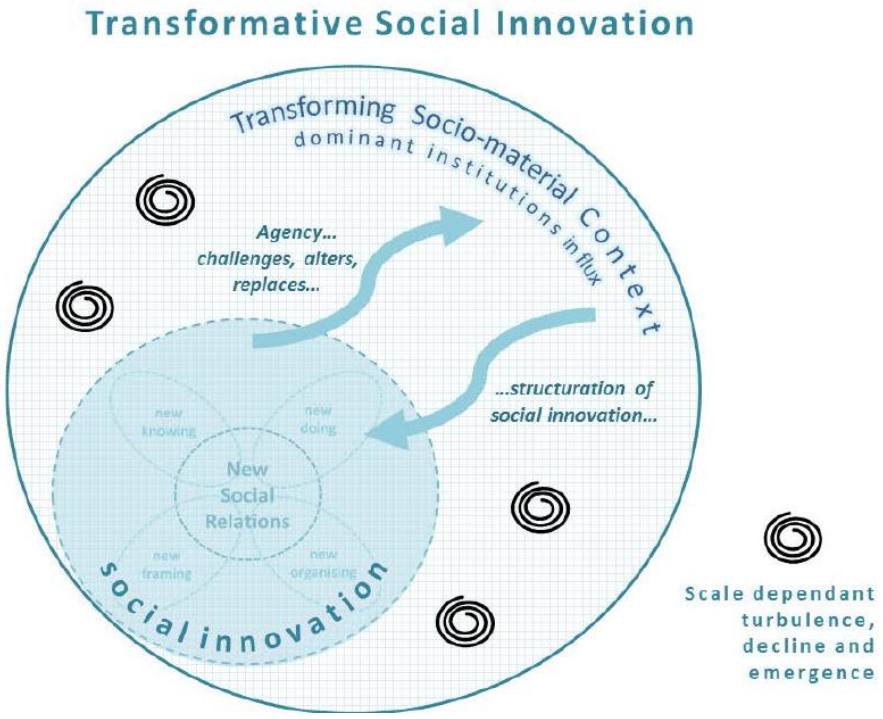

Figure 5 Interactions of Transformative Social Innovations and the social-material context (Source: Haxeltine et al. 2016)

I will explore the differences and similarities of the two very different contexts in Hungary and the United Kingdom, and how these differences affect the initiatives (besides providing inherently different backgrounds and social constructs) by posing different – or similar – challenges and opportunities.

3.4. Transformative Food Politics (TFP)

Levkoe (2011) formulated this framework theory along the critiques of alternative food initiatives (AFIs), but it is well suited to be used for critiquing our case studies as well. AFIs emerged one after another in the past few decades, and while some of them failed, some of them got mainstream. They were aiming to change the current food system, which was deemed inadequate and even harmful for the environment and the consumers too. One valid critique by many authors (eg. Allen 2008) is that by going mainstream, these AFIs actually have lost their 'alternativeness' and got integrated into the system rather than changing it. Some disappeared without reaching the desired transformation because they got 'exhausted', the actors dispersed, disappeared, lost motivation or got grind up in the changes of the many interrelated subsystems (Haxeltine et al. 2016). As a response to the most frequent critiques of AFIs, he introduces three elements that constitute transformative food politics: transition to collective subjectivities; a whole systems approach; a politics of reflexive localization.

The first element in Levkoe's transformative food politics framework addresses the fact that AFIs are often accused of failing in their attempt of creating an alternative, of working outside the system. The issue is that these initiatives still feed into the individual consumer identity, - which is promoted by consumerism -, rather than dissolving it:

> "The concept of collective subjectivity refocuses analysis from the individual towards the collective as the primary agent of change. With respect to food, it is a shift away from acting strictly as a consumer, to having agency – and responsibility – beyond purchasing power. … In practice, this involves moving beyond individual, market-based solutions towards ones that embed food within meaningful cultural and community relations while improving production of, and access to good, healthy food for all." (Levkoe 2011:692)

The second element responds to the critiques about AFIs responding to niche issues, which are too small, too localized and too isolated, while not considering the interconnectedness

of the issues into the whole food system, hence not inducing change just patching up a small pothole. The whole food system approach, Levkoe (2011) suggests, means

> "a comprehensive perspective that integrates social justice, ecological sustainability, community health and democratic governance throughout all aspects of the food system from policy, to production, to processing to distribution, to consumption, and to waste management." (Levkoe 2011: 692)

The third element, reflexive localization responds to a general phenomenon of AFIs praising 'the local'. Levkoe (2011) warns against this, emphasizing that often being too rigidly focused on the solutions having to be 'local' as opposed to the globalized nature of the (faulty) food system can obstruct the much needed change and satisfaction of needs.

> "…reflexive localisation underscores the idea that while localising food systems has many potential benefits, locally produced or distributed food does not possess inherent attributes. Instead, ideas of local must be contextualised by the historical and social elements of a particular place. Further, reflexive localisation demands solidarities be established not just within place, but also between localities." (Levkoe 2011: 698)

For my thesis, I will use the combination of SI, TSI, and GI theory to understand the drivers and processes of these initiatives, to see how their practices interact with other elements and sub-systems in their specific (and different) social-material contexts and whether they have the potential to change the system and create transformation. I will use the transformative food politics framework to further dissect their transformative potential in their targeted dimension as well as in other dimensions (community, solidarity, etc.) and their ability to induce system change.

4. Methodology

4.1. Research design

The research that serves as the basis of this thesis was designed to compare three initiatives working in the same field with different organizational structures and methods in order to identify their transformative potential as social innovations. The research was purely qualitative, based on a loose theory of the environmental and social impacts of (grassroots) social innovations in the food waste sector. The methods chosen was semi-structured interviews (sampling for interviewees was done by the snowball method) and participant observation to identify the values, drivers and opinion of the individuals and the core principles and their manifestations in the everyday operations of the initiatives. A review of the existing literature and document analysis was conducted to establish the social-material and historical contexts of the initiatives as well as to review the already established theories and concepts of food waste, environmental implications of food waste and the most dominant characteristics of redistribution. Given the short time period for producing the thesis, the field research was 10 days in Leeds and Manchester, United Kingdom between the 27th of April 2017 and 9th of May 2017 and several days of interviews and participant observations in Hungary over the course of May 2017.

4.2. Case study selection

My choice of case studies was somewhat arbitrary. I wanted to conduct research on the food waste reduction topic from a new angle, and The Real Junk Food Project provided this new angle with their unique approach to the environmental consequences of food waste and charitable surplus food redistribution and their openly admitted contestation of the system. To the advice of my supervisor, I chose two Hungarian organizations operating in the same realm of food waste and charitable food donations to frame my study as a comparison of similar

organizations in different contexts. I deliberately chose from the two 'extreme' of the spectrum, one underground movement with a relatively small scope (Food Not Bombs Budapest) and one well-established, 'official' organization (Hungarian Food Bank Association). My decision of the cases was further supported by the fact that Food Not Bombs is an international network of local cells operating along the same basic principles with local unique features and the Food Bank is working along the guidelines of the European Federation of Food Banks. The Real Junk Food Project had started as a local initiative and expanded into a network of loosely connected cafés and Sharehouses around the world operating along some shared principles hugely tailored to the local context. TRJFP can be positioned somewhere in between FNB and the Food Bank on the imaginary spectrum since it is a legal entity but openly violates some regulations and works in a gray area.

4.3. Methods

4.3.1. Literature review

In the literature review, the most important terms and concepts are defined and explained. An overview of the current state of food waste around the world, in the European Union and in the United Kingdom and Hungary is given with factual or estimated data where available. The reasons behind food waste is briefly described and the environmental and social implications and the interconnectedness of environmental and social issues are explained. Historical, social-material and institutional context is described along with the introduction of each case studies.

4.3.2. Semi-structured interviews

The primary source of information were semi-structured interviews conducted with the volunteers as employees of each organization. The interview questions (Appendix 1) were focusing on five areas: general waste perception; general food waste perception; shopping practices, edible food waste knowledge and utilization; regulations, authorities; community.

The questions were put together in two sets, with one intended towards consumers and other towards volunteers and employees, but in the field, I have only interviewed volunteers and employees (more in Limitations). The differences between the two sets are that several questions mostly related to regulatory and operational issues are excluded from the consumer version. The interviewees were selected by using the snowball method. The interviews were conducted on site, in a familiar setting for the interviewees, either in English or in Hungarian. For TRJFP, four interviews were conducted at Armley Junk-tion, the original café of the project, where the interviewees worked, during opening hours, and one interview was conducted in the office of the Sharehouse. One interview was conducted with two interviewees together, at their request. The Hungarian interviews were also conducted on site, at the Storage facility kitchen of the Food Bank, while the interviewee was peeling eggs. The interviews with FNB were conducted at the balcony of the prep room in Élesztő Pub. In addition to the in person interviews, I've conducted one phone interview with another volunteer of FNB due to convenience reasons of the interviewee. All of the interviews were recorded and transcribed fully or partially. Every interviewee have given permission to use their names (either first or full name) in the theses and were given information about the research and agreed to the terms of the interview (Appendix 2. Ethical research form). I have conducted altogether 8 interviews (5 TRJFP, 2+1 FNB, 1 Food Bank) and the length of the interviews are between 27 and 58 minutes.

4.3.3. Participant observation

Another significant portion of information was participant observation at the different locations of the cases. TRJFP operates cafés and a Sharehouse in Leeds and these were the primary locations for my observations. I have performed strictly observation without contact with the volunteers or patrons of the café to get familiar with the everyday dynamics of the café. I have also talked informally to the volunteers and managers and asked questions directly

related to my research in informal settings. I've done volunteering to submerge more in the day-to-day work and dynamics of both the café and the Sharehouse. These were both individual tasks and communal activities with one or more other volunteers. At the FNB location I applied the same strategy with a shorter time span, volunteering in the preparation and distribution of the food. In the case of the Food Bank, I only had the opportunity for observation of the preparatory work for an event and for a guided tour of the storage facility. The results of these observations and conversations are recorded in the form of field notes.

4.3.4. Document analysis

For the document analysis, I have analyzed legal and policy documents on regulations concerning food waste and redistribution, government notes and committee reports concerning food waste, and annual reports on the collected amounts of food by the Food Bank.

List of analyzed documents:

Csákó, B. 2015. Waste management (Hulladékgazdálkodás). Infojegyzet. Budapest: Képviselői Információs Szolgálat.

European Commission (EC) 2016. EU platform on food losses and food waste; Terms of reference. EC, Directorate-General for Health and Food Safety.

