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Final Thesis

**Contact with food waste
and the non-profit redistribution of surplus:
challenges to the neoliberal food regime?
The case of RECUP.**

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ABSTRACT

Wasted food is a very telling object. As a research object, it is here understood both through the sociological concept of the “ex-” or “postindustrial” commodity that is able to reproduce capital, and through its material status that defies the imposition of standardized rules in the neoliberal food market. In this latter sense, food waste is proposed in this research as “vibrant matter”, i.e., matter that is able to cause a perturbation, that possesses an agency, despite being apparently not alive. This perturbation is a call into question of the meaning that is given to food in our socioeconomic system vis-à-vis what food means to us when we have it in our hands. The latter is explored here through a case study of food recovery, specifically at the Milan wholesale market. Contact or exposure to discarded food within a context of organized activities of recovery and redistribution also implies a call into question of the tradition of allocating discarded food to people facing food poverty. A theoretical insight, through a literature review, of the socioeconomic structures behind this tradition reveals that instead the solution to the twin problems of food waste and food insecurity requires radically restoring food’s dimensions of nourishment and sociality against its commodification, that is framed as the root cause of both problems. This research tries to advance the proposal of “challenger” models of food surplus redistribution that could truly lead to the political and cultural shift required by a just food regime. Yet, in order to focus on what is going on in the present for the advancement of such models, the research tries to assess the political and cultural impact of the Milan-based grassroots association RECUP, which proposes an inclusive and ecological-inspired model of sharing vegetables discarded in markets. Even if RECUP still operates between traditional and “challenger” models of food surplus redistribution, the conduction of ethnographic work in its spaces, with its people, still unlocks the possibility of learning the limits and the room for this shift, not to mention, again, the possibility of learning what the materiality of food can teach us.

INTRODUCTION

Any research is motivated, moved, by some kind of special interest in the topic on the part of the author. The reason why food waste and surplus redistribution has been deemed of particular relevance for this research originates from a very concrete fact: a close and sometimes painful real-life contact with food waste, specifically during catering work. Actually, many food waste scholars and activists recall an experience of food waste first-hand, and the effect that wasted food has on them is to “prompt horror or denial, urging to tell others, seek explanations and solutions” (Reynolds et al. 2020).

Personal contact with food waste is able to produce the sparks—from emotions to questions—that start a process of discovery: in this case, one diving into an apparatus of literature on the topic and seeking out the social and urban practices dealing with the recovery, redistribution, and re-valuation of wasted food.

The extent to which food waste is often discussed is as a problem of pollution, environmental and social justice, management, inefficiency, etc. Due to its pervasive and multifaceted nature, it is acknowledged by scholars as a major global problem for a variety of reasons and across all world societies (Reynolds et al. 2020), and such that the United Nations have recognized this challenge within the Sustainable Development Goals (SDGs) framework: the SDG number 12, “Ensure sustainable consumption and production patterns”, includes a specific target (12.3) to: “by 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses” (United Nations, 2015). Moreover, as Papargyropoulou et al. (2014) observe, in response to concerns over escalating GHG emissions and other environmental impacts associated with food waste, a growing number of national and regional policies identify food waste as a *priority* waste stream (EPA 2012; Defra 2011, cited).

Papargyropoulou et al. also take the food security perspective, which “raises questions about the amount of food wasted in the global FSC that could have otherwise been used to feed people” (Stuart 2009, cited). One of the paradoxes that afflicts the dominant food system, and which is reflected in the society of developed countries, is in fact that of

“scarcity in abundance” (Campiglio and Rovati 2009; Rovati and Pesenti 2015, in Toldo 2017), which sees increasing levels of food poverty coexist with the waste of still edible resources. Food insecurity is a side of inequality, which is explained by the fact that “the food regime is such that many eat poorly and badly so that others can have access to all the food they desire: purchasing power is what separates the two” (Vivero Pol et al. 2019). Indeed, a deep asymmetry that runs through the world (not necessarily just between macro and heterogeneous categories such as Global North and South) is access to and consumption of food, both in quality and in quantity, and this even though research by Berners-Lee et al. (2018) in *Elementa: Science of the Anthropocene* confirms that the current gross agricultural biomass is sufficient, not only for the current world population, but also for 2050 targets accounting for population growth.

The sphere of “negativity” surrounding “foodscapes” that can be perceived in the first lines of this introduction, but also in many studies about food insecurity and food waste, is coherent with the emotions elicited by contact with wasted food (as said before, the spark of this study), which somehow suggest that it shouldn’t exist. Yet, the goal here is to consider food surpluses destined for disposal as an *opportunity* for understanding what we need for change, turning the negative into positive.

It is above all the urgency of finding concrete initiatives that are already tackling the problem of food waste in the present and on a daily basis—not only focusing on academic studies, which nevertheless contribute to creating the space for awareness and action— that has pushed this research to turn to the activity of a group of people who organized to recover and redistribute food surplus: at the heart of this research there is the fieldwork conducted with the Milan-based food-recovery association RECUP.

At the individual level, it must be said that contact with a certain kind of food waste (not the banana skin we drop in the street bin, but the kilos and kilos of unsold ripe bananas) does not belong to the happenings of the average person’s daily life, if an individual doesn’t work in food retail or service sectors. In the same way, experience in food rescue and redistribution is something exceptional. Since waste is systematically hidden, one important goal of this research is to bring food waste to light, with all the consequences that this encounter may provoke.

If “explanations and solutions” to the problem of food waste are in fact sought, this work is founded on the desire to provoke questions and reflections around a phenomenon that is very ubiquitous yet very hidden. The main objective is twofold, or better, bidirectional: on one hand, to interrogate the concepts, the ideas, the meanings around food waste that shape the economic, social, legal and urban reality and to see if and how they contribute to the actual production of surpluses and wastage. Inseparably and reciprocally, this will be done starting from the very leftovers of the food system, seen as a thing with agency, i.e. something itself able to interrogate *us* about both the functioning of the food supply chain and, more essentially, our relationship with food.

The ability of wasted food to prompt a reaction in its “readers”, be it an emotion (of disgust or rejection) or a reflection, may indeed suggest that food waste has a sort of transformative power. Therefore, the hypothesis is that it is precisely the *materiality* of food which exerts these “strong calls” and from which the transformative power comes from.

If the contact with food waste implies a modification in the person who enters into this contact, food waste cannot be understood as inert matter. Instead, as political ecologist Jane Bennet proposes, as “vibrant matter”, i.e. matter that is apparently not alive yet is able to cause a perturbation. Matter with an agency. While Bennet’s study focuses on the materiality of food components (such as macro- and micro- nutrients) in having a significant biochemical effect on human bodies, the vibrancy we are talking about here is not connected to ingestion, as we don’t eat food that is going to trash (at least not immediately), but the first contact occurs by sight. It is a visual connection with waste that triggers a modification in our persons, or at least this is what this essay will try to argue. The concept of food as actant here is therefore declined in a different way. The visual connection causes the elicitation of emotions (and thereby exertion of those “strong calls”) such as disgust, denial, shame, etc., caused by the presence of to-be-wasted foods before us, not by the impact of their nutritional components on our human bodies. The situation of denial, distress, or unease that unavoidably departs from these ideas is also due to pre-existing ideas about the value we assign to food and to the vital, social, anthropological relationship of dependence we constructed with food over time.

The central hypothesis of this study was born out of a reaction induced by that kind of contact. It can be framed in this way: “food waste may have a transformative power such that its physical presence creates an opportunity for people who encounter it to organize the relationships among them and with food in a way that do not reproduce or resemble the existing structures of social organization”. The main research questions correlated to this hypothesis are the following: first, to what extent does food waste act as a concrete demonstration of the dysfunctions of the neoliberal food regime and its radical inequality? Secondly, to what extent does food waste work as a vehicle for the creation of a better (fair, democratic, horizontal) food regime? Are there food surplus redistribution options that constitute a real alternative space to hierarchical food system structures? To what extent, then, can the political potential of food recovery and redistribution organizations be assessed?

Last but not least, there is a philosophical premise to make, concerning the idea of an identity between theory and practice. This whole work, which is divided into a theoretical part and a study of practices just in order to facilitate the comprehension of the process from questions to results, is in fact founded on the idea that theory is practice synthesized and practice is theory applied. It is necessary to go beyond the theory-practice dichotomy precisely for the purpose of disclosing the transformative power of food waste—according to the definition of “transformative” provided earlier—that keeps together the nature of food waste both as a concept, a category in and of economic sociology *and* a very concrete whole of physical things.

As far as the structure of the essay is concerned, it consists of four chapters following this introduction: I) a brief explanation of the methods and the research flow; II) the theoretical framework; III) the case study; and IV) the final discussion and conclusion. The possible answers to the research questions may turn up gradually, during the flow of writing and reading, but will eventually be collected in the conclusive dialogue between the theory and the results of the case study.

I

METHODOLOGY AND RESEARCH FLOW

The research is based on a hybrid methodology, relying on the combination of two main “sources of information” about the phenomena of food waste and food surplus redistribution. On the one hand, the research went through the existing literature dealing with cultural and social aspects of food waste and the activities surrounding it; on the other, it collected information during a short fieldwork with the volunteers of the association RECUP. The combination and alternation of research methods reflects the non-linear process by which the research questions arose and the possible answers came forward as suitable. Indeed, although the structure of the essay proceeds linearly from a theoretical framework to a case study, and to a conclusion, the starting point of the flow is not a reflection formulated by a study in theory; rather, its source was real-life encounters with food waste, encounters that are described in the fieldwork chapter. In other words, the research through the literature has been done *after* the “raw” formulation of the query, but comes earlier in this essay because it is methodologically important to provide the epistemological and social contexts in which the query can be located and so approached “scientifically”.

The methodological flow behind this final product can be described also as a process of hypothesis testing following these passages:

1. First-hand contact with food waste as prompt for research: rise of (raw) queries and formulation of a main hypothesis;
2. Formulation of more precise research questions: exploration of the meanings of the words used to formulate them; scaling-up of the (situated) problem to the global, regional, national levels through reading written documents;
3. Analysis of possible answers to the research questions, i.e. of (i) ideas present in the literature, and (ii) the findings of the study of RECUP; comparison of the arguments needed to validate or not the main hypothesis.
4. Adjustments to the main hypothesis. The fieldwork can also be read as a verification test to the latter, with mixed outcomes.

The flow of the investigation is therefore circular: it starts and ends “in the field”. The field stimulates the questions because it already contains suggestions on how to see things from different perspectives—not necessarily definitive answers, but possible answers—but we try to come back there equipped with the conceptual or analytical tools that the scholarship has forged for defining those specific questions.

A premise regarding the ways to transform field notes into anthropological articles, “thick description” (Geertz 1973), has been deemed the best approach. The thick description overcomes the distinction between descriptive and analytical accounts, focusing on details and connections that would otherwise go unnoticed, so it already embeds a level of analysis. The reporting of the participatory observation activity with the association’s volunteers primarily consists of a faithful description of what happened when the author was present. For this reason, and because ethnography recognizes the positionality of those who practice it, the first-person authorial tense is used. Such factual description is nevertheless intermingled with some extra-contextual reflections that were immediately raised *in* and *by* the very field experience, and not during second elaborations, which instead have been made *a posteriori* and occupy the fourth chapter of the essay, in which, in fact, the analytical-theoretical modality and the authorial impersonality used in the first chapters are restored.

The factual nature of the fieldwork, in other words the “raw material”, has a dual role: on the one hand, it constitutes a test of concreteness or reality for the theses advanced in the literature and introduced in the theoretical framework; on the other, it must be understood as an epistemological starting point for anyone having or not having access to the literature. The goal of intersecting the observation of what happens regarding food waste (be it ethnographic or other) with a theoretical reflection or analysis (be it philosophical, economic, social, or otherwise) is to restore the ability for anyone to see reality, if there is any, as something that can be interrogated. The hybridity of a methodology that combines bibliographic research and ethnographic research, while keeping them separate in the essay’s structure to maintain their respective specificities, can be read as an expression of the contact between theory and practice that is a fundamental part of the content of the main thesis of this essay.

1. Literature sources

The research on the contributions from the literature on food waste that occupy Chapter I has its foundation, most importantly, in the *Routledge Handbook of Food Waste*, and in particular, among others, the chapter “After market: Capital, surplus, and the social afterlives of food waste” by anthropologist David B. Giles. Giles’ article raised a lot of questions about the nature and definition of the food recovery activity represented by the case study of choice. From the handbook, bibliographic references helped to expand the research in a first moment, for example providing the link to another fundamental text, the *Routledge Handbook of Food as Commons*. An important resource for the section on waste is chapter 29 of the *Routledge Handbook*, that on *Regenerative Food Systems* (“Cradle to cradle: the role of food waste in regenerative food systems” by Tammara Soma, 2020). The so-called snowballing method (accumulating bibliography by going from citation to citation) was used to expand theoretical contributions. Actually, the handbooks and the bibliography of each of their chapters were deemed comprehensive and reliable as they would not present a unified or completely agreed-upon view on the matter by their authors; however, other authors not from the handbooks, such as A. Toldo, contribute significantly to the theoretical framework.

Worth of mentioning is, ultimately, part III of Polanyi, Arensberg & Pearson’s *Trade and Market in the Early Empires: Economies in History and Theory*, that constitutes a foundational text for understanding what is the underlying approach to economy and society and the related concepts in this work.

2. Contextual background sources

Chapter I also includes the contextual background, consisting of an account of some data about food waste, and the sources are the Food Waste Index report by the United Nations Environment Program, the Estimates of European food waste levels by the FUSIONS EU project, the Food Waste and Food Waste Prevention dataset by NACE Eurostat, the official reports of the United Nations Food and Agriculture Organization (FAO) and of the United Nations Environment Program (UNEP). All these documents were downloaded from the respective official websites.

The review of the law on food waste narrows down the scope to Italian laws for the reason that the activity of the association RECUP, the case study of the research, is situated in Italy. The law concerning the distribution of food surplus, the Gadda law (LEGGE 19 agosto 2016, n. 166. *Disposizioni concernenti la donazione e la distribuzione di prodotti alimentari e farmaceutici a fini di solidarietà sociale e per la limitazione degli sprechi*), was downloaded from the Gazzetta Ufficiale della Repubblica Italiana and translated into English.

The resources for learning about the local context are both the official reports on the websites of the Lombardy region and the Milan municipality, and the pieces of information provided by RECUP volunteers during fieldwork.

AI use disclaimer

The use of Artificial Intelligence as a method of research is absolutely limited to one case in Chapter I, section 1.2.4, where it is clearly made explicit as an experiment. Otherwise, AI was used occasionally either to translate some notes from Italian into English or to extrapolate some specific information from secondary or auxiliary resources, yet downloaded from official publishers. The AI models used were Google Gemini Flash (3.1, 3.5, 3.6), accessed through the institutional account of Ca' Foscari University, and Claude Sonnet 5.

3. Fieldwork

Chapter III includes both field notes and other contributions for the case study, the latter consisting specifically of: a section showing RECUP's food collection data, in which a couple of graphs have been plotted; a text reporting an article from RECUP's blog; a very small, informal, to-the-point interview with the volunteers. The reason behind including the latter two is to account for the ways in which the people, reflecting on their own activity, express themselves and build dialogue.

As for the former, the choice of the ethnographic diary as a method for a consistent part of the research relies on the eloquence or expressiveness of the facts that occur during fieldwork. That expressiveness is certainly reinforced by the theoretical framework through which they can be interpreted; however, without "raw" facts it wouldn't be possible to see the concreteness or reality of what is said in theory. The most material description possible of

what happens in the context of interest (the recovery and re-destination of surplus food) favors itself the coming true of the hypothesis—that the physical contact with food waste and the encounters with the people who deal with it create an opportunity to rethink the economic and social system surrounding food—because, on the part of the reader, to read (what the author saw, what she discussed with people at the markets, etc.), precisely at the most descriptive level, is itself a contact with food waste.

So, given that the purpose of the notes from fieldwork (the place where contact with food to throw away was real) is to let them take on the role of a quasi-real or analog contact with food waste, the style of the essay switches to the informal register of a diary, giving space to the emotional sphere as well. Notably, the text consists in auto-ethnographic writing based on an “embodied approach” that both hopes to involve the reader in the experience of the site, and relies on the methodological layer of a constant interrogation of the researcher’s own positionality, acknowledging her specific identity and perception of the setting.

As previously said, the narrative aims to follow the tradition of the “thick description”, i.e. the anthropological description where details are used to ground “larger” concepts. This way to describe physical reality is not properly an abstraction, because everything that is elaborated in mind through contact with people and matter always bounces back to the latter. This can be seen in the continued alternation of a chronological chronicle of events and the interpretive thoughts that, although transcribed here in a second moment, have been maintained as faithfully as possible to the original, trying to avoid any further level of elaboration.

Another difference of the field notes section compared to the rest of the essay is the in-text use of image. While, for the sake of continuity in reading, the figures that complement the text in other sections have been postponed to appendices, the photographs taken in the field have self-explanatory power and purpose, and they have no caption because they take the same role as the text.

Note on the importance of studying with

Before delving into the subject matter, a premise that is not strictly methodological, but somewhat philosophical, concerns the vision of one the disciplines within which we will operate, that is anthropology. The premise is important to approach the research questions as

open questions, with answers that are not definitive results of a learning process, but are the learning process itself.

According to T. Ingold, in his seminal work “Anthropology: Why It Matters” (2018), the peculiarity of anthropology is that, unlike any branch of science, it does not operate as if the answers to its questions are lying around somewhere, needing only to be discovered. Anthropology doesn’t produce “a quantum of knowledge” to add to previous contributions; information is not turned into a product. Learning doesn’t aim at fixing nor putting at rest, instead, it both takes the risk of exposure and questioning of its own premises and does not provide any final solution. In other words, objective knowledge is not what anthropologists are after: what they seek is, according to Ingold, wisdom. Studying with others exposes us to confronting subjectivities, different worldviews, imaginaries, that can make us wiser. Indeed, the lack of objectivity is the very source from which anthropology takes its strength, for it does not provide explanations but imaginaries.

All study calls for observation, but in anthropology we observe not by objectifying others but by watching what they do and listening to what they say. We study *with* people, rather than making studies of them, of their behaviors and relationships (the “object” of social sciences). This way of working, called “participant observation”, is absolutely not a method of data collection, as Ingold warns. It is rather a commitment to learning, to undergo a process of education that is ultimately transformative. A question posed by Ingold is about how we should regard participant observation, since it is practiced in the field rather than the laboratory, as a method for “collecting data”: these data are clearly not quantitative, but are they qualitative? Actually, they cannot be tabulated in numbers or compiled into statistics. The very idea of “qualitative data” is problematic, according to Ingold, insofar as “the quality of a phenomenon can only lie in its presence, in the way it opens up to its surroundings, including we who perceive it. The moment we turn the quality into a datum, however, the phenomenon is closed off, severed from the matrix of its formation” (2018). In order to avoid the understanding of qualitative data collection as an opening up to people only to extract some information and then closing the relationship (what he calls a form of expropriation), the dimension of care must be included in the methodological approach. Care is a fundamental dimension that is neglected by traditional scientific disciplines: instead, care in anthropology amounts to treating others not as “objects of investigation”, by assigning them

to categories and contexts or by “explaining them away”, but bringing people into presence as co-learners, so that they can converse with us, and we can learn from them. Finding ways to answer the famous “research” questions therefore becomes a common task, a mutual transformative process (Ingold 2018).

Here, according to what we introduced before, the transformative process of learning does not only emerge from interaction with our co-learners, but also from contact with (apparently) inert matter. i.e., food thrown away. The methodological point to make here is that the *presence* of food waste is the starting point, and the dimension of care (*treating it not as an object of investigation, by assigning it to categories and contexts or by explaining it away, but bringing food waste into presence as a co-learner, so that it can converse with us, and we can learn from it*) is to be so applied to food—to a thing as well. Indeed, if from a theoretical point of view, human actors are the subjects that encode things with significance, from a methodological point of view, it is the thing—food waste in this case—that illuminates the human and social context (Appadurai 1986).

Secondly, the study *with* people met in the field meant, in this case, that those encounters changed the dynamics of the study beyond the fieldwork itself: thanks to making friendly connections, once back at the University, the dialogue continued remotely, allowing the integration into the research of new questions and answers.

A last, closing note on the importance of studying food waste with people—and the people brought in this research in particular—is the role that these have in contributing to the material collection of quantitative data on food waste destinations, and especially on redistribution, the greatest example being RECUP keeping its registers.

As it will be shown later, the reading of the Estimates of European food waste levels reveals that “no data were available on amounts of food being redistributed—and therefore this sector was completely left out in the study”, or “for food redistribution very little data are known” (Stenmarck et al. 2016). As we will see, the reports provided only by some countries are insufficient because they take into account redistribution only happening via food banks; therefore, the number is likely to be underestimated. So, this research also directs attention to the lack of data about food recovered for purposes other than charities, and hopes to stimulate further quantitative research too.

II

THEORETICAL FRAMEWORK

As archeology has confirmed, foodscapes have long been central to understanding human-environment interactions (Spring et al. 2020), and in our age, the Anthropocene (in its various definitional upgradings too, see *Capitalocene*, Moore 2017), the human-environment relationship has tipped completely to the first side. According to De Schutter et al. (2018), the fact that we live in an era with roughly the same number (about one billion) of overfed people and of people lacking access to nutritious food is “the most embarrassing predicament of the Anthropocene/Capitalocene”, adding that “our era also stands out by the remarkable amount of food that is wasted in some parts of the world and by the unprecedented number of livestock that populates this planet (Patel and Moore 2017, cited)”.

As far as the Anthropocene is concerned, there are debates around the term regarding the fact that its constitutive Greek word *anthropos* (human) refers to the impact of humankind on the planet, generalizing the category in a homogeneous way. In other words, it leaves out of the picture the peculiar structures according to which humankind is organized, and that this organization depends on a particular way of *consuming* natural resources. In the research of the historical origins of the ecological crisis, J.W. Moore (2017) supports the need to distinguish that “the agent” at the origin of human-caused global environmental issues is not humankind as such (he criticizes in particular the homogeneity of the category “Human”), but a specific mode of human economic organization: capitalist accumulation. At the origin of the ecological crisis he finds two moments: first, the separation of the human from the nonhuman; secondly, the rise of the world-praxis of “finding and co-producing Cheap Natures”, consisting both in the economic reduction of the costs of exploiting more-than-human natures for the accumulation of capital, and in the literal cheapening of the worth, dignity and visibility of soils, forests, animals and all manner of extra-human nature (Moore 2017). It is for this reason that Moore has proposed the alternative conceptualization of the “Capitalocene”. Beyond issues of terminology, it is interesting to put on the table, among the *othered* and *cheapened* natural resources, also food. Needless to say, food items are nothing but the “products”—the outcomes of processing—of “natural resources”.

Capitalocene can be related to food waste following David B. Giles' (2020) insight: capitalism has practiced distinct forms of "accumulation by disposal" in each of its phases, from the mid-twentieth century's built-in product obsolescence and disposable consumerism (Packard 2011 [1960], cited) to the "vastogenic" or "waste-making" regimes of the global corporate food system (Cloke 2013, cited)—also see Cloke 2020 in the same volume). These industry-wide transformations are reflected in individual habits and consumption practices: Guthman and Dupuis (2006, in Giles 2020) describe the vastogenic logic of the current neoliberal food system as a kind of "bulimic economy, constituted among the contradictions between excessive portions, empty calories, overeating, and expensive dieting, all with the effect of multiplying capital's opportunities to return a profit". As they put it, "neoliberalism's commodification of everything ensures that getting rid of food [...] is as central to capitalist accumulation as is producing and eating it".

This is the macro dimension that situates this research in the context of the era of the Anthropocene, of our global society and its trends. However, there is a micro dimension of the discussion that situates the research in the context of individual lives and lifetime. The present research wants to address not only the academic community researching food waste, but also common people who go to the supermarket, cook, eat their food, and sometimes throw it away. Contact with food waste, and the perturbation that the latter can cause, always starts, in fact, from a personal encounter, and it will be the case study to bring this contact at the live of an individual experience.

This chapter absolves many functions that are essential to the contextualization and understanding of the main hypothesis: *food waste may have a transformative power such that its physical presence creates an opportunity for people that encounter it to rethink the relationships among themselves and with food in a way that may not reproduce or resemble the existing structures of social organization*. We will try to both explore the meaning of the key words, so dissecting the research questions through the review of the literature, and to provide the relevant statistical and legal contexts, at different scales, that determine the perimeter for the case study's contribution to the main hypothesis. These parts are, however, not merely a framework that awaits for a main argument to occupy the stage: in outlining concepts and contexts, there are already significant arguments.

Before moving to a theoretical discussion where food and food waste are “categories”, the passage from their materiality to the category, and the conjunction between the moment of the real-life contact with those objects and the reflection about those same objects, must be explained. With this premise, the *transformative* role and power given to food waste in the main hypothesis will gain meaning from the beginning. Indeed, already from an anthropological perspective on the meaning of food (and thus of food waste) in the globalized world, we find a clash between “material” and “categorized” food.

According to Soma (2020) in a system bent on standardization, mechanization, short-term efficiency, overproduction, and cheapness, food poses a host of problems due to its intrinsic nature. It is a living organism, but it can also be categorized as an inelastic-demand product which poses problems in a capitalist-based consumption and production system. In the mainstream industrial western paradigm—by no means the only one, as the meaning of food for people varies across societies, but knowledgeably the dominant one—food is framed as a passive commodity. Instead, Soma references Bennett’s work on “Edible Matter” (chapter 3 of *Vibrant Matter*, 2009) to define food as a “vibrant” category, with “vibrant” being clearly a material adjective. As anticipated, Bennet argues that the material and agentic capacity of things derives from the vital power of nonhuman “actants” in the bodies of vegetables and minerals, a capacity that is not therefore restricted to human actors. Therefore, within the “body” of food (and as such we would similarly argue within the body of food waste) there exists a potentiality that includes both “the active power to exert forces and create effects” and “a negative power to resist or obstruct human projects” (Bennett 2009). To recognize that food, far from being passive, has material agency, is important in shifting what Bennet termed “the conquest model of consumption” towards a model of a bidirectional relationship according to which the material agency of food impacts us.

An example of the ways in which the intrinsic, living, and vibrant matter of food resists or obstructs human projects of mechanization and standardization is the fact that food—to our dismay—rots, wilts, and bruises (Soma 2020). To the “dismay” of machines, foods are also diverse in shapes, colors, and tastes. As such, food makes the process of standardization and homogenization very challenging, which in turn leads to wasting (Gille 2012), but it is precisely from the existence of waste that we can develop a critique of standardization and homogenization.

So both food and waste in particular are dynamic categories that are not only socially (humanly) constructed, tied to (human) moral and ethical questions, and embedded in larger questions of social, economic, environmental, and political justice (Soma 2020), but also materially capable, with their presence or physical state, of changing or adjusting their corresponding epistemological categories.

It is still necessary to determine the ability to *categorize* what is “food” and what is “waste” through a review of human debates and questions around what is exactly meant by these words, which are complex, laced with culture, class, income, and power structures (Shilling 2013; Soma 2017a; in Soma 2020). By challenging the mainstream categorizations and reframing the concepts of “food” and “waste” (*also* through the material encounter and contact) the hope is to reshape the ways in which we, as a society in the Anthropocene, view and value food (Soma 2020). For these reasons, food and waste are going to be dissected in various dimensions soon.

As far as the following three sections of this chapter are concerned, they correspond to three main dimensions (which by no means exclude other possible dimensions) in which food waste and opportunities of food surplus redistribution are framed: the first one, the wider, encompasses the anthropological and socioeconomic aspects of food and waste; the second explores the quantitative information on the actual *size* of food waste; the third part eventually offers an overview of the legal-institutional framing of the phenomenon.

The scales of these socioeconomic, quantitative, and legal dimensions are different. The anthropological-socioeconomic perspective on the phenomenon approaches food and waste from a larger perspective, possibly including some philosophical takes, and aims at studying the reach of the dominant global mentality about and the systemic character of the problem. The quantitative dimension considers food waste “numbers and figures” (i.e. official data collected by international and national institutions) briefly at the global level, and then more specifically at the European level, with a further focus on the Italian case. In the latter, the scale of analysis narrows down specifically to Italy, because the purpose of providing a legal and institutional framework is to delimit the space of action of grassroots experiments like the one of RECUP, which is the case study and takes place in Italy, thereby producing the context of rules and constraints that is necessarily local.

1. Socioeconomic framework

In introducing the contribution of the discipline of economic sociology to food studies, Schneider & Cassol (2020) first of all outline the three main social forces—or three social structures—that can be identified as the most relevant to the sociological explanation of the economy and markets: social networks, institutions, and culture or cognitive frames (Beckert 2010; Dobbin 2004; Fourcade 2007, cited). Each of these elements can be mobilized to analyze and explain the emergence and operation of markets, formation of prices, values attributed to certain objects, and the role played by different actors and organizations in the construction of new spaces of production, marketing and consumption—redistribution may be added—of foods (Goodman 2002; Marsden et al. 2003; Zelizer 1979, cited). The authors admit that studies on contemporary agri-food markets have adopted, though implicitly, some approaches from economic sociology to analyze, interpret, and understand the following: how these supply spheres are constructed and reproduced; what cultural values they borrow and eventually reproduce; and what practices, more or less sustainable, they generate. The authors admit the importance of recovering the cultural aspects and meanings related to agricultural processes and attributed to food, the role of social networks in strengthening and reconnecting producers and consumers, and the role of social norms and rules in mechanisms of governance and operation of these markets (Schneider & Cassol 2020).