Forward 2013. FoRWaRD Regional Report- Hungary

House of Commons; Environment, Food and Rural Affairs Committee 2017. Food waste in England; Eighth report of session 2016-17. HC 429. England: House of Commons.

Hungarian Food Bank Association annual report 2016 (Közhasznúsági jelentés 2016). Magyar Élelmiszerbank Egyesület.

Hungarian Food Bank Association financial and progress report 2016. (Egyszerűsitett beszámoló 2016) Magyar Élelmiszerbank Egyesület.

Országos Hulladékgazdálkodási Terv (OHT) 2013.

Szabó-Bódi, B. and Kasza, Gy. 2017. NÉBIH-Wastless program; Summary of research foundings (NÉBIH-Maradék nélkül program; Kutatási eredmények összefoglalása). NÉBIH, Élelmiszerbiztonsági Kockázatértékelési Igazgatóság. Budapest.

4.3.5. Interpreting for an independent study

I've been asked to act as a volunteer interpreter for a retail food waste reduction study conducted by a group of students from the University of Wageningen. Their study aimed to identify what best practices (collected from around Europe) could be implemented successfully in the retail sector in Budapest. They walked around in small groups in assigned districts of Budapest and tried to do semi-structured interviews with store owners, managers and employees. I was helping out on three different occasions (3 days) with three different groups, setting up future interviews and conducting interviews with small shop owners, managers of chain-stores and supermarkets as well as vendors in markets. I also participated in a meeting with NÉBIH, who was contributing to the study. I was given verbal permission to refer to the information I've helped translate (anonymously) in this research.

4.4. Limitations, bias and challenges

The major limitations to the study were the nonexistence, unavailability, incomparability and uncertainty of food waste data. The lack of unified definition also contributed significantly to the difficulties of establishing the terminology and baseline data.

In the field, I have encountered an unexpected language barrier, even though my proficiency of English, the local accent (Yorkshire) proved to be an aggravating condition. Another significant limitation, which resulted in the change of the research focus was the unapproachability of café and Sharehouse patrons, who were unwilling to answer questions,

even anonymously, on tape, or at all. The initial reluctance of a few patrons rippled through the community and I have met brick walls after that.

The data used to represent the redistributed amounts of food for TRJFP was gathered from their website and Facebook pages, because I have encountered communication issues with Adam at the later stages of my work. I have asked for the documents and the franchise package repeatedly for over the course of at least a month, but I've never got them, and in the last week, I couldn't reach him through Facebook at all, which was our primary channel of communication (he has blocked me or discontinued his account).

As I am Hungarian, my personal experience growing up in Hungary, both in small communities and in urban settings have without doubt influenced my perception of the social-material and historical contexts. I am biased towards the general attitude of Hungarian people on many aspects mentioned in the research, like the sense of community, trust and environmental awareness. Some of these biases are supported by interviewees or research finding, which are referred where relevant.

4.5. Trajectory of the development of the research topic

The topic of the thesis changed from the original proposal due to limitations in data and literature and unexpected challenges in the field. The original proposal of consumer perception of and attitudes towards the consumption of food waste was replaced with the attitudes and working methods of the organizations and the assessment of their environmental impact, because I encountered serious challenges on engaging with consumers in the field as described above. While transcribing the interviews and reading and re-reading the field notes, a more interesting and promising message started to take shape, and after discussion with my supervisor, we decided to apply a new framework of Transformative Social Innovation and Transformative Food Politics to analyze the environmental implications and transformative

potential of the initiatives and compare them with consideration of their respective social-material and historical contexts.

5. **Introducing the case studies**

In the following section, I will give a more detailed introduction of the case studies and evaluate them along the SI and GI framework elements. I attempt to highlight the attributes of each organization that makes them unique or influential and contribute most to their transformative potential.

5.1. Food Not Bombs

5.1.1. The history and concept of Food Not Bombs

The Food Not Bombs movement originates from Cambridge, Massachusetts, USA, where in 1980 a group of anti-nuclear activists formed an organization dedicated to make social change through nonviolent actions (FNB website 2017). In the past 35 years FNB cells were formed all around the world, sharing the same principles and working toward social change in many different ways. FNB applies an egalitarian structure with no formal leadership and attempts to include every participant in the decision-making (FNB website 2017). Many local cells or chapters oppose the ruling institutions openly through their actions which results in arrests, lawsuits and imprisonments of activists and volunteers. Their motto, "Food is a right, not a privilege" serves as a guiding line for all cells and volunteers along with the three principles (FNB website 2017):

1. Always vegan or vegetarian and free to everyone

   They chose to use only plant based ingredients due to food safety reasons as well as to reflect their dedication against violence, which includes violence against animals.

2. Each chapter is independent and autonomous and makes decisions using the consensus process

   They aim for equality in their operations, therefore there are no leaders of any kind, in

decision-making, a proposal or action is accepted only when all the participants can feel good about giving their consent.

3. Food not bombs is not a charity and is dedicated to nonviolent social change FNB provides food for everyone who is willing to take it as well as providing support in the form of food for nonviolent movements, actions and activists.

5.1.2. Food Not Bombs Budapest (FNB BP)

The Budapest cell of FNB started as a loosely structured action carried out by a group of friends, the distribution/cooking events were not regular and the amounts and quality of the food was considerably lower than nowadays (Judit). The whole 'movement' was very underground and unorganized and the events stopped shortly and only started to be more organized and regular from 2012 with events in every 3 weeks (FNB BP website 2017). Over the course of the next two years, events started to be more and more regular and grew in volume as well - both the number of people served and the number of volunteers. This steady growth culminated in the establishment of a weekly, high quality distribution from 2014, named after the motto of the whole movement, Food Is A Right. Now they serve 100-200 portions of three course (soup, main dish and fruit/vegetable salad) vegan or vegetarian meals every Sunday afternoon at Boráros square (Judit).

5.1.3. Food Is A Right

The volunteers collect fruit and vegetables from two market halls in Budapest, the Great Market Hall (Figure 6) in the city center and a smaller one on Fehérvári street.

Figure 6 Volunteers collecting the food from the Great Market Hall (Source: FNB Budapest Facebook)

In the beginning, the volunteers collected their ingredients via dumpster diving in the outside containers, and sometimes, if they could sneak inside, foraged the inside bins as well (Faresz). Both of these actions are illegal, and I was told that they had some run-ins with the security guards. They have slowly infiltrated the market hall grounds, first purchasing some items, chatting up the vendors and asking if they had any food to throw away that they could have to cook for homeless people. Most of the times they were rejected, the vendors were suspicious and mistrustful, but some vendors started giving them their waste. Over time, realizing that the volunteers were not undercover inspectors, trust between the vendors and volunteers started to build and now FNB often receives quality food besides the waste. They work with the same vendors, whom now they have a good relationship with, they know and trust each other, and to show their appreciation and maintain the good relationship, the vendors always receive little gifts for Christmas (Faresz). Now a few volunteers collects the food from the vendors every Saturday just before the markets close, than a cargo biker takes it to the

kitchen, which up until the middle of June was located in Élesztő Pub, and was moved to the Food Truck Courtyard. There the volunteers sort it, throw away what is really not fit for consumption, the cook for the next day decides what the menu is going to be and separate the ingredients for the different courses and put in the fridge what they can (Judit).

On Sunday, the volunteers gather at 10 AM and start preparations for the meals, coordinated by the coordinator of the day. Volunteers clean and chop the vegetables and fruits (Figure 7). All the equipment is donated, from the knives to the chopping boards and the plastic buckets and containers to serve the food in.

Figure 7 Volunteers preparing food for the 'Food Is A Right' Sunday event (Source: FNB Budapest Facebook)

The space is provided for free by the Pub, but they do need to purchase some things, like gas canisters, cooking oil, rice, pasta, spices, salt. Since FNB is not an official, registered organization or legal entity, they do not receive any support from governmental agencies or municipalities, but they hold an annual donation event with concerts and food to receive donations to support themselves. When the food is ready, the volunteers eat together, then

distribute the tasks: some people stay to clean and wash up, some pack up and go to the distribution site by 4 in the afternoon. They always distribute at the same spot at Boráros square in the underpass, using a number system. One or two volunteers distribute the numbers among the people and in the meantime, the tables and the food is set up. One person calls the numbers in order and the recipients collect their food portioned into plastic containers (Figure (). One person can ask for more than one numbers, and everyone is entitled to get food who waits for their turn, be it a homeless person, a broke college student or a businessman. When all the numbers are called and there is still food left, those who want more can take extra portions. FNB BP usually prepares and distributes 100-200 meals per event, and sometimes there are still leftovers, which the volunteers take around in the underpass and try to give away to whomever would take it, homeless people, pedestrians to and from the tram station.

Figure 8 Patron receiving food at a 'Food Is A Right' event (Source: FNB Budapest Facebook)

In winter, there are usually less people that come for food than the summer, probably due to the weather induced restricted mobility. In these cases, the volunteers try to give the food to

shelters, but due to regulatory requirements, this is rarely successful, so they have to resort to walking around as long as everything is gone. The group then returns the equipment to the kitchen, finish with the cleaning and disperses by 6-8 in the evening.

According to Judit, FNB BP saved 7800 kg of fruit and vegetable and distributed 10400 portions of food in 2016. The number of volunteers are always changing, everyone is free to come and go as they feel. Winter usually brings more volunteers than the spring and summer.

5.1.4. Who is who

I interviewed Faresz, a founding member of the cell, a young man in his 30s. He tried his hands in virtually everything around the movement: collecting vegetables, logistics, cooking, sorting donated plastic containers, setting up the social media page, communicating with new volunteers and answering emails among others. He was there from the very beginning in the early 2000s, for the restart around 2012, went inactive for two years due to being burnt out and now considers himself as the 'jester', who is mainly responsible for the mood and entertainment.

I also interviewed Martin, a 19 years old young man who found FNB BP while looking for an anarchist, egalitarian movement to engage in. He volunteers from October, 2016, tries to come almost every week. He was market coordinator and he was the coordinator of the day on the Sunday I've volunteered.

I had a phone interview with Judit, one of the coordinators of FNB BP.