In general, processes or networks that build alternatives to the conventional food system (like our RECUP study case) claim the need to relocalize the production, supply, and consumption dimensions: market spaces are no longer seen by new economic sociology as mere places for meeting supply and demand, in a mechanical way, rather, they are recognized as spaces where the ways of transacting are inextricably linked to culture, values, human interactions, and social norms, and where *there is* the potential to generate more sustainable practices and behaviors. Schneider & Cassol note that there are also studies adopting an institutionalist approach seeing markets as an aggregate of rules and social norms that are locally appropriated and shared. Such rules drive the construction of collective mechanisms of governance that ascribe stability, distinction, and quality to food (Hebink et al. 2014; Ploeg 2014, cited). Those approaches, which have Ostrom's (1999, 2010) studies as reference, are based on the idea that local markets and their sustainable practices are common pool

resources collectively appropriated by the various actors who construct them. A point in recognizing that markets are social constructs and do not follow a general/universal pattern or model—as proclaimed by founding fathers of sociology (Marx 2017; Simmel 1972; Weber 1991, cited)—is also to call into question some assumptions and views that directly link markets to the capitalist system. In fact, in their sociological definitions, markets are beyond capitalism; they precede this system (Polanyi et al. 1957). In particular, the argument of Polanyi and colleagues rested on the historical evidence that markets, trade, and money existed for millennia before the advent of capitalism, without ever dominating human organization. In pre-industrial empires, for example, markets were embedded within overarching social, religious, and political structures. Then, the mutation into a capitalist system marked an historical departure: it established a self-regulating market economy where society, *in its entirety*, has been subordinated to price-making mechanisms. Polanyi describes this transition as a profound decoupling, wherein the economy ceases to be submerged in social relations, and instead becomes “disembedded”, forcing society to conform to the mechanical logic of supply and demand. Under this new capitalist paradigm, the traditional relationship between human community and economic activity is inverted: rather than the economic system serving as a tool for social sustenance, the social fabric organizes itself at the service of the market. Reading Polanyi, we understand that this historical process intertwines with a logical-cultural process whereby what he calls the “formal meaning” of the economy has become the mainstream. According to the author, it is formal the meaning that derives from the logical character of the means-ends relationship, and denotes the economy as a sequence of “economizing” choices induced by scarcity situations. While the rules governing such acts are universal, the extent to which the rules are applicable to a definite (empirical) economy depends upon whether or not that economy is, in actual fact, a sequence of such acts. Such a situation obtains only under a market system: the relation between formal economics and the human economy is, in effect, contingent. Instead, “outside of a system of price-making markets economic analysis loses most of its relevance as a method of inquiry into the working of the economy” (Polanyi et al. 1957). In fact, “the anthropologist, the sociologist or the historian, each in his study of the place occupied by the economy in human society, was faced with a great variety of institutions other than markets, in which man’s livelihood was embedded” (ibid.).

The point of adopting Polanyi and colleagues' view is twofold: first, to stress that our social lives already are and can be embedded in institutions other than markets, which gives significance to the study of redistributive economic practices (in the “substantive” meaning of “economic” cf. Polanyi et al. 1957). Secondly, in relation to what we have described just before, to give a description of capitalism as an historical arrangement that allows the market mechanism to swallow the society whole, transforming the foundations of human life and nature into commodities, but also for detaching it from the category “the market”, not extractive or imperial *per se*. This premise is necessary, firstly, to understand our position from a historical-economic perspective and, secondly, to avoid contrasting the initiatives of food surplus redistribution that we will analyze with a general concept of the market: the target against which these initiatives propose an alternative is, precisely, its *capitalist* social arrangement.

First, it is worth acknowledging that the capitalist market is the place where food is turned into an agricultural commodity (as capitalism transformed “the vital foundations of human life and nature into mere commodities for profit”) and that this transformation implies first the abdication of many other dimensions of food, and then the conditions allowing the waste of food, i.e. a phenomenon for which a vital foundation of human life is wasted.

1.1. Food

What the meaning of food is is a difficult question with no straightforward answer, although there seem to be some common features that accompany the definition throughout societies. Food is, above all, feed, or nutrition, as our body demands food energy to keep its vital functions. According to A. Maslow's hierarchy of needs (1943), food is included at the very bottom of the pyramid, among, clearly, the basic human needs. Furthermore, no one can deny the importance of food as a foundational pillar of culture and civilizations (Fraser& Rimas 2011; Diamond 1997, in Vivero Pol 2018). Everything having to do with the collection or cultivation, preparation, and consumption of food represents a cultural act (Montanari, 2006, *ibid.*).

Vivero Pol (2018) observes how in modern times, most human needs have been framed as legitimate *rights* to which citizens can aspire, and which society at large has an obligation to respect and provide for. This framing already amounts to a shift from an understanding of food based on an objective datum (the need to fuel the human body is of biological nature, which is undeniable) to a socially-constructed understanding of food as right, which is peculiarly and exclusively human—that other animals did not have the need to specify. An interesting question: why was it necessary to frame needs as rights? Was it because these needs were largely not met—for example, access to food was denied to some part of the world population, i.e., the right to food was denied? From a sociological perspective, Hess (2008, cited) observes that humans are the only animals that were able to constrain access to food to other human beings, more or less intentionally, most notably through evolved mechanisms of food distribution (i.e. for reasons other than biological competition for survival), and the most basic mechanism being the enclosure: the gradual or sudden decrease of accessibility of a particular resource due to privatization, new legislation or overconsumption.

1.1.1. Food as right

Needs as legitimate rights became the legal framework for political and social action in modern nation-states, and an object of international law. In particular, the undeniable need of food was recognized as a *human right* under international law first in Article 25 of the Universal Declaration of Human Rights (United Nations 1948)—“everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food [...]”— and then in Article 11 of the International Covenant on Economic, Social and Cultural Rights (United Nations 1966), stating that the States Parties “shall improve methods of production, conservation and distribution of food by (a) making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources; (b) taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need”.

Perhaps the most interesting document concerning the right to food is the Report of the UN Special Rapporteur on the right to food, Olivier De Schutter, drafted in 2014:

“The right to food is the right of every individual, alone or in community with others, to have physical and economic access at all times to sufficient, adequate and culturally acceptable food that is produced and consumed sustainably, preserving access to food for future generations. Individuals can secure access to food (a) by earning incomes from employment or self-employment; (b) through social transfers; or (c) by producing their own food, for those who have access to land and other productive resources. Through these channels, which often operate concurrently, each person should have access to a diet that as a whole contains a mix of nutrients for physical and mental growth, development and maintenance, and physical activity that are in compliance with human physiological needs at all stages throughout the life cycle and according to gender and occupation. Thus, the normative content of the right to food can be summarized by reference to the requirements of availability, accessibility, adequacy and sustainability, all of which must be built into legal entitlements and secured through accountability mechanisms.”

Some points are noteworthy for this essay’s sake: 1) People can access food not only *alone* (or as a nuclear family) but also *in community with others*. 2) The *means* by which access to food is guaranteed (which is the end, the satisfaction of the need) are specified, and can be summarized as (a) purchasing it, (b) receiving it, (c) producing it for oneself. These options may appear limited in light of the case of this research, which studies access to food through the recovery of surpluses, that is, access to food that is neither purchased, nor passively received, nor even self-produced by those who recover it. Mindful of the fact that the word “transfer” still suggests one-way directionality, it is nevertheless true that the “social transfer” option leaves space to the possibility of including the pooling of food surpluses destined for waste among the ways of accessing food that do not fall within the “purchase” and “self-production” options. The Report of the UN Special Rapporteur is an important document for the framing of food as a right, but it focuses, due to its goal to address global food poverty, on the sustainability of production and consumption. Is it that it implicitly maintains the mainstream understanding of food systems, based on the productivist scheme in which there is a single mode of exchange that involves the two distinct parts of supply and demand of food? Exchange of (and access to) food may also extend to channels that are other than the conventional ones, and for the very reason of being unconventional, they can represent “revolutionary niches” to experiment a different socioeconomic arrangement.

However, from this passage we first understand that it is through the juxtaposition—closely revealing indissolubility—of the problem of food insecurity, poverty, and global hunger and the problem of food waste that the dominant mechanistic and market-based conception of food systems reveals its irrationality. Food waste *exists* and is a problem also in relation to food insecurity. The right to food cannot be discussed without referring to the coexistence and contradiction between the facts that around one third of globally produced food is thrown away and that over 600 million people suffer from hunger in the world (The State of Food Security and Nutrition in the World, FAO 2025). Not only that, as food waste is a further demonstration of the interconnection between the right to food and environmental issues (food waste is, for example, often discussed as a problem of pollution; see United Nations Environment Program, 2015). We will go deeper on this matter in section 1.2.3.

1.1.2. Food as commodity

At the centre of the contemporary food regime is the idea that food is an object for sale (a commodity) and the food system is an opportunity to extract private value (Vivero Pol 2019). In such a context, achieving the universal right to adequate food (a legal entitlement), food and nutrition security (a global public good) appears difficult. From a historical perspective, treating food as a pure commodity devoid of other important dimensions is an anomaly: for centuries food was cultivated in common and considered a mythological or sacred item; it was allocated according to need, rather than on the basis of the ability to pay. In different times and geographies, food was considered so important in terms of culture, religion, and survival that its production and distribution were governed even by non-market rules; production, distribution and consumption were collective activities, done in common rather than alone or within the nuclear family (Diamond, 1997; Fraser and Rimas, 2011; Montanari, 2006, in Vivero Pol et al. 2020). On this side, it would be necessary to rediscover the history of food, for producing new questions and posing challenges to current food regimes, also by going beyond common ideas about traditions, which are also experiencing a process of subservience to the logic of profit. Should we try to deconstruct the idea of food we have become accustomed to? And if yes how?

It is important to underline that food as a commodity is not a timeless and non-spatial “fact”, but is the result of a process, i.e. the process of commodification that accompanied the development of capitalist society. The development of the market society—in the terms specified in the introductory lines of this chapter—necessitated the treatment of all factors of production, including land (nature) and labor (people) and money ultimately (its means of exchange) as commodities.

What is the definition of commodities? They are economic goods understood on the sole basis of two specific inner properties, or ontological categories: rivalry and excludability, meaning respectively that when one person uses a good, it leaves less of that good for anyone else, and that it is possible to prevent someone from using or getting the good. Usually, goods that are excludable and rival are termed private goods, while goods that are non-rival and non-excludable (or difficult to be) are termed public goods, to be better allocated by public means (Vivero Pol 2020). The economic typology of goods developed by economists during the second half of the 20th century pivots around these two features, which are supposed to be inherent to the goods, taking the attention away from their social construction. De Schutter et al. (2018) critically present—as a misunderstanding—that “food is par excellence a good that is both excludable and rival”, because as a material object, access to food can easily be fenced off, and what one person ingests is obviously not left to others. Following Paul Samuelson (1954, cited) then, food is a private good, and in principle there would be no reason to believe that market mechanisms would not be appropriate to ensure optimal allocation of resources for its production and distribution. Yet, food understood in these (limiting) terms is the result of an historical process that, from the industrial revolution to the present, progressively transformed food into a private, transnational, monodimensional commodity of mass consumption in a global market (Vivero Pol et al. 2020).

Economic imperialism

What is the relationship between the commodification of food over time and the centrality of the role of the market in determining the value of food? According to Wood (2002), the capitalist market has an unprecedented role not only as a mechanism of exchange or distribution, but as the principle-determinant and regulator of social reproduction. Zerbe (2019) observes that not only the market, disembodied from broader or social obligations, can

explain the reduction of food to the social dimension of a commodity, but also the other way around: the commodification of food over time reinforces the market's role as the dominant allocation mechanism.

In order to understand the shift in the consideration of the value of food (the overtaking of the strictly economic one over a multi-dimensional one), it is worth considering the process of “economic imperialism”. Economic imperialism is a paradigm that not only operates as a critique of global power structures, but is also a very helpful concept describing the methodological expansion of market logic into the broader spectrum of human experience (Becker 1976). The historical process behind the concept elucidates the analogy between its geopolitical meaning and its epistemological meaning (what is of interest here). Economic imperialism was in fact born to describe the material capitalistic expansion, in a critique most notably articulated by J.A. Hobson (1902), who argued that domestic under-consumption within industrialized nations necessitated the coercive opening of foreign markets to absorb surplus capital. The thesis was significantly expanded by Vladimir Lenin, who characterized imperialism as the terminal stage of capitalism—a period defined by the hegemony of finance capital and the territorial division of the world according to monopolistic interests (*Imperialism, the Highest Stage of Capitalism*, 1917). In the modern era, this structure has been characterized by Immanuel Wallerstein's World-Systems Theory (1974), as a hierarchy where a global “core” maintains the “periphery” in a state of perpetual underdevelopment to facilitate the continuous extraction of resources and labor.

Parallel and analog to these geopolitical interpretation of economic imperialism is the methodological imperialism outlined by Gary Becker (1976), which posits that the analytical tools of economics—such as rational choice, utility maximization, cost-benefit analysis, incentive structures, etc.—came to possess universal applicability across all social sciences. In other words, the analytical tools of economics have “colonized” non-economic domains, for instance by reframing all human behavior as a series of calculated trade-offs. This phenomenon, so described, is the precise object targeted by the arguments of this essay: the case of human behaviors developed by people that deal with recovery and redistribution of food waste can represent a challenge to the reduction of social interactions to strictly economic calculations.

Concerning the connection between the geopolitical and methodological forms of imperialism, the conceptual bridge is provided by intellectual history and is traceable to the historical evolution of value theory, or better, the transition from the classical labor theory of value to the neoclassical subjective theory of value. Briefly (cf. Vaggi & Groenewegen 2002), in the former theory, championed by Smith, Ricardo and also Marx, the value of a good is determined by the amount of socially necessary labor required to produce it. The theory therefore looks backward at the production process, suggesting that value is a property built into an object through the energy and time invested by workers. In contrast, the neoclassical subjective theory of value emerged during the Marginal Revolution of the 1870s (with W.S. Jevons, C. Menger and L. Walras as its prominent theorists) posits that value is not inherent in the object itself but exists entirely in the mind of the beholder, ultimately the final beholder. This approach looks forward to the consumer's satisfaction rather than backward at the resources for production. According to this view, the value of an item is determined by the specific usefulness or satisfaction gained from consuming one additional unit of a good, i.e., its marginal utility, so that value is seen as a fluctuating measurement based on individual preferences, scarcity, and utility at a specific moment in time. Simplifying, while the labor theory might imply that a useless item is valuable simply because it took a long time to create, the subjective theory clarifies that if no one desires a product, it has zero value regardless of the labor spent. While the classical school believed that production costs and labor inputs determine value, the neoclassical school flipped this logic, arguing that the value consumers place on a finished product is what ultimately determines how much labor and cost a producer is willing to invest in its creation.

Finally, here is the possible reason why this shift elevated economic value to a position of absolute hegemony: the dependency of economic value on individual preferences required economic value to subjugate moral, spiritual, or aesthetic concerns affecting these preferences, thus allowing the price mechanism to penetrate these spheres of life.

Michael Sandel addresses the phenomenon of economic imperialism from a moral-philosophical perspective most comprehensively in "What Money Can't Buy: The Moral Limits of Markets" (2012). In this work, Sandel explores the transition from having a market economy—a tool for organizing productive activity—to becoming a market society, where

market values and economic logic begin to govern every aspect of human endeavor. While he uses the terms “market reasoning” or “market triumphalism” frequently, his analysis is actually a direct critique of economic imperialism as the expansion of economic methods into non-economic domains.

Sandel argues that the “marketization” of everything leads to the corruption of civic and social goods; when market logic is applied to spheres like education, healthcare, or environmental protection, it often degrades the intrinsic value of these institutions. The main argument (and suggestion) of Sandel against this “imperial” creep is that we must reintroduce moral and civic debate to decide where markets serve the public good and where they don’t belong. For example, he suggests that the era of “market triumphalism” has led to a moral vacancy in public discourse, where technical questions of economic efficiency are used to bypass difficult but necessary debates about the common good.

Furthermore, his critique is articulated through two primary objections: the fairness objection and the corruption objection. The former highlights the injustice inherent in a society where the commodification of essential social goods—such as quality healthcare, education, or political influence—exacerbates the effects of inequality. In a world where everything is for sale, the disadvantage of poverty is multiplied, as money becomes the prerequisite not just for luxury goods, but for the basic requirements of human dignity and democratic participation. In other words, when food is subsumed by the logic of economic imperialism, it is no longer distributed based on biological need or social right, but rather on the ability to pay, which effectively transforms the disadvantage of poverty into a threat to life. So, the commodification of food exposes a systemic injustice where the price mechanism dictates access to the most basic prerequisite for survival.

The corruption objection addresses the ontological impact of marketization on the goods themselves. Sandel argues that markets are not value-neutral instruments; rather, they carry certain norms that can “crowd out” or diminish non-market values. For instance, when civic duties or altruistic acts are incentivized through financial rewards, the intrinsic moral motivation of the actor is often replaced by a commercial calculation, thereby devaluing the original social practice. This phenomenon suggests that economic imperialism acts as a form of “normative pollution”, where the price mechanism dissolves the communal and moral significance of human interactions. By treating all preferences as equally valid within a

market framework, society loses the capacity to distinguish between higher and lower goods, ultimately leading to a hollowed-out public square where the only remaining universal language is that of the transaction.

Sandel's corruption objection confirms Vivero Pol's observation on how the "marketization" of food has altered the very nature of the good, stripping it of its cultural, communal, and ecological significance, with the addition that marketization can have the same effect on the social interactions around food.

Historical commodification

Magdoff (2012) retraces the commodification of food historically and compares hunter-gatherer societies and diets, that were diverse and egalitarian, with early agricultural ones, which instead created surpluses that were appropriated by non-producing elites. For many millennia following the origin of our species, humans were hunters and gatherers who generally ate a diverse diet that supplied adequate nutrition. Agriculture developed some seven to ten thousand years ago and provided surplus food that allowed the development of cities and the hierarchies and civilizations that went along with them—farmers, artisans, priests, warriors, etc. But just because there was a surplus did not mean that people were better nourished: not only did the narrowing of available foods used from the wide variety in the hunter-gatherers' diets in favor of a reliance primarily on grains to provide calories cause a decrease in the health of early agriculturalists, but, most importantly, in these agricultural societies surplus food production was mainly appropriated for the use of the non-food-producing classes. In this phase, in much of the world (including feudal Europe) food was produced either by peasant farmers and consumed by their families or else appropriated by landed aristocracies on a fairly local basis. Existing markets were often based on barter, and food trade took place in kind, without it being a commodity.

This changed with capitalism or generalized commodity production. Magdoff lucidly writes: "The endless accumulation of profits, the motive force of the capitalist system, occurs through the production of commodities or services to sell at a price in excess of the production costs. Production for the purpose of sale and profit, instead of production for use, is a defining characteristic of capitalism, and essentially all commodity exchanges take place in markets" (2012). During the early stages of capitalism, food was produced to be consumed

locally in the rural areas and did not exist as a commodity, because most people still lived and worked on the land. Magdoff introduces the factor of colonialism in the picture of the process we are describing: the commodity nature of food was significantly accentuated when imperial powers integrated the farmers of their colonies into the monetary economy, imposing monetary rather than in-kind taxes. The farmers' need to obtain money to pay taxes initiated a process that converted part of the food produced into commodities: they were selling their crops to buyers, who resold the raw materials for processing—or processed them directly; the semi-finished products were then sold to final processors/packagegers, who in turn sold them to wholesalers, who distributed them to retailers, who ultimately sold the food to the public. Evidently, the farmers producing the bulk of food in the wealthy countries became greatly separated from the public that finally purchases their products—not just physically, but also by the long chain of intermediaries. Moreover, the mechanization of farms increased labor productivity, resulting in fewer farmers and larger farms, and industrial methods have been applied to raising crops and animals, resulting in the dramatic growth and concentration of the agriculture-input sector—a shocking example is that today about 40 percent of the entire global seed market is controlled by three firms; in fact, industrialized food systems also saw growing monopoly power.

In conclusion, in different ways the literature shows that the commodity dimension of food is taking over the other dimensions (see also De Schutter 2014; McMichael 2009; Patel & Moore 2017, in Vivero Pol 2018). Now, the humble proposal here is to verify this starting from the very existence of food waste. If food is extremely valuable (it's a vital need, it's a human right), why does it go to waste? (And it does so in incredible amounts, as official data show in the next section). This is just irrational. In other words, in Giles', it seems incongruous that in our market economies—“reputedly bastions of efficiency”—invest in food to then throw it away. The phenomenon of food waste “defies the hegemonic truism that free markets are rational and efficient” (2020).

This reduction of food dimensions to the one of a commodity actually explains to those authors the very roots of the *failure* of the global food system, a system that produces food in excess to adequately feed the whole planet, but it is not capable of guaranteeing equitable food access to everybody by simply using the market rules. However, taking a cue

from Zerbe (2019), we can begin to think about alternative systems starting from processes and spaces “free from” commodification (the case study was chosen with this prospect): in fact, the author shows that it is not the item itself (food) that determines its relative commodified or decommodified status, but rather the process of production and exchange. The central goal of the commodification of food is to prioritize exchange value to foster accumulation rather than use value to feed people. Conversely, practices focused on gifting or sharing can have different objectives, and such processes, by shaping decommodified environments, determine a decommodified status of food.

1.1.3. Food as commodity vs food as commons: towards a different kind of value

According to Zerbe (2019), “markets are never fully embedded or disembedded from broader social relations, and commodification is always an incomplete process (Radin 1996, cited). Hence, food products can work as commodities under specific circumstances and differently under different ones, according to the relative degree of commodification and decommodification (embeddedness or disembeddedness). The demarcation between capitalist market or non-capitalist market societies is “the relative degree to which the economy is subject to limits and control by non-market factors such as community-held rights, regulatory limits on the idiosyncrasy of property or the accumulation of capital” (Zerbe 2019)—factors that we will rediscover in the idea of food as commons.

In that market society to which Zerbe refers Polanyi’s idea of a theoretical ideal type, food *as a commodity* proceeds on the roadmap that producers follow to transform a raw idea or material into a finished product that a customer is willing to buy. This roadmap consists in the process through which economic value is created, and it is referred to as the value chain. From the mainstream (and rigorous) economic perspective, a value chain represents a comprehensive production function wherein an organization or network of entities transforms discrete inputs into finished outputs that achieve a market price exceeding the cumulative costs of production. This process is traditionally centered on the concept of value addition, where the net value generated is defined as the difference between the final market price of the commodity and the cost of all intermediate inputs used in its creation (Porter 1985).

The objective is to maximize the Value Added (V), which is defined as the difference between the final market price (P) and the cost of intermediate inputs (C): $V = P - C$.

The value chain describes the full range of activities required to bring a product or service from conception, through physical transformation and producer services, to final delivery and disposal, and its intra-chain linkages often work in a two-way flow, where downstream constraints influence upstream activities and vice versa (Kaplin & Morris 2001). A note: the agricultural value chain differs from the agricultural *supply* chain in that the latter simply ensures that a bulk agricultural crop efficiently moves from the field to the marketplace, while the value chain transforms that commodity into a differentiated product that commands higher pricing, through interventions such as organic certifications, quality grading, and specialized processing. The scales of the food supply chain range from the local to the global, but it can be described in general as in the figure in Appendix n.1, designed by Bukeviciute and colleagues (2009) for the European context.

The way in which economic value is produced and accumulated throughout the current complex, interlinked supply chains, which mostly serve large-scale distribution, is crucial in the effects that food chains have both on producers, who for example often have to accept decreasing prices and join a global competition among farmers, and consumers, whose choices are often limited by efficiency and logistical constraints rather than by their own needs and rights (Pettenati et al. 2019). But this framework, including that formula to increase the value of food, is all about economic, or exchange, or monetary value.

A redefinition of the food chain under a paradigm that takes into consideration non-market values of food exposes “the way in which distribution patterns affect the space where they take place, how they redefine the identity and lives of the people who are involved (Tsing 2015, in Pettenati et al. 2019). In fact, Tsing (2013) argues that capitalist commodities are taken-for-granted objects that *define* the value system and are disengaged from their makers, at the mercy of market transactions. Tsing advances a distinction between such things—which are exchanged for things, and once they are exchanged, the exchange and the steps that led to it are forgotten; and which are then available for use or further transactions—and gifts, that in contrast, are akin to persons: gifts, indeed, “bring something personal with them, drawing the receiver into a social field, and serving as a continual reminder of the need for reciprocation” (2013). Therefore, capitalist commodities and gifts animate different

systems of value: while in a commodity system value is in things for use and exchange, in a gift system value is in social obligations, connections, and gaps.

A redefinition of the food system that departs from the concept of chain but embraces Tsing's rehabilitation of social obligations is that of food as commons.

In the closing of the *Routledge Handbook of Food as Commons*, De Schutter and colleagues (2018) remark that a number of understandings co-exist as to what is implied by reframing food as a commons. While the authors note that all of them share the view that neither unaccountable markets nor state bureaucracies are appropriate mechanisms to exclusively guide production choices, nor to allocate resources or to ensure equitable access to food, those understandings range from the least to the most radical versions. The least radical interpretation aligns food as a commons with the human right to food, in its availability, accessibility, adequacy, and sustainability features, and holds states and markets accountable for access to food. However, this entitlement approach remains limited by its state-centric orientation, reliance on specialized legal mechanisms, and potentially, failure to disrupt the commodification of food we have explained before.

A distinct understanding emerges from traditional and indigenous communities that struggle to maintain customary common property regimes, collective resource "governance", and non-instrumental relationships with nature. These instances are increasingly recognized and protected by international/institutional instruments.

Then there are contemporary civic social innovations, commonly originating in urban settings, that define food as a commons through grassroots self-governance, peer-to-peer sharing, or polycentric arrangements that activate intrinsic human motivations. Lastly, at its most radical level, the food commons is rejected as a static, positivistic resource category in favor of a dynamic phenomenological counter-hegemonic practice to dismantle corporate-capitalist enclosures and the public-private binary (De Schutter et al 2018).

What is noteworthy about the Handbook's theoretical ground is the underpinning understanding of commons not as ontological, but as phenomenological. In fact, while commons were first theorized by Garrett Hardin as places of no law (1968, in De Schutter et al. 2018), and then "rescued" by Elinor Ostrom with the idea of material common-pool resources better run by communities (1990, *ibid.*), both of them shared the same positivistic

logic aimed at an objective *ontology* of the commons. Instead, the authors of the Handbook understand commons as situated—in place and time—and “continuously re-created and co-constructed by the inextricable ecology of the web of life” (De Shutter et al. 2018).

The de-commodification and commoning of food opens up a food regime in which primacy rests in its need for human beings (nutrition + culture + community) and not in profit maximization, and in which the different dimensions of food (explored before) are valued together with the other—ecological, social/relational—dimensions of the web of life.

After these first challenges to the dominant, “colonial”, mono-dimensional view of food, we shall move to the one that takes the center stage in this research: the challenge through waste. Notably, Gille (2012) even asks what would happen to a view of food presented through the concepts of value and supply, if we recognized that the economy is not simply a place where value begets value, but where value also begets waste, waste also begets value and waste begets waste? What would it mean to view the world of food from the perspective of waste rather than of *goods*; from the perspective of disuse rather than use; and from the perspective of loss rather than gain?

1.2. Waste

Soma (2020) quotes this consideration from Evans (2011): that it is “a bit peculiar to suggest that waste matters, especially when it is generally understood as the worthless, redundant, rejected and discarded afterwards of how we live our lives”. She shows in what sense, instead, waste does matter: as Gille (2012) notes, the economy is not simply a place where value generates value, but may be understood as a space where value generates waste, waste generates value, and waste generates waste. In undertaking the twofold process of understanding value and re-defining waste, it is interesting to engage with the seminal work of Mary Douglas (2002). Douglas had called dirt “matter out of place” and observed that things that are defined as “dirt” not because they are insalubrious in-and-of-themselves, but because they transgress particular cultural categorizations. Douglas’ reflection on “dirt” “involves reflection of order to disorder, being to non-being, form to formlessness, life to

death” (2002). Reflection on waste can be developed on the same binaries, demonstrating that defining food waste is not a clear-cut process, but categorizations and definitions around food waste are replete with contradictions. According to Moore, “waste is best thought of as a parallax object”, or an object that disturbs the smooth running of things (2012). The adjective parallax describes the effect by which the position of an object seems to change when it is looked at from different positions. So it happens with waste. Soma references Moore’s extensive review of the waste literature, in which she explores the ways that waste is conceptualized by various scholars: as hazard, as resource, as (non-Marxian) commodity, as manageable object, as risk, waste as fetish, and many others.

For example, the definition by Alexander et al. (2013) is informed by a political economy and human-oriented perspective that puts waste in relation to human needs, coherently with the dimension of food as a vital need explored in the first part of this chapter. They refer to food waste as a “failure to use potentially edible items to satisfy human hunger, as well as to the inefficient use of plants’ energy content and nutrients for human purposes”. Along a similar line, the definition by Lee and Soma (2016) considers food waste “any discarded organic material that was intended for consumption by humans, regardless of its ultimate fate”. In this case, the authors argue that the definition emphasizes prevention and human consumption as the original intention and purpose of the food, which should be distinguished from efforts around diversion and from a managerial approach.