5.2. Hungarian Food Bank Association

5.2.1. The history and structure of Food Bank

The Hungarian Food Bank Association is a not-for profit organization founded in 2005 by individuals based on French examples (Food Bank website 2017). Their self-proclaimed

mission is to seek out surplus food and distribute it to those who need it. In addition to that, in their vision, the Food Bank states that through their actions, they aim to reduce poverty, hunger and malnutrition in Hungary (Food Bank website 2017). The Food Bank operates as a 'middle man' between the donors and charitable or municipality organizations, who will distribute the food to the poor. The Food Bank is a member of the European Federation of Food Banks (FEBA) since 2006, which means the Food Bank also has to follow the Charta of FEBA as well as the national regulations (Food Bank website 2017). The Food Bank aims to provide its services while abiding the current regulations concerning food safety and only accepts donations of agricultural surplus, catering and provisioning surplus, foodstuff that cannot be sold due to technological or marketing reasons or donations collected by the public. Their operation is supported and endorsed by the Ministry of Agriculture and the Ministry of Human Capacities and the National Food Chain Safety Office. Being a legal entity, Food Bank has to follow strict administrative requirements in terms of financial reporting and the donations as well (Food Bank website 2017). This includes contracts with the donors as well as the distributor organizations, the latter also includes a reporting responsibility towards the Food Bank. The Food Bank was in contract with 325 organizations or municipalities in 2016 and distributed 4727 t of food to an estimated 348000 people (Hungarian Food Bank Association annual report 2016). According to the annual reports of the Food Bank, in 2005 the total amount of food collected was 22.5 t, and they have experienced a steady grow over the years. In 2016, the majority of the saved products (over 3500 t) originated from supermarkets (METRO, Tesco, Auchan, Aldi) and consisted of bakery products, fruit, vegetable, meat and dairy products and non-perishable products Hungarian Food Bank Association annual report 2016. Another significant portion of over 950 t of donation of similar nature came from companies (producers, distributors). The estimated total value of all the donations (including donations from the public) was over 20.3 billion forints Hungarian Food Bank Association annual report 2016

5.2.2. Logistics

The Food Bank has a central warehouse facility in Budapest, where some of the donations arrive (Figure 9), get sorted, administrated and distributed, but the majority of the donations go directly to the distributing organizations (Food Bank website 2017).

Figure 9 The Food Bank receives donations from the wholesale market (Source Hungarian Food Bank Association Facebook)

This system was developed to maximize the amount of food that they can collect and minimize costs, which also incentivizes the stores to donate more food (Veronika). The Food Bank does not accept anything which exceeded its expiration date, as they are legally not allowed to. One of the reasons they opted for direct connection between donors and distributors was to broaden the palette of food they can accept. Often stores would wanted to donate food that was to expire the next day, but with the transport to the central storage and from there to the organization and from there to the people, the products would have been already expired. Now the Food Bank connects their partner organizations directly to the donor facilities which then can arrange pickup as they see fit (Veronika). The organizations have to provide proper transportation and storage (if needed) for the products they receive and conduct a strict administrative process to ensure the food gets to those who are really in need of it. The recipients are chosen by the organizations, which often work with the social services or the municipality, and the eligibility of the recipient has to be proven. The organizations have to register the recipients and note the amount of food that they were given and make sure everyone receives their fair share.

In the warehouse I saw mountains of food stacked up on pallets and shelves. Easter eggs and other seasonal products which cannot be sold before they expire the next year, but are well within the expiration dates.

Figure 10 Sweets awaiting to be given out at Children's Day at the storage facility of the Food Bank (Source: authors own photo)

I saw cartons of chewing gum that was "stuck" in some storage and now out of promotion, overstocked products, like 3 pallets of pre-packed cold cuts or canned beans and food. The majority of the sweets and candy was stored for a longer time to be distributed on Children's Day on top of the regular food distributions (Figure 10).

5.2.3. Who is who

I've interviewed Veronika, one of the founding members of the Food Bank in the kitchen of the storage facility. She currently runs the catering service of the Food Bank that generates income for the running costs of the Food Bank.

5.3. The Real Junk Food Project

5.3.1. The history and concept of The Real Junk Food Project

The Real Junk Food Project was founded in 2013 by Adam Smith, a chef, who has returned to his hometown, Leeds from working in Australia (Adam; TRJFP website 2017). His first hand experiences with farm and restaurant food waste made him realize that the system is

faulty and wanted to utilize his skills to do something about is (Adam). The first café, Armley Junk-tion (Figure 11) opened up in Leeds and served delicious meals made by food waste and surplus food that the volunteers had intercepted from stores.

Figure 11 Armley Junk-tion, (during the beginning of the refugee crisis) (Source: The Real Junk Food Project Facebook)

They wanted to divert edible food from landfills, where it would be just wasted money and resources and contribute to climate change through GHG emission (TRJFP website 2017). The primary drive of TRJFP was to decrease environmental degradation and harm represented by millions of tons of edible food being wasted. To make sure that the food that they save is taken, they have implemented a pay as you feel system which worked in Australia for similar facilities and added the option to pay by skills and time as well. Over the course of the past three years, around 200 TRJFP cafés have opened around the world based on a few core principles, like utilizing food waste and using PAYF, inclusion and tolerance (TRJFP website 2017). New cafés have to accept these core principles, but otherwise they are free to tailor their operations to the local needs (TRJFP website 2017). In 2016, a storage facility converted into

a ‘food waste anti-supermarket’ have opened in Leeds and have been joined since by two other locations in the UK. In these ‘Sharehouses’, as they call them, food items collected from retailers and manufacturers are sold in the same PAYF system as it is operating in the cafés.

Figure 12 The Sharehouse in Leeds, early picture, it since has been moved to another room. (Source: The Real Junk Food Project Facebook)

Products are lined up on shelves, stacked in freezers and fridges while anyone can come and shop and pay as they feel, and the selection of the Sharehouse is matching the selection of a small store (Figure 12). They intercept practically every kind of food: bakery products, non-perishables, fruits and vegetables, meat (both frozen and chilled), dairy products, ready-meals, condiments and often drinks as well (Figure 13). The donations are transported to the Sharehouse by the volunteers, by car, van or cooling trucks, where the volunteers sort and weigh it, some goes to cafés, the rest and majority is to Fuel for School and out to the Sharehouse. The

shelves of the Sharehouse are restocked regularly, on a busy day, like the 1st of May, they had over a 1000 costumers and had to restock every hour.

Figure 13 Condiments, spices, sauces etc. just after arrival at the Sharehouse (Source The Real Junk Food Project Facebook)

The cafés are staffed with qualified chefs and volunteers who prepare and serve hot meals to patrons, who often help out in preparation washing up, cleaning and serving café or food. Every time I was at Armley it was lively and welcoming, people coming in for a breakfast toast and jam, greeting the servers or other customers, joining with them for lunch or just a tea with some local gossip with the server and the coffee guy. The chefs are given freedom on deciding on the menu, and everyone can chime in if they have some ideas. The atmosphere in the kitchen is friendly as everyone goes about their tasks or comes down to the tables for a break. I am told that the 'boss' is nice and considers the personal needs of his employees, such as the health condition of one of the chefs, who has to take short breaks often due to an injury. He tells me that he couldn't do that in a regular kitchen that goes for profit.

I've volunteered in the Sharehouse, where everyone was immediately helpful and nice, explained my tasks and chatted with me as we have worked together. The crew also had lunch together, sandwiches, salads, potato mash and so on, picked from the intercepted food accompanied with chitchat and some business talk as well as the discussion of the upcoming elections. Everyone was a volunteer there, many of the people come in their free time after work, but they worked hard all day and with visible passion for the issue.

5.3.2. Who is Who

I've interviewed Adam Smith (referred to as Adam), the founder of TRJFP. He is a chef in his early 30s, who is running the project full time since the beginning. His task include everything from looking up stores, giving interviews, doing administrative work, delivering food and education events for Fuel for School, picking up donations and cooking at Armley and at other events.

Joanne is the co-manager of Armley Junk-tion, and also serves food most of the time. She has had her 'own' café in her community, which was closed, and after she joined the Armley team. She also helps out in the Sharehouse, as most of the other volunteers as well.

Sam is the head chef in Armley, an energetic 20s man, initially joined because of the recommendations of friends, and now works full time.

Gabriel is a cook and helps out in kitchen tasks, and occasionally prepares his very own dishes. He has worked in many charities and considers TRJFP as the most transparent and honest among them.

Charlotte and Lily are university students spending their internship working in Armley and in the Sharehouse. They chose TRJFP because they've wanted to have a non-corporate experience related to food.

5.4. Social innovation elements of case studies

5.4.1. TRJFP

Agents are the volunteers and the members of the community where the café and Sharehouse operates as well as the patrons.

Drivers are primarily environmental. Concern for environmental degradations caused by food waste, and specifically by edible food waste.

Purpuses are to redirect edible food waste from landfills towards human consumption to reduce the environmental impacts of food waste and feed people.

Processes are mainly direct action of collecting and redistributing food waste, raising awareness about the issue and education through targeted project and everyday operation. They openly contest regulations about expiration labels, trading standards and others that are making the utilization of expired but edible food products difficult and illegal.

5.4.2. FNB BP

Agents are everyday citizens, activist and volunteers.

Purposes are to induce social change, end hunger, stop the globalization of economy, stop the restrictions to the movements of people, stop the exploitation and destruction of the Earth and its beings.

Drivers are the concern for the breach of social justice and freedom of movement and speech, the constant unresolved issue of homelessness and the unjust actions and regulations taken to regulate and restrict homeless people as well as the concern for hunger and the right to eat.

Processes are strictly nonviolent, which can involve food distribution in various contexts, where the food itself is a tool of protest. Taking a stand and supporting actions that are against

the restriction of the freedom of movement or social justice. Examples include occupations (Camp Casey, 100 day occupation in Kyev, Peace Camp on west Bank, etc.), strikes, protests or animal welfare actions, like establishing animal shelters in Slovakia. FNB is known for providing food after natural disasters or economic crises situations.

5.4.3. Food Bank

Actors of social innovation here are the Association itself as a formally recognized institution, the partner organizations that are similarly official legal entities and the donors (supermarkets, independent stores, distributors, producers).

Drivers of the Association are pronounced in their mission as social sensitivity and concern towards poverty, hunger and malnutrition in Hungary.

Purposes of the Association are to reduce poverty, hunger and malnutrition and to do it using excess or surplus food.

Processes include seeking out donors and distributor organizations and connect them via legal contracts to ensure the quality and safety of the donations on both end of the chain. The Association participates in research projects towards the advancement of the understanding of food waste generation as well as awareness raising and educational projects towards the general public. Through their continued work with the donors they wish to improve their attitudes toward donations and food waste management. This should be in RQ1, bc this is an attempt to transformation of the system.

6. **The common table: how food waste can combat isolation and induce social change**

Food is a common denominator, an excuse or frame that can be coupled with other activities, community building, empowerment, education. It can be the reason people are gathered together in space and time, combat social isolation and alienation. Two of my case studies are grassroots organizations working on the brink or totally outside of the system, collecting food waste and feeding it to the poor. Some of their approaches are newer and more unconventional than others, but they definitely challenge the ruling system by framing the consumption of food waste differently, attempting to remove the stigma attached to it. They also change social relationships in their environment by connecting people that may never would have sat down for the same table otherwise. They rephrase the discussion around food waste and in the case of TRJFP extend the right to that food from the people in need to everyone equally, which represents a fundamentally new approach to food waste and surplus redistribution.

I argue furthermore, that the inclusiveness of the organizations are defined by very different dynamics and thus result in varying levels of community engagement. Between the three organizations, a very interesting pattern is shown: in the case of TRJFP, there is basically no barrier between the volunteers and the patrons, café and Sharehouse goers. The PAYF system helps to erase these boundaries and encourage the patrons to participate which makes the system very inclusive and diverse. A more closed off situation can be detected in the case of FNB, where, in theory, the chance for the patrons to volunteer and join the community is there, but it doesn't happen that often. In the case of the Food Bank, this boundary seems to be the most pronounced. They work with organizations that do the collection and distribution and

consequently have the brunt of the contact with the patrons which can make it difficult for patrons to become involved in the works of the Food Bank itself.

Below I will analyze the three case studies separately along the frameworks of transformative food politics and transformative social innovation.

5.1. The Real Junk Food Project

Some of the most important attributed social impact of TRJFP is changing the ways how people see food and food waste, what they know about it and how these attitudes impact their decisions. As we discuss the community building aspects of TRJFP, Adam talks about how people are being detached from their food, how they are not aware or concerned about the environmental damage that wasting edible food causes. When I ask him if there is a way out, he responds:

> "Education. Education is the key. [...] we recognized that hunger was a barrier to learning, so we were gonna feed these children [...] and educate them at the same time, about where the food comes from, how to make your own assumption whether it's safe to eat and the impact that every time, every decision they make around food, what impact it has on their environment."

The Fuel for School program (Figure 14) started in 2016 and now involves 50 schools with as many as 20000 students receiving 75 kg of "junk food" per school on a weekly basis. But they don't just get food, they participate in making the meals, they learn about the ingredients, where they come from, how they are grown, and how they can use them.

Figure 14 Volunteers and participants of the Fuel For School project next to the van that distributes the food among the schools (The Real Junk Food Project:Fuel For School Facebook)

They learn about the farmer's labor, the big production companies, how much water, energy, labor goes into those vegetables, that piece of ground beef in their burger, that loaf of bread that is going to go to the landfill. They also learn about some crops are destined to end up in landfills or plowed back to the soil almost from the point of them being planted due to overproduction fueled by the quality and availability requirements of consumerism.

Another problem is that the people of developed countries seem to be not only detached from their food but from each other as well. Alienation is a common occurrence in the welfare societies of the global North (Cacioppo and Patrick 2009). People are overworked, chasing money and spending less and less time with their families and friends. But it does not seem to be only a time issue. The lack of common values or interest, the feeling of powerlessness and meaninglessness all feed into people being alienated from each other, from the communities

that they live in (Cacioppo and Patrick 2009). How can one person change the world? We feel insignificant and powerless against the corporate machinery of the food industry, we know that our individual choices of being vegetarian, or buying organic or local, recycling and composting everything may just be a tiny speck of sand against the tidal wave of the food industry. This concept, individual subjectivity is promoted by the consumer society, strengthening alienation, making people think they are only consumers, represented by their purchasing power and their individual choices may influence the food industry (Levkoe 2011). On the other hand, shifting from this ingrained self-perception towards collective subjectivities would mean forming groups and communities around similar interests, values and goals that would act together in union for that common goal (Levkoe 2011).

In the food sector, the fight against food waste can be this common ideal, as we see with TRJFP, that induces social change and provides a platform for a community, a sense of belonging to somewhere. I argue that through t Joanne shared a story with me about "a regular here, a really nice old old gentleman, homeless for a couple of years", whom she met in one of her earlier days in Armley and managed to get him a bed for the night. It was only one night, but recently she heard that he was housed, with the help of the community. "It's nice to see the teamwork, that he is not forgotten, he is not being left behind." Since she works in the Armley café as a manager and waitress, she has many of these memories, hands on experiences of the power of the movement. "It's [the project] about showing people that it [food waste] still has value, that everybody has value", she continues, this time with a more general observation. "Many people are sitting here on their asses", she says, claiming they can't do anything, they have not worked for a long time. But with a little encouragement and help, they usually find something for everyone to do.

> "Everyone can help some way, sweeping the floor, washing up, and once they have done that, they usually want to do something else, you see them stepping into the right direction. [...] Over time they get more confident.

[...] It depends on the individual, but you see them changing. That's what the project is about, it makes some people feel good about themselves again." (Joanne)

Figure 15 "Food is not free. It has value & so does you. So PAYF and let's really feed the world". The interior of Armley Junktion with the projects motto painted on the wall (Source: The Real Junk Food Project Facebook)

Sam, the head chef, when I ask him about some memory that stuck with him, shares the story of a single father of three, recently laid off of his job, who was grateful for the café being there, so he was able to feed his kids warm meals until the benefits arrived. I saw food being the connection between people, the "excuse" to meet and talk over a bowl of soup, instead of eating it at home, out of a can, probably alone (Figure 15). The cafés, mostly due to their pay as you feel (PAYF) model, attract people with social needs, drug and alcohol problems. They are alone, have no one to turn to, struggle on child support or welfare. "Society is on a downhill unfortunately. You often get reminded of that." - continues Joanne - "Here you can see people coming in just to eat, but some of them come for the social feeling, that they are linked to each other. [...] Church is where a lot of them go, and they are not necessarily religious, but for having companionship, having someone to talk to. A lot of them are in need of therapy, and social support, a lot of them are having learning difficulties, family needs, social isolation is the

biggest one. And a lot of them are reaching out to cafés and to churches because of isolation and social needs and food is just an extra bonus here."

However, besides its apparent social impacts and community building effects, TRJFP was not started with the goal of creating social change, inducing changes in the structure and formation of communities. They wanted to change the food system, reduce food waste, to divert the impossible amounts of edible food from landfills, keeping in mind first and foremost the environmental impacts and effects of this food being wasted. They wanted to raise awareness to this pressing environmental issue and all the positive impacts on communities, with human relationships and social issues as just fortunate side-effects. Even if they are side-effects, the members and volunteers of TRJFP community are very well aware of this effect and welcome it.

Still, the transformative ambition of TRJFP is very clearly stated: raising awareness of the shortcomings of the food industry and the impacts and consequences of throwing away edible food.

> "This concept is an environmental concept. […] we understand that if we don't stop food waste we could destroy the planet. […] I wanted to prove that the food that is deeded waste is still fit for human consumption". (Adam)

They aim to educate and change the relationships that people have with their food. While doing that, an additional effect seems to be arising; the change in relationships between people, emerging sense of community, a place to engage in human interaction, to turn for help or a little push in the right direction.

There are more than 200 cafés now all around the world, built on the same principles and aiming for the same thing: showing the fault in the system, proving that food waste still has value and can be turned into delicious meals with a little energy and care. Groups of people organize themselves to collect and save this food, to turn it into something more. They work to

educate kids, to let them know where their food comes from and how it is grown, what is the price of throwing away something that is still edible. Volunteers work to change people's relationship to their food and consequently to each other, to reconnect them with their environment, their food, to encourage and teach them to cook and eat together.

The hard figures can show their impacts on the amount of food saved and the number of bellies filled. But social impact is a lot harder to quantify, especially in the case of a grassroots movement, where there is no requirement for predetermined indicators and benchmarks. Instead we have to rely on the stories and experiences of those who work and volunteer there. Every time I asked about relationships the answers were very much alike: It's like a family, a very open and welcoming group, everyone feels valued and appreciated. Lily and Charlotte told me that they were looking for something different for their internship, they wanted to feel that their work is meaningful and contributes to something useful. Gabriel, a cook in Armley told me that he feels so much better about himself, that Sam often lets him experiment with the ingredients, to come up with his own dish for the day. He worked for a number of charities, and he said "Here, it's honest. I know every penny goes back to the project, goes back to the people; that it means something".

It is clearly shown, that TRJFP considers the whole food system, acknowledges the interconnectedness of the food waste issue and aims to change people' relationship and perception of food and food waste. With this approach, their ultimate goal is to work themselves out of a job by creating a movement, a new, more conscious way of living and thinking about food and the food system, from production to consumption. A new normal, where individual, isolated and self-centered decisions are replaced by the sense of community and conscious decisions based on common values and the interest of the community and the environment kept in mind as well. With this approach, TRJFP achieves two out of the three elements of TFP - whole system approach and collective subjectivities. While the project does not put detectable

emphasis on local food, the individual cafés, because of practical reasons, rely on local stores, but due to the inherent nature of supermarkets, the products that they receive are not necessarily locally produced. The 'reflexive localization' element in TFP urges AFIs to consider ideas in their respective context and adopt to it, show solidarity across localities, which TRJFP provides through the very loose 'franchise agreements' for opening new cafés across the world. By addressing the whole system through education and awareness raising, the positive aspects of locally produced food may also emerge. On the other hand, the same approach provides a balance by delivering the information about global food production and showing that just because something is locally produced, it does not mean it is better for the environment, for the producer, for the consumer. A handy example can be the signature British potato. It can't be assumed that because it is produced in Britain it is inherently better, that it come from a small farmer and the Mexican broccoli on the other hand is not always grown on the land of a global enterprise.

5.2. Food Not Bombs

In Budapest, similar patterns are detectable in the ideas and approaches of FNB BP. "We build communities, not just give out food. We have volunteers who are homeless; they just walked up after an event saying that they wanted to join", Judit, a member of FNB tells me, when I ask about communities associated with FNB.

> "It takes them out of their everyday lives. We talk, we learn about their life stories. Some disappear, and a year later, they come back, tell us that they got a job and are renting a room." (Judit)

FNB is open for everyone to join as a volunteer, which provides a platform for integration and to bring together people from different backgrounds and status. Martin talks about the crowd at the events, most of them are homeless, but a good number of them are pensioners, parents with several kids, who are looking for some supplement, and that few portions of food

means a lot for them at the end of the month. “There are groups among them [the recipients], of course, but I can’t really say that it’s a community.” Faresz, one of the founding members of the BP cell answers to my question of community building aspects of FNB among the recipients of the food. This is supported by what I saw at the event: the distribution of food only takes an hour or so, maybe even less, and it does not really provide much platform for interaction and engagement. There are some jokes being exchanged between the volunteers and the recipients, but besides the smaller, loose groups of some homeless people, I can’t see many signs of community feeling among them.