Yet, Giles’ (2020) contribution has been deemed of particular relevance. The scholar comes back to the history of capitalism, saying that it has been *defined* by waste-making. Industrial capitalism, in particular, creates value by both mass-producing goods and producing demand itself. Both those processes generate obsolescence or surplus: by creating value through distinction and valorization—for example, of innovation or style—there is inevitably a wasted remainder (Thompson 1979, cited). Let alone overproduction: Giles cites Marx to frame it as the “fundamental contradiction of developed capitalism” by observing that capitalism’s endless pursuit of growth and profitable return made it irrepressibly productive while at the same time compensating its workers—also its chief consumers—as meagerly as possible. But where goods are produced in excess, and demand is produced through rarefaction, the two strategies are in diametric opposition. It is in their intersection, that is, where overproduction directly results in overaccumulation of surpluses “with no

avenue for consumption”, that waste emerges as a central paradox for capitalism (Giles 2020). In this context, we can better understand the author’s look at waste as ex-commodity. First, its disposal can never quite resolve the contradictions between nullified exchange value and persistent use value. Secondly, disposal is not a momentary decision, but rather one continually reproduced through social and spatial practices that dispose objects—in both the sense of engendering their “disposition” (in the sense of both spatial and cultural orientation) and their “disposal” (Munro 2013, cited). Once abandoned, most commercial food surpluses must remain segregated from the market, enclaved in a sort of cultural “no man’s land” where their existence is of little consequence to hegemonic price structures (Giles 2020).

A corollary to everything that will be said about waste concerns the time dimension of food waste, in line with the stress on the materiality of the subject that is always held as a pillar of this essay. As Papargyropoulou et al. (2014) have noted, it is important to consider the dimension of time (at the level of the epoch in which we live) in the analysis of the food waste challenge in order to identify the parameters that will influence the scale and nature of the problem in the future. These factors were outlined in the very introduction of the essay. However, the same authors interestingly make a note on the specific time factor belonging to food due to its material nature. Unlike other waste materials such as glass, metals, paper, plastic, etc., food decomposes with time until becoming inedible—not even food anymore—therefore becoming eventually waste. Because food’s properties change within a short amount of time, the time dimension is crucial to its transition into, or not, food waste, both at the retail and the household level.

1.2.1. Associated concepts

As it is clear from this kind of introduction, there are many ways to talk about food waste. To give some more structure to the understanding of this object, we may also try to compare food waste to what it is not, (and later to what it is like). For instance, the literature, as well as international organization official reports, establish quite clear boundaries between food waste and food loss, food waste and food surplus, avoidable and unavoidable food waste, etc.

Loss

Starting off from the report of the biggest institution that deals with food production, the Food and Agriculture Organization (FAO), food waste was broadly defined as “the wholesome edible material intended for human consumption, arising at any point in the Food Supply Chain (FSC) that is instead discarded, lost, degraded or consumed by pests”. (FAO, 1981). In this definition, “waste” was used in its wider sense and applied also to food losses. Conversely, “food loss” was defined by FAO (2022) specifically as

“all the crop and livestock human-edible commodity quantities that, directly or indirectly, completely exit the post-harvest/slaughter production/ supply chain by being discarded, incinerated or otherwise, and do not reenter in any other utilization (such as animal feed, industrial use, etc.), up to, and excluding, the retail level. Losses that occur during storage, transport and processing, also of imported quantities, are therefore all included. Losses include the commodity as a whole with its non-edible parts decrease in edible mass at the production, post-harvest and processing stages of the food chain.

Therefore, agricultural produce that is lost or spoiled at production, post harvest, and processing stages in the FSC is referred to as food loss (Gustavsson et al. 2011; Grolleaud 2002 in Papargyropoulou et al. 2014), with losses resulting from inefficiencies during production and processing, such as spoilage during transportation, damage during harvesting, or inadequate storage facilities. Food waste instead refers more precisely to the phenomenon whereby food is thrown away at the levels of retail, services and household consumption, i.e. at the final stages of the FSC, where the phenomenon relates more closely to behavioral issues (The Government Office for Science 2011a; Parfitt et al. 2010, *ibid.*).

However, an insight from Bowman (2020) opens our eyes on the fact that the loss/waste binary is a hegemonic distinction, implying that supply chain losses result from infrastructure or technical failures rather than human socio-economic arrangements, power imbalances, and unfair trading practices. In this narrative, developing countries experience food loss primarily as a result of poor technical infrastructure, and developed countries experience food waste primarily because of wasteful consumer habits. This is highly misleading, the author argues. Bowman counters this narrative with data showing, for example, that retail food waste is usually small in rich nations compared to food waste in other businesses—see also the section on EU data in this chapter.

Like Bowman, who decides to use the term food waste throughout his paper to refer to all food that is used “below its environmental and social potential”, wherever it occurs in the supply chain, we will do the same. We also add a semantic argument to criticize the use of the word “loss”: while waste intrinsically refers to a human action—and therefore responsibility—loss is made devoid of this consequential character and more easily leads to thinking of a factor of inevitability.

Surplus

According to the Food and Agriculture Organization of the United Nations, a food surplus refers fundamentally to agricultural production or food supplies that exceed immediate consumer demand, domestic requirements, or standard market absorption capacity. The formal institutional definition of food surplus was established in the organization’s Principles of Surplus Disposal and Consultative Obligations of Member Nations (Committee on Commodity Problems 1954, endorsed in the 1955 FAO Conference). In this framework, a food surplus is conceptualized as abnormal agricultural stocks arising from overproduction or market imbalances that cannot be disposed of through ordinary commercial trade channels at prevailing prices without risking market disruption.

In more recent technical literature (FAO, *The State of Food and Agriculture 2019: Moving forward on food loss and waste reduction*), food surplus represents safe, edible food that remains unconsumed relative to market demand at any point along the supply chain. The FAO emphasizes here that food surplus is not inherently waste; rather, it is the precursor to potential waste depending on how it is managed: if surplus food is effectively recovered and redistributed—e.g., through food bank donations or redirection into animal feed and non-food processing—it remains within the economic cycle. Conversely, if surplus food remains unrecovered and is discarded during harvesting, processing, retail, or consumer consumption, it officially transitions into food loss or food waste.

According to Jane Midgley (2020), surplus is positioned on a continuum between the two extremes of value and waste (Evans 2012, cited), and this makes it an ambiguous category. Both value and waste are primarily concerned with economic value, and so when a good fails to fulfill its expected economic value, this marks the turning point wherein the

good becomes categorized as surplus by its owner. Attempts to then recover its economic value see goods sold at reduced price or become de-commodified or gifted, with this categorization emphasizing a separation from the norms of market circulation and associated practices (Henderson 2004). However, a good's categorization as surplus does not negate a connection to its original intended use or that this use value has been lost (ibid). As such, Midgley borrows Douglas' (1966) idea of the "stickiness" of the good's original cultural meaning(s) and value(s), which have prevented its disposal. Consequently, surplus, along with waste and value, are cultural categorizations that reflect the arrangement and interaction of different relationships in different contexts (O'Brien 2011). Yet, given that the surplus good still retains the possibility of being used/consumed in the future, it may be conceived as an inter or holding category that spatially and/or temporally pauses an item's movement to waste and allows time for its potential use (or disposal) to be identified and realized; with either outcome being dependent on the different social, economic, technological and political arrangements that structure the goods' flow (Hetherington 2004, in Midgley 2020).

Marxist economic theory has been used to conceptualize surplus as the object of an alternative circuit of capital to obtain use value while suspending its exchange value, as it is diverted from its expected path and commodity flow (Henderson 2004). Lindenbaum (2015, in Midgley 2020) extends this argument to suggest that surplus food redistribution is a means by which capitalism creates an Other to stabilize itself and exploit actions elsewhere in the food system. We will clarify this idea now.

1.2.2. Determinations of waste

The postindustrial commodity

Giles (2020) writes that there is nothing inevitable about the end of a thing's shelf-life and paraphrases Marx by saying that if waste could itself speak, it would say, "My "uselessness" may be a thing that concerns men. It is no part of me as an object." What is that defies Marx's labour theory of value, able to displace value rather than adding it? This is hardly the typical model of industrial labour, which combines materials and transforms products. To understand the "forcible desuetude" of such "postindustrial commodity" (where *post* indicates that its commodity status is determined after and not due to industrial

manufacturing), we have to look at its effect: a thing that is thrown away produces scarcity, that is, according to Giles, the “fundamental animus of market value”. In other words, it produces demand, and hence value or return. Then, the faster surpluses are discarded, the more accelerated is capital’s mean turnaround time between investment and return.

The seclusion of good food in dumpsters and landfills, as well as the physical displacement of highly waste-producing retail hubs at the margins of urban centers, making surplus recovery difficult, is the denouement of a linear value chain—a one-way conveyor belt from manufacture to disposal—that clashes with the recirculation of goods and that is the dominant model of economic growth in a consumer economy (Giles 2020).

Furthermore, the displacement of value, like the addition of value, happens through work. While mainstream political economy imagines that labour adds value to the commodity, Giles makes some examples of the countless labours that rob things of their worth and commodity candidacy, so that the general work of waste-making is a combination of particular labours—named “biopolitical labours” by Hardt and Negri (2004, cited) as they create not material goods, but relationships, and ultimately social life itself—that dispose commodities to an unnecessary or premature end—see for example the built-in obsolescence of electronics. Further to this devalorization on the producers’ side, the work of waste-making extends to the customer, who is involved in the discursive and affective labour of producing desire and sentiment toward goods (Giles 2020, cf. Gibson-Graham 2006). A sentiment like disgust, for example, “helps create conditions of scarcity which build up demand and increase value” (Miller 1997, cited). Precisely such disgust keeps consumers away from the scraps and renders the recovery of waste a quite profound transgression according to capitalist norms.

Regime

It is so clear that food waste can be understood as (it is) a material thing (especially on a micro level), even with a certain degree of abstraction. At the macro or “phenomenal” level, Gille (2012) observes that social scientists studying the worlds of food usually talk about it as either a final product or as something resulting from “material, aesthetic and social transformations of value creation”, and that “even the more analytical studies frame food stories with the metaphors of commodity chains, supply chains or value chains”. Actually, this study aims at departing from such framings and following Gille’s (2010) approach.

First, in this study the author understands economic systems as interdependent circulations of *both* value and waste. Rather than understanding waste as a byproduct of the system or accidental operational inefficiency, she supports the idea that waste and value co-constitute one another through institutional and material practices. On this line, her view of the world of food is from the perspective of “waste rather than of goods; of disuse rather than use; and from the perspective of loss rather than gain.”

Secondly, to demonstrate both the “socialness” and the inevitability of waste, we need to conceptualize waste as exhibiting social systemicity both at the macro and micro levels. To this end, Gille not only advances a view of the economy as a waste chain, but shows how waste chains themselves participate in maintaining value chains. Through waste scholars’ contributions, she shows that new consumption (notably at the household/micro level) necessitates disposal and other wasting practices; the relative absence and/or failure of waste regulations (notably at the institutional level) makes possible a particular social life – and, as such, is constitutive of society. Most substantially, in our system without disuse there is no use, and without waste there is no value.

Putting together these insights, she advances the idea of a food waste regime, in line with Young’s (1982, cited) formulation of resource regime: a regime of social institutions that determine what natural resources are considered valuable by society, by laying down the principles of valuation and resolving the resulting value-conflicts. According to Young, the core of a resource regime is a structure of rights and rules, which imply a certain distribution of advantages and disadvantages, and it possesses the general qualities of social institutions, such as deviance, formal and informal channels and decisions, unintended consequences of operation, and is subject to pressures for reinterpretation and change as well. Now, how to apply this conceptualization to waste? Remarkably, the social nature of waste so understood does not exclude the material nature. The concept of waste regime transcends the individual, but it is concerned with the production, circulation, and transformation of waste as a concrete material.

Gille provides an example of an answer to the question of what social relations determine waste production and in what way, consisting in displaying the asymmetries of power between the Global North and the Global South in managing the risks that are inherent to farming as economic activity. She argues that power dynamics dictate how different

economic actors manage in particular risk, enabling them, to a greater or lesser extent, to shield themselves from economic, technological, and legal uncertainties.

Economically, agricultural subsidies and in-kind food aid from Western nations protect agribusiness from demand fluctuations while depressing Southern agricultural prices, rendering local crops unharvested and converting productive land and labor into waste. While in developed countries wealthier private actors can absorb such risks, in former colonies the private sector is not robust enough to hedge against uncertainties. Moreover, technological and cosmetic standards imposed by the most powerful retailers and institutions, mainly concentrated in the North, shift perishability and supply risks backward to primary producers, compelling farmers also in the South to overproduce systematically. Lastly, legally and politically, ambiguous date labelling hedges liability for retailers by inducing defensive disposal by consumers (ultimately blamed for food wasting habits in the North), while the preservation of agricultural subsidies and food aid regimes protects not only producers in the South but also real estate values and farm lobbies' interests.

This analysis already contains some hints about the possible causes of food waste (notably, for Gille it is the unequal organization of uncertainty, which acts as the primary transmission belt between value creation and waste production, the structural driver of the global food waste regime), but they will be explored in a later section

We note here a last contribution from Gille, who adds that the prevailing representations of food waste further reinforce the global food waste regime precisely by misdiagnosing its causes: standard representations in developing countries frame food waste as a problem of technological and infrastructure inefficiency, casting waste as a moral or behavioral failing of consumers. Consequently, policy responses favor technological fixes, such as genetic modification, advanced packaging, or consumer education, while ignoring the underlying social relations and scalar interconnections that produce waste.

1.2.3. Food insecurity and structural inequalities

As anticipated in the introduction, a fundamental point is to acknowledge that food waste exists and is a problem also in relation to the existence of “another problem”: food insecurity. The two facts that one-third of food produced for human consumption, which

amounts to about 1.3 billion tons per year, is lost or wasted globally, and that between 702 and 828 million people in the world faced hunger in 2021 (FAO 2011) coexist and contradict.

Downs & Fox (2021) evaluate global trends in food system inequality between 1970 and 2010 and demonstrate that while disparities in agriculture, food, and health indicators between nations declined, within-country inequality increased. Although global indicators show reduced inequality—defined as uniform resource distribution irrespective of specific needs or barriers—these metrics fail to reflect underlying disparities in food affordability, nutrient bioavailability, and agricultural resources. The authors claim that since progress in health outcomes remains uneven, there is a necessity of an equity-based approach that tailors resources and support according to distinct population needs. If the aim is food justice (for the differences between equality, equity and justice, see the article’s visual in Appendix n.2), our understanding of “support” must advance beyond targets of equality and systematically identify and remove the *structural* barriers that perpetuate food insecurity. Their insight on global/national heterogeneity is also an interesting hint to take into account when we will reason about the responsibility of States in guaranteeing the right to food and about the fact that this task is often fulfilled by other, non-institutional actors of civil society (e.g. charities).

On this line, Kenny and Sage (2019) argue that this “new” era of food poverty is characterized as much by malconsumption as by under-nutrition, where the abundance of cheap, unhealthy, highly processed food rather than a lack of food prevails and is reasonably due to the industrial massification of food, whereby greater volumes of such products are driven through a linear supply chain destined for supermarket shelves, also accompanied by strong media promotion, such that customers are encouraged to buy more than they require. “In the make-believe world of consumer sovereignty and free choice, food is always and everywhere a commodity purchased by ‘rational economic actors’” (Kenny and Sage 2019). Against the backdrop of food as commons, this narrative is vicious in that it reinforces an individual focus, crowding out the notion that food is a public good, as it should be understood by a truly revolutionary social and public health policy: if food is just about consumer choice, then the responsibility for eating healthily falls upon individuals, not the state or other actors—public or private—responsible for the supply of the food. This issue of responsibility will return later, as in the context of food waste recovery and charitable food assistance programs, “consumer choice” does not apply for there is no consumer—instead,

only a needy beneficiary relying upon the food industry, social entrepreneurs and an “army of volunteers”.

Ioris (2020) explains in more depth that food d extends beyond questions of access, affordability, and self-sufficiency, as it emerges from global supply chains dominated by oligopolistic corporations that distance producers from consumers and prioritize processed commodities over nutrition. He warns against international or mainstream definitions of food security emphasizing availability, access, utilization, and stability, which frequently adopt technocratic perspectives that obscure the underlying political-economic dynamics of hunger and malnutrition. With this conceptual basis, dominant solutions end up relying on market-based productivism, which frames food scarcity as a technical issue solvable through increased output, technological innovation or further market deregulation. Not addressing the structural economic causes of the “agroneoliberal model”, such food insecurity fixes instead deepen farmer indebtedness vis-à-vis corporate power concentration. The alternative, so-called post-productivist paradigms, yet often remain depoliticized, allowing “conventional supply chains” to co-opt sustainable production into high-cost niche markets for privileged consumers, without restructuring core agricultural practices. In the same way, rights-based approaches, including food justice and food sovereignty that emphasize democracy and human rights, risk institutional co-optation or restriction to privileged citizen segments.

The persistent “elusiveness” of food security conceptualized by Ioris stems from two primary structural drivers under capitalist modernization that have been discussed in the first part of this chapter: first, the systemic transformation of agriculture into agribusiness subordinated land, labor, and ecological relations to capital accumulation and exchange value, converting food into a financialized commodity. Secondly, commodification induced the alienation of individuals from the ecological and cultural origins of their food, not only reducing citizens to passive market consumers, but also making them vulnerable to price volatility and therefore to inequality due to the difference in purchasing power.

Ioris also critiques emergency aid as a solution to food insecurity, as it frequently serves donor interests and perpetuates dependence. *Systemic* food security instead calls for a dual imperative: reclaiming agriculture from corporate agribusiness and re-establishing locally produced food as a non-lucrative common good detached from market exploitation.

Another interesting observation comes from Blake (2019), according to whom food insecurity should not be understood only in terms of individual nutritional deficiency and hunger; instead, it engenders psychological stress, social isolation, and individualization that suppresses collective action. Blake investigated how different food-centred interventions shape local capacity for self-organization and found that while traditional emergency food aid provides immediate crisis resolution, it maintains unidirectional power dynamics and does not foster long-term community adaptability. Conversely, food initiatives such as subscription pantries, social cooking events, and community-led educational hubs re-establish social cohesion so that the people “regain the resources they need to be able to enact resilience in the face of trouble and difficulty”. Relying on community self-organization alone is obviously insufficient to counteract structural poverty, but the author’s aim is to suggest multi-scalar policy responses that address macro-level structural economic drivers *while* supporting micro-level community infrastructure.

A final suggestion in this regard is the reading of Timmerman (*Routledge Handbook of Food as Commons*, 2019), who argues that living in a food-secure world yields advantages for the whole global society (also in the neoliberal context itself, proving once again contradictory) regardless of individual contributions. Beyond the morality of relieving human suffering from hunger, food security improves overall public health by mitigating disease transmission that also diminishes labor capacity. Adequate nutrition enables individuals to participate in productive market interactions rather than remaining fiscal burdens. Lastly, eliminating chronic hunger prevents civil unrest, thereby securing political stability for rich and poor citizens alike. Actually, the emphasis on morality put by Timmermann is relevant for our case because morality involves also the emotional sphere (cf. Greene et al. 2001), and emotions are what our focus, the material contact with food waste, elicits in the first place. How likely is it that the emotions (shame, regret) elicited by the wasting of food are somehow also connected to the idea that that food could have been destined for millions of people in situations of food scarcity, food insecurity, and hunger? Timmermann adds that, according to virtue ethics, caring for others should also demand action from everyone, including lifestyle changes. In this context, a hunger-free world would render morally acceptable the personal food habits or spending of resources. Morality is also a word that will return more times during fieldwork.

1.2.4. What are the practical causes of waste?

The causes included in this part, which by no means pretend to be exhaustive, must be read against the backdrop of the structural commodification of food we have, which in its turn should be read as one of the fundamental, root causes of food waste production. A general outcome of the most basic literature review is that there is no such thing as *the* cause (one cause) for the phenomenon as a whole.

According to the Food and Agriculture Organization of the United Nations, food waste predominantly stems from consumption inefficiencies, encompassing factors such as overproduction, expiration dates, shifting consumer preferences, etc. (Kechagias et al. 2024). Though, no premises should become unshakable assumptions—this part has been developed precisely because, in the moment of contact with large amounts of food waste, during fieldwork, the straightforward answer to the “why” of waste was easily found in the idea of “overproduction”. Instead, the approach here aims at interrogating some of the mainstream characteristics attributed to the production-consumption system, to see if and how waste can be considered something else than a mere by-product of it.

Wholesale logistics

As a result of the intermingling of the more accurate “back-office” research and the tools available in the moments of reflection right after fieldwork, during the “life out” in the Milan wholesale market, an immediate experiment with Artificial Intelligence (AI) followed the jarring sight of unwanted pallets and the raising of the most raw questions about the reasons behind that waste. More generally, since the case study of this research is about an organization fighting food waste in a wholesale market, it has been deemed worthy to understand the reasons behind the discarding of entire pallets of fresh produce in such places, which represent a persistent structural challenge. Here is the answer to the question that an average user can receive from AI.

The prompt: Why do wholesalers often throw away entire pallets of fruit and vegetables? (Transform your answer into a coherent, full-body text).

The answer: At the operational level, wholesale markets function on narrow profit margins, elevated volume turnover, and strict time constraints. When a pallet suffers localized spoilage or structural damage, the manual sorting required to salvage viable items demands substantial labor hours. In the majority of instances, the cumulative labor cost exceeds the marginal recovery value of the remaining sound produce. Additionally, cold-chain infrastructure imposes severe spatial limitations; maintaining compromised or near-expiry inventory in refrigerated storage consumes a high-cost footprint that would otherwise accommodate compliant, high-margin shipments.

Regulatory compliance and food safety mandates further restrict flexibility. Perishable commodities are highly susceptible to pathogenic cross-contamination, particularly from fungal spores or bacterial soft rots. Under regional public health codes and product liability frameworks, commercial distributors face severe legal exposure and contractual penalties if non-compliant or deteriorating goods enter the supply chain. Consequently, preventive disposal is routinely employed to mitigate biohazard risks and shield distributors from breach-of-contract disputes with downstream buyers.

These dynamics are intensified by the stringent specification standards established by major retail conglomerates and grocery chains. Large-scale buyers enforce precise metrics regarding caliber, color uniformity, skin defect thresholds, and specific firmness levels measured via penetrometer testing. Should a consignment arrive slightly overripe or fail to meet exact cosmetic criteria, retail buyers exercise contractual rights of rejection. When a high-volume order is canceled post-transit, wholesalers face an abbreviated window—often less than twenty-four hours—to reallocate metric tons of highly perishable inventory before irreversible senescence occurs.

Finally, structural barriers hinder the systematic diversion of surplus produce to charitable food networks. Although legal mechanisms exist to encourage donation, the practical execution encounters severe bottlenecks in logistical capacity. Non-profit receiving entities frequently lack the specialized fleet vehicles necessary to maintain continuous cold-chain conditions during transit, as well as the high-capacity refrigeration infrastructure required to store and process bulk shipments before rapid degradation. Ultimately, the systemic disposal of viable produce is an engineered byproduct of an industrial supply chain prioritized for aesthetic uniformity, stringent liability management, and operational velocity.

In order to back up these answers—which ultimately prove to be true—more reliable (official or academic) sources were used to investigate the matter.

First, the 2025 FAO report *The State of Food and Agriculture, 2025*, finds that at the wholesale and retail stages, food loss and waste are driven by a combination of high biological perishability and commercial and logistical constraints. Fresh horticultural produce and other highly perishable commodities deteriorate rapidly under suboptimal conditions, making them particularly vulnerable during loading, unloading, display, and prolonged storage. Wholesalers and retailers frequently enforce rigid cosmetic and aesthetic specifications regarding product size, shape, and color, resulting in the systemic discarding of perfectly edible produce that fails to meet retail display criteria (criteria that have also been institutionalized in official market regulations, as it will be shown in a following section). Furthermore, retailers are led to overstock inventory to maintain full shelves and buffer against volatile consumer demand, which increases the likelihood that produce reaches its expiration date before being purchased. Ultimately, these challenges are often compounded by infrastructure deficiencies, such as improper cold-chain management or temperature fluctuations during wholesale transit, which substantially shorten the remaining shelf life of commodities prior to reaching store shelves (FAO 2025).

Yet, decisions to discard near-expiry or aesthetically non-conforming produce at wholesale and retail hubs are predominantly cost-driven, as the labor, time, and specialized logistical infrastructure required to manually sort, repack, or reallocate compromised inventory often exceed the marginal financial return on the salvaged goods. What we understand from FAO's analysis is that the rationale permeating wholesale logistics is the maximization of economic profit. This “epistemological origin” of waste may be advanced as the root cause, not in a way that synthesizes or annuls all the other causes, but explaining or motivating them: without an epistemological shift, action on any of the particular causes of food waste might always be limited. This, though, doesn't prevent us from exploring them.

Secondly, one of the most comprehensive and pertinent studies for our scope has been conducted by Bartezzaghi and colleagues of the Politecnico University of Milan, which tries to address the fragmentation in the literature regarding surplus food and food waste origins across fruit and vegetable supply chains in “developed” countries, acknowledging that while fruit and vegetables are a core component of healthy diets, horticultural production and

distribution activities suffer from a high incidence of surplus food and food waste. The intrinsic perishability of products, as well as recurring pests, diseases, and contamination events are since long recognized to be primary reasons for fruit and vegetable wastage (Bartezzaghi et al. 2022), in line with one of the main causes identified by FAO (2025) and most notably when comparing food waste with other types of waste. However, the authors advocate for a “more thorough knowledge of causes, including external events and internal strategies and practices”, so that they not only synthesize existing knowledge about food waste causes, but most importantly develop a qualitative tool, the Causes Framework (and validate it through an empirical case study of the supply chain of the Pera Mantovana IGP in Italy).

The Causes Framework categorizes, in a table, 27 distinct waste causes identified from over 30 literature sources across five key supply chain stages: agricultural production, post-harvest handling and storage, processing and packaging, wholesale distribution, and retail. These causes are mapped into five underlying macro-categories or root problems: natural causes (e.g., weather, pests), consumer behaviors (e.g., intolerance of visual defects), operational process inefficiencies (e.g., improper temperature control, mechanical damage), quality standards (e.g., stringent retailer cosmetic specifications), and inter-actor supply chain dynamics (e.g., contract terms, lack of coordination, forecasting errors). Moreover, for each cause, the authors include in the Cause Framework the main references found in the literature for each cause, in the second column of the table. In the third column, they mention all the product types investigated in the main references and for what type of waste the causes in question apply. The number of food waste causes, 27, is already interestingly high as we try to show the complexity behind the factual production of waste. It is worth listing them, drawing directly from Bartezzaghi and colleagues:

1. Non-conformity to quality specifications
2. Lack of coordination and information sharing
3. Product quality deterioration due to diseases, pest or contamination
4. Poor operational performance
5. Overproduction; oversupply; excessive stock
6. Short product shelf-life; near expiry products
7. Lack of appropriate storage facilities and cold chain facilities
8. Inadequate or defective packaging

9. Inadequate demand forecasting; unpredictable orders
10. Storage at wrong temperatures
11. Inadequate transportation management
12. Inadequate agronomic practices; inadequate harvest scheduling
13. Weather variability; extreme weather
14. Consumer education on food losses; consumer intolerance of substandard
15. Not-harvested products due to unprofitable market prices
16. Transportation at wrong temperatures
17. Pricing strategies and promotions management
18. Buyer availability
19. Take back agreements and orders cancellation
20. Inadequate inventory and storage management
21. Changing consumer tastes/demand over years
22. Risk of rejection
23. Distance travelled
24. Inadequate handling by consumers
25. Inefficient in-store management
26. Impossibility of repacking if one item becomes diseased or out of standard
27. Trimming

The study shows that although waste often materializes downstream—during distribution or retail—its root drivers frequently originate in upstream agricultural or handling practices. Thereby, it suggests that in accounting for food waste causes, we shall always make the effort to look for a precedent—as in the case of the epistemological matrix. More substantially, by mapping root drivers and establishing stage-specific waste priorities, the study wants to propose the Causes Framework as a structured tool for both public policymakers and private supply chain managers to diagnose operational vulnerabilities and address food waste, especially at the wholesale level, following any possible route.

Marketing standards

Taking one of these “routes”, we may delve further into the “marketing standards” cause. Kechagias et al. (2024) believe that determining discarding of food throughout the supply chain is the enforcement of public and private marketing standards, which dictate strict requirements regarding the size, shape, color, texture, packaging, and visual appearance of agricultural commodities. An example of such standards is reported in Appendix n.3.

At the primary production level, these standards require producers to cultivate specific crop varieties and adhere to strict aesthetic criteria, resulting in the rejection of edible yield or premature harvesting to align with fixed delivery schedules. The same happens in processing and manufacturing, discarding raw agricultural products that fail to satisfy precise visual or dimensional specifications, even if they are still safe for consumption.

Kechagias and colleagues also trace consumer wasting behavior back to a prolonged exposure to uniform retail displays that have conditioned consumers to equate cosmetic defects with inferior product quality. Otherwise, they recognize the causes of waste at the household level in overbuying, improper storage, lack of awareness regarding product safety, and the cultural acceptance of food waste in our era of apparent abundance.

On this line we find another contribution from Gille (2013). Strict quality, safety, and aesthetic standards imposed by dominant retailers can also be understood as a technological and legal risk-management strategy to protect themselves against product liability, market volatility, and supply deficiencies. The consequences are that overproduction becomes necessary to guarantee the fulfillment of these standards at least for the greatest share of the agricultural produce, and that small-scale farmers, lacking the capital required to do so, are progressively excluded from principal supply networks. Something similar happens at the retail and household levels: here, a well-known mechanism to mitigate liability for producers is date-labeling, usually confusing in its correct understanding and prompting precautionary discard behavior by consumers (and even by final retailers, as we will see).