The sustained communication and building of relationships between the volunteers and the recipients are seem to be a little more pronounced. Everyone I talked to emphasized the importance of talking to the recipients, getting to know them, their stories and struggles. As Martin puts it, “We try to keep the dialogue open. We stay, we talk, we share information, not just give them food: here you go, now move along. This is what makes this a solidarity movement, not a charity.”

Figure 16 Food Not Bombs volunteer giving food and having a chat with a patron (Source FNB Budapest Facebook)

He also considers this as one of the most important added value for the volunteers. Most of them joined FNB because they felt empathetic towards people in need, the issues of homelessness was important for them but being in direct contact with those people regularly provided them with a deeper understanding and enhanced the feeling of solidarity (Figure 16). I've found Martin's point very spot on, when he told me that even though he always considered himself empathetic, "before [FNB] I've never started to talk to a person in need, ask them to

tell me their story, what is their situation, to deeply empathize with them. It's very important to come here, to experience this, so you can face these people."

During my time with FNB I saw that there is a sense of community (a collective subjectivity) among the volunteers, which later clearly shone through the interview responses as well. The launch of the regularly and effectively functioning cell was dated around 2012, when a "few people were at the right place at the right time, being serious about doing this" (Faresz). Although there is natural fluctuation among the volunteers, people tend to come back later, as Faresz exemplifies. He was there from the beginning, doing everything he could, from collecting the vegetables to cooking, washing up and distributing, which, in the end, turned out to be too much and he left, for a good two years. Now he is back, admittedly mostly for the community. He claims that he is the court jester, which is an important role. We talk about burning out, and how even though you first come here wanting to help the poor, in the long run, a good community is what will keep you (Figure 17).

Figure 17 FNB volunteers (Source: FNB Budapest Facebook)

The sustained interest is a key element in achieving goals and realizing social transformation, as Wolford (2003) explains. The realized ways or achievements of the group may be different from the idealized, imagined ones (limited inclusion, limited transformative effect), but the sense of community among the volunteers above the shared idea of solidarity and concern for poverty and food waste is what keeps the movement afloat.

> "A bunch of us are hanging out outside of this. We go partying, hiking together, we keep in touch in the 'real life' as well. Now I mostly come down for the people." (Faresz)

Indeed, when I was there, peeling carrots and slicing radishes, people were laughing at dirty jokes and stories of 'epic' parties or festivals that some of them attended together. The newcomers are incorporated immediately, the slight language barriers are quickly dissolved by some people playing the ad hoc interpreter between parties not sharing a common language.

FNB's community building aspect seems to be more pronounced among the volunteers rather than the recipients itself. While the chance is there for everyone to join, volunteers turning up from the lines of the recipient seems to be more like the exception than the rule.

If the institution in place is the social welfare system and the multiple charities and organizations that distribute free food for people in need, FNB definitely do things differently. Not only by using food destined to garbage for feeding people in need, but by the nature of the meals, being strictly vegetarian, and two courses, on top of that. One of the global FNB principles is being egalitarian and making every decision based on consensus, which notion can be traced back to the roots of the organization. Adding to that, FNB BP is not a legal entity at all, and they don't intend to become one, which limits their financial opportunities, but at the same time, shows resistance against being incorporated into the reigning institutional framework. Their main profile is feeding people in need using food waste, which does not readily give room to consider consumer subjectivities nor the reflexive localities of food. FNB

is determined to stay outside of the system, to remain an 'underground movement', and against the critiques addressing AFIs being unable to 'resist' being sucked in by the system, FNB seems to be doing well. Their decision of using food waste (although is a collective requirement of global FNB) indicates a broader awareness of socio-environmental issues represented by overproduction, food waste and hunger, thus more-or-less fulfilling the whole systems approach element of TFP. It can also be understood as a slow and steady process of trying to transform the system by distributing waste and pointing the spotlight to the issue of edible food going to waste while people are going hungry. Again, the hard headed staying underground approach feels counterproductive, as it is hard to walk that fine line of having enough face to have effect on the system without being sucked into it.

FNB as a global idea of showing resistance, feeding poor with edible food destined to go to waste is steadily present for more than 30 years now. They have cells all around the world, sharing the same core values while giving freedom to the individual cells to act on their local contexts as they see fit. The inherent nature of the volunteer based structure limits their transformative potential by limiting their outreach which is complicated further by staying 'underground'. Judit also told me that they are at their full capacity now, in terms of time, space and volunteer numbers as well, when I asked if they still want to include more vendors. They are content and comfortable with the work they are doing and as Faresz told me, and as I saw for myself, this 100-200 people are enough to serve, organize and control at one time. Despite these limitations, FNB BP collected 7800 kg of fruits and vegetables turned into 10400 portions of food in 2016 on their weekly 'Food Is a Right" solidarity events.

5.3. Hungarian Food Bank Association

On the other end of the spectrum, the Hungarian Food Bank Association represents the institutionalized way of making use of excess food and fighting hunger. Their work is endorsed

and supported by the Ministry of Agriculture, Ministry of Human Capacities and the National Food Chain Safety Office. I learn from Veronika, a founding member of the association, that they started the Food Bank based on a French example, aiming to combat hunger and poverty using excess food. She tells me that her motivation – as well as the approach of the whole organization - was primarily social, but there are volunteers among them with environmental motivations as well. "For me, the best thing is when I go to an organization and they tell me about the changes they achieve, because they give out this food. People try to pull themselves together," she continues,

> "when they go to the distributions, they put on better clothes, they have more energy and time to spend time with their children, to tidy up around their house. When we see that the kids got somewhat better grades, that feeling of being in a shameful, dependent situation is eased a little."

They have a strict system, where the recipients have to prove that they are indeed in need of the donations. When we talk about this, Veronika emphasizes that despite the huge amounts of food that they distribute, there is still need for a lot more, and they have to decide, prioritize somehow. They try to work with organizations who do some social work besides being the distributor of the saved food. Sometimes just by the people being there for the food provides them with the opportunity to be together, so they can communicate, help each other out. Depending on the resources and the profile of the organizations, some have educational and social integration projects as well. "We believe that with a little help and push, these people can get out of this situation, and our goal is not to conserve poverty with providing them with free food, but to give them an incentive to get out of it." Food is a good connection between people, it makes people to go to the shelters who otherwise wouldn't, which presents the opportunity to talk to them, see how they are doing, what else they would need. "When they are not hungry, they can work, they can learn, they have a bigger chance to get back to society." said Andrea Sczígel, the communication representative of the Food Bank in an interview earlier this year

(Kalas 2017). However, Veronika notes that she does not think that these [social integration and community building] are the strongest and primary benefits of their work, but there is certainly a positive change concerning the relationship between people.

The Food Bank Association was founded with the clearly stated vision of combating poverty, but, in contrast to the other two cases, they are following the letter of the laws and regulations in place. We touched the question of overly strict regulations, but Veronika believes that "there are many reasons that companies wouldn't want to give their food to us, but it's not the regulations." She sees the room for change and improvement in the attitude of companies, and there are some improvements, that, most of the time, depends on finding the right person in the company, like in the case of Tesco. They aim to persuade the donors to think ahead and be cooperative, and sometimes, like an Aldi store in Budakeszi, the stores are even willing to absorb a little deficit to be able to donate better quality food (Kalas 2017). Their ways of doing are still an alternative approach trying to plaster a leak on the state welfare system, and the "outsourcing" of the distribution, by directly connecting local organization to the donor companies is a step away from a centrally (over) controlled distribution system. The Food Bank does not aim to change the system fundamentally but to change attitudes of its elements while working within it. Social innovation element in the case studies

7. The perception of food, saving, and leftovers: How are the historical and cultural differences affecting transformative potential?

I argue that the success of TRJFP lies in their locality. New cafés are opening up embedded in local communities, with the help of local volunteers and in collaboration with local stores and schools, serving local people. They are inclusive and mainly locally focused, working along common values of concern for the environment, for wood waste and for poverty and social isolation. I think that a similar venture in Hungary would fail unless it is carefully planned and placed in an already existing community. This theory resonates with the third framework element of TFP, reflexive localization, which calls for critical approach to overemphasizing local food but maintaining the appreciation for diversities and unique characteristics of places. FNB BP is very similar in this aspect, as the local cells are autonomous and only supposed to follow the core principles but are free to adapt their methods to the local needs, as FNB does. FNB BP is embedded in the informal social networks described above, which are remnants of the socialist era while simultaneously they intensively use social media to raise awareness and reach more people. Community based solutions like TRJFP cafés or FNB cells need to be tailored to the specific context they wish to operate in while maintaining a global and systemic overview of their work.

In terms of the different challenges and effects of the legislative contexts, I argue that the overall legislative context does not affect the organizations very differently. What seems to be different is their legal stand and their approach towards accepting the laws over ethical considerations. Food Bank works with and within the system which limits its transformative potential. This includes the obligation of complying with all the regulations, consequently they have to refuse a considerable amount of food (eg.: expired but edible products). On the other

hand, the strict contracts that the Food Bank has to sign with their donors can be seen as an incentive for retailers to ensure they have no liability in case of food poisoning associated with food aid. Having all ensuring contracts with both donors and distributors also means a lot of paperwork which diverts resources (both human and financial) from the actual work. The transformative potential of the Food Bank lies in their social, educational and awareness raising work rather than alteration of the system. As was discussed above, the Food Bank tries to carefully select and prefers to work with organizations that provide some social work (inclusion, education, integration) besides distributing the food packages. At the other end of the spectrum, FNB stays underground and out of the legal framework and relatively small, which might not be intentional, but this is just the scope of such initiative. Due to these factors, their impact is localized and their transformative potential is mostly realized through awareness raising (partially via involving new volunteers) and some education rather than altering or challenging the system. They do challenge it in theory, as we have seen in the standpoint of Martin on ethical decisions and anarchist movements, but it seems more of a personal drive in his case than a realized impact of the Budapest movement. Nevertheless, the original idea of FNB included a pronounced wish to alter the reigning regime of consumerism. It seems that the obstacle limiting their transformative potential cannot be attributed to the system but to the practices of the movement itself. Namely that they are content with their work and don't wish to expand further. With their current number FNB can feed 100-200 people every Sunday and their infrastructural and volunteer capacities couldn't take more (Judit).

In the meantime, TRJFP openly and admittedly challenges the system in many ways and on many platforms, with their everyday operations as well as through education and awareness raising projects and through the media. Due to their size, quick spread, and the altogether good response from the people of their respective communities, they have good potential to actually achieve alterations to the system, like in the case of the revision of labels by the end of 2017. I

argue that TRJFP have the potential to reach that 'critical mass' that can induce real alterations to the agri-food system, with special attention to transparency in retail and the prevention of edible food waste. Since their start, they are continuously expanding the circle of their donors, now cooperating with almost all major retail companies of the country and intercepting significant amounts of food. Through community building, education and awareness raising the transformative potential of the project is also significant, as they reach out to more than 20000 kids through Fuel for School and feed on average 1200 people weekly through the cafés and the Sharehouse in Leeds-Bradford alone. The inclusion of patrons through the special pay with time and skill system provides room for self-improvement, a platform to break out from social isolation, to get in contact with the local community. The associated events, like cooking lessons or specialty days (eg.: Syrian refugees share their traditional cuisine), induce change in lifestyle and attitude towards people, food, waste and the environment.