Yet, what is most interesting in Gille is that at the origin of waste production there are economic risks. Because agriculture is inherently subject to biological, environmental, and market volatility, economic actors utilize institutionalized risk-management mechanisms to shield themselves from loss. However, as it was anticipated earlier, the capacity to convert, manage, or externalize risk is determined by power relations, and this is what explains cross-country differences in waste generation.

Lastly and coherently, David B. Giles (2020) suggests that to the question “Why should for-profit enterprises invest in valuable stock, only to evacuate it from the shelves a little later, unsold?”, in practice there are many reasons: one is that often, one cracked, bruised, or bad item that comes together with other items in a package dooms all the other. A

whole package cannot be sold anymore even if all its items but one are in perfect shape. This observation also explains the ease with which waste increases in quantity. Another reason is that a fast-approaching sell-by date renders foods obsolete (even if they are not yet expired), since customers can reach past it for a newer item—this has also to do with the cultural expectation of full shelves at all times. A third reason is that if the average product's retail price is two to three times its cost price, at the end of the day, it is cheaper to throw away two items than run out prematurely and lose a single sale. The latter example most acutely reveals a structural logic common to all: these cases entail a calculation, a pragmatic comparison between investment, markup, potential for sale, and the universe of other commodities that could take their place. Giles says that sometimes this calculation is made in offices by corporate policy-makers, sometimes in real time by employees. “Either way, if the opportunity cost of keeping a commodity on the shelf overshadows the cost of throwing it away, or if the price it will fetch at market is outweighed by newer stock, with few exceptions its exchange value is effectively null” (2020).

1.2.5. “Solutions” to food waste

Dominant solutions to address the global food waste problem follow the neoliberal tendency to concentrate blame on the individual consumer, and policy recommendations stress the importance of creating more consumer awareness (Soma 2020). However, many scholars in the field of food waste studies caution (rightly so) against the concept of a “throwaway society” (Gregson et al. 2007; O’Brien 2007; Evans 2014, in Soma 2020). Soma believes there is empirical evidence to demonstrate the existence of a waste crisis and a food and agricultural crisis, to be identified as a crisis of *culture* (Berry 1977, cited)—because of the industrial culture, based on exploitation and waste.

At the policy level more specifically, the standard for addressing food waste is represented by the food waste hierarchy, most notably conceptualized in the publication by Papargyropoulou et al. (2014), that reflects the principles of European policy since the 1970s and notes that with the 1989 European Parliament Council’s Community Strategy for Waste Management, the waste hierarchy has been adopted worldwide as the principal framework for addressing food waste.

The main takeaways of the publication are that a “sustainable management” of food waste requires adopting a “sustainable” consumption and production approach throughout all the global food supply chain(s). The hierarchy is designed taking into account the dimensions of environmental, economic, and social sustainability of food, but also its materiality and temporality. It is designed as an inverted pyramid, ranking the most to the least favorable options for handling food waste. The authors rightly highlight the distinction between the terms “waste prevention” and “waste management”: the former includes activities that avoid waste generation, for instance, reduction of food surplus, whereas waste management includes the options available to deal with food waste once it has been generated. An image of the food waste hierarchy is provided in Appendix n.4.

Prevention, which focuses on eliminating overproduction and supply chain inefficiencies at the source, is at the top of the inverted pyramid as the most favorable option. When surplus is unavoidable, the secondary priority dictates the reuse and redistribution of edible food for human consumption, possibly re-routing high-value nutrition to address societal food insecurity. Then, we find recycling mechanisms such as repurposing materials into animal feed or utilizing biological processing like anaerobic digestion and composting to generate bioenergy and soil nutrients. Incineration with energy recovery constitutes an even less favorable fallback for non-recyclable fractions, while at the very bottom tier of the hierarchy there is disposal—predominantly via landfilling—as the least desirable option, due to its severe greenhouse gas emissions and total loss of embedded resources. It is important to say that the waste hierarchy, as a framework, primarily focuses on delivering the best environmental option, even though the European Waste Framework Directive (European Parliament Council, 2008) advises the Member States to consider the social and economic impacts as well. This has been the basis of criticism from a number of economists, for example Rasmussen and colleagues (2005, in Papargyropoulou et al. 2014), pointing out that “the waste hierarchy may take into account the environmental effects, but the relevant question in relation to policy development is not whether to choose recycling, incineration or landfilling. The relevant question is *how much* waste we should recycle, incinerate or landfill, respectively”. They hence propose the well-known method of social cost-benefit analysis (CBA) for weighing a specific option against both its positive and negative social and economic impacts.

As far as the re-use of surplus food for human consumption is concerned, Soma reconduces the notion of recycling and reuse to a concept of waste as a resource, giving Evans' (2011, cited) definition of reuse as what happens once goods have gone through the first cycle of consumption, reached the point of disposal, and entered a second cycle rather than being sent to the landfill. An example of reuse in this sense is "secondhand consumption", which in the context of food can include the consuming of leftovers or the donation of leftover/surplus food, for example through food rescue (Giles 2015, cited) in the form of community refrigerators, food banks, and food sharing apps, or others. The practice of dumpster diving or freeganism can also be considered as reuse (Barnard 2016, cited). These key concepts in waste scholarship and the idea of "waste as resource" might be useful when considering interventions to reduce food waste. However, Soma throws a word of caution in the mobilization of the "waste as a resource" paradigm, quoting Alexander et al. (2013): "when food waste's disposal becomes productive (i.e. value-creating), it demands that more food becomes wasted", in fact, at a larger scale, it simply encourages more wasting and possibly even worsens the problem by not addressing the structural causes. From this perspective, the challenge to the patterns of food production and consumption becomes irrelevant.

This is the perspective of the dominant ecological modernization theory, which focuses on "green" production and decouples economic growth from its environmental and social impacts, and pushes the donation of corporate food surplus to "the poor" (for a critique of this model Soma quotes Fisher 2017, but in this work we start from Giles'), or investing in de-packaging technologies are included among the best solutions.

According to Giles, in response to growing concerns about food waste which entered public consciousness especially after the 2008 Global Financial Crisis,

"a flood of new enterprises, grassroots, governmental, and commercial alike, have spread across the industrialized nations, offering new salves for our collective profligacy. Prohibitions against grocery disposal. Tax incentives for its recovery. New business models. Technological fixes. The inevitable "app for that". Like many ostensibly progressive causes, however, behind their sincere concern, the majority—and arguably the most celebrated—reflect a conservative logic (in both political and material senses of the word "conserve"). Like the shadow economies above, they recapture wasted food without disrupting the structures of the market that wastes it. They innovate, developing new pathways of circulation—often allowing businesses to reduce their carbon footprint, earn

tax credits, or circumvent the overhead costs of waste disposal—but leave the linear capitalist value chain unchallenged.”

Similarly, we find in Gille (2012) that limiting “solutions to the food waste problem to technological innovation and a few sites or even countries will prove insufficient and will likely exacerbate existing inequalities”.

1.2.6. Food redistribution

An interesting, let’s say, semantic, provocation before getting to the point: doesn’t the word “redistribution” already contain an idea of injustice? If the distribution has to be done *again*, doesn’t it mean that the first (socially recognized as the official) distribution did not work properly and there is something to adjust? Does it suggest only a second round of distribution, or also contains an idea of restoring a balance in an unbalanced situation?

This provocation is nevertheless equivocal as it is not clear to what meaning of redistribution we are talking about. Clearly, in our society, initiatives of food surplus take place in “after-market” (Giles 2020) social spaces. But in this way, the market (the exchange-based) organization of the economy is a given. Contrariwise, redistribution is also a specific mode of the integration of the economy in society, alternative to exchange. According to Polanyi, economies (as we observe it empirically) are *instituted* and can acquire unity and stability through a few different patterns, which he calls “forms of integration”, that are reciprocity, redistribution and exchange. Reciprocity denotes movements between correlative points of symmetrical groupings; redistribution designates appropriational movements toward a center and out of it again; exchange refers vice-versa to movements taking place as between hands under a market system. Superficially then it might seem as if the forms of integration merely reflected aggregates of the respective forms of individual behavior; instead, Polanyi remarks that the latter do not by themselves produce such structures. The integrative effect is instead always conditioned by the presence of definite institutional arrangements.

In the case of redistribution, it presupposes the presence of an allocative center in the community, where, then, the organization and validation of such a center does not come about merely as a consequence of frequent acts of sharing as between individuals. All this to say that in Polanyi’s terms redistribution can be understood as a specific way in which the

economy is instituted and integrated in the society. If in these terms redistribution *designates appropriational movements toward a center and out of it again*, instances of redistribution of surplus food that set up such a center (the movements toward being the collection and the movements outward being the donation), when institutionalized, could represent a form of integration of the economy *other than* (and not only “after”) our exchange economy based on institutionalized price-making markets.

The case study of this research evidently regards food recovery and redistribution of surplus food in its peculiar way. In general, we can say that once food is identified as “surplus” by producers, manufacturers and retailers—according to the definition of surplus provided before, surplus indicates that the food is potentially available to organizations that use alternative forms of supply and exchange, and through these activities work toward achieving its safe consumption. Redistribution, which is often but misleadingly assimilated to donation, can actually take different forms, including food sharing, recycling, etc. Most of these efforts are frequently underpinned by an environmental rationale (though not exclusively, as our case study will show) that seeks to utilize the food to prevent the environmental costs of its landfilling (e.g. pollution) and the loss of resources expended in growing/raising, processing, manufacturing and distributing the foodstuff.

There are different ways in which surplus food is moved from food industry actors to other organizations, whether they are commercial or social distributors (the latter may include either charitable or social enterprise organizations), that have each their own motivations and practices in dealing with surplus food and operate in varying regulatory contexts. Midgley (2020) organizes an overview of food redistribution typologies in two categories, based on generalized characteristics: on one hand, “brokerage” models, on the other, “challenger” models.

The first model sees industry transfers of surplus food (at reduced cost or free donation) that would otherwise go to waste being deposited with a food bank organization (typically a charity), that, in its turn, stores and then releases the food to another organization commonly dealing with food insecurity in their community. Over time, food banks have become a regularized and recognized institution in both the food and welfare landscapes for many communities throughout the world, although spatial coverage and access to these

redistributors remain ad-hoc (Poppendieck 1998; Tarasuk & Eakin 2005, in Midgley 2020). The development of this increasingly dominant model of surplus food redistribution achieved through “brokerage” activities between the food industry and the charitable and voluntary sector, has seen food banks emerging in 31 countries across the global North and South, and has provided food to 7.78 million people since the first food bank opened in 1967. Toldo (2017) reminds us that food banks were born in the political vacuum that has historically characterized the issue of food insecurity, replacing an increasingly contracted welfare system incapable of providing practical solutions to a constantly growing number of poor people; and were born as a form of reaction by a segment of organized civil society, generally of religious origin,.

The “win-win” equation of reducing both food waste and hunger through the solution of surplus food redistribution constitutes the main focus of debates that contest the brokerage model (Poppendieck 1998, see also Kenny and Sage 2019). A clear illustration of this equation is when industry donors translate the amounts (weight) of food saved into the number of meals created. While this equation is always a crude estimation, it does show what this kind of food redistribution can achieve. However, scholars demonstrate that the claimed environmental/social “win-win” is not always guaranteed. Rather, these solutions may “bite back” (Lougheed and Spring 2020), meaning they can create new and unintended problems or exacerbate the very problems those interventions attempted to remediate, because the prevailing narrative, which proposes to fix an inefficient system (which, as we know, wastes a third of all food produced) by channeling surpluses to the less fortunate, thereby “solving” the twin problem of food poverty and food waste, fundamentally fails to challenge the structural unsustainability of the food system (Kenny and Sage 2019).

Indeed, Riches (2018) notes that the solution of redistribution offered by brokerage approaches does not encourage the food industry to prevent or reduce the generation of excess food but serves as a way to manage their waste and reduce food waste disposal costs, especially considering that food donation is also encouraged by tax incentives. Authors have also stressed that surplus food redistribution efforts detract from national governments’ failures to provide, respect, and fulfill their citizens’ right to food: as Poppendieck (1998) has argued, such networks have arisen across industrialized countries to fill the gap left by neoliberal reforms (Giles 2020).

This model contrasts with the “challenger” model of surplus food redistribution, where more radical politics, accompanied by less conditional and more plural and collective means of accessing and sharing food are practiced. Global examples which readily fit within this format, albeit informed by different politics, are Food Not Bombs, Disco Soupe and Real Junk Food Project. Such diverse organizations’ activities bring to the table a combination of ethical values—equity, unconditionality, ecology, anti-war, anti-capitalism, etc. (Cloke et al. 2017). Moreover, actions that typically involve the communal sharing of surplus food in some way do not just give new value to surplus food but also work to set up different social and economic arrangements, for example by creating the opportunity for food consumption following agreed social norms—choosing the food, consuming alongside others, etc.—for everyone without stigma, and the opportunity to interact and be with a diverse range of people from different backgrounds. A challenger model has greater transformative potential under a political point of view, and it is worth seeing some of its declinations.

1.2.7. The political potential of food waste

Contrary to common-pool resources like pastures or irrigation systems, food waste is not a resource that communities are interested in keeping and reproducing; rather, food waste needs to be reduced. For we talk about food surplus (or excess) that is to be turned into a shared resource before it becomes waste. Possibly, the idea of “waste as commons” is meant to highlight that there might be a “commons model” for dealing with food surplus in order to reduce waste, in clear qualitative contrast to other ways of reducing waste —commercial or charity solutions. So, having introduced in the previous chapter the idea of *food* as commons, which is translated into practice or was born out of practice in some contexts in the world, we move on to see what practices start from food waste to shift the understanding of food from a commodity (subject to private property from transaction to transaction) to a common good (exchanged in a polycentric economy of gift and sharing). The rationale in approaching food surplus genuinely as multidimensional and decommodified departs from the charitable rationale, and is founded on the questioning of the mainstream understanding of the food regime.

Ferrando (2020) proposes an acute and radical (according to the range introduced by De Schutter et al., 2018) understanding of food waste as a common good, which is worthy of being quoted verbatim:

“To think about contemporary examples, there is no “commons” or “commoning” when a fridge is left in the middle of the street so that anonymous citizens moved by charitable feelings can leave any sort of food—including that purchased at a low cost in large-scale discounts—to other anonymous citizens. Similarly, we should not talk about commons or commoning when a food bank uses mislabeled products of a large cereal multinational company (probably obtained at very low cost from large monoculture and containing excessive amounts of sugar) to feed children in breakfast clubs. [...] The diffusion of these practices does not challenge the underlying reasons behind the unequal distribution of food and financial resources nor the lack of a welfare state that protects, respects, and fulfills the essential right to food and nutrition. More importantly, corporate charity and bottom-up emergency aid dependent on the mainstream food system do not challenge the idea that food is a final object of consumption rather than a political act.”

Ferrando aligns with De Schutter et al. (2018) in saying that, in order to understand the transformative potential of commons and commoning, it is important to differentiate among the multiple theories of commons that have been proposed and to realize that they are not all equally radical: systemic change can only come with the adoption of the most political declination of the commons (Ferrando 2020). When making these considerations, it is always necessary to recover the etymological meaning of “radical”, which doesn’t mean “extreme”; rather it indicates a knowledge deep enough to get to the roots of a phenomenon that we are trying to explain and, if necessary, able to *e-radicate* its harmful consequences.

Commons and commoning are, according to their more political declination, two indissoluble components of a radical transformation of the present: commons do not exist in isolation (ontologically), but it is the process of commoning that creates them, conferring on a material or non-material resource its commons consideration and its emancipatory character (Dardot and Laval 2014, cited).

Instead, De Schutter et al. (2018) find a political or challenger character in social innovations like cooperative supermarkets, social groceries or food sharing in the form of “people’s fridges” (from the German *Lebensmittelretter*). In fact, such social practices challenge not only the dominant representation of food as a commodity, but also the

accompanying implicit and powerful (indeed, powerful because often left implicit) representation of the individual in Hobbesian terms, that is “as guided by appetites and aversions, and constantly searching to satisfy the former and to avoid the latter, for the selfish maximization of their utility” (De Schutter et al. 2018).

While the spots where people place the foods that are approaching their “before use” date (but on which others can rely in order to satisfy their own needs), are actually characterized by anonymity; while dumpsters divers have to hide; while charities are mostly unidirectional enterprises; on the contrary, organized grassroots groups promoting collective engagement to redistribute and/or consume surplus food, may be closer to a “commons model” to “manage” food waste, to the extent they recognize the potential of food excess in enhancing a kind of food consumption that constitutes a real alternative to hierarchical food distribution and that consciously seeks to create creating a better—more fair, democratic, horizontal—socioeconomic order.

In fact, there is no certainty on the degree of awareness that people engaged in redistributive practices have of the implications of a real shift to a “food as commons model”. The aim of studying the association RECUP in the third part of this essay is to see if what its members do can be considered somehow political, if the framework of their activities can be considered a challenger model.

In the literature, we find accounts of social movements that have engaged in publicly reclaiming and redistributing discarded food, yet focusing on a particular kind of excess food: “ex-commodities” (Barnard & Mourad 2020). The most popular one is without doubt Food Not Bombs (FNB), founded in the 1980s by activists who wanted to create (and feed!) communities organized around principles of solidarity, direct democracy, and vegetarianism, but also anti-nuclear civil disobedience, situating the distribution of rescued surplus food within an anti-capitalist, anti-war, and direct-action framework. In Barnard & Mourad’s words,

“By serving free, surplus food in public to anyone regardless of need or condition, the group sought to differentiate itself from churches and charities as well as demonstrate how its core principles—vegetarianism or veganism, consensus-based decision-making, and non-violence—could be used as the basis for a more just and peaceful world.”

Barnard & Mourad also interviewed Anne, 81 years, who had been a regular cook for FNB since her retirement. When asked about her “volunteering”, she answered:

I don't like the word volunteer, or really charity either. I'm doing this to make a political statement [...] The reason we are in Food Not Bombs and not some church or charity is because we believe that food is a human right and not a commodity. We demonstrate that by serving meals and giving away food participating in the Food Not Bombs community is a meaningful and positive political act.

Another movement introduced by the authors is Disco Soupe (DS), of more recent origins, for comparing the degree or type of political engagement. DS organizes meals where cooking is collaborative and that are served in public to anyone, regardless of need. Similarly to FNB, the group wants to distinguish itself from more “mainstream” soup kitchens of emergency food providers: DS claims to avoid hierarchical, formal structures of food access in favor of consensus-based decision-making with no designated leaders. Here is an activist's opinion on what politicization means for the organization:

“Distributing free food in the public sphere in a festive way is itself a form of claim: acting is not always acting *against* something, but it can consist in offering free activities that cannot be controlled. The idea of testing new systems of valuation not based on the market is political.” (Barnard & Mourad 2020)

However, the goal of Disco Soupe's public meals was not to place blame on corporations or consumers; rather to raise awareness among citizens and gain media attention against food waste. In fact, it joined major international organizations in pointing to consumers as key to addressing the issue.

In contrast, since Food Not Bombs' practice functions simultaneously as a mechanism to sustain activists, including anarchists, and vulnerable populations outside market structures, and as explicit opposition to urban exclusion and state governance, FNB's public occupations and food-sharing activities have historically clashed with administrative and legal authorities, facing arrests and municipal restrictions on public shared meals. We could say that in FNB's orientation, addressing food waste itself is secondary, or better, instrumental: ex-commodities serve primarily as material resources and symbolic vehicles to demonstrate the viability of post-capitalist social organization.

Conversely, the Disco Soupe both acquires ex-commodities through institutional donations from retailers and wholesalers (rather than informal recovery practices—FNB

relies on dumpster diving too), and adopts a non-confrontational posture, focusing on education on waste reduction and collaborative partnerships with corporate and state entities. To secure legitimacy, legal regulatory frameworks, at times receiving public subsidies and participating in state-level legislative negotiations.

So, despite an apparently similar activity, the two initiatives attach to it different meanings that show, according to Barnard & Mourad (2020), the shifting politicization of food waste over the last decades.

In conclusion, the case of RECUP (an Italian, quite unique case, while FNB is an example coming from the US and DS from France), has been chosen with the objective, among others, of discovering the potential of politicization of non-profit enterprises. After our tentative discourse on the systemic—epistemological and economic—causes of food waste, the necessity of a challenger or “commons” model of the food regime to resolve the inherent contradictions of the food regime, we may recover the initial hypothesis for this research, *food waste may have a transformative power such that its physical presence creates an opportunity for people that encounter it to organize the relationships among them and with food in a way that may not reproduce or resemble the existing structures of social organization*, and adjust it by specifying that the “organization of relationships among people and with food” that is necessary for breaking with the existing structures of social organization cannot succeed without a political stance. A political stance of the non-profit, clearly informed by notions of de-commodification, food as commons, inequality, etc., and engaging political action in parallel to or in conjunction with the simple recovery and redistribution activities.

1.2.8. Ethical foodscapes

Can the political implications of a certain phenomenon really be studied separately from its moral implications?

An enlightening and well-written contribution is Alessia Toldo’s *Etica della cura, geografia e cibo: pratiche di recupero e redistribuzione alimentare a Torino* (“Ethics of care, geography and food: surplus food recovery and redistribution in Turin”, 2017). The article is

very rich in references to authors who have “extended the concept of care to include actions related to food consumption, procurement through alternative networks, and other issues that can be traced back to a more general objective of re-moralizing food systems” (Morgan et al. 2006; Morgan 2010; Jackson et al. 2009, in Toldo 2017).

The theoretical objective underpinning Toldo’s research is to apply the feminist conceptualization of the ethics of care to the redistribution of surplus food, both in its more structured forms (the so-called food banks) and in its more spontaneous and informal forms. According to Toldo, the act of recovering and redistributing still-edible food, given the boundary between food and waste that is not as blurred as contemporary society dictates, and saving it from a too-brief end, can be usefully interpreted as a practice of care—for others (more or less needy, more or less close) and for the environment. Compared to other interpretations that have informed the debate on these practices, the reference to the theme of care opens new spaces for reflection on the limits and opportunities of food recovery and allows us to move beyond traditional approaches linked to economic policy and food security, which, through a critique of these practices, provide a useful but partial interpretation (Toldo 2017).

The author endeavors an important clearing of the field from the supposed dichotomy between care and justice (based on the idea that care is particular and based on compassion, while justice is universal and based on rationality), through the reference to Tronto (1993), who insists on the importance of understanding care not only as a personal activity, dictated by a particular state of mind, but as a public and political issue that concerns social relations in space, at the local, national, and transnational levels (Williams 2002, cited). This vision of care has a great transformative power for values and social relations, a potential capability of shaping practices for a more democratic citizenship, and is useful for rethinking the moral boundaries that preserve inequalities and privileges. Still, the political value of care lies in its ability to counter the dominant neoliberal narratives of individualism, independence, and competition (Cox 2010, cited).

Proceeding toward the subject of food, Toldo shows that the moralization of social sciences also includes a substantial contribution of studies on concepts dedicated to food’s relationship with ethics, such as ethical food, ethical foodscapes, and the moral economy of food (Jackson et al. 2009; Freidberg 2010; Goodman et al. 2010; Goodman 2014; Morgan et

al. 2006; Morgan 2010, all cited). The ethicality of food is often used as a descriptor for many alternative practices that define themselves, in opposition to the supposed amorality of the market economy (Sayer 2007, cited), as more just, more equitable, more democratic, but also more sustainable, healthier, and more ecological (Freidberg 2010, cited).

. The food supply chain, and consumption in particular, have been widely treated as areas of care within food studies, where the conceptualization of care appears as a positive force with high transformative potential—politically, economically, and environmentally—as well as relationally, capable of connecting people with each other and people with the natural environment (Cox 2010, cited).

Toldo also contributes to the confrontation between “brokerage” and “challenger” models of food redistribution, addressing the place and role of food banks and charities in ethical foodscapes. Here, Toldo’s analysis has been deemed the clearest and most balanced, even if it resonates with reflections of authors in the *Routledge Handbook of Food Waste* and the previous discussion on food surplus redistribution.

As anticipated in the food redistribution section, Toldo distinguishes two main critiques of these institutions, pivoting around (i) the weakening of the right to food and food security and (ii) the implication in the broader neoliberalization of welfare and the economy. Regarding the first perspective, critics of food aid highlight three things: first, the incompatibility of the logic of gift/donation (something gratuitous, not necessary) with the concept of food security, which instead embodies the inalienable right to sufficient, nutritionally balanced, and adequate food (Riches and Silvasti 2014, cited). Secondly, institutional/traditional food aid supports the idea of the citizen as a mere consumer, whose right to food is reduced to a commercial transaction that can be denied when purchasing power is lacking. Thirdly, the creation of a parallel circuit of giving based on surpluses (production, sales, consumption) not only does not represent the solution to food poverty, but also tends to consolidate an environmentally unsustainable development model, based on the outputs of a food system that produces too much (ibid.) and too quickly downgrades its products from food to waste.

The second perspective, which relates to economic policy issues, frames food banks as key institutions of urban neoliberalism that emphasize individual responsibility and the power of local communities, contributing to the “depoliticization of food poverty”.

However, according to recent reinterpretations (Lindenbaum 2016; Cloke et al. 2016; Williams et al. 2016, cited), the relegation of food banks to neoliberal practices of welfare commodification, incapable of impacting poverty and food insecurity, poses some problems: first, the rejection of such a response, even if it is a partial and emergency one, leads to the risk of a “politics of abandonment” (Cloke et al. 2010, cited). The main argument is that *while* some are working to find radical, long-term solutions to food insecurity and food waste, what about food aid *today*? Considering the multiplicity of situations that the action of recovering and redistributing food can generate has two implications: on one hand, it makes the failure of these practices in terms of food security less obvious; on the other, it makes their connection to neoliberalism and paternalistic narratives of charity less certain (Cloke et al. 2016, cited).

Therefore, the interpretation of food recovery and redistribution “institutions” as spaces of care—within today’s permanent scenario of austerity—is tied to a specific *temporal* reference, that of the “meantime” during which food aid must be accompanied by work toward radical change (or toward what we are here calling the challenger or “commons” model of the food regime) that addresses the structural causes of inequality and food poverty. The temporal reference is absent in the rest of the literature reviewed for this research, which seems too occupied with the critique of the depoliticization of the entities dealing with food recovery and redistribution, while the variable of time is also able to increase their degree of politicization or transform the nature of organizations from brokerage to challenger.

Acknowledging that realities like RECUP grow over the years and eventually improve their impact, we will further understand how a static, timeless, and “categorical” understanding of food redistribution models cannot be informative of processes of political involvement.

2. Food waste data and the legal-institutional framework

Yet, before moving to the RECUP case study, it has been deemed useful to provide a general framework of food waste data (about its size, its major contributors, etc.) to define the scope of that desired political action.

The purpose of this section is not only to frame food waste in its quantitative dimension through the data provided by international institutions, a dimension that is too general and already well-documented. Besides working as a back up for some facts introduced in previous chapters, the purposes of including some “numbers & figures” are: to understand what is the purpose of the data collection; to put forward an interpretation of the “shares” representing contributions of food waste production as real social actors that influence each other; to compare their efficacy in impacting the reader’s awareness compared to the narration of the fieldwork; to show the gap in food recovery and redistribution data in European reports, even if redistribution organizations represent a very important actor in the continent.

The data that can provide a useful overview of the current situation of food waste include food waste indexes that measure quantity and composition of food waste at both global and European levels. Food waste indexes are the measure through which organizations such as the Food and Agriculture Organization or the United Nations Environment Program quantify and also describe the phenomenon qualitatively, but by no means can be considered exhaustive for accounting for the severity of the problem of food waste. The scale of this outlook is global in the first moment and then narrows down to Europe, and ultimately to Italy, because the more local the trends, the greater the extent to which they can inform the later description of RECUP’s activity, which takes place in Milan. Another purpose is, in fact, that of designing the contours of the initiative to understand the space of action in which it operates, its facilitating factors and its constraints, both vis-à-vis the size of the phenomenon at the different scales and the different normative levels.

A desirable outcome of such an approach, and a proposal for further/future research, is not only to get what actors contribute the most to food waste, but also what actors can be leveraged most in the fight against it, starting from the consideration that there are encounters and influences between them in real life.

2.1. Food waste globally, in Europe and in Italy.

There are several studies on the amounts and consequences of food waste as a global phenomenon, as there are several ways to describe it. FAO collected more than 700 publications (e.g., subnational reports, academic studies, FAOSTAT and reports from national and international organizations such as the World Bank, GIZ, FAO, IFPRI, and other sources) and created a database where it is possible to dissect the information applying filters.

For instance, measuring food waste in terms of pollution production, FAO estimates that the greenhouse gas emissions connected to food that is currently wasted is equivalent to a hypothetical third-largest country in the world, behind the United States and China (2014).

However, Soma (2020) rightfully notes that the impact of food waste differs greatly between regions in the global South and the global North—it would be incorrect to talk about global data without talking about its variation. In the global South, where landfills are often open dumpsites, methane generated from food waste has acted as a “ticking time bomb” in creating landfill fires and fatal landslides, the victims of which include people (including children) living and working on landfill sites (Lavigne et al. 2014, cited).

We can measure the phenomenon in many more ways. The Food Waste Index Report by the United Nations Environment Program debuts:

“Food waste is a market failure that results in the throwing away of more than US\$1 trillion worth of food every year. It is also an environmental failure: food waste generates an estimated 8–10 per cent of global greenhouse gas emissions (including from both loss and waste), and it takes up the equivalent of nearly 30 per cent of the world’s agricultural land. The conversion of natural ecosystems for agriculture has been the leading cause of habitat loss. Just as urgently, food waste is failing people: even as food is being thrown away at scale, up to 783 million people are affected by hunger each year, and 150 million children under the age of five suffer stunted growth and development due to a chronic lack of essential nutrients in their diets.”

We are not interested here in the accurate analysis of global food waste statistics (be it enough to stress that the most useful unit of measure to rightly understand the actual size of the phenomenon is the food wasted per capita, and the measurements are available on the database of the Food and Agriculture Organization).

This information is usually used to stimulate a sense of urgency, but the focus on the doable remains the priority. When tracing the causes of food waste, from the logistical to the epistemological, we used a the “backward-telescopic” approach, gradually shifting attention to those principles that underlie and underpin the discourse and revealing the misdiagnosis of the food waste problem: the same shall also apply for the institutional and legal information. It is interesting to understand what is the epistemology on which official guidelines and laws on food waste are based.

European Union

The collection and analysis of data from across Europe by the study of the FUSIONS project (“Estimates of European Food Waste Levels”) generated an estimate of food waste in the EU (28 States) of 88 million tonnes in one year, referring to 2012 and including both edible food and inedible parts associated with food. This equates to 173 kilograms of food waste per person in the EU-28, and means that 20% of the total food produced was wasted.

The study indicates that the sectors contributing the most to food waste are households (47 million tonnes $\pm$ 4 million tonnes) and processing (17 million tonnes $\pm$ 13 million tonnes). These two sectors account for 72 percent of EU food waste, although there is considerable uncertainty around the estimate for the processing sector compared to all the other sectors. This is due to only four member states providing information of sufficiently high quality. Of the remaining 28 percent of food waste, 11 million tonnes (12%) comes from food service, 9 million tonnes (10%) comes from primary production, and 5 million tonnes (5%) comes from wholesale and retail (FUSIONS 2016). The graph is available in Appendix n. 5.

As it has been said in the introduction to this section, there is a risk of considering these categories (households, retailers, etc.) only as lifeless and static representatives of numbers. One way to avoid this is to *meet* retailers and households and go see how they behave in at least one context of the production of food waste, to understand if there is, and what is a space for behavior change. This is another reason behind the choice of hybrid methods as outlined in the Methodology part.

There is also the risk, from a legal-institutional point of view, that the biggest contributors to food waste production (households) attract the attention—as a leverage—and

the blame—as a culprit—of scholars and policymakers interested in fighting food waste, thereby hindering a systematic critique of the agrifood regime and its profit-based rationale from the field to the fork. Moreover, there could be the temptation to underestimate the role of wholesale retailers as they represent the smallest share. Instead, looking beyond the numbers and the graphs and considering their social role, wholesale and retail represent a potential bridge between households (the biggest share, in fact) and the rest of the food supply chain (that, merging together the remaining shares, is big as well), i.e., they can condition other actors (potential contributors to waste stream production) both downwards and upwards along the food supply stream. Most importantly, retail occupies physical places in reality that are accessible to citizens, i.e. the majority of the population, if interested; are frequently tied to local institutions and policy agencies; and are the places where organizations for food waste redistribution operate.

If the Estimates of European Food Waste Levels produces the results of the data collected and focuses on the production of all the *material* scraps that have been somehow quantified, the methods for such quantification are defined in the *Standard approach on quantitative techniques to be used to estimate food waste levels* (Møller et al. 2014a), a study fundamentally underpinning the Estimates and part of the FUSIONS project as well.

Since we are interested in the organizations dealing with wholesale-retail food waste (its recovery and redistribution), it is impossible not to note that in the Estimates, redistribution is included as a category in the data collection tables, just in order to follow the Standard approach's schematization of data collection methods—the Standard approach describes the methodological approaches suitable for redistribution. Despite this, no data were available on amounts of food being redistributed in the EU countries, so this sector is left out in the work, and in the matrix displaying the countries that provided data (available in Appendix n. 6), the column of the “redistribution” category that intersects with the rows indicating the countries, for the evaluation of the data provided, shows almost everywhere “data not available” cells, with the exception of the Netherlands, Austria and Ireland, from which “data has been submitted but no estimation of food waste amounts has been made”.

The authors state that they considered redistribution to be small by comparison with total food production and consumption and not to have a large impact on the overall numbers,

but also admit that there is a growing interest in these activities and, since by redistribution food is saved from being wasted, it is good to be aware of the figures reported by the few studies mentioned in the report: The European Federation of Food Banks (FEBA) estimates that 411 000 tonnes of food were redistributed in 2014 via their members. Yet, the number is very likely to be underestimated since not all redistribution is happening via food banks (and our case here is an example) and, anyways, that estimate covers their members and not non-member food banks. Then, amounts are reported from an Austrian study based on interviews and questionnaires sent out to different actors, but given that it is hard to estimate amounts without using proper weighing, the results must be handled with care: 11 100 tonnes in 2014. Then, Nordic data (Hanssen et. al. 2014, cited), based on data from registered food banks, show a low number (900 tonnes in 2014). Even if, clearly, there is a considerable amount of food being redistributed without the organization of a food bank, food redistributed in the Nordic region is still less compared to other European countries: the UK and the Netherlands, the only other countries that tried to measure it, show an amount of 20 000 tonnes in one year.

Should this accounting gap be explained by little interest in food surplus recovery and redistribution on the part of the governments, even though they are the entities in charge of the transmission of data to the European Union? A lack of data on the quantities of food saved and recirculated is not only a statistical problem but a social one, because it does not allow us to see the amount of work of the organizations that deal with it, leaving them with little visibility and struggling to receive incentives to carry out their activities, and possibly their demands as people primarily involved in the “management” of food waste. Conversely, the cultural, political, social, and logistical impact that these people can have on agrifood systems, actors, policies, and local communities is considerable.

Italy

In Italy, the forefront in collecting data on food waste is represented by “private” (academic) enterprises, notably by the University of Bologna, with studies especially by professors Falasconi and Segrè of the Faculty of Agriculture, and the Politecnico University of Milan, with studies by Garrone, Melacini and Perego of the Faculty of Management Engineering.

An interesting account of the situation in Italy is provided by the study from the latter (2015), the outcomes of which say:

- A total of 5.6 million tons of surplus food are produced each year along the Italian agri-food supply chain, from the fields to the final consumer, of which 5.1 million tons become waste. It means that the recovered part is only 0.4 million tons.
- Most of the surplus (57%) is generated by economic actors, but consumers also have a significant influence on the phenomenon (43%). This framing or categorization of data is interesting because, with a simplification, it divides producers and consumers, showing that the latter represent, in this way, the smaller contribution.
- The rate at which surplus food is recovered and redistributed is growing—from 7.5% four years ago to around 9% today—“thanks to the spread of best practices and greater social awareness”.
- Recovery is more effective when structured management processes are implemented. “Best-in-class” processing companies recover up to 80% of surplus food. In large-scale retailing, despite traditional recovery difficulties, “best-in-class” stores achieve 30%.
- Recovery is a costly process—from 0.2 to 2 euros per kg depending on the stage of the supply chain—but considering the value of the recovered food, there is a “multiplier effect” (ratio between recovered value and recovery cost) that varies from 3 to 10. However, the “multiplier effect” concerns in donation only: it is “by investing €1 in the recovery chain that you can obtain food to give to poor people for a value between €3 and €10”. We can therefore say that the value of the recovered food that they talk about is, again reduced to the economic, and the donation activity easily loses the dimension of restoring inequality, taking on the role of maximizing the profit of the donors. We find the same rationale in the proposals that Garrone and colleagues put forward for public policy. In fact, while writing or reading the results from this study, it is very evident that it is focused on the economic costs of food waste in Italy, and tries to make a calculation of the advantages of redistribution in these terms. The word “management”, indicating an approach based on technological fixes, occurs quite often.

Instead of insisting a lot on the numbers of food waste in Italy (that are nonetheless important for giving an idea of the size of the phenomenon at the national level, even though a better way to comprehend sizes is by going, for example, to a place like the Ortomercato—later in the field notes), it is worth acknowledging what the rationale underpinning the dominant networks of food redistribution in the country is, and observing that it is coherent with the managerial logic behind European and United Nations food waste guidelines. If the collection of data about waste is aimed at outlining the strategies for reducing the costs for the industrial actors, it leaves out completely the political responsibility and, more broadly, the need for a cultural change. The research by Garrone and colleagues was in fact promoted by Banco Alimentare, the biggest Italian food bank, that, by following a brokerage model, has somehow fostered the idea that food surplus redistribution is a “win-win” strategy. An entity like Banco Alimentare, whose goal is merely charitable, does not ultimately address the structures of power that produce inequality, nor the “economic imperialism” that reproduces the reduction of food to a commodity. This is not to criticize the study, but to highlight that within the Italian system, which relies largely on top-down food aid of catholic matrix (for example, Banco Alimentare was founded by the leader of the catholic movement Comunione and Liberazione), RECUP is a distinct case.

2.2 Laws and policies

Given that food waste law more easily varies regionally, the focus here first narrows down to European Union legislation.

2.2.1. European law

The European Union has established a quite robust legal framework to address the issue of food waste, primarily through the Waste Framework Directive (WFD), or Directive 2008/98/EC of the European Parliament and of the Council, amended with Directive (EU) 2018/85. An EU directive is the legislative act that sets out a goal that all European Union Member States must achieve, while leaving the choice of form and methods for reaching that goal to the individual countries. Unlike a regulation, which applies directly and uniformly

across the EU, a directive requires “transposition”, meaning each member state must adopt its own national laws to implement the directive's objectives into their domestic legal system. Since 2018, Member States have been required to develop national food waste prevention programs. With the 2025 amendment of the Waste Framework Directive, Member States are required to evaluate and adapt their food waste prevention programs, with a view of attaining the food waste reduction targets. In these programs, Member States shall take appropriate measures to prevent the generation of food waste along the entire food supply chain. Besides measures directed to behavioral change, training and skills development, food supply chain inefficiencies, technological solutions, etc.; food waste prevention programs must also include measures to “facilitate the donation of unsold, safe food at a reasonable cost to food business operators”. This should be done “through donation agreements between specific food business operators and food banks and *other redistribution organizations*.” The RECUP case falls in the latter category.

The legal definition of food waste within the European Union was specifically established through the amendments introduced by the WFD. Under Article 3(4a) of this framework, food waste is defined as “all food that has become waste” and is the result of the combination of the two definitions of food (provided in the Regulation (EC) No.178/2002 of the European Parliament and of the Council) and of waste (in the WFD). The former defines food (or “foodstuff”) as *any substance or product, whether processed, partially processed or unprocessed, intended to be, or reasonably expected to be ingested by humans*. Moreover, it includes in “food” also drink, chewing gum and any substance, including water, intentionally incorporated into the food during its manufacture, preparation or treatment. Conversely, “food” shall not include, among others, feed, live animals unless they are prepared for placing on the market for human consumption, and plants prior to harvesting.

According to article 3 of Directive 2008/98/EC, “*waste*” means *any substance or object which the holder discards or intends or is required to discard*. The definitions of the directive maintains boundaries to support a circular economy; for example, food that is redirected for use as animal feed or processed into non-food products is not legally classified as food waste, but is instead treated as a by-product. Moreover, Article 4 of the WFD sets a clear priority order for waste prevention and management that Member States are legally required to follow: the food waste hierarchy (already displayed in Appendix n.4). Beyond the

priority order itself, Article 9 of the amended WFD imposes specific legal obligations on Member States to implement food waste prevention programs and monitor their progress through standardized reporting. While the hierarchy is generally binding, the directive provides a degree of flexibility through the principle of life-cycle thinking. This allows Member States to deviate from the standard priority order if they can provide a technical and environmental justification showing that a lower-tier treatment option—such as energy recovery over recycling—results in a better overall environmental outcome for a specific waste stream. This structured approach ensures that food waste management is not just a matter of disposal but a strategic effort to preserve the environmental and economic value of food resources for as long as possible (the literal meaning of sustainability...).

Another strategy conditioning EU regulations is the “farm-to-fork strategy”, which is part of the European Green Deal. This strategy aims to integrate food waste prevention across all EU policies and has proposed legally binding reduction targets for 2030 (including a 10% reduction in processing and manufacturing and a 30% per capita reduction at the retail and consumer levels). A critical yet curious area of focus within this strategy is the revision of “date marking” rules, as confusion between “best before” and “use by” dates is estimated to cause up to 10% of the EU’s annual food waste.

But the most interesting laws for our analysis are those concerning food redistribution, both as a way to guarantee the right to food to some section of the population and as a solution to the problem of waste. Countries like France and Italy have pioneered domestic legislative tools (the Garot Law 2016-138 and Gadda Law 166/2016 respectively) to operationalize the right to food in this sense, for example reducing the bureaucratic burden on donors and clarifying liability issues.

2.2.2. Italian law

The legal-institutional dimension of food waste will now focus on Italian relevant legislation concerned with food waste prevention and management, as long as the purpose of legal analysis is to identify potential incentives or constraints to the feasibility of food recovery and redistribution initiatives, and feasibility itself is a factor that depends on the local context. Then, to contextualize the work of RECUP, it is essential to outline the

regulatory framework and environmental policy agenda of the Lombardy Region and the City of Milan, which has pioneered the adoption of measures to encourage collaboration between the public and non-profit sectors with the goal of transforming food waste into a resource.

The Gadda Law

The type of work proposed here is that articles of the Gadda Law have been selected according to the use of particular words and for their relevance for defining the legal scope of actions promoting the recovery of surplus food, as well as the opportunities for its expansion. Underlines are made in italics and analyzed right away.

Art. 1. (Purposes) begins:

“This law pursues the purpose of reducing waste for each of the stages of production, transformation, distribution and administration of food, pharmaceutical and other products, through the achievement of the following priority objectives:

a) *favor the recovery and donation of food surpluses for social solidarity purposes*, assigning them as a priority to human use;

[...]

e) contribute to research, information and awareness activities for consumers and institutions on the matters covered by this law, with particular reference to the younger generations.

Art. 2 then specifies the definitions of the words used throughout the legal document: “donation” means “transfer of goods free of charge”, therefore, it doesn’t explicitly refer to—and limit the scope to—charity donations. The word “transfer”, as it was noted in the introduction of food as a human right, does suggest a one-way directionality and implies the existence of a donor and a recipient; however, by revisiting the word, the wider meaning of “transfer” can leave space to the possibility for including the movement of the food from a pool of “commoned” goods to an individual or group that eventually “takes possession” of the food.

Social solidarity is established as a priority, it does not equate to charity, and is coherent with article 2 of the Italian Constitution: “The Republic recognizes and guarantees the inviolable rights of man, both as an individual and in the social groups where his personality is expressed, and *requires the fulfillment of the inalienable duties of political,*

economic, and social solidarity". Social solidarity is not explained in the definitions of the Gadda law, but an insight into the term is worthwhile. The concept was first explored by Durkheim (1983), distinguishing between mechanical solidarity, found in traditional societies where people are united by their similarities and shared customs, and organic solidarity, which characterizes industrial modernity and arises not from being identical, but from our radical interdependence (because we fulfill specialized roles—such as doctors, farmers, or engineers—we are bonded by the practical necessity of each other's contributions). It is noteworthy that this principle moves beyond simple altruism and establishes a framework where the rights of the individual are balanced by duties toward the group.

The question arising here is: is it our duty to address the social inequality produced by the food system and to guarantee the right to food to the poorest? More specifically: is this a task that falls to those (workers, not necessarily volunteers) who currently hold the specialized role of recovering and redistributing surplus food? Upholding social solidarity means shifting from an individualistic perspective to a collective one—recognizing that the well-being of the individual is inseparable from the health of the entire community—and thereby transforming an ethical ideal into a structural foundation of justice and equity¹. Yet the issue of responsibility in the specific case of food insecurity and waste production remains open or, better, in the Italian and constitutional contexts, in which the guarantee of the right to food is the responsibility of the State, the issue is essentially why it is still necessary that non-state actors cover this responsibility.

The title of the second chapter of the Gadda Law is: "Simplification measures for the gratuitous transfer of food for social solidarity purposes *and for the limitation of food waste*", which actually expands the scope of food recovery to activities not necessarily centered on food security. Yet, paragraph 1 of Article 3 (in this section) says: "Food sector operators may/ can (*possono*) transfer food surpluses free of charge to donee subjects who may collect them directly or by appointing another donee subject"; with paragraph 2 specifying: "the donee subjects referred to in paragraph 1 must destine, free of charge, the food surpluses received, suitable for human consumption, *primarily to indigent persons*": the law does establish a

¹ Check again Appendix 2.

priority—but not exclusivity—for *donation* of surplus food, but with *donee subjects* it refers to retailers or food market operators.

It is clear that the Gadda Law institutionalizes donation, determining constraints and freedoms of the parties involved in the transfers of surplus food; however, its big flaw is that it does not provide for administrative or penal sanctions for the actions of large commercial players that produce waste on a systematic level. In other words, we could say that the Gadda law is built on the principle of what *can* be done (legally) to fight food waste, not yet of what *must* be done, in particular on the side of the producers or the actors responsible for the creation of surplus food, or responsible for the choice of its destination.

Articles 9, 10 and 12 insist on prevention through communication campaigns, education in public schools, guidelines for restaurants and catering, and increased state funding—leaving, however, to the Minister of Economy and Finance the decision to make the necessary budget changes with his own decrees (a decision that is not but political). An interesting comparison could be made with the punitive “fine-based” model used in France with the Garot Law: the legal mechanism of the French *Loi Garot* is the requirement for supermarkets with a surface area exceeding 400 square meters to sign formal donation agreements with authorized food banks or charities. Failure to comply with the obligations of *Loi Garot* in France can result in administrative fines of up to €3 750, with additional penalties for destroying edible food. Although the law is an example of integration of food waste prevention into the annual corporate social responsibility (CSR) reporting of large companies, not only making it a matter of legal transparency and public record, but also an example of legal holding of private stakeholders, a paradox remains: businesses get a benefit (e.g., tax breaks for donations), while nonprofits still shoulder the burdens and responsibilities of “managing” the food, with all the economic costs of the project itself.

In any case, the comparison between laws connected to food systems should be deemed useful by policymakers and lawyers to assess the room or margin of improvement at their national or regional level. We must remember that understanding the law within which anti-waste organizations operate helps identify both the obstacles to be overcome and the scope for improvement. The same goes for the regional context that we will see soon. The existence and thriving of informal organizations is subordinated to institutional regulations, then from here, what interests us are the inputs that the former can give to the latter.

The “Third Sector” Code

RECUP has the legal status of a Social Promotion Association (“Associazione di Promozione Sociale”, or APS) that is a specific type of non-profit organization designed for community-led, grassroots initiatives. APSs belong to the broader category of the Italian Terzo Settore (“Third Sector”), which encompasses entities that pursue solidarity or social utility goals instead of commercial profit. To be officially recognized as an APS, a group must be formed by at least seven individuals, maintain strict non-profit status where any revenue is reinvested into the organization, and be registered in Italy’s “Single National Registry of the Third Sector”. This legal registration grants APSs access to public funding, some tax exemptions, and the possibility of partnerships with local municipalities. The legal framework for reference is the Codice del Terzo Settore (“Third Sector Code”), established by Legislative Decree Number 117 on July 3, 2017, and in particular Title V, Chapter II, Articles 35 and 36. Article 35 provides the legal definition of APSs and also mandates a strictly democratic internal organization for them, while Article 36 outlines the financial and labor resources available to the entity, establishing limits on employment that the number of paid workers or professionals utilized by the organization cannot exceed fifty percent of the total number of active volunteers or five percent of the association's total registered membership. The association must rely prevalently on the voluntary, uncompensated work of its members.

As far as the financial relations between APSs and the State are concerned, pursuant to Legislative Decree No. 117 of July 3, 2017, an APS registered in the Single National Register of the Third Sector (RUNTS), the state provides direct public grants disbursed via the Ministry of Labor and Social Policies and regional authorities to fund specific projects of general interest selected through public competitive calls (public tenders). Registered APS entities also receive a share of public money through the annual “5x100” mechanism, which channels a percentage of personal income tax allocated by taxpayers directly to the association (D.Lgs. n.117/2017, 2017, art. 72-75). Other facilitation measures include, under Article 56, direct agreements between public administrations and qualifying APS entities for the execution of social services, the former providing direct reimbursement for documented operational costs incurred by the latter. Under Article 71, public bodies may grant the free use or reduced-rate lease of unused public real estate assets or properties confiscated from

organized crime for the conduct of institutional activities. Finally, under Articles 82 and 83, the state delivers indirect support through exemptions from national and local taxes—including stamp duties, registration fees, and municipal property taxes—while establishing tax deductions for private donors to increase financial contributions to the association.

2.2.3. Local framework

Regional measures

The relevant information about policy at the regional level concerns projects of the administration of Regione Lombardia (RECUP is also active in Rome, but our case focuses on Milan), also for the reason that, in Italy, Lombardy is the region with the most innovative and effective anti-waste policies (Earthshot Prize 2021), along with Emilia-Romagna.

First of all, Regione Lombardia (Lombardy Region) has published a memorandum of understanding for the experimental project “Virtuous territorial networks against food waste”, expressing the commitment of the Region and all its signatories (i.e., municipalities, the GDO—acronym for large-scale retail trade—and non-profit organizations) to commit to significant action on the issue of food waste. This project falls within the Regional Waste Management Program designed by the Region’s Department of Environment and Climate (before March 2018, Department of Environment, Energy, and Sustainable Development), focusing, in general, on waste prevention.

The project is being implemented in collaboration with the Lombardy Foundation for the Environment (FLA) and the Lombardy Region’s Departments for Family, Social Solidarity, Volunteering and Equal Opportunities, Commerce, Tourism and Services, Education, Training, and Employment. The project first aims to investigate the current status of unsold food return in Lombardy and assess how return activities (i) contribute to reducing the amount of waste produced by large-scale retail trade; (ii) pursue a social purpose by delivering unsold food products to those most in need, in accordance with the provisions of the so-called “Good Samaritan” law (Law No. 155/2003). The project’s objectives are therefore: (i) to identify and analyze current legislation and procedures regarding food management and recovery, highlighting best practices already implemented and any critical issues; (ii) to assess the environmental, economic, and social costs/benefits associated with

the return of unsold products for the types of entities involved; (iii) to assess the possibility of introducing reward, incentive, or compensation mechanisms into municipal administrative procedures for the Parties to the protocol directly involved in the return initiatives; (iv) to communicate and disseminate the activities carried out under the protocol and other initiatives against food waste through a targeted communications campaign.

One result of the project is the development, in collaboration with the General Directorate for Welfare, of a “Regional Health and Hygiene Guideline for Food Recovery for Social Solidarity Purposes” with the aim of supporting supply chain operators by providing them with guidance on the procedures to follow for the donation and distribution of surplus food products, thus facilitating small third-sector organizations that do not fall within the definition of a food sector operator.

Milan Food Policy

The city of Milan is truly a point of reference in the global landscape for the management of urban food chains. In 2015, it launched the Milan Urban Food Policy Pact, an international agreement of mayors providing a working tool for cities to develop sustainable urban food systems. Local governments join the Pact without fees, guided by an elected Steering Committee and a Secretariat in Milan. There are member cities from all continents.

Content-wise, the agreement starts from the acknowledgement that half of the global population resides in cities (a figure projected to approach 70 percent by 2050), implying that urban areas hold both the responsibility and the potential to promote sustainable diets and address the constraints to their healthiness due to climate change. It mentions climate change, but not structural social inequality, which also affects diets; and even of the “social and economic equity actions” are based on a view of food and water as a primary human right, they are still intended to promote assistance systems that protect vulnerable groups on a top-down scheme.

Secondly, governance actions focus on mapping local initiatives and creating multi-sectoral information systems to integrate food policy into municipal programs, strengthen urban-rural linkages, protect agricultural land and support family farmers to maintain biodiversity, and lastly coordinate local infrastructure, such as municipal markets and short-distance networks, to ensure balanced neighborhood coverage.

Thirdly, as a practical application of these principles, Milan implements a food waste and food aid strategy centered on Food Aid Hubs, stabilized through co-design agreements extending to 2027. The logistical model provides that vehicles collect surplus goods from commercial supermarkets each morning, transporting them to neighborhood hubs. In the afternoon, non-profit organizations collect these supplies for local canteens and distribution programs. Eight specialized neighborhood hubs—including Isola, Lambrate, Gallarate, Centro, Selinunte, Loreto, Cuccagna, and Foody Zero Sprechi (the hub at the Ortomercato)—operate in partnership with third-sector entities, academic monitors like the Politecnico di Milano, and philanthropic foundations. This network recovered 1 057 tons of food surpluses in 2025, providing over two million equivalent meals to approximately 18 000 families..

Following our thread of research about the challenger or “commons” model for the food system, we shall note that Pettenati and colleagues (2019) have included the Milan Urban Food Policy Pact in a sample of 60 sustainable food policies, which they used to reveal the lack of the term “commons” or any specific understanding of food policies as a way to construct a commons-based food system. However, the authors admit that such policies

“offer different levels of recognition of the multiple dimensions of urban food systems; talk about participation and ecology; are based on bottom-up processes and on coordination with the public authority as a facilitator of collective processes; and understand the importance of avoiding a fragmented attitude towards the complexity and interdependency of food production, transformation, transportation, consumption and post-consumption”

thereby representing, as a matter of fact, an “indirect narrative” of the food system as a commons. Indeed, Pettenati and colleagues quote Lang (2010), arguing that there is a holistic and systemic approach embedded into urban food strategies like the Milan Food Policy that provides other forms of support and integration beyond the division between providers and receivers of food. Such strategies also support the creation of new spaces for food beyond the food banks and traditional places pivoting around food security, which can use food (and food practices) to generate other forms of value that are not only economic but also spatial, social and cultural (2019).

III

CASE STUDY

Introduction

“RECUP is an association founded to provide a concrete response to food waste, the climate crisis, and social exclusion. Our goal is to restore value to food and the resources used to produce it. Simply put, we want a waste-free, greener, and more inclusive world”.

These lines are the introduction of the association on its website. I will write some further lines to expand the information about the mission and the vision of RECUP that I obtained by conversing with my internship tutor Eleonora. The first idea for RECUP was born in 2016 from a group of students who gathered to sort and distribute leftover food to anyone interested in the Papiniano market, in Milan. The activity of this initially informal group attracted a growing number of citizens. Then, to scale their impact and be able to support their activities, also by applying for public grants, the core group formally structured the project by officially establishing RECUP as a “Social Promotion Association” in October 2016. Over time, RECUP expanded its operations to over a dozen weekly markets across Milan, and the model was “exported” to Rome in 2021. Unlike a traditional volunteer organization which focuses almost exclusively on helping external third parties, an APS has a mutual benefit structure: members actively participate in and directly benefit from the activities, meaning that volunteers and beneficiaries often overlap. For RECUP people, as far as I got from the conversations, this overlap is not due to a strong political stance that contrasts social classes; it is rather based on the ethical goal of inclusivity.

The association focuses its efforts on Milan’s neighborhood open-air street markets and the wholesale vegetable market, the Ortomercato, which represent the “field” of the following research work. At the end of the market day, amounts of fruits and vegetables are discarded by vendors. RECUP volunteers gather at these markets as the stalls are closing to intercept this food, set up their stall, and then sort it to separate the fresh produce from what is actually spoiled. Once selected, the saved food is redistributed: for free to anyone present

at the neighborhood markets, to charitable organizations (mainly other third-sector associations) in the case of the Ortomercato. On the website we read:

“Our volunteering model is based on the active participation of everyone and on sharing. Our volunteers contribute to the selection of food and are, at the same time, the beneficiaries of the recovered food, which is also given to anyone who requests it, without distinction”.

RECUP can otherwise be described as a participatory model of active citizenship that transforms a logistical problem into a tool for community building. The aim of studying it with the background provided by the literature is also to assess whether it pursues a “win-win” solution to food waste and the right to food, without challenging economic structures, or it can be included in the challenger model of food redistribution activities because it engages politically in some way.

The Ortomercato

The market traces its origin back to 1956 with the creation of a company, followed by the opening of the primary fruit and vegetable facility in 1965 to modernize citywide food distribution. Over the decades, the complex expanded to unify several wholesale sectors into a single district, incorporating the Fish Market and Flower Market in 2000, along with dedicated sections for meat and specialty gastronomy products. In recent years, the hub was rebranded with the name of *Foody*, adopting the mascot from the 2015 Milan Expo, to symbolize high standards in food quality, safety, and traceability.

Beyond its historical economic role, the site has been undergoing a massive redevelopment project aimed at transforming it into a state-of-the-art European city food hub (as of 2026 there is an ongoing project of expansion; I witnessed the worksite during fieldwork). While the venue functions primarily for commercial wholesalers and professional buyers operating from late at night to early morning hours, it also opens its doors to the general public on Saturday mornings, allowing individual consumers to purchase fresh produce at wholesale prices.

The choice of this big wholesale produce market as the site for fieldwork is motivated by two reasons: on one hand, as I said, the aim is to see how the collaboration with charitable organizations affects the objective of RECUP of inclusivity (that means, adopting a non-

hierarchical model of donation, in favor of communal sharing), but also because only there have I been able to grasp the magnitude of food waste aligning with the numbers I've read in official reports. Put otherwise, I believe that the scale of the phenomena in this market is more indicative of the behavior of the agro-industrial system as a whole. Being still a step behind the last act of sale (occurring in local markets), I consider wholesale produce markets the best place accessible to an ordinary citizen to observe the movement of fruit and vegetables (or other foods) on a scale that transcends the individual, thereby reflecting the systemic trends of these movements (including waste) beyond the household sphere. Furthermore, given that the management of the produce market is tied to a specific public policy (in this case, that of the Municipality of Milan, which nevertheless responds to national and European directives too), I also see it as a place where proposals can be raised for better regulation of the food waste phenomenon, working both as a bottom-up virtuous model to be generalized, and as a top-down source of improvements in food management falling on the lower tiers of the distribution chain (retailers, restaurants, local markets). On the contrary, local markets are further away from large institutions, and a change within one of them may leave the same problems unsolved in other local markets.