7.1. Legislative and institutional context

Regulations are strict in both countries, however it seems that the perception and approach of the organizations towards these are very different. Veronika agrees with the strict food safety regulations when it comes to donations and the Food Bank, as a non-profit charitable organization have to comply to all standards and regulations. They cannot accept expired food, even if it is only past its sell-by date, even if in their private life, they are comfortable with consuming such products. She sees the solution in changing the attitudes of the retailers and emphasizes that "those are people on that end [the recipients of the food aid] as well, and if you could give them better quality food, why not donate in time?" referring to the fact that a lot of food expires by the time it would be donated. But this could be avoided, since, according to her opinion and experience, it is often clear earlier on that something is overstocked and won't sell and with a better attitude, could be saved by donating it in time. She explains that they frequently face retailers "unwilling to donate because they are concerned about risk and their

liability, among other reasons", but where they can find good attitude the donations are regular and without problem. When asked about the fiscal incentives or regulatory pressures, Veronika again emphasizes that the attitude in the company is more important:

> "We don't believe in coercing measures, because they [companies] will comply until they are forced by it. In the long run, we believe in awareness raising and changing attitude. If someone understands that it's important, that can result in long-term cooperation. If the company can understand why it is good and important, the cooperation will go on after that one originally interested person leaves. This is how we can form long term alliances based on solid basis. It won't be created by a regulation, only by the change of attitude."

The approach of FNB to the same regulatory environment is fundamentally different. Despite the fact that both my interviewees from FNB declined to talk about what they know about regulations and how they and their organization feel about them, the ethical question of wasting food brought out some thoughts on the regulations. Faresz mentions that avoiding contemporary politics is among the basic guidelines of FNB, but he describes that, just as the international movement, they get involved in protests against regulations and policy which are against their core values, like recent legislations targeting homelessness. They also provide food for such events and cooperate with other associations or initiatives that they share some values with. Martin has a more pronounced stand on the ethical conundrum of food waste and food poverty, however he doesn't give a definitive answer to my question of FNB being illegal either. We discuss the difference between ethical and legal, and he points out that "we would not need to change laws and regulations constantly if everything was right the way it is, if it would be in accordance with ethics, with human morals". "There are bad things that are legal and good things that are illegal", he concludes. FNB is not a legal entity, it is an underground movement despite its extent over the world. Because of this, they do not have to comply to standards and report to authorities or get checked on. The volunteers I've talked to were not concerned with the legality of their actions, and since they only use fruit and vegetables that are considered

waste, food safety risks are very low. FNB uses fridges to store as much as possible for the next day and they apply the 'Would I eat it?' method in preparation. The idea of using food waste to feed poor people is in part a protest against food waste and regulations that contribute to the production of food waste as well.

In England, where the common EU regulations are the same as in Hungary, national regulations do not seem to be that strict concerning donation (Vittuari *et al.* 2015). The volunteers of TRJFP shared somewhat different views on the rightfulness of the regulatory environment, but all of them were critical towards the strict regulations concerning the donation of expired products. "We are in a gray zone", it can be read on the webpage of the project, and Adam elaborates on it some more when asked about the legal environment and whether it could be improved: "There need to be more consequences for those creating the issues rather than trying to punish us for doing something that might be slightly illegal." "As far as we are aware, it is illegal to sell any food past its use-by date, but it depends on what governmental organization you speak with", he continues to explain how they are able to do what they do for over 3 years now.

> "Tax men say we are not selling, trading standards say we are selling, […] there's a lot of contradiction between them in terms of what we are doing. Legally, we are probably breaking lots of laws and probably create lots of gray areas. We know that, we've known that from day one and we've never lied about what we do, […] we've always been very transparent." (Adam)

He talks about the ethical paradox and the morality of wasting edible food in a similar context as Martin from FNB did. He adds that "[…] it might be illegal in some respect, but it doesn't mean it's not right". He tells me that they are constantly researching the rules and regulations concerning food waste, donation, redistribution, labels, to know where they are at, but "at the end of the day, we are not stopping what we are doing because we are breaking a

law. Because if we did, then who else is gonna be challenging and what's gonna happen at the end of it?".

While TRJFP are a legal entity, they seem to be applying laws and regulations more flexibly in order to save more food from landfills and feed it to more people, because "we want to make sure that everyone has access to a good meal that's healthy and safe", adds Sam. He also criticizes labelling regulations: "I think dates should be looked at [revised by authorities] […] we have too many, it confuses the consumer". On the other hand, both he and Joanne mentions the importance of some food safety standards:

> "Food is a high risk product, especially meat, seafood, dairy […] appropriate storage, transportation, it is important to have these legislations in place. […] I don't think you can really change these legislations, they are there to protect the people that are more vulnerable - babies, old, sick people."(Sam)

Joanne sees their continued existence as a failure of the system. "They [policies] are very strict, [there are] misconception with the dates." She talks about the various authorities that they have to work with, the standards they have to comply with. She agrees with Adam's point on contradictory attitudes of authorities, and when I ask about the relationship with them, she laughs and says "It often depends on how they agree with Adam. […] But we are fine, we are not stopping. There is certainly room for improvement". On the other hand, both she and Sam talk about the food safety and hygiene standards for the cafés that they follow just like any other restaurant.

> "We have to comply with everything, we are only pushing the guidelines on food waste, but with safety, hygiene are all the same. The chefs are all fully qualified, high standards in many levels, it's just the food labels." (Joanne)

Both Joanne and Adam talked about the most recent investigation of Trading Standards, and how they have found (surprisingly) expired products in the kitchen. They were waiting for

the report at that time, which later resulted in a public hearing and investigation of TRJFP. The investigation is currently on hold with very little information available. However, Adam is somewhat hopeful about it; he said on social media that hopefully it will generate more debate and brings the issue forward.

7.2. Social and cultural context

Both in Hungary and in the UK, food redistribution is mainly going through charities and targets poor people. Most of the food banks (like the Food Bank Association) work along contracts with social services or other local government agents or organizations providing some social service and attempt to give the food to those in the most need of it. It often requires some proof that the recipient is on social support, etc (Figure 18).

Figure 18 Patron receiving food package from the Food Bank and signing the receipt form (Source: Hungarian Food Bank Association Facebook)

This practice is understandable on one hand, since there are more people in need than food currently available for redistribution, and charitable values dictate to make sure those who are in most need are getting food. On the other hand, it creates a dependent, shameful situation, a social stigma associated with poverty and with the consumption of food waste. Veronika works at the Food Bank in Hungary, and she strongly agrees with this practice.

> "In France, there are 'facilities' where poor people can buy food for whatever small amount of money, and they feel better about it than receiving food aid. They are ashamed of being in need and don't want to get food aid. There's this saying, that everybody is poor on their own levels, and for me, it means that in France for example, there are poor people whom are very far from the poor in Hungary. A family in Borsod [County in Hungary with one of the highest unemployment and poverty rate] will never say that they do not need food aid."

Martin from FNB shares her view on prioritizing people in need over free access. Adam on the other hand believes that the access to this food should be open to whomever is willing to take it, regardless of their financial status.

This was the basis of the Junk Food Project, they wanted to direct attention toward the extreme amounts of food getting wasted and divert it from landfills towards people, where it was originally intended to go. For him, and for the project, the environmental cost of food waste was the driving force to start working with food waste. For FNB and the Food Bank, the initial motive was to feed people in need, and as Veronika puts it "Our goal was to feed as many people in need as we can, and the best way to do it is using surplus food". One of the potential transformative elements of TRJFP is its inclusiveness and unique 'Pay As You Feel' (PAYF) system (Figure 19).

Figure 19 Sign presenting the PAYF system in the Sharehouse (Source: author's own photo)

The PAYF system in the case of the TRJFP is supplemented with the ability of the patrons to pay with time or skills as well. This is a new method, a new way of thinking and doing, which of course brings about issues, such as people abusing it and only taking and giving nothing back, but all the volunteers I have talked to stand by it.

They say it helps to involve people in day-to–day activities which gets them out of their routine and isolation and also helps to destroy the social stigma around food aid and food waste. Adam and Joanne inform me that they usually break even with PAYF and all of it goes back to operation costs. They are organizing more high-end events that compensate for the freeloaders. But Adam reminds me of the real reason the project came to life:

> "People say that some people take advantage of us, but you can't take advantage of us, because we are here to get rid of food waste […] and if somebody would come and take it all, put it in their van, happy day! We could close the Sharehouse, we don't need to do it anymore, that's the point". (Adam)

Evans et al. (2012) argues that food waste is becoming increasingly visible in the UK due to the increasing environmental awareness and public and political discourse about

environmental issues and climate change. I argue that this may contribute to the fact that an alternative approach to both food waste reduction and to food aid, complemented with the PAYF system can function and spread in the UK.

In an interview for an ongoing study (Wageningen University 2017), an interviewee who works in relation with food safety was asked about possible best practices for food waste reduction. He said Hungary is behind the western countries in sensibility about food waste, and that Hungarians are "not mature enough" to implement brand new elements in our society, which is partially the reason of low environmental awareness as well (Anonymous). A pay as you feel system probably wouldn't work in Hungary, not even as much as it does in England. In Hungary, looking for "deals" is a national sport, and PAYF can easily be interpreted as 'free stuff' which would mean the end of such a venture in a short time, with no way to pay for running costs. It is possible that the embedded memories of the communality of socialist era contributes to this effect, and the newfound sense of private ownership turns people against sharing, thrifting, and a system of pay as you feel instead of set prices. On the other hand, the practices of FNB reflect those of the informal social networks (Caldwell, M. L. 2004; Aistara 2015) typical in countries of the former Soviet Block. In these networks, people were reliant on each other for some products and the ways of exchange and deals were based on trust and practice. FNB collects its food from some specific vendors in markets, with whom they have built a good relationship. Now they receive quality products in addition for the waste and surplus, and in return, FNB gives presents on Christmas, talks and listens to the vendors. Their relationship is built on trust and the understanding of the positive impacts of FNBs work. Similar informal social networks can be detected all around Hungary, and the key for understanding this dichotomy is the scale and social isolation. Informal social networks work on small, local scales, with a limited number of people, where everyone can know each other and the mutual trust can be developed. In a larger setting, it is much harder to form these

network in the first place, where people don't even know their neighbors, let alone participate in an uneven cost-sharing venture.