1. Field notes

Field notes were collected between some weekends in winter 2026 and the month of July of the same year. Since the routine of RECUP volunteers was quite identical between different days, and given that these diary pages have a specific goal in this context, I transcribed only the most relevant or representative ones for the sake of the essay's balance. To understand many other things about the functioning of the fruit and vegetable market, the role of charities, the relationships between people and their stories, the internal organization of volunteers, the interaction with institutions, the trend in the volumes of excess food, etc., it would perhaps take years of visits to this place.

29th March 2026

It's 8:15 in the morning, and I've just entered the Ortomercato through the turnstiles, after leaving my ID in safekeeping at the entrance to this place that, to my eyes, seems like an empire. The Ortomercato of Milan is one of the biggest wholesale produce markets in Italy, second only to Rome, and the market with the highest trading volume for urban consumption. It took me half an hour of suburban train to get here, and it's still hard for me to realize that most people will never see what goes on behind the scenes of their vegetables shopping. I feel privileged—and somehow responsible for this privilege—and can't wait to come back with a story to tell. However, the "privilege" comes only from my interest in the matter and from getting informed, because any free citizen (not already employed in the official jobs of the Ortomercato) could enter this place by volunteering for food waste recovery through a number of different associations.

I walk towards the food waste recovery hub (warehouse number A-23) by memory, sensing that the workers coming and going from the warehouses are looking at me with curiosity. It's only my second time at the Ortomercato, but I know that women are something rare to see here. Once there, the other volunteers of RECUP are already ready. The three coordinators—I can't call them bosses because in RECUP there is no hierarchy; there are just different degrees of responsibilities—Lucrezia, Matilde, and Sofia are dividing up the tasks for the day. The first thing is "to do the round" (*fare il giro*): I grab three fluorescent yellow bibs with the print RECUP and Paolo, Lucrezia, and I hop on the cargo bike, Lucrezia on the pedals. It's my first time on a cargo bike... what else should it actually be used for? Here, the container on the back will be stuffed with leftovers, with boxes and boxes of food destined for disposal...

To start our tour off right, our first stop is for a coffee at Paolo's, a vendor in the C pavilion who knows Lucrezia very well by now and always offers coffee from the vending machine. Paolo has a tidy store, and warehouse workers are quickly moving around. He tells us that today in particular there is a lot of commotion at the market because sellers and clients are already preparing for Easter, which falls next Sunday. Clients are mainly restaurants, hotels, food service companies. As Lucrezia says that we will then need to quickly get on with our work, since it looks like it will be long, Paolo corrects her: "Oh, your work? Yours is a mission, not a work!". Lucrezia explains that, in reality, she's started getting paid by the

association, not only because, along with the others, she carefully handles the reporting of food recovery data here at the Ortomercato, the distribution of food to associations, as well as the relationships with the latter; but also because she comes here every day, from 8:00 to 13:00 am (quite often from earlier to later). So, what is that distinction between work and mission? With his resolute tone, Paolo didn't mean to dismiss our activity at all; instead, he was, let's say, ennobling it, because gratuitous and perhaps because aimed at something other than private interest. "You're not doing all this for yourself, isn't it? Dear girls, us, we work for ourselves, for a living". Despite the good intentions, I feel that the nobility imposed on volunteer work betrays deeper beliefs about what is good and bad and why. It is bad (for some reasons, evidently) to let all that food be thrown away (I ask myself: would Paolo say that the whole system that produces waste is bad?); it is good to recover that food, good to help charities (I guess Paolo doesn't know what the difference is in not making a distinction between recipients of the food); it is good not to want anything in exchange... That's his point: we don't aim at getting some salary in exchange for our activity. Well, Paolo has inadvertently confirmed my suspicion that here the volunteers are seen by the market workers as benevolent people and not proper workers, maintaining a sort of heterogeneity between (their) "real" work and (our) voluntary work.

We thank him for the coffee, and the round continues toward block 1-A, where we park the cargo bike and begin the visits to the vendors. The enormous hangar is structured so that there is a wide central corridor for the forklifts to pass through, while the vendors' spaces are arranged adjacently, one next to the other on either side, and are open on the back to the outside. Rows and rows of pallets full of fruit and vegetables follow one another indefinitely, or at least that is the impression I have. The amount of stuff is incredible; I really cannot imagine that all of it will be bought. Even more impressive is how these fruits and vegetables look: each item is identical to the other to the point of seeming fake. I can't help but wonder how this was possible from the first stages of production. Even if these pallet rows are colorful—oranges close to cabbages, strawberries, bananas, shiny courgettes and apples—the agricultural rows where each of these products grew must have been single-color (and well controlled), in order to allow the mass production of identical strawberries or whatever. I can't even help but take out my phone and record a video: in these pallets I see evidence, a proof, of the peculiar evolution (...both qualitative and quantitative) of our agri-food system.

Just look at the labels: the origin of the fruit is often vague (only the country of production is indicated), but when a more specific site is indicated (“*prodotto nello stabilimento di...*”), this site indeed consists of an “establishment”, a plant. No farms, no vegetable gardens. And the signs with the names of the producers, all written in red with the same font at the top front of each store, are equally eloquent: followed by S.r.l. (the Italian equivalent of Ltd.), they identify as companies, agri-food retail companies.

The culture of monocultures is just producing its fruits in front of my eyes. At some point, we come across a box of apples which are so waxed that we can mirror in them. Isn't it an absurdity to impose such marketing standards upon the fruits of the earth, isn't it violence to force natural species to homogenization? They are not natural anymore; they are artificial.

I shortly comment on that with Lucrezia, and I take the opportunity to chat with her—initially without addressing big issues. As I've learned, Lucrezia has now made these rounds her job, and ever since I saw her directing the counting and sorting of recovered food, I've looked up at her. In going from one store to another, I have also noticed that she is very kind and relaxed with the workers, so I first ask her how she gained their respect, and she underlines the importance of two things: continuity (of the visits) and smiling. Workers, on the contrary, are not always smiling; their work looks fast, busy, repetitive, and hard at times. She also knows what to expect from each of them. Managers of the agricultural companies are most importantly taken by accounting sheets. Some of them sit at a computer desk in a glass-box kind of office, some others walk around the pallets. With the defective vegetables that we want, some leave freedom to the warehouse workers to decide on their destiny, some others are more controlling. I ask Lucrezia if the vendors that say not to have any waste (there are quite a few) are telling the truth, or if they would just refuse to give surplus away. She says it depends: some probably don't like the idea of gifting (even if gifting is the only alternative to disposal), i.e., the idea that someone takes the “fruit” of their property for free, having done nothing to deserve it or having nothing to give in return. On the contrary, some others refuse to give us the bad stuff because they stubbornly continue to adhere to market standards of quality and appearance, even if products are by then in an “after-market zone”—the gift zone. At some point a seller says: “no, those boxes I can't give them to you, they have gone bad.” But Lucrezia exclaims that's the exact point! Another one, realizing not to have anything to “donate” to us (or maybe willing to get rid of us soon?) gives us a box of

enormous and perfectly oranges which I take away directly from a two-meter pallet, and laboriously carry to the cargo bike. We did not need that. But I will bring home a couple of them to see if they taste well.



Besides transporting boxes, I try to follow the script when it's not Lucrezia speaking: "Good morning, do you have anything to recover, by any chance?" And then a range of possibilities of responses opens up. But whether the sellers say yes, or no, or "I don't know", their attitude doesn't change significantly: they have a bored expression, not annoyed, but still suggesting that they would rather not deal with the scraps, or they forgot about them, and are trying to get the matter done quickly. For this reason, I'm not comfortable with asking them questions about their relationship with waste. I also don't want Lucrezia and Paolo to think that I am here only for the purpose of my research, so I decide to wait.

Concerning the state of the food, Lucrezia is very careful to make sure she is the one to make the assessments, especially when sellers (or inexperienced volunteers) say that it needs to be thrown away. With her and the other experienced volunteers of RECUP, there is a lot to learn about what can be saved and what not—about the famous distinction between edible and inedible food, which, by the way is theoretically fundamental for the evaluation and categorization of waste along the entire food supply chain in official reports.

After a while, I realize we are collecting the leftovers only from the stores on the left side of the hangar. When I ask if we shall go the other side, Lucrezia tells me something unexpected—but not unbelievable once I think over it—that is: volunteers from other associations accused RECUP volunteers to “gold dig” at the Ortomercato; therefore, they had to divide the hangars in two in order to avoid arguments. They reason in terms of theft (?). Why? It feels childish to me and her. My idea is that they are maintaining and reproducing an internalized competitive logic; they cannot detach from the internalized construct of private property. And so: where do we internalize these schemes? How long does the process take? Can we really emancipate ourselves from them, at one point? My mind begins to make networks of questions and possible answers, all traceable to a matrix that sounds like an article research question: how could private property and competition compromise our idea of food, transforming a gift of nature into a mere “agricultural commodity”, transforming what should be a common good into a private good? Possibly, I am going a little far, but this conversation makes me realize this other way in which surplus food causes a perturbation: it conditions the relationships and dynamics between the people who deal with it.

I came here hoping to find a solid example that could challenge the absurdity of competitive logic and private property, in search of a “safe” space where food ceases to be commodified and its social value becomes again the priority value. I did so aware of the vision that characterizes RECUP, centered on the value given to sharing and to community-making. But I came across a multifaceted reality, interplaying with human factors that affect that possible space. For example, the associations’ inability to form alliances, despite the fact that vegetables are ultimately put in common, is something delusional, yet not excludable. Yes, it would be much more rational to collaborate, to help each other and achieve a certain degree of efficiency in “saving” and redistributing food surplus too. But there is an antagonist type of relationship to be explained. May it be due to something intrinsically human? Like envy? (I don’t like to think so). I come back to Lucrezia. She admits that RECUP volunteers objectively manage to recover more in quantity and maintain continuity with the visits to the sellers, and the other associations can’t count on so many young volunteers (who, I observed, generally show more enthusiasm). I meditate that in any job there will always be someone who does things better, but it is desirable that this was a resource for everyone, not a source of conflict.



Later at the recovery hub, where all the pallets brought with forklifts and the boxes brought by our cargo bike are accumulated, at the moment of beginning the sorting out of the edible food, a woman with an apron of a different color says to Rosalia (a volunteer from RECUP): “Be careful of what you take! We don’t know what is yours and what is ours”. They reason in terms of mine/yours. Rosalia replies: “Oh, come on, it doesn’t matter, everything belongs to everyone here!”. Witnessing this, I am very tempted to think of the “tragedy of the commons”. Is it that when surplus food is definitively discarded by its previous owner, it becomes nobody’s property, and therefore also everyone’s property? Then, there is the chance for each to try to get more of it than the others. It is competition that also attacks, contaminates the world of free things. How can a different form of socioeconomic organization of the food system (the object of my research) be possible if the spheres of positive action, anti-system action, etc., are contaminated by the system’s own patterns of private property and competition? Contamination is a key word that has been suggested to me by the discarded food itself. I think of contamination as I sort the mandarins, moving the good ones into a new crate and leaving the few moldy ones in the original crate to be thrown in the dumpster. Moving my hands in gloves, I learn that despite contamination, most of the mandarins are safe and still edible. Not everything should be thrown away then. Does this mean that, also in these initiatives, there is still room to take advantage of the good things,

starting from the observation of their critical points? I might need to go back to work to find suggestions. Here we are indeed: the time to put hands on food waste comes after the round: volunteers put on plastic gloves and go on the attack of the pallet loaded with boxes that all need to be sorted. There are both boxes collected by us with the cargo bike and those that the sellers sent us via our trusted forklift drivers. I say “trusted” because only a couple of them do RECUP a favor and add some rides to their workday to bring us all the heaviest pallets. When Paolo Lucrezia and I found too much leftover food in a particular ware, Lucrezia would write down the name of the store to communicate to the forklift driver for a later pickup. They have each other’s phone numbers and also call each other by name... Informal work creating informal (friendship-like) relationships.

In the meantime, the two other coordinators, Matilde and Sofia, have already started to weigh and register all the different foods, using a giant analog scale and an excel file on the laptop. They have also prepared empty pallets where the boxes of “good” fruit and vegetables will be distributed. Each empty pallet is in fact set for a different charity association, and the girls will take great care to divide the boxes equally. I’ve heard Lucrezia stressing the word “equally” very often when she would explain the activity to the new volunteers. She told me that the representatives of the associations are often trying to get something more, or controlling that the others don’t have something better (competition is not surprising at this point). It’s then the task of the remaining volunteers to save the edible veggies from the dumpster and discard the inedible (moldy, excessively ripened, or evidently gone bad).

So I am in the company of Rosalia now, who is a retired woman and brought her personal shopping trolley, parked close to the table where we do the sorting. Every time she finds a particularly good item, she stuffs the trolley. I learned here at the hub that it is usual for volunteers to wait for the end of the session to take the veggies they want to bring home, but this is not a rule: as I said, RECUP doesn’t make priorities among the recipients of the recovered food: it is to be given to all the people who request it without distinction—we can read this on the website of RECUP, where they explain their volunteering model. I learned, talking with Sofia, that the reason why RECUP’s activity at the Ortomercato is conducted in partnership with charity organizations (and with the municipality of Milan that helps in coordinating it) is because the amounts are so significant that would be absolutely impossible

for the volunteers to take it all home or to take it out of the Ortomercato and make it available to free citizens only with the means of RECUP (that still cannot afford a car).

While they are counting and weighing, Lucrezia and Matilde put aside the boxes of produce that cannot be divided equally (for example, because there is not enough quantity of that item), and the volunteers will eventually pick up from there. Now aware of the human passions that interplay with this activity, watching Rosalia's trolley filling up before that moment, I can't exclude—nor condemn—a bit of greed. Moreover, what the hub receives is so much that it doesn't make any difference to take away one or two peppers from a pallet, even if it has not yet been registered and divided. In front of me there is instead a man who is cutting cucumbers wrapped in plastic. If the inside is ok, they can go in the box for the distribution to charities; if they are bad, they are nevertheless considered a vegetable that can't go too bad to be thrown away and they are destined to pigs. Listening to Lucrezia, Matilde, and Sofia making evaluations, I understand that much of what we are discarding today will still be eaten by pigs. I feel grateful to pigs, but at the same time I feel sorry that they are considered a dump. Lucrezia tells me she wants everyone to be careful in using the word "the sanctuary" instead of "the pigs" to indicate the destination of the scraps. RECUP has in fact made an agreement with the sanctuary *Rifugio Miletta*, hosting animals rescued from exploitation and abandonment. Such partnership merges RECUP's mission to fight food waste with the specific anti-speciesist ethics characterizing entities like the sanctuaries, an ethics that possibly reflects the non-hierarchical consideration also of human recipients of the recovered food. No surprise when I discover that Matilde is vegan and Lucrezia and Sofia are vegetarian (I position myself between the two, I say when they ask). Lucrezia wants us to say "sanctuary" to underline that the animals that will be fed the food we are selecting will not be killed and processed into meat for human consumption. That's also why she must hold back from getting upset when Rosalia says "*dai che poi ce li mangiamo!*" ("too good when we'll eat them!"), referring to the pigs and to the idea that they will still eat "selected" vegetables and become tasteful meat. All of us vegetarians refrain from giving her a big speech about ethical stances or anti-speciesism, but the inclusion of animals and their role in food waste recovery activities shows up as a cue that I hadn't thought of entering the world of fruit and vegetables, and it's certainly worth exploring in a context of research that combines the environmental impact of food waste (its reduction) with the social impact of its recovery

and redistribution. If so far I have wanted to highlight RECUP's potential in proposing a model for an inclusive, equitable and sustainable food system within human society, here it comes something more: an expanded understanding of society including animals as well.

After a while we are sorting the mandarins, I suddenly ask myself: what am I doing? I realize it would be much easier to throw everything away, and I perceive (better: I am tempted to surrender to) the feeling that nothing would change. Just going around the market, I was overcome by the feeling of facing something too big and insurmountable— “It's an empire”, I kept telling myself—, that is, a system that processes such large quantities that this batch of mandarins will be almost insignificant. When Matilde asks me how it is going with the mandarins (as if she could read my thoughts), I reply: “There are so many...”, and that's true, because the work of sorting 30-40 boxes of mandarins is a lot. She replies: “Let's keep the focus on the ones we're saving.” I think about who will eat these mandarins and the workers who produced them. These very mandarins still had a cost, still have a value. The doubt came when I imagined myself alone in this job. Making the individual the yardstick for solutions is paralyzing, but realizing the effect our own (even single) actions will have on even just one individual is motivating. In this sense, there must be a politicizing aspect in rescuing food: food (re-)takes on its importance for every person, after it has been so easily thrown away in large quantities by a system that ultimately gives importance to profit for a few persons. Alternatively, the politicizing aspect of sorting, by deciding between the edible and the inedible, shifts the value criterion from profit to basic need: food regains value precisely because it becomes waste and allows us to reprioritize its nutritional value over the monetary value. Moreover, from the perspective of our own labour, it is aimed at generating social value. In this sense, we can redefine the concept of profit as collective benefit.

Last time I came here, Matilde had distributed to the volunteers some *pangoccioli* (small famous Italian packaged cake) and some Fanta drinks—items that we clearly did not collect in our round at the market: they were gifted to us by the charities that probably had too many of them, but also in sign of gratitude. It has been so since the beginning of their agreement, says Matilde. I came here hoping to find a solid example of a challenge to the capitalist understanding of value. Here it is: the gift!

I recall anthropologist Anna Tsing: *capitalist commodities are exchanged for things, and once exchanged, the exchange and the steps that led to it, can be forgotten; the commodity is available for use or further transactions. Gifts, in contrast, are akin to persons; they bring something personal with them, drawing the receiver into a social field, and serving as a continual reminder of the need for reciprocation.* At the Ortomercato I witnessed the two Tsing's value ontologies. Vegetables no longer suitable for a profitable exchange? To waste. Sellers ultimately alienated from the vegetables, separated from the commodities they didn't even produce, but just transacted. On the contrary, in RECUP the products urge sharing, they urge further social relations, the products are valued by sentiments like the marvel in recognizing the mathematical structure of a cabbage, or like the gratitude of the people who come to collect them. Today I've found plenty of sunscreen samples gifted by the charities last week, together with *Lemon sodas* and lemon juice bottles. I'm gonna take the sunscreen and give it to my friend Ben's mother, who is hosting me in Milan (allowing me to come here), thinking that I will so extend the gift chain.

My hypothesis, *food waste may have a transformative power such that its physical presence creates an opportunity for people who encounter it to organize the relationships among them and with food in a way that may not reproduce or resemble the existing structures of social organization*, could not be verified, falsified, or modified, but with more work with RECUP. Before coming here, I was thinking about what kind of methodology I should follow for researching food waste here: qualitative? Quantitative? After coming here, I am sure about the importance of studying with people: things are better understood (for me, and I imagine also for those who read me) by going to see for oneself what happens, by participating in what happens, rather than, for example, asking anonymously through questionnaires. Each person's personality is crucial to understanding their propensity for organizing social relationships, and human passions play such an important role that we need to adopt a method that unveils them. After doing this small fieldwork, I am also aware that the contradictoriness of reality won't allow me to provide a definitive confirmation of my hypothesis, but only to collect an array of perspectives on practices around food waste, perhaps apparently disordered, but able to reflect the complexity of the intermingling of different aspects of food systems.

Another methodological lesson I bring home regards the importance of the visual. At the end of the work time, Matilde makes the sum of everything they weighed and registered and tells us the total. I forget the number, I just remember it's in tons. On the other side, I find a lot of photos and videos on my phone, ready to be shared with my friends. I want to paste in their visual memory the shocking size of the pallets, that I am the first to be unable to forget. Because the quantities are unspeakable: there are more boxes than in the biggest supermarket, there are more bins than in any waste collection point, none of this looks like what I'm used to, every unit of measurement or comparison seems to escape me.

The people in charge of the pick up of the vegetables for the charities will come tomorrow, so we must leave everything ready. Looking at these colorful stuffed pallets, I rethink my work. It certainly had a cost in time, and not a reward in money, but I am so much more rewarded by the feeling of gratuitousness and by the image in my mind of the families that will go take these boxes! Perhaps, this feeling places my work outside of the labour category, suggesting that there are ways of producing something valuable other than those that make us earn money. Today we eventually exit the Ortomercato at 1 pm, one hour later than the official closure time of the hub. There was a lot of work and for the last half hour only three of us remained. And we left with so many pallets still to be sorted... to be sorted tomorrow.



30th March 2026

Today, after the Ortomercato, I decide to go to the local market on Via Termopili, Milan, where the recovery operation takes place right as the market closes, around 1:45 pm. We meet up with four other volunteers: the two elder set up a stall with a scale and a RECUP banner, while the other two girls and I begin our first round among the vendors with a trolley. The round involves picking up any crates left on the ground containing fruit or vegetables that still look good; otherwise, we ask the vendors if they have anything for us. Even though they are familiar with RECUP, the vendors all tend to be diffident. After the round, we unload the trolley of recovered produce, and the two volunteers at the stall begin weighing the items and recording the quantities of each vegetable on a sheet of paper—"the old-fashioned way". They will report these numbers to the RECUP board member responsible for the Termopili market. From that point on, anyone can come to the stall and take what they like (though not everything: the only rule is that you must always leave something for the next person).

We make a second round because many vendors had told us to come back later—partly, I suspect, to brush us off quickly, but also because they actually realize which goods can be sold the following day and which cannot when they are actually dismantling their stalls and reloading their trucks. We gather a huge amount of chicory. I wonder who could possibly take all of it... The RECUP stall is certainly different every day, and the "offer" is often uneven: a few scattered items (like the odd bell peppers we found here and there) alongside numerous full crates of something else (like the chicory). I can only think that we ought to have a big pot here and cook a good chicory-based meal for everyone. Sharing it would be the smartest way to distribute it.

But it is precisely the issue of unique items that drives the scene I witness shortly after. Two women have arrived at our stall and are watching impatiently as the vegetables are weighed: an Asian woman in her fifties and a very, very old lady. Both have already filled their small trolleys with the spoils from the earlier round. As soon as the volunteer finishes writing on the paper sheet, the women literally assault the crate containing the only two cauliflowers that we found. They realize almost simultaneously that one is way bigger and in a better state than the other, but before a lady can grab it, the other snatches it from her hands. For a few seconds, both are clutching the cauliflower, insulting each other and fighting. Thanks to the volunteer's intervention, one of them eventually gives up and goes for the less

good cauliflower, but immediately starts hunting for the best produce in the other crates to make up for the loss.

Meanwhile, a pair of women, likely Southeast Asian and also in their fifties, arrive, along with an African woman with a baby in the stroller. We've got still produce on the table. While the first two carefully inspect each vegetable to pick only the best, chatting just as shoppers would at any market stall, and clearly discarding the damaged items, the mother simply grabs what she needs and quickly leaves. I, however, cannot get that contested cauliflower out of my mind. Cannot believe in "internalized competition" here. What if that cauliflower is a genuine rarity in a life where one can never afford one? What kind of emotions and feelings must poverty cause? I sense their poverty from their appearance, a superficial impression, to be sure, but what in fact reinforces my impression is the obsession they have with filling their trolleys. I don't think I've ever seen anything quite like this. And, behind this table, I also feel very distant from them, as if without knowing their stories I will never really understand what it happened.

6th July 2026

Here I am again on Via Cesare Lombroso, at the entrance to the Ortomercato. I notice a sign I hadn't seen before, at the entrance to the parking lot: "Private property of So.ge.mi." "Private property" is a funny word here, thinking of what we volunteers do—the thing most far removed from pursuing private property. But yes, So.ge.mi. (an acronym for the Italian "Company for the Establishment and Operation of Wholesale Food Markets in Milan") is the joint-stock company wholly owned by the City of Milan that manages and administers the Ortomercato, which it advertises under the *Foody* brand, accompanied by a logo reminiscent of Arcimboldo's fruit self-portrait.

As per the rules, I leave my ID at the entrance and pass through the turnstiles. I have to wait for a series of trolleys full of pallets of vegetable boxes, hooked up to each other, transported by some kind of machine, to cross the road: they parade in front of me. I'm about to take out my phone to take a picture of this, but the guy driving shouts "no photo" and covers his face with his hand. I feel really sorry. But why so? Aside from the fact that I wouldn't have shared my photo anyway, what could a worker be afraid of here? I didn't even sign a no-photo agreement.

I regret not having the time or the means to address the composition of the market's workforce. I'd like to know the story of every forklift driver and warehouse worker... The only thing I couldn't help but notice is that a good 80% of them are of non-Italian ethnicity.

I find Sofia in the hub. Matilde and Lucrezia have already left for the round, and while we are waiting for them, I ask her to share some data on recovered food over the past months. She starts to show me the web page of the data management system that the University of Milan has developed for RECUP. It looks very organized and efficient. There are these options: Donation Notifications; Incoming Donations; Outgoing Donations; Add Donation; View Donations; Donation History; Warehouse; Working Days; Reports.

In the history section, you can select the desired period, which records statistics on the social, environmental, and economic impact of the activity, as well as the composition of each donation—that is, how many of each type of fruit and vegetable was received and/or donated. I ask her if she can share this data with me, and she agrees with a smile. I also ask her if there are certain vegetables in particular that arrive here at the hub in greater quantities, and she tells me (rightly) that it depends on the season (although I don't think the vendors at the market observe seasonality, given that in February there were tomatoes and peppers, while now, in July, we still see pumpkins and kale). However, she and Lucrezia remember the most frequent pallets incoming each month: Romanesco broccoli in January and February, Savoy cabbage in March, daikon in April, and from June onwards, tons of tomatoes. [I'll include a short analysis of this data in a future section.]

Without being asked but reading my curiosity, she tells me the reason why all this registration work is important: that is, for participating in tenders (both public and private). "The data is there, it's all transparent, and when we have to participate in tenders, we're ready." The tenders thing seems fascinating to me. As if the institutions occasionally drop some money to outsource what they can't do. So I shift the discussion to how it feels to work with institutions, first and foremost with the closest one, the City of Milan, whose coat of arms stands out, alongside the logos of the associations that manage this space, on the banner at the top. Two of Sofia's words stick in my mind: "slow" and "pioneering." With the former, in a negative sense, she actually refers to all the institutions they've had to deal with. "It often happens that certain very effective things that could significantly improve our work and that could be done quickly are blocked by political interference or excessive bureaucracy".

With the second, she admits that Milan is truly far ahead of other cities in managing the urban food system, and tells me about its innovative Food policy and about the Milan Urban Food Policy Pact. Then, she tells me she was recently in Barcelona, whose produce market has an even more efficient surplus recovery system. I ask her what more she would like here, and she points out that, first of all, their hub is in a very marginal position in relation to the pavilions of the vendors. Another thing she finds senseless in Italy is that vendors have to pay an annual “flat rate” waste tax that is not proportional to the waste actually produced. Which doesn’t incentivize virtuous behavior, she says. Which always seems scandalous to me. I’ve already studied how the waste tax works here: the calculation mechanism for determining how much a wholesaler pays is based on the interaction between the tax regulations of the Municipality of Milan and the management services provided directly by So.ge.mi. The expenditure is divided into a mandatory tax component and an ancillary service cost component for the operational management of the facility. The tax component of the TARI (Italian Waste Tax) is structured on two parameters defined by the Municipality for category N27 “(Flowers and plants, fruit and vegetables, fishmongers, pizza by the slice”)), which has the highest rate due to the high amount of organic waste: approximately €29.34 per square meter/year (composed of a fixed rate of approximately €18.60 + a variable rate of approximately €10.74). Therefore, the first parameter is the stand’s surface area. This surface area is multiplied by two distinct rates: a *fixed* rate, intended to cover the essential costs of the city’s public waste network, and a variable rate, sized by the *potential* waste production coefficient specific to this economic sector.

However, the mechanism provides a key tax reduction lever linked to the special waste management of the Ortomercato. Since they are non-domestic commercial users, the law allows the vendors to opt out, in whole or in part, of the public collection service if they demonstrate that they independently send their waste for recovery through specialized private operators. By demonstrating the delivery and recycling of organic waste, packaging, and wood through traceable contracts, the operators obtain full exemption from the variable portion of the municipal waste tax (TARI). Under this condition, the local tax due directly to the municipality is reduced only to the payment of the fixed amount multiplied by the square meters of the facility (plus the percentage increase of the provincial tax and any local equalization components). Finally, this municipal tax expense is added to the operating costs

owed to So.ge.mi for the logistical and environmental management of the food center. These costs are apportioned and highlighted within the management fees and condominium service fees invoiced by the company. This amount covers the cleaning of shared corridors and pavilions, the use and maintenance of centralized compactors, the treatment of packaging, and the logistics related to centralized waste disposal, thus completing the total annual cost incurred from the fruit and vegetable company for waste management. The main point of this discourse is: in the traditional TARI system, the tax is not calculated by weighing the actual waste produced day by day, but on a presumed quantity.

With taxes on my mind, I start sorting tomatoes with a sixty-year-old volunteer from the other association. Meanwhile, forklift drivers continue to arrive (most likely sent by Matilde and Lucrezia) unloading pallet after pallet, and I feel a bit overwhelmed. Today there are very few of us. While Sofia begins weighing a box for each type of vegetable that has arrived, only one other young man joins us, very quietly. Only later do I have the chance to ask the girls who he is, and I discover that RECUP regularly takes in people for probationary service (*Messa alla Prova, MAP*), which in Italy represents an alternative to prison, like the “performing community service” (*Lavori di Pubblica Utilità, LPU*). Perfectly in line with the mission of social inclusion. I also remember that one time there was a group of volunteers sent by their company, in the cadre of RECUP’s “corporate volunteering”.

After the tomatoes, we tackle two pallets of oranges, for a total of 140 boxes. Two more volunteers from the other association arrive and tackle the peaches, more or less the same quantity. Their method is to write everything down by hand on a whiteboard. Sofia shouts at them from the scale station: “If you want to write down, peaches are 400kg!” I’m always shocked by these numbers, which then add up and add up. The packaging of some of the oranges I’m sorting makes me smile: they are wrapped in a piece of paper printed with the words: “unique and special”. And then maybe when I unwrap some of these oranges, the fruit is completely moldy. Truly unique and special! In truth: a good three-quarters of the oranges are in perfect condition, and we fill a lot of crates, we can’t even finish the second pallet today. I imagine this scenario and do a quick calculation: if everyone “out there” came here to the market to take an orange or a peach, there would be fruit for about three thousand people. Of course, thanks to redistribution through associations, the result will be more or

less similar. But I really wish everyone could see the work behind it and, above all, the reason why. See what the “natural” destination of all this fruit is.

At some point I go to the back to throw away the dirty paper crates. Sofia is talking to a warehouse worker who asks her: “You going on holiday?” She replies that yes, the market will be closed for the whole of August. “What about you?” “Not me. Last year managed to go back to Pakistan, but this year the boss no let me.” As I return, Matilde is waving to a young man who is smiling at her while loading a crate of oranges onto the truck, for himself. His name is Ahmed, she later tells me. Again, I’m disappointed that I and these people both don’t have time to stop so that I can get them to tell me who they are. There’s always work in between; they arrive, do what they have to do, and disappear. And there’s so much for us today that we have to force ourselves to stop sorting because it’s already past one o’clock. Only the three girls and I are left to tidy up; then, we pick a few vegetables for ourselves from the remaining pallets (“Do you want to shop?” Sofia asks me) and, with a nice, varied bag, we eventually leave the hub.

7th July 2026

Today I arrived in time for the tour. The first stop on the cargo bike is Paolo again, who inevitably greets us with compliments on our beauty... Last time, I hadn’t noticed how full his box is of ceramics from Sicily (his homeland, he reminds us). Then, beyond the machines for coffee—that he invariably offers us, there’s also a huge TV, a speaker connected to Alexa, and other objects that always evoke Sicily. I don’t have time to imagine what it must be like to “come up North” to sell vegetables wholesale in such an alienating place, because he starts telling us a thousand things, until he warns me, as a “newcomer” (he doesn’t remember me) that although he’s happy to have “friends” like us to chat with, there are also bad things about this job, “back there” he says, but I don’t understand what he means, either by “bad things” or by “this job” (is it his or that of the warehouse workers “back there”?). Is it tiring, maybe? Repetitive? Are there often arguments? Problems? It seems like he wants to keep us well away from that world. But anyway, we go to the “back” where he kept the pallets of stuff to be thrown away—that is, to be given to us. Matilde and Lucrezia do the quality checks. Pineapples? “Sold!” Peppers? “Sold!” Etc.).

Having commissioned everything to the forklift driver, we leave, and the girls hint to two boys chatting. I ask who they are. “They’re from another association; they don’t come often, but when they do, it’s always very early in the morning so they can take everything away.” I detect a touch of antipathy. I ask: “Do you know what they do with it?” “They have their own charity, and everything they recover is redistributed only to their users.” I honestly don’t see much harm in it. Well, RECUP’s model is very much based on fair distribution. I’ve often heard Lucrezia remark on the high level of morality they have as volunteers and that they also require from those who come to collect food, so that they don’t try “to grab more than the others” and always prepare pallets with equal quantities of the same products for each association. Yet, this air of competition with other organizations is jarring.

We continue our tour, and the conversation unwittingly continues along: we meet Gian, on his way back from the bar, and we end up chatting again. He tells us he has nothing left to give us because the people from Banco Alimentare have already stopped by, and that he feels sorry because “he prefers us”. He even compliments us, saying that ours is a *particularly successful type of business*, as we send young people (read: young women) rather than retirees, so all vendors are more willing to donate their surplus. “Business” is a word that makes me smile: it just seems far from what RECUP is all about. Certainly, the continuity, the smiles, the chatter are part of a strategy to make the association’s work here at the market successful (Matilde herself emphasizes the importance of cultivating human connection, admitting that, in the end, everyone waits for them every day), but how long is this a calculated tactic? When does it instead become a natural practice born from the fact that they see each other every day and can even, dare I say, grow fond of each other?

Back at our space, we start sorting. There are some potatoes that have been waiting since yesterday, and they smell terrible. I didn’t even think potatoes could rot; at home at most, I found some with sprouts. And yet, when I open the bags, the smell is so bad and pungent that we have to wear masks (which, anyway, isn’t enough). I don’t think I’ve ever smelled anything worse than this. The bags at the bottom of the pallet are in such bad condition that we throw them away without sorting them. I remember what I thought yesterday: this place isn’t exactly pleasant, absolutely true. But yesterday I did leave happy. Again, doing this job gives me something: the feeling of intervening and modifying the default flow of things. Surely, I think, as I move on to the tomatoes, getting my hands dirty is

better than typing away at a computer keyboard behind a desk. One thing I'm certain of is that I don't want to find out how things really are (whether it's about food waste or not) just by reading articles, far from the places they're talking about and from the people who pass through them. My temptation to photograph everything is also a reflection of the desire to make what I am discovering a little closer, more concrete, more visible, more real for others.

2. Other contributions

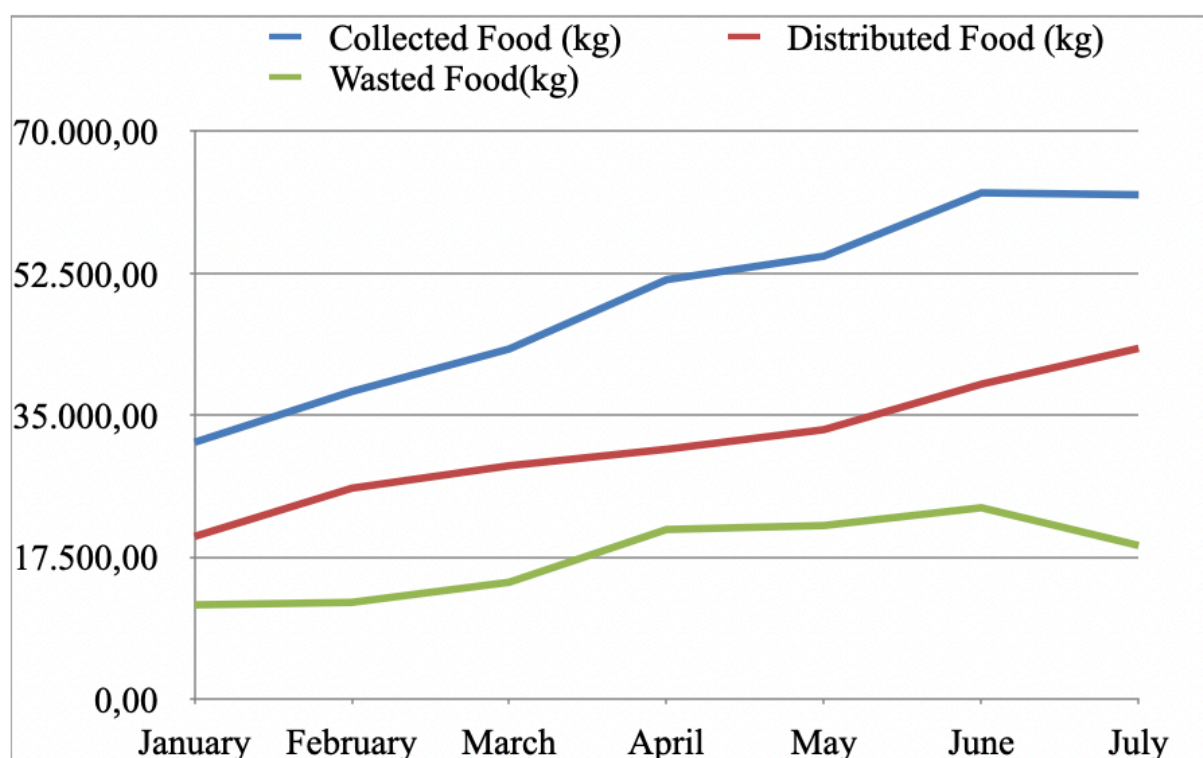
2.1. RECUP's recovery data

As shown in the second section of the first chapter, Table 14 in Annex E of the Estimates of European food waste level (see Appendix n.6) displays “non-available data” for any of the European countries except for three countries with “data has been submitted, but no estimation of food waste amounts has been made”. Although RECUP does not transmit its data to a government statistical body, its data tracking activity is an important example of the scientific potential and contribution that a grassroots association can represent. The amount of food recovered by a single association is negligible compared to the total that would be reached by aggregating the results of the various associations for the recovery of surpluses, but this input from RECUP reminds us that the lack of European data on recovered food, not provided by the Member States, does not mean the absence of methods to collect it.

Through a collaboration between RECUP and the Department of Food Science and Technology of the University of Milan, a database was developed for the registration of the activities at the Ortomercato. Volunteers that became responsible for the “management” of these activities had interest in estimating the numbers of food collection and donation of surplus food for these reasons: first, as you learnt from Sofia's words, because a track and summary of the activity is needed when participating in public tenders, that is when there is the possibility of receiving funding; secondly, in order to make forecasts about the quantity and composition of the food collected and get ready in terms of volunteers workforce in certain periods, as well as mobilizing the “beneficiaries” that are always differentiated according to how much and what type of food they are usually interested in taking.

I therefore transcribed the data from the history section of their data management system (tables in Appendix n.7.) and plotted the following graphs, representing the trends in the quantities of the food collected/received from the vendors and the food distributed to the various associations—the difference between the two is the food eventually thrown away after the selection—, both in the season of my visits at the Ortomercato, extended backwards to the fall and winter seasons (fig. 1), and over the past three years (fig. 2). The activity always stops in August.

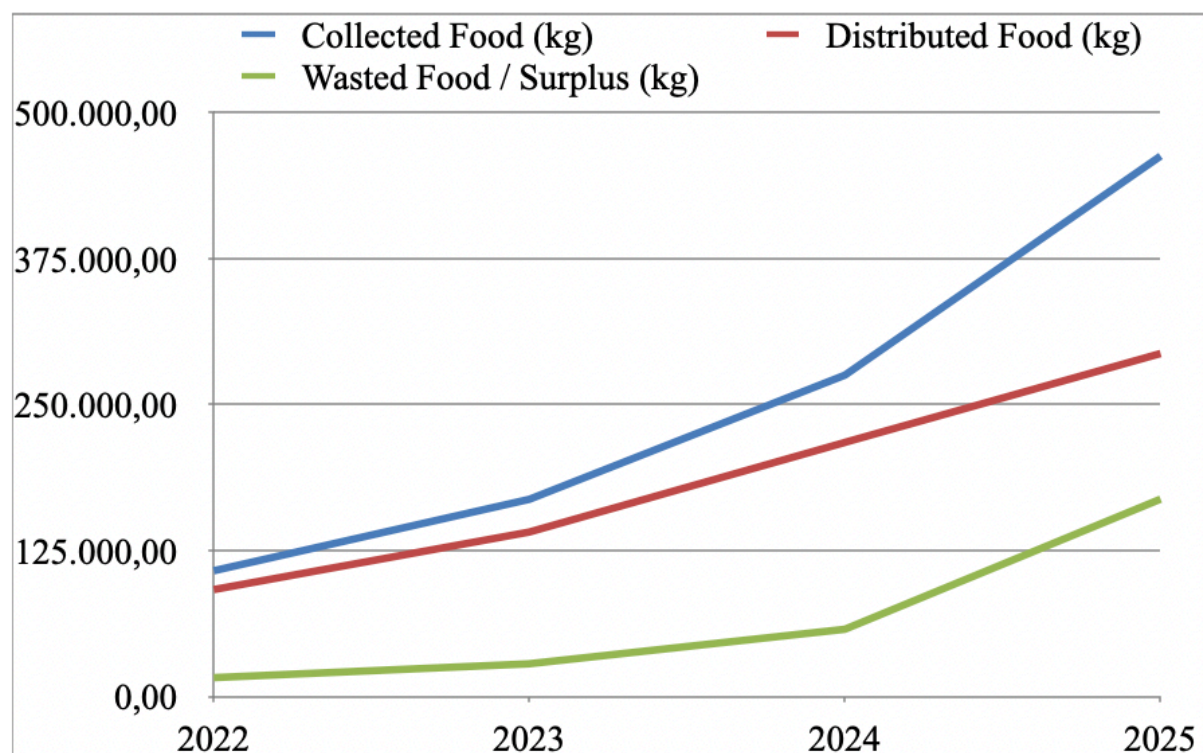
Figure 1.



A short analysis of these trends: even if we don't isolate the seasonal variable from the overall continuous growth of the activities over the years, which impacts all the trends as we go along month by month, we can infer that the quantity of food collected, wasted, and distributed in the Ortomercato's Zero Sprechi hub depends on the season of the year, most evidently because of the varying climatic conditions, which are an important factor affecting the physical state of the food and its consequent edible or non-edible status (I myself witnessed the increase in rotten fruits in July compared to March). Collected and wasted food trends tend to be similar because of the climatic factors: when the heat causes the vegetables

to go bad, both retailers discard more produce, and the volunteers are forced to throw away more bad items, also foreseeing a shorter life of such items after donation. But the gap between the collected food and the distributed food, which accounts for the quantity of wasted food *relative* to the collected, can be explained by a number of other variables, for example the number of volunteers available to do the sorting, greater in certain periods rather than others—this datum is included in RECUP’s register and in the tables in Appendix n.7, and may allow further analysis.

Figure 2.



In Figure 2 we see that distributed food has followed quite linear progress, while in the last year there has been a steeper increase in food collected and in food wasted. In the face of higher amounts of food that arrived in the hub in 2025, the volunteers didn’t manage to redistribute it immediately. Talking with Sofia, I understood that this difference is due to the large increase in collections: the three girls became employed; they went from two days of work per week to three, and then to four days per week (Monday, Tuesday, Thursday, Friday) that is the frequency now (2026). Increasing collections required a transition period in which they had to look for other associations that could manage the logistics to come and collect. In that period, then, more food was collected, but there was not yet the structure to

distribute more, so the food that was in worse condition was thrown away (maybe even if still edible). Yet, Sofia adds that the research for new associations has actually progressed a lot. The number of partner associations today is 53. Most importantly, there are now what she called the “big players” that guarantee greater collection, such as the animal sanctuary, what takes entire pallets of vegetables that most times we don’t even have to select, and another association called “*La Finestra del Sole*” which distributes to a larger web of families and also takes several pallets at a time. According to Sofia, if we make a forecast based on the data to date, which is halfway through 2026, and also consider that towards the end of the year the quantities tend to shrink, the trend of the food distributed will likely follow the growth of the food collected, and even if the food thrown away also increases accordingly, it will not be an increase in relative terms to the food distributed.

2.2. Civic engagement

This other part, an addition to the proper fieldwork, falls under the idea of accounting for a personal involvement or engagement—both mine and of other people—with the aim of showing how the creation of a community around food waste happens in various ways. In fact, becoming a volunteer for RECUP leaves open the possibility of helping not only in the activity of recovering and sorting food at the markets, but also contributing to the structure that surrounds and sustains it. I chose to account for two of the other ways in which RECUP engages in the fight against food waste that are 1) advocating for debate and dialogue on the subject and 2) sharing meals cooked with recovered food.

2.2.1. On the network

By “network”, I refer both to the online activity of the association (on the Internet) and the social networking and co-working with other associations in the sector. Here is a case in which they combine.

RECUP has its own blog, with several contributions from volunteers or external collaborators. Given that I entered RECUP’s world as an intern, and because the Milan Ortomercato was distant from my residence, I took on some other tasks. Among these, my tutor Eleonora asked me to prepare an interview with Raffaele Avigliano, who works for the

Dispensa Sociale project in Bergamo and wrote the book *Nostra Eccedenza. La lotta allo spreco alimentare: un impegno per tutti* (“Our Surplus. The fight against food waste: a commitment for all”) in 2025, and who also wrote an article on the blog of RECUP, with the aim of “sharing some of the thoughts expressed more extensively in the book. To initiate an exchange, albeit virtual, of opinions and reflections”. Given our objective of discovering the potential or the degree of politicization of non-profit enterprises (in Italy especially), I deemed it appropriate to report the article written by Raffaele in its entirety:

«Are we sure that the “poor” should be content with only surplus food?

Behind the good intention of donating surplus food to those in need lies a risk: that of considering people in financial difficulty as mere recipients of the “waste” of the rich. The right to food cannot be guaranteed with leftovers alone: it must be a universal right to healthy, adequate, and culturally respectful nutrition.

Every day, in food solidarity networks, volunteers find themselves dealing with specific requests—for example, from those who are gluten or lactose intolerant, or from those who, for religious reasons, abstain from pork. These are not marginal cases: in Italy, there are approximately 600,000 celiac sufferers and 1.5 million Muslims. Ignoring these realities means diminishing the dignity of the right to food. We cannot be satisfied with what we recover if we truly care about those living in poverty.

The real problem, however, is not the scarcity of food in the world, but its distribution: a third of the food produced on the planet is lost or wasted, according to an authoritative study by the World Food Programme. This would be enough to feed four billion more people. Hunger, therefore, is a question of redistributive justice, not insufficient production.

The nonprofit paradox: repairing others’ damage and saying “thank you” too

There’s a paradox that exists, and sometimes fuels nonprofits in the fight against food waste, more or less consciously: businesses that generate and supply surplus food are considered “donors,” even though they’re actually solving their own economic problem (through reduced disposal costs and tax benefits thanks to the Gadda Law) rather than making a true act of giving. The nonprofit, which is improperly called a “beneficiary,” is actually the entity that, with volunteers and its own resources (including financial ones), transforms surplus food from potential waste into useful food, bearing the costs of living expenses such as transportation, logistics, storage facilities, and so on, without any financial return. This dynamic creates an imbalance: the business rightfully benefits, while the nonprofit shoulders the burdens and responsibilities, with all the difficulties that this creates for the economic sustainability of the project itself. To overcome this paradox, a shift in perspective is needed: businesses and nonprofits must recognize themselves as co-responsible partners, not as donors and beneficiaries, to build a sustainable system that truly reduces food waste and does not mask its structural causes.

Is it worth investing in the fight against waste? Who benefits?

Today, the fight against waste relies on volunteers and the goodwill of a few entrepreneurs. But that's not enough. We therefore asked ourselves whether it was worth it, not only from an economic, but also an environmental and social perspective, to commit to fighting waste. We asked for support from the students of the Department of Business Sciences at the University of Bergamo, who analyzed—using the Bring The Food management software—the case of the Bergamo Dispensa Sociale (Social Pantry).

The study, promoted as part of the “Business and Sustainability” project, not only demonstrates that every ton of food saved is a collective gain—less waste, less CO₂, less wasted water—but it has also been estimated that every euro invested in the fight against waste generates at least three euros in social return. This is in terms of free food redistributed to people and also reduced collective disposal costs.

Yet the organizations that do so don't profit from it: the benefit is for the entire community, not for the nonprofit organization or even the individual company donating the surplus. Therefore, political direction is needed. Reducing waste isn't just an ethical act: it's an environmental, health, and economic policy. We must treat it like renewable energy or sustainable mobility: a strategic priority for the ecological transition.

From service stations to getting us moving

I end these reflections with the classic: what can we do to encourage the ecological transition of food supply chains and reduce inequalities? I believe that non-profits, over the years, have become very good at providing services. In an era of decline in public welfare, fortunately the Third Sector still exists! However, continuing to create services, even more performing and effective ones, is not enough and will not change the world. Non-profits (not all, but most) have stopped doing politics.

Those who deal with waste know the supply chain better than anyone else: they know where it is thrown away, how much, and why. For this reason, it should bring its voice to institutional tables, even at the cost of conflicts with those who finance the projects. There are several cities that have started so-called food policies and it is a good thing, but non-profits can and must also make their contribution. In Rome, in 2021, the Food Council was born, a consultancy that brings together over one hundred entities to write the city's food policy. An experiment born from below, pushed by associations like Terra! and Lands Onlus, which has now become a model of food democracy. As Fabio Ciconte, president of Terra!, recalls: “Transformation is not just good practice; it is politics. Food is the lens through which we can read and change the world.” And perhaps this is precisely the ultimate meaning of the fight against waste: to unite and disappear. Because the day we no longer need solidarity shops or social dispensations, we will finally have won.»

The textual document can be considered already very self-explanatory, but we can relate it with the critique of traditional food aid models. Raffaele is well aware of the problematic donor-beneficiary divide and unequal distribution of power. The article exhibits very well also the issue of the responsibility of States in guaranteeing the right to food (alternatively, the politicization of food security) and the fact that this task is often fulfilled by non-profit entities or actors of civil society, adding that the politicization of food waste should be a priority of the State too, as it has environmental and economic costs (that are shared by all citizens). A significant, still not mentioned, insight regards the financial difficulties that, despite the institutionalization of the Third Sector as a receiver of State incentives, these non-profit organizations carry the burden of the benefit they have for society. Although Raffaele may appear disillusioned by the admitted depoliticization of the food recovery and redistribution activities, he does not renounce stressing the potential of these actors as the most informed about all aspects of the food waste phenomenon and the functioning of the supply chain, even proposing their political participation in institutional tables, which may also result in conflicts with authorities who finance their projects.

Perhaps, the ultimate question through which we could summarize this article: who must pay? Who must pay for both guaranteeing food security and resolving food waste without recurring to the supposed “win-win” equation that ultimately loses in eradicating both problems at the source?

Curiously, Raffaele Avigliano was one of the guests invited to the “birthday” event organized by RECUP for the 10 years from the founding of the association, for participating in a round table with other guest speakers, among which the Hon. Maria Chiara Gadda, promoter of the Gadda Law (also promulgated 20 years ago). In the preparatory works for the talk, Raffaele advances his ideas about the possible answers to that “who must pay” question: big producers? GDO [large-scale retail in Italy]? That is, actors that are very difficult to reach and bring into the discussion. Strategies for their involvement could be studied in further research that would provide the most complete picture of the players in the food waste arena.

2.2.2. Around a table

The round table just mentioned is in plan for the 27th of next September as part Specifically, the talk has the goal of taking stock of the 10 years of both RECUP and the Gadda Law, and building a bridge to the future of food waste in Italy, balancing individual and political responsibility, and understanding together how to transform food and the recovery of surpluses into a systemic and socially just priority. It is going to bring together non-profits and institutions: participants will include RECUP, Raffaele, Hon. Gadda, the social network activist Alessio Cicchini, the IBVA foundation (a charity), the Milan Food Policy administrative office, and the public.

Where is “the political” of such an event? Probably in the fostering of public participation and in the dialogue between some among the actors that have the most transformative potential with regard to the fight to food waste. However, the political “direction” to which Raffaele refers in the article is probably a different thing from an initiative that will have as the most likely result the raising of awareness among the participants and the push to a more sustainable behavior in their houses. Indeed, here we come to the usual conflict between the two perspectives of political and individual responsibility. To avoid that conflict in the first place, an epistemological shift away from mutual exclusivity is needed: individual action does not preclude engagement in a common endeavor, and does not exclude that political direction and cultural/institutional change are necessary. “The best solution” is not one, nor the other, but the two combined. Dialogue must serve this purpose.

Lunch

What is truly interesting about events like the birthday, which is just one, maybe a big one, among other events of a similar kind organized by RECUP during the year, is the cooking and sharing of a meal made out of recovered scraps, where it happens that all participants without distinction do not pay for the food and sit around a table that re-valorizes food destined to waste. This re-valorization in fact consists both in the enjoyable experience of a free and shared meal in company, and in the saving of all the ecological resources that were put into the production of the ingredients.

During the year, RECUP proposes a lot of activities outside the market, mainly structured in zero-waste cooking laboratories/classes or vegetable coloring laboratories for kids. A couple of other more exceptional events of a different format in the history of RECUP, which the association is nevertheless eager to propose again, are those called “Junk Food”. Junk Food are public lunches cooked with recovered food. This practice of RECUP, a quite unique case in the Italian landscape, is perhaps one that approaches the idea of a “commons” model for the food system the food thrown away also increases accordingly, to the extent that it takes the individuals-consumers out of their homes, possibly inducing a critical reflection on the multiple dimensions of food and on the absurdity of wasting food, but most importantly reclaiming the practice of having food as a community activity.

A comparison with the meaning attributed to shared meals by the movements Food Not Bombs and Disco Soupe (cf. section 1.2.7. this paper) would probably reveal a closer affinity with the latter, as there are no strong political claims accompanying this practice in RECUP and the atmosphere is more that of a party rather than political opposition.

2.2.3. Volunteers’ assessments

To conclude the discourse, we now compare the conclusions we might have come to about the politicization of food redistribution organizations, both through Raffaele’s contribution and the example of an event that approaches a “commons” understanding of food, with the opinion of the people who live RECUP it every day.

I, in fact, shortly interviewed some volunteers from the board, and the question was so articulated: “How do you reconcile RECUP’s vision of non-discrimination between the volunteers/ordinary citizens and the people in need of food aid with your collaboration with charities (we could say, how do you guarantee the “no leftover food to socially left-over people” principle)? Have you ever considered alternative ways to allocate the recovered food? (Not that doing as you do is wrong, absolutely, just that the authors I study argue that something very radical is needed to solve both the problems of poverty and waste, something as reclaiming food as a commons to eradicate power

structures where one person decides what to give to another). So, if I were to ask you, on a scale from 1 to 10, how much do you think the association is politicized?» The answers aligned on a similar evaluation:

Eleonora: «In my opinion, politicized 7; we can do better, but we're on the right track. In terms of communication, we can do better in terms of positioning [expressing our position] and criticism of the agri-food/economic system.»

“We maintain a middle ground because of the different management of the local markets and the Ortomercato, with the principle of “removing power structures where someone decides what to give to someone else” best developed in local markets, in my opinion. Then, in the events sector, with the Junk Food format, we're promoting the idea that recovered food is for everyone, is healthy, and creates unity.»

Federica (the president): «It comes to my mind: in RECUP, to be volunteers also means being beneficiaries; we don't make distinctions about who takes food, and this allows us to be horizontal. We simply share it with those who want to fight waste, and each person takes what they want. Another interesting thing is that we donate not only to associations that package meals, but also to the sanctuary, that is a space politically connotated by anti-speciesism. Regarding the overall politicization, I agree with Nora, 6/7, because we can definitely make ourselves louder.»

Sofia: «I agree. I think volunteers approach RECUP because the goal is not aid-based, but environmental and ethical. In the context of the Ortomercato, things are a little different, because the retailers are primarily driven by the traditional social aid rationale or interest. Overall, of course there's room for improvement, but the vision is very clear.

IV

DISCUSSION AND CONCLUSION

The conclusion of this research can be drawn from a discussion on the inputs from the literature review, contextual background, and the fieldwork together. This last part is organized into (1) a list of the main takeaways of the work with RECUP, (2) a quick synthesis of the main key points emerging from the theoretical discussion in the literature, that are given new vigor (also after many pages), and (3) final remarks that revisit the research questions and seek to convey the essential significance of the entire study. The first two parts must not be understood as summaries of chapters II and III, but rather as two distinct ways of putting them in dialogue. The ultimate, general conclusion will consist in the adjustment of the main hypothesis of this research. We may state it again: *food waste may have a transformative power such that its physical presence creates an opportunity for people who encounter it to rethink the relationships among them and with food in a way that may not reproduce or resemble the existing structures of social organization.*

The existing structures of social organization around food have been characterized by the commodification and privatization of food, unequal distribution of power (both between producers along the supply chain, between producers and consumers, and between consumers with different purchasing power), individualism of consumption, and reduction of social relationships around food to the transaction. All of these were also framed in this research as the “radical” reasons behind the production of food waste. We shall integrate our statement by adding that the exposure to the physical presence of such amounts of food waste may also provide an opportunity to look critically at the idea of the causes behind it.

The “rethinking” can now be made explicit in a more concrete way, so that the word indicates not only an intellectual reflection about what food means to us, but, beforehand, an emotional trigger, and afterwards (possibly above all) a shift towards practices based on a decommodified vision of food. Such practices can consist both in engaging in different food consumption habits (for example, reclaiming the judgement on edibility or having meals together with a community) and in political participation for institutional change, if not in political opposition to express dissent towards the current “agro-neoliberalism”.

Can all of this happen? If yes, how? What is that “way” through? The experience on the field with RECUP has tried to answer and the following takeaways represent its attempt.

1. Takeaways

1.1. Materiality and awareness

The contact with food waste does induce a reaction in the human, both emotional and of a reflective nature. The “why” question about the very encounter with discarded fruits and vegetables in absurd quantities often springs from the need to give a name to one’s own emotions (displeasure, disbelief, anger, etc.), that urge an explanation. Put differently: matter that is apparently not alive is able to cause a perturbation in who comes into contact with it. This perturbation is initially emotional, yet right after ontological or existential (in the sense that it interrogates the essence and existence of waste, asking what it really is and why it is there), and eventually, potentially, political (from reflecting on or studying and finding its contradictions, it can move people to actions—more or less effective—to contrast it).