8. Change in attitude leads to change in environmental consciousness

I argue that TRJFP, in contrast with the other two organizations have a primarily environmental drive towards food waste redistribution, and due to this difference in approach, the actual transformative impact on the environment is potentially bigger.

Environmental impacts of surplus food reduction and redistribution projects seem small in the grand scheme of things, but still their effects can be calculated, such as how much CO_2 equivalent it has saved, how much money or landfill space it has saved.

I argue that besides that, an even more important environmental impact of these initiatives is on the long term through education, empowerment and awareness raising. By changing consumer behavior, encouraging people to make more conscious decisions and to pay attention to food waste, these organizations perform transformative social innovation.

Furthermore, I argue that the examined social innovation processes have transformative potential and impact on three different levels/aspects with clear environmental benefits: on personal level; on community and local level; and in policy making.

8.1. Environmental drive

Only TRJFP of the three case studies identify purely environmental concerns as the main driver for establishing/starting their initiatives. “This concept is an environmental concept […] Overproduction, CO2 emission, landfills, transport, all of that contributes to the destruction of the planet.” Adam states it as their primary objective from the beginnings. I believe that working with a primarily environmental drive is behind the approach of feeding everyone, regardless of their financial state rather than targeting people in food poverty. Their goal is to get rid of food waste, to not let edible food go to waste, while it can go to people’s bellies, where it was

supposed to go. In the end, it doesn't matter whose belly it is, rich or poor, as long as that belly is willing to take it. "We feed human beings. Doesn't matter who you are, there's no prerequisite, no requirements. You don't have to come along with proof that you don't have money. This is for everyone" starts Sam, when I ask about the self-proclaimed 'no charity' state of TRJFP.

> "A lot of the time we are just looking for more people to come to the Sharehouse to take the food, because if they won't, we have to throw it away. […] It doesn't matter who you are, it's very important to get anyone and everyone involved" (Sam).

The initial driver of the original FNB was to raise awareness to food waste and its environmental and social impact (FNB website 2017), and the initial ways of food gathering via dumpster diving was intended to bring the issue forward. Despite this background, the main drivers of FNB BP are primarily social, namely social justice, the issue of homelessness and food poverty, as it was demonstrated in Section 7. On their website, FNB Budapest emphasizes these aspects and the awareness raising attempt on the food waste issue is mentioned as well. The Food Bank wanted to address the issues of poverty and the most logical idea was to use surplus food to minimize economic costs and the associated environmental costs of the disposal of said food (Veronika).

> "That scale is balanced when on one side there is the goal of preventing all the energy, water, […] resources and labor that went into producing that food, going to waste and on the other side, you feed people in need…" (Veronika).

Since the primary goal of TRJFP is to save the food waste from landfills and both Food Bank and FNB wants to feed people in need above all, TRJFP is putting more emphasis on education and awareness raising which results in broader and longer term changes in the perception of people towards food waste. This being said, both FNB and the Food Bank is

aiming to raise awareness on food poverty and through this mainly social angle, they highlight the paradox situation of wasting edible food while millions of people experience food poverty.

8.2. Education as transformative environmental process

Participating in the work of these organizations have induced changes in behavior and attitude towards food, food waste and the environment in the interviewees. They are more conscious of the environmental impacts of their consumer decisions which resonates with the move towards collective subjectivities element in TFP framework.

> "I didn't come to food because of the environment. […] Now I'm seeing the damage we are causing, now I need to become more proactive. Now I consider myself an eco-warrior, now I consider myself in it for the environment." (Joanne)

She talks about the change in her personal motivation and her attitude towards the environmental issues of food waste as an effect of volunteering. "You need to help yourself, we are equals, it's about empowering […] being close to these people with real knowledge and learning as you go, with a lot of people [is a real advantage of the project]."

It is important to note, that these personal changes in attitude and perception have an effect on the immediate surroundings of the volunteers as they try to slowly educate and influence their family, friends and community.

"I think slowly, as I moan at them more, I'm making a slight difference, and people are being a little bit more conscious of what food they buy and how much of it gets wasted. Small steps." (Sam) and "The biggest fear in my house now is being told off for not recycling properly" (Joanne) are testaments of the personal change of attitude rubbing off on the immediate surroundings of those involved. Veronika's story on preparing an entire meal at home from solely expired products supports the validity of this argument across locations and regardless of the social context of the country. Joanne was kind enough to share her story of

fighting an eating disorder and how joining TRJFP helped her overcome it, eat more, try more food, eat healthy and get into terms with her condition. I believe that it is important to appreciate the little, personal achievements catalyzed by the work of the organizations and attribute them as transformative impact. Joanne's example is not unmatched, almost every interviewee talked about personal transformation and when were asked to single out memories they all recited positive changes in the lives and living conditions of individuals thanks to their respective movements.

They also have a broader and deeper understanding of the whole agri-food system, why and what kind of food waste is arising at the different stages of the supply chain and what are the environmental implications of it. While a well-defined whole food system approach has emerged more directly during the interviews with TRJFP, both the Food Bank and the FNB demonstrate this angle on their website. It can be stated that all of the organizations promote a whole systems approach, in line with the second TFP element.

The transformative impacts of the projects on their local community is most successful and detectable through their educational and awareness raising attempts. All of the organizations have mentioned that they are aware of the importance of education, and to different degrees, they try to incorporate educational and awareness raising elements in their processes. The Food Bank works on government and grant funds which determine the way they can utilize their money, but when they have the opportunity, they aim to have awareness raising events, primarily for children.

> "As an NGO, our resources are very limited, but when we have won an EU grant, we have had a school education program. You can educate kids, and people who are open. It is the hardest with companies." (Veronika)

This statement not only demonstrates the realized importance of education but describes an important policy challenge as well. Profit oriented companies are hard to educate and nudge

towards processes that are not making profit, and policy and market based incentives are often necessary to convince them to donate food or change their attitude towards donation.

TRJFP also directly targets children through their Fuel for School program. They are committed to the idea that the way towards a more sustainable and just society is through educating kids about where and how their food comes from and what are the environmental costs of wasting food and why caring for the environment is important.

Fuel for School works with 50 schools and reached 20000 kids, teachers and parents in 2017 in the Leeds-Bradford region. They deliver on average 3 t of food for each school annually, which represents 285 t CO_2 equivalent of emission avoided (RMIT University, ongoing research 2017).

Besides the directly targeted education programs, indirect methods of education are detectable, for example how FNB wishes to broaden the horizon of their volunteers about the environmental and social consequences of wasting edible food through mainly their processes of utilizing food waste. TRJFP volunteers constantly inform their patrons in the cafés and the Sharehouses about the connections between food waste and environmental degradation via verbal communication and informational signs as well.

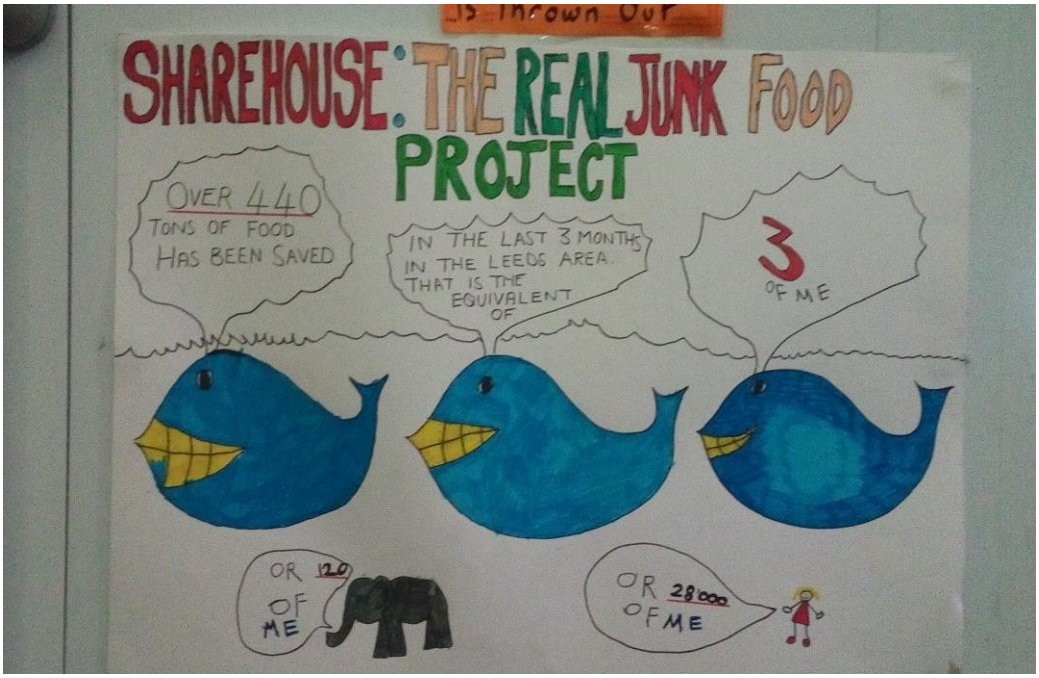

Figure 20 Sign presenting the recent saves of TRJFP Leeds at the Sharehouse (Source: Author's own photo)

They provide their patrons with advice and information on expiration dates, ways to utilize leftovers or tips on how to identify harmful food. This is reinforced through the involvement of the patrons in the everyday operations, where they experience and use this information first hand while sorting donations or preparing food. These new skills, experiences and information will in turn induce change in attitude which brings us back in a full circle to personal attitude change and its ripple effect through the community.

8.3. Policy and system change

The transformative social innovation frameworks identifies the wish to transform, change or alter the system as the goal of TSI initiatives. The ultimate goal of TRJFP and FNB was to induce change in the system through influencing policy change about food waste. The Food Bank does not show signs of aspiring toward such ambitious goals themselves, however they would welcome positive change concerning regulations about the donation from the food service and hospitality industry. Both FNB and TRJFP wanted to shed some light on the issues of food waste and its destructive effects on the environment, and TRJFP admittedly continues

to try to shock people into awareness with displaying the amounts of food they gather (Figure 21).

> "All this food is being wasted, […] we need to make sure to get it into people's bellies as quickly as possible. And whilst doing that, we can tell them it actually came from waste and therefore shock the general public into kind of believing about where wood comes from and why it is wasted." (Adam)

> "On the environmental level, I think it's ridiculous that we waste so much food, because of the sunlight, water, energy, field space that's required to grow a vegetable, for that just to go into the bin. […] It's very important to see to understand the level because when it's hidden in the back of a supermarket in a bin, people don't realize it." (Sam)

Figure 21 375 kg of banana intercepted from one store in one day at the Sharehouse (Source The Real Junk Food Project Facebook)

> "It's the highlight of the problem of food waste, that we can open up a Sharehouse to match and compete [in term of amounts and selection] with most small stores is completely wrong. We shouldn't be in the position where we can do that." (Adam)

FNB and TRJFP through their actions are changing the framing of food waste. Evans *et al.* (2012) explained the negative undertone to 'waste' and how something becomes valueless and dirty in the instant it is called waste. These initiatives are attempting to change this perception and frame food waste as a valuable resource that can be transformed into healthy, delicious and nutritious meals. TRJFP cafés employ qualified, often award winning and accomplished chefs to demonstrate the value of food waste, which brings publicity towards them. FNB's food on the other hand is prepared by volunteers with no official qualifications as to demonstrate that everyone can learn to save and prepare food waste. All of the organizations actively communicate their message on their social media pages as well as giving interviews and appearing on television.

The currently ongoing investigation on TRJFP Sharehouse –according to Adam – is a good opportunity to generate more debate and turn attention towards the food waste issue. Sam talked about something that they call "food black holes", which are warehouses loaded with unmarketable (sometimes expired, sometimes within date) products stored indefinitely by retailers to avoid landfill costs. He adds that these practices are not really legal, and sometimes supermarkets main motivation to donate is only to avoid the landfill taxes. TRJFP contests these issues and urges for the change in relevant policies and will use every opportunity to make themselves heard (like the investigation, which is already picked up by the media and other food waste reduction campaigners in the UK (Figure 22). An immediate consequence of the investigation was the launch of a petition "Change the Food Safety & Hygiene regulations 2013 - Re-look at Best Before & Expiry Dates" which is currently over 3000 signatures (TRJFP petition).

Figure 22 Supporting post of Hugh's War on Waste considering the ongoing investigation of TRJFP (Source: The real Junk Food Project Facebook)

The transformative potential and impact on the policy level is hard to estimate, however current progress in the UK to reevaluate expiration labels is in line with the aspirations of TRJFP and they have openly called out in the issue multiple times and NÉBIH is supporting volunteer based reduction measures (Szabó-Bódi and Kasza 2017).

9. Conclusion

The act of wasting edible food has both environmental and social consequences and they are inseparable from each other just as much as the causes behind food waste. Estimated 1/3 of food that was produced for human consumption is wasted globally while about 800 million people is malnourished or lives in food poverty(FAO 2014a). The wasted food translates into 3300 million t of CO_2 equivalent of greenhouse gas emission, which puts it as the third largest GHG emitter after the United States and China, and into almost 800 billion euros of economic loss (FAO 2014b). Reducing food waste would be economically and environmentally beneficial. Reduction and prevention measures can be economically inefficient if done by paid workers, which is considered a main obstacle in more effective action, and consequently many reduction measures depend on volunteer work (FAO 2014b).

9.1. Transformative Social Innovation and Transformative Food Politics

I argue that the social innovation initiatives have social and environmental transformative potential. In developed countries (like the UK and Hungary), the majority of food waste arises at the consumer level, and while the retail sector contributes with relatively small amounts, they have a significant role in the household food waste generation through the control of quality standards and marketing practices. Focused attention on the retail sector food waste prevention and reduction could result in reduction of household food waste. The retail sector furthermore provides an excellent starting point for the increased utilization of edible food wastage through redistribution measures, such as my case studies. Through volunteer work, policy and fiscal incentives the amount of redistributed food could be increased drastically which would result in environmental and social benefits such as reduction of GHG emission and food poverty, cost savings, increased environmental awareness and community engagement. I argue that my case study initiatives possess transformative potential and induce transformative change in their

communities via education, social inclusion and awareness raising. They contribute to the formulation of transformative food politics by promoting a whole food systems approach to food waste and social issues and directing their communities towards collective subjectivities through the aforementioned educational projects and their overall inclusive ways of operation.

9.2. The effect of social, institutional and legislative context on transformative potential

The differences of the historical and social-material contexts of Hungary and the United Kingdom result in key differences between the transformative potential of the initiatives as well as their ways of framing food waste, organizing their movements and doing their everyday work. The attitude of people towards saving, thrifting, sharing and donating is different in the post-socialist Hungary with memories of nationalization and collecting scraps while entering into the open market and abundance of capitalism in the last two decades (Gille 2007), than in the United Kingdom, a capitalist country with one of the world's leading economy. The sharply different approaches of the Food Bank (working within the system) and TRJFP (openly contesting the system) can be deducted from their different drivers and purposes (social and environmental). The legislative context is not that different in the two countries (both being a member of the EU), which highlights similar obstacles in the operation of the initiatives. For example, overly strict food safety regulations, arbitrarily set expiration labels, differing standpoint of different authorities, contradictory regulations concerning redistribution and liability. The transformative impacts of the Hungarian initiatives are represented by the number of people receiving food aid and hot meals on a regular basis and the awareness raising potential of their continued work. In the case of TRJFP, the transformative impacts are presented through the extensive educational and awareness raising work, through social inclusion and an increased sense of community.

9.3. Environmental relationships surrounding food and food waste

Transformative social impacts and the transformation in environmental relationships towards food and food waste are inseparable. Through the individual attitude changes, the circle of more conscious members of the community is growing and a more conscious and active community has the potential to carry out organized change, as the individual perceptions of people affect the ways of knowing and doing in the community as well. Teaching people about the whole food system, about where their food comes from and at what cost (environmental, economic and social) helps reconnecting them with their food and make them understand the weight of their decisions. By volunteering and using the services people are constantly exposed to the reality of wasting food, which increases their sensitivity and awareness of the subject and the associated issues as well as inspires them to work on solutions.

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APPENDIX 1

Interview questions (combined volunteer and consumer question sets, questions excluded from the consumer set are underlined.

Name

Sex

Age

Income range

community

How did you learn about TRJFP?

What do you do here?

How much time do you spend here? How often you come?

Did you have expectations? (What kind? Why? Did they deliver?)

How was it the first time you came? How did you feel? (Why do you come back?)

How do you feel about this place?

Can you talk about some experiences you had here?

Would you tell me about your relationships here?

general waste perception

What do you consider as 'waste'? (What is waste, what is not? Why?)

What do you think of waste?

How do you feel about waste? (byproduct, necessary, it's a shame?)

How wasteful is our society? How do you feel about that?

Do you or did you talk or think about waste? (With whom, why, what is that you talk about? when?)

Do you remember events related to waste, waste collection, recycling or any of the sort? Can you talk about it? How did you feel about it?

general food waste perception

What do you consider as food waste? (What is, what is not? Why?)

How do you feel about food waste? (Do you think our society is wasteful? How do you feel about it?)

Do you or did you ever talk or think about food waste? (With whom, why, what is that talk about? when?)

How do you feel about you or your family throwing away food? (Why? Ethical, moral?)

Do you think you throw away more food than the average British people? (Why?)

Do you have ways of preventing food to be thrown away?

Do you think food can lose its value? (When? Why? Can it be valuable again? How?)

What do you know about our ways of handling food waste? How do you feel about it?

What do you know about the environmental aspects of food production and waste? What do you think, feel about it?

Are you concerned with it? Does it affect your decisions regarding purchasing, consuming, discarding food?

How do you see the food waste situation? Why do you think food waste is generated?

How do you think these reasons could be addressed?

Should something change?

Do you know about food labels? Which ones? (Are you familiar with best-before, sell-by and use-by labels?

How do you feel about them? (Do you use them, trust them, decide on throwing away food based on them?)

How do you feel about your capabilities of deciding about a product whether it is still edible or not? (What methods do you use? Do you trust yourself?)

shopping practices; edible food waste utilization

Where do you go for food shopping? (Why? What do you buy there? How often? How much you spend in general for food?)

Do you go to the sharehouse to shop for groceries? (Why, What do you buy there? How often? How much you spend in general for food?)

How do you feel about doing shopping in the other places you go to? (Why?)

How do you feel about doing shopping in the sharehouse? (Why?)

How do you feel about buying damaged products? (Why? What kind of products would you buy? What damage is still ok? Why? Where would you buy them? Why?)

What do you think about the prices of damaged products?

What do you think of the 'Pay as you feel' system? (Why?)

What do you think about expired food products?

And consuming them? (Safe? Ethical? Shameful? Out of necessity?)

When do you consume food that is expired or meals prepared from expired products? (Why?)

What do you think about charitable donation of expired food products?

Who should receive these donations?

What do you think they (the charities) (can) achieve?

Do you know/think of other ways to deal with this kind of food waste?

regulations, authorities

What do you know about the laws and regulations concerning food waste?

How do you feel about them? (Do you agree, disagree? Should be changed in any way? stricter, more loose?)

Can you tell me about the legal stuff around starting the project? Did you have any challenges, difficulties, helpful actors, positive memories? (Would you do it again?)

What laws, regulations you have to comply to? Which authorities are in control?

How is the relationship with them? Do you have difficulties? What kind? Helpful or more complacent ones? What kind? Why do you think it is that way?

How do you think the legal environment could be improved?

Is your operation illegal? How do you feel about it? (Are you concerned about it?)

Legal and moral are not always the same. How do you feel about this? Does it apply to your operations?

Is your project political?

APPENDIX 2

Interview information and consent form

Title: Perception of edible food waste and its redistribution among the consumers and volunteers of The Real junk Food Project

Name: Dorottya Oláh

Information: Central European University, Budapest, Department of Environmental Sciences and Policy; Masters in Environmental Sciences and Policy

Contact: olah_dorottya@student.ceu.edu

2 Kings Approach, Leeds, England LS13 2DX

+36707756399

Supervisor: Guntra Aistara

AistaraG@ceu.edu

Summary of the project:

This research aims to identify how the consumers and workers of the Real Junk Food Project perceive food waste, surplus food and the (charitable) redistribution and consumption of edible food waste, and how can an initiative like TRJFP address the issue described above. We are interested in the perceived value and social context of food waste and surplus food redistribution.

Methods and Consent:

In order to obtain this information, we will conduct semi-structured interviews with consumers and volunteers or associates of The Real Junk Food Project.

The interviews will be recorded and transcribed, the material will be handled by the researcher and the supervisor only. The materials will be used for the master thesis of the researcher.

The interviews will be anonymous and responses cannot be tied back to individuals, unless they give consent to use their names on this form.

The interviewee can refuse to answer any question and stop the interview at any point.

Please indicate your choice regarding anonymity below:

I allow the researcher to use my name in her work.

I do not allow the researcher to use my name in her work.

Date Signature