As David Goodman puts it in his critique of agro-food studies in sociology, it is all too rare to find an acknowledgment of food as an “ontologically real and active, lively presence”. Instead, that is exactly what happens at the Ortomercato. And while Jane Bennet focused on the materiality of food components (such as macro- and micronutrients) in having a significant impact far beyond nutriment on human bodies (and souls), the vibrancy of the matter of surplus food that can be perceived there is due to its invasive presence in its specific urban spaces—it does not derive from ingestion.

At the Ortomercato, the sense of sight does most of the work. The load of the cargo bike, those boxes and boxes of unsold food that we look at with dismay, suggests the way in which the vibrant matter of food has resisted or obstructed human projects of mechanization and standardization: to our dismay, and to the “dismay” of machines, foods are diverse in shapes, colors, and tastes (Soma 2020). Food rots, wilts, and bruises. As such, food does make the process of standardization and homogenization very challenging, and it is precisely starting from the sight of those boxes that we can develop a critique of standardization and homogenization and relate to theoretical studies on the subject matter.

For instance, concerning standardization, a reference that we can add is Tsing (2013), regarding the sorting of matsutake mushrooms for the global market. Tsing says that the transnational trade in matsutake distinguishes between low-value mushrooms, processed before they arrive at retail establishments, and the remaining large part of them, sold whole and fresh to final buyers. However, these mushrooms “change hands” many times from the forest to retail markets: besides storing and transporting the mushrooms, the dealers along the matsutake route continuously sort them into value classes. Because the mushrooms don’t change much, an observer might think, “Isn’t assessing them once enough?”, Tsing says. Yet, the obsession with assessment suggests that “although its significance is covered up by ideologies of market transparency and supposedly neutral technologies, assessment is built into every commodity chain, from design through marketing”. With the matsutake case, she shows that the work of assessment is to “purify” the mushrooms precisely as a commodity, erasing other characterizations of the food.

A second lesson taught by a manual/material activity is that by of sorting the crates of fruits and vegetables unwanted by retailers, the boundaries between edible and inedible reconfigure as arbitrary, and the person dealing with imperfect foods can reclaim these foods. Exigent marketing standards have replaced personal judgement on edibility, putting out of play the role of the senses (touch, smell) in determining whether a food, despite looking imperfect, is anyway good to eat. At the Ortomercato, it also came about the fact that aesthetic standards are not only the consequences of official food regulations that retailers respect and have internalized, but they represent a defense for the producers against product liability and price volatility, more than how they serve to protect consumers against unsafe consumption.

Lastly, we learn from the lived experience of a material contact (especially if compared to the food waste measurements in official reports) that the involvement of the senses psychologically impacts emotions and memory more than read numbers. Therefore, experience in waste-making spaces like the Ortomercato not only brings with it reflection and questioning, but is also (and therefore) more likely to affect “consumer” behavior to a greater extent—the perturbation caused by the materiality of discarded food continues in a second moment, as the effect on people’s awareness is lasting beyond that moment.

1.2. Contamination

That's not all we learn from the crates of fruits and vegetables. The activity of sorting, in its requiring a long time, also allows us to elaborate finer or more abstract concepts, still from a very material datum. This is the case of the concept of contamination. A crate of mandarins, where a dozen of moldy fruits were responsible for the retailer's decision to get rid also of the remaining fifty intact ones, suggested two things: first, that contamination brings the idea that the "good" food is *made inedible* by proximity with rotten food. Secondly, that contamination also applies, as an analytical tool, to the study of the anthropological dynamics at the Ortomercato's "Zero Sprechi" hub.

As far as the latter is concerned, the observation of the behavior of some volunteers towards volunteers from other associations involved in the same activities revealed attitudes of competition, envy, and prioritization of private interest over the common good (the maximization of food collected). These attitudes seemed to clash with the shared ethical ideals and, in a broader sense, with a system in which food is commodified and therefore subject to power structures in which private profit prevails. The initial contradiction between a behavior of appropriation and the end of gifting to others (the actual end of the activities of collecting and sorting) is in fact resolved by the idea of contamination: the dominant value system, the dominant form of integration of the economy (exchange in a price-making market), as well as the prevailing logic of maximizing one's own profit—even when this is measured in different ways—are all capable of penetrating even those spaces where people are seeking to create a value system or an alternative economy that prioritizes fairness and sharing. Virtuous, challenger models of reclaiming and distributing food in society can still be contaminated by the more powerful (because institutionalized and normalized) neoliberal model. However, the crate mandarins also reminds us that it's not as though, just because there's something flawed within a whole, you have to throw the whole thing away. Instead, you have to take the good part and try to keep making the most of it without letting the flawed part ruin it all. If we had to draw a conclusive evaluation of the social-transformative potential of the engagement in food recovery and redistribution at the Ortomercato, that would be the idea.

This, without hiding that the question of competition remains open: will a way ever be found to sweep it away from interpersonal relations, especially when material goods are at stake? Is competition unavoidably a component of human nature? There is no answer here to this question, but an input.

And lastly, contamination suggests that we analyze social phenomena avoiding the category of mutual exclusiveness. The case of the Ortomercato's dynamics demonstrates that "existing structures of social organization" are not always replaced by more virtuous ones, where "virtuous" means more able to overcome or eliminate unequal social structures. The argument is provided by the example of RECUP itself: although the association aims at erasing the distinction between donors and beneficiaries, between active volunteers and passive receivers, the reliance on traditional charity donation methods has been forced by the otherwise impossible management of the enormous quantities of agricultural produce at a wholesale market. Charities, despite contributing in the weakening of politicization on food security and being implicated in the neoliberalization of welfare, are introduced by the RECUP case as, at least, an important help in reducing the environmental losses that would come with food waste. The non-mutual exclusiveness of the traditional and "challenger" solutions will soon be upgraded to the concept of temporal reference.

1.3. Insisting on the doable

This last consideration about the impossibility of distributing so many pallets of surplus food in RECUP's ideal way (the real final consumers gathering and sharing it) or by RECUP's volunteers alone, is an example of a concrete limit that brings "back on earth" any theoretical evaluation of the transformative potential of surplus food redistribution solutions.

Similarly, the acknowledgment of the institutional framework in which RECUP is situated is aimed at understanding the practical limits and room for improvement. Providing legal, financial, and logistical contours to these kind of enterprises is precisely aimed at suggesting that research should focus more on what can be done within the current conditions rather than dedicate only to critique.

The question posed to the volunteer at the very end of the fieldwork chapter, "Have you ever considered alternative ways to allocate the recovered food?" is nevertheless an

attempt to expand the horizon of the doable. The focus on the doable, the encouragement of initiatives that are already striving to make the world of food more fair and sustainable, does not exclude (again, non-mutual exclusiveness) that we need to accompany it with a creative strive for change, an endeavor of imagination for finding better, more radical solutions. This consideration also comes from the personal encounter with the people who “rolled up their sleeves” and got their hands on food waste: it would be admittedly very hard to dismiss their commitment.

1.4. The human factor

The sense of novelty, gratuity, gratefulness, marvel, happiness, desire to share, for having in the hands some food we haven’t had to pay for. Anger, disbelief, sorry, trouble, when instead pallets add up and up, revealing the size of wasting practices. The RECUP experience reminds us that we should never forget that the human beings inhabiting social and economic spaces cannot be reduced to rational actors. Their potential to change the *socio-economic* structures in which they participate cannot be studied sweeping away the impact of emotions, concerns, and feelings, as it happens in economic theories where human preferences are reduced to a utility function, nor their beliefs, values, and roles in society (cf. Polanyi et al. 1957, p. 285).

An important human factor is then the propensity to create social relationships other than the exchange-contractual relationship. Unsaleable food is not exchanged for something in return; it is either donated or received with, at most, an exchange of a conversation. In the interplay of people who live the Ortomercato every day, making kins, if not friendship, could have the outcome of enlarging the space for discussion also around the theme of waste. In concrete words, as retailers feel closer to volunteers, they can more easily empathize with the volunteers’ sensitivity to wasting practices—this is a possibility, not yet a fact, that should nevertheless be explored, in order to understand if we should really limit the assessment of an organization’s transformative potential to the political. Actually, during fieldwork it emerged that the employed in agricultural retail consider their job not easy and say they have to worry about many aspects, among which the production of surpluses is only one, that, by the way, does not yet have priority. The hypothesis that households and retailers can influence

(contaminate) each other in a virtuous way regarding wasting behaviors is supported by the fact that interpersonal relationships encourage collaboration in the concrete rescue of wasted food; however, our case study did not show a change in the production of surplus by the sellers of Ortomercato over the years as a result of these relationships, i.e., we cannot say that the contact with people with sensitivity regarding waste (the volunteers) has increased the attention to waste on the part of the sellers in the management of their supply.

In conclusion, as well as the legal, logistical, and financial factors or frameworks need to be taken into account in studying a redistribution organization, the latter is also affected by factors of human nature and the social ecosystem of its people. And notably, the people in the Ortomercato ecosystem are also the more diverse in their biographies: this datum could significantly modify the extent to which they could be interested in participating in structural change and is worth expanding in further research..

1.5. Alienation assessment

The visits at the Ortomercato with RECUP also introduced a twofold theme that was initially left pending (not deepened in the theoretical background) that is about the process of assessment (of vegetables) and alienation (both of the workers and of food).

The “tour” in the Ortomercato and the observed attitude of the retailers reveal the alienation in their job. If we understand “alienation from the product” in Marxist terms, it explains why the making of waste seems not to impact retailers emotionally as it does with volunteers—leaving aside the fact that there is also a degree of normalization when the economic structure you are part of considers it legitimate.

Instead, among the authors of reference, a particular reflection, in a slightly different sense, is A. Tsing’s. The anthropologist suggests that assessment can do varied things in converting value systems. While she focuses on the commodity-making job of matsutake mushroom sorting, showing how the commodity status can be obtained without industrial labor, it is through assessment as a “process of translation” (Tsing 2013) that we may take two insights: first, Tsing defines commodities by the alienation that constitutes them. By redefining the capitalist commodity in this way, we move away from the mainstream understanding of “goods in exchange” (see e.g. Appadurai 2012), and acknowledge that the

commodification of things (in our case, of food), happens precisely through the removal, deprivation of their human or social relations. In fact, “without alienation, the products urge further social relations” (2013). Tsing, in fact, suggests that some forms of assessment actively block gift-like social relations, and calls these forms “alienation assessment”: alienation assessment privatizes, and decides upon the commodity or ex-commodity status of things—in our case of food “items”—by interposing a process that is blind to social relations other than contractual ones. The sorting experience in the Zero Sprechi Hub revealed an opposite effect: a thought that came to help endure the job was precisely about the moment in which a person would have enjoyed food, a motivational thought re-establishing the importance of food for every person, and connecting with another human even if unknown, so tending, if not physically, at least intentionally, to a social relation. Moreover, such sorting-with-care of the volunteers contrasts with the alienated and alienating sorting process of retailers, which instead implies a calculation that first leaves over large quantities of food, and secondly, is aimed not at the benefit of everyone but ultimately of a few persons’ profit.

2. Keywords

In the theoretical framework chapter, many concepts and ideas were introduced as tools for a critical interpretation of the RECUP case. The case itself then contributes to them giving feedback grounded in reality. The following keywords represent the most interesting outcomes of the research and give the experience in the field a substantial theoretical thickness; hopefully, they represent a good résumé of the outcomes of the literature review.

Commodification of food

In simple terms, the commodification of food consists in the prioritization of market-exchange value to foster accumulation rather than use value to feed people. Commodification of food is a theoretical and material process centered on the idea of private property, in its turn the result of a long and contested historical and political process begun with the European Enlightenment and the transition to capitalism, accelerated under British imperialism and the colonial project (Capra and Mattei 2015; Moore 2015; Vivero-Pol 2017a

in Zerbe 2019, see also Magdoff 2012). In recent decades, it underwent an escalation due to the expansion of intellectual property rights on plant varieties, the dramatic acceleration of financialization of food and agricultural markets (Zerbe 2019), as well as the mechanization and industrial methods applied to farms and the monopolistic market concentration of agricultural inputs (Magdoff 2012).

Alternatively, commodification can be understood as the alienation that is constitutive of food as commodity, that is the deprivation from food of the social relationships—other than commercial ones—that it urges, such as relations of gift, of community relations, etc. (cf. Tsing 2013).

Abject capital

Because a commodity qua commodity is defined by its market-exchange value, we could say that discarded food that exits the market becomes an “ex-commodity” (Barnard & Mourad 2020). However, Giles’ idea of a *postindustrial* commodity is more informative about the role of wasted food in reproducing capital and capitalist economic structures. To explain the idea of postindustrial commodity, we shall use Giles’ concept of “abject capital”: discarded food is abject because it has been rejected by the official spaces of the market, however, it is capital because, first, its disposal can never really resolve the contradictions between nullified exchange value and persistent use value—and this is what dumpster-divers and initiatives of redistribution or food sharing exploit; secondly, and most importantly, because it creates the conditions (scarcity) for new demand (then further capitalist return). The roots of abject capital (read: food waste) lie in the structural logic of capital accumulation, in which disposal is not a momentary decision, but rather one reproduced through social practices that dispose objects both in the sense of engendering their disposition—their spatial and cultural orientation—and their disposal (Giles 2020). For example, the postindustrial commodity is the result of a waste-making process that involves not only the producer but also the consumer, who in particular is involved in the discursive and affective labour of producing desire and sentiment toward goods (cf. Gibson-Graham 2006). So, discarded food is temporally located in a phase subsequent to the commodity’s social life and spatially removed from spaces of market exchange.

This segregation from the space of the market is further secured by the social norms of capitalist exchange that stigmatize the free distribution of food in a market-centered public sphere. In fact, the recipients of “abject” food are spatially and symbolically alienated from the market, and likely imagined by donors not to be potential customers anyway (Giles 2020). This segregation can be understood in terms of distancing, which refers to the “separation of production and consumption decisions, both of which impede ecological and social feedbacks”, or the “separation between primary resource extraction decisions and ultimate consumption decisions” (Princen 2002, in Soma 2020). Indeed, distancing is connected to the Marxist critique of capitalism and the politics of consumption, which reframe commodity fetishism as a hypothesis about the effects of consumers having no knowledge about the origins of the goods that they consume (Barnett et al. 2010).

Reflection on distancing (or alienation) between humans and the goods in the capitalist system from an ecological perspective also led Marx to coin the term “metabolic rift”, which I. Scales interprets as the split whereby “people are increasingly separated, both spatially and socially, from the ecosystems that support them” (2017). The term “metabolism” is an interesting one: it was initially used by biologists to refer to “the complex biochemical process of exchange, through which an organism ... draws upon materials and energy from its environment and converts these ... into the building blocks of growth” (Foster et al. 2010), but Marx somehow applied the idea to the social world, so that a “metabolic” *rift* could refer to the disruption (in terms of loss and waste) of the natural dynamic processes that connect humans with the earth.

Common root

The need to eradicate both food insecurity and food waste can be met only by going at the roots of both problems.

Tackling the problem of food waste through donation, or conversely tackling food insecurity through the recovery and redistribution of surplus food, seems the most logical approach because our thinking is shaped by the market logic: that of cost-benefit analysis, optimization, problem-solving, and the maximization of utility. However, contemporary food insecurity extends beyond questions of access, affordability, and self-sufficiency, and emerges from global supply chains dominated by oligopolistic corporations that distance

producers from consumers and prioritize return on profit over nutrition (Ioris 2020). Similarly, the “practical” causes of waste are nothing but the surface: under the surface there is the historical, cultural, and social process of capitalist commodification that first of all *allows* waste.

If we want to tackle both problems—food insecurity and food waste—once and for all without merely addressing symptoms, we must challenge the root causes of both: the neoliberalization of the agrifood system and the commodification of food. The one requires political action (e.g. at the level of food policy), the other an epistemological shift.

Challenger/“commons” models

Whilst there is a wealth of theoretical criticism regarding redistribution initiatives and the limits to their transformative potential—with reference to current-neoliberal social and economic structures—such criticism rarely provides examples of genuinely transformative *and feasible* solutions. The most popular, revolutionary or radical model (so far) for transforming the neoliberal food system, which is based on the notion of food as a commodity or private good (with the consequent exclusion of social relationships other than those involving transactions), is that of food as commons, because, at least in theory, it addresses its epistemological roots and thereby eliminates structures of inequality.

Framing food as commons means freeing food from private property (also state property). From a political standpoint, this translates into a participatory and polycentric governance where small-scale producers and consumers control the food system. Such theorization of food as commons, which emerged from a number of initiatives aimed at reclaiming the cultural and social dimensions of food, primarily in the Global South, has been applied to redefine the functioning of the food supply chain and food relations in various dimensions (cf. *Routledge Handbook of Food as Commons* and section 1.1.3 of this essay); however, in conclusion to this research, we can rarely find the “commoning” of food with surplus food, and the underlying guiding rationale of existing initiatives is, at best, that of food as a public good, redistributed through social safety nets supported by the state. On the contrary, redistribution initiatives like charities have been framed as obstacles to food as commons (see Kenny and Sage 2019). A concrete model for treating food waste as commons is therefore missing.

The experience of Food Not Bombs (FNB) provides perhaps the most radical example to a critique to the capitalist food system *starting from the reallocation of food surplus*, but FNB doesn't refer to a reclaiming of food as commons; rather aligns the re-appropriation of public spaces for sharing food with anti-war and civil disobedience political instances. FNB nevertheless suggests (together with theoretical critique) that “challenger” models of food surplus redistribution (i) have to depart significantly from traditional charity donations, which maintain unequal structures of power, and (ii) cannot be separated from political direct action. A challenger model of food surplus redistribution is one that requires the food industry to prevent or reduce the generation of excess food, not one that serves as a way to manage its food waste disposal costs.

In this sense, the experience of RECUP cannot be properly considered a “challenger” model, but this doesn't mean that the activities of the organization have not transformative outcomes of other kind.

Temporal reference

Actually, we must begin to complement traditional charity with initiatives inspired by a conception of food no longer as a private good (to donate to those who cannot afford it) but as a common good, without distinctions based on purchasing power. Traditional philanthropic initiatives for the collection and distribution of surplus food must begin to be seen just as a *temporary or transitional solution* within a process that must go on and profoundly change the way in which food is understood (theoretically) and the way it is distributed throughout society (practically, by putting this understanding into practice), possibly by redistributive forms of integration of the economy or according to a commons model.

The concept of temporal reference (cf. Toldo 2017) resolves the mutual exclusiveness of brokerage and challenger models, admitting the former only as a model to outdate and giving the latter the time to take the place permanently.

Limited institutions

The reports of global institutions about food waste and food insecurity that we included in the contextual background of this research reveal an approach that relies on an ecological modernization/green capitalist epistemology, focusing on transition- and fix-based

solutions, rather than expressing the need for a radical transformation of the structures of inequality that the modernization of the food system caused. The sustainability of the food system is often framed as sustainability of supply chains, and here understood as a problem of efficiency, or as sustainability of consumption.

Guidelines from the United Nations' Food and Agriculture Organization or from the European Union are the sources on which national public policy refers and confers authority to; while the guidelines tend to base the question of responsibility for preventing food waste on statistical data regarding its production, they don't take into account the social structures that are responsible for it, nor the social relations in real life between the actors involved. In this sense, the institutional framework can prevent the birth and thriving of challenger models from the foundations.

Another institutional limit, as the conversation with RECUP volunteers demonstrates, is that even in the more innovative contexts like the Milan Food Policy, there are bureaucratic slowdowns due to top-down hierarchies that limit the possibilities first of all logistical, but also, to say, transformative, of initiatives like RECUP that re-value food surplus.

3. Final remarks

In this essay, we have tried to understand the ex- or postindustrial commodity of wasted food in both its ethnographic and epistemological dimensions, as part of the larger "waste regimes": a research object situated both at the Ortomercato and within the wider contradictions of the neoliberal food regime it belongs to.

An experience of food recovery, like the one at the Ortomercato, triggers a profound reconfiguration of the perception of value, starting from a novel and gratifying sensation of gratuitousness. When the "products of the earth" somehow exit the capitalist market, because they have been rejected by it, they are free—not only in the sense of "without a price", but also in the sense of being freed. Indeed, they present themselves as something liberated from the constraints of private property, whether belonging to the producer or the distributor, and from price value, so operating a conceptual transition whereby gratuity overlaps with

liberation. What is no longer desired by an economic system based on certain standards and profit is transformed into a gift, not only for the final receiver, but also for whoever experiences the unusual situation of finding in their hands something they did not pay for, and that they can enjoy.

Enjoyment also comes from the sense of reclaiming the decision about the possibility of eating a food. A fundamental decision in the process that generates or prevents food waste is the distinction between edible and inedible food. While institutional documents use these words almost as if they were categorical (either edible or inedible, with no nuances like “bruised but edible”, “edible in part”, etc.), the judgement on edibility actually corresponds to in- and out-of-commodity condition, and so far it seems that the formal market has not found an operational middle ground: paradoxically, for the sellers is less costly to throw away a crate that has few inedible and many edible items, rather than spend time in separating the two. Comparing the two ways of doing assessments, of the retailers and of the volunteers, there are indeed two different logics: in the first case, the logic is the cost-benefit equation; in the second, there are not labour costs. To consider food sorting, or assessment, not as labour but as something else, interrogates us about what this something else is: it is a relationship of care. Behind that, there is not precisely a logic but an ethics of ecology (care about the fruits of the earth), a sense of justice and equity (care about the people that will eat the food).

Deciding between the edible and the inedible has a cultural consequence: by shifting the value criterion from profit to nutrition, it reprioritizes the dimension of food as human need over that of food as commodity. Deciding about good food or food to throw away also implies including in the good food some that has imperfections. And, as a last remark, admitting imperfection in this epoch is a revolutionary cultural act.

If a reflection like this is an important outcome of the experience at the Ortomercato, from a broader perspective the main “cultural” outcome of that experience is this very research. We must remember that all the work that has been done to explore the topic of food waste and surplus redistribution, also in its more compilation-style forms, has originally sprung out of a contact with wasted food. If the emotions in front of a phenomenon can be translated into a systematization of the problem, this research suggests that we should go out there and see the real objects that we want to study and listen to what they can say to us, we

should enrich the literature with field experiences that help us understand where to find the dysfunctions of the system we live in, and make them visible to those who read or we know.

The will to speak to common people must remain a priority of research about these issues: since when food waste is truly brought to light, it shocks everybody, it is important that everybody feels empowered to act together, from the greengrocer to the customer, from the cook or the waiter to the client, from the student to the policymaker. This focus on grassroots engagement is further motivated by the conviction that consumer behavior and political action are not mutually exclusive. Indeed, it is precisely because self-organized communities and social food movements are grounded in non-commodified paradigms that they are perceived as a threat by the consolidated oligopoly of the industrial food system, the state and the market, whose capital remuneration and extraction of value are incompatible with a view of a food that cannot be appropriated, controlled, monopolized and profited from.

However, given the complexity of the contemporary food regime, it would be presumptuous, respecting the very diversity that the idea of commoning wants to foster, to point to one leverage point or one-size-fits-all solution. Acknowledging that change is, as for now, represented by niche or territorial experiences, we nonetheless should not give up studying how change *can* be done at the macro level, e.g. through institutional modification, in a way that challenges the very foundations of the neoliberal food regime. Technological, isolated, but also merely localized solutions are, in the end, inherently insufficient to address food waste as a generalized and ubiquitous problem.

The case study was clearly introduced against the backdrop of a criticism towards charity and donation models in the literature. As Toldo (2017) shows, these models have come to represent the most widespread, organized, and institutionalized component of food assistance, to the point of structuring an emergency food system that nonetheless operates according to a logic similar to that of large industry. Some scholars go further, arguing that by institutionalizing charity, and through an illusion of effective action, food banks alleviate feelings of guilt and distract from real structural inequalities, contributing to a broader “depoliticization of hunger”, becoming, in this sense, part of the problem itself. Read through Giles’ (2020) critique of the postindustrial commodity, food recovered through charity can indeed still be understood as “abject capital”.

What follows is not a dismissal of redistribution, but surely the need to abandon the vision of a top-down global food system and engage instead with the construction of bottom-up food systems. However, clear-cut categorizations of models of redistribution, with the consequent criticism against some of them, risks falling into a very common error in Western thought in particular, that is using dichotomies in normative considerations. Dichotomies imply mutual exclusiveness of two options. What we found studying RECUP is that while in principle, or in theory, food banks and charity donations are not a solution to food waste, because they maintain unaltered the structures that produce it, in practice they still represent the only option to avoid a “politics of abandonment” *while* new, more political or anti-system ways of redistributing surplus food take shape and action and gain enough visibility to affect both individual and institutional engagement.

It is in this context of imperfection that the degree of politicization of RECUP itself must be assessed, and the main hypothesis of this research adjusted accordingly. While the idea that initially attracted the attention to RECUP was its explicit non-charitable self-understanding, later the fieldwork showed that the association has in practice adopted charitable-like methods (e.g. the donation to food aid associations at the Ortomercato), not only retracing, in this, the dynamics of “contamination” discussed above, but also suggesting that, often, the logistics of recovery and redistribution of surplus food require the combination of methods that do not necessarily match with the guiding ideology. Rather than a weakness to conceal, this can be an indication for improvement: RECUP could achieve a political or challenger potential in other ways, for example by insisting on education (even just with the people that encounter the organization) about the structural causes of food waste; or by approaching experiences such as Food Not Bombs. What instead appears as a potential weakness in the RECUP case (but not depending on RECUP people only) is the inter-association competition marked by envy. We might need to understand to what extent this is an ineradicable factor—because intrinsically human—and to what extent, instead, it stems from the internalization (read: contamination) of neoliberal competition.

The contribution from RECUP must also be assessed, even if more modestly, at the level of data. The third sector in this field has a determinant role not only because it fills the gaps left by the governments in covering food security, but also because it brings to light the size of a phenomenon that takes its strength also from its being hidden: reliable data on

recovered food remains scarce despite the great quantities at stake. Sharing the accurate records of collections kept by RECUP volunteers who took it upon themselves to register this information may have no relevance at the global level, but prove useful for municipal or regional policy, and this points toward the broader potential of public participation or citizen science in the field. According to the data plotted in the graph, the activity and impact of the association over the years are growing. If data like these were to be aggregated with those of other similar initiatives, assuming they are growing too, we might have greater hope that an alternative way of integrating the economy could progressively take the place of the current dominant one. In this sense, it is important to continue to talk about these initiatives.

Moreover, the embeddedness of RECUP's activity in the city suggests the potential of urban food strategies (cf. Pettenati et al. 2019), not only because one of the strongest features of urban food strategies is their positive impact on food security, due to the good degree of independence that local authorities and communities gain vis-à-vis market dynamics, but also because, as the Milan Food Pact network demonstrates, their food waste strategies can virtuously contaminate each other. In any case, further research in the direction of urban strategies is encouraged also because the distancing of people from food and food waste of which we were speaking earlier is, as the geography of the Ortomercato exposes, also a matter of physical displacement or confinement.

Finally, if we took back the initial research questions and gave synthetic answers based on the outcomes of the research, they would sound as follows: first, "to what extent does food waste act as a concrete demonstration of the dysfunctions of the neoliberal food regime and its radical inequality?": It reveals the epistemological or cultural narrowing of the meaning of food as a commodity that is at the foundations of that regime. At the moment in which wasted food, as such, ceases to be tradable food (it is free from price), and when its consumption is reclaimed by the people that recover it, it restores the anthropological and social dimensions of nourishment and of sociality, that are instead left out in the price-making market system despite being fundamental human needs. The experience within the activities of RECUP entails a continuous effort (both mental and manual) to refocus on the dimensions of food as something that is to be eaten, and that creates social kins.

Moreover, since the amounts of pallets like those at the Ortomercato make it look irrational that an economic systems based on profit from consumption wastes so much, we explained that as a way in which capitalism *induces* scarcity and new demand. The main dysfunction of this dynamic is, however, that continuously new production goes at the expense of the natural ecosystem (in terms of loss of resources), this being perhaps the greatest concern among RECUP's volunteers that in fact care about transforming their food collection data in CO₂ equivalents and m³ of water saved (see again Appendix n.7).

Food waste most importantly reveals the radical inequality of the neoliberal regime when in its understood in conjunction with the problem of food poverty and hunger. It is enough to compare the staggering numbers measuring both phenomena in official reports, but we can strengthen this argument by returning to the physical dimension that is the thread of the research. The episode about the contested cauliflower at the local market suggests us that where food waste takes place, in those places we can also come into contact with poverty—this is valid not only in this specific case within the experience in RECUP, but most evidently in the context of charities. The primary goal of the institutions that take up more frequently the job of redistributing surplus is actually to make up for existing inequality in access to food. Even if we concluded, in the theoretical framework, that we cannot solve one problem by exploiting the other, in the situation of finding a destination for surplus food, the latter still represents a vehicle for coming into contact with the lack of food, thereby exposing the radical contradiction between excess and poverty, and suggesting that if both exist, there really must be something wrong with this system.

A second question was: “To what extent does food waste work as a vehicle for the creation of a better (fair, democratic, horizontal) food regime?” To conclude, when the commodity status is removed from food, it is possible to restore relationships based on gifts instead of mere exchange. The existence of this type of relationship alone cannot give birth to a new economic arrangement, but through the institutionalization of food redistribution models that, in our case, deal with surplus food—and among which RECUP is an outstanding example—we propose that a different arrangement has room to develop. Moreover, as for now, waste recovery is also able to create spaces that grassroots organizations can use for making ecological and more oppositional political claims (see FNB).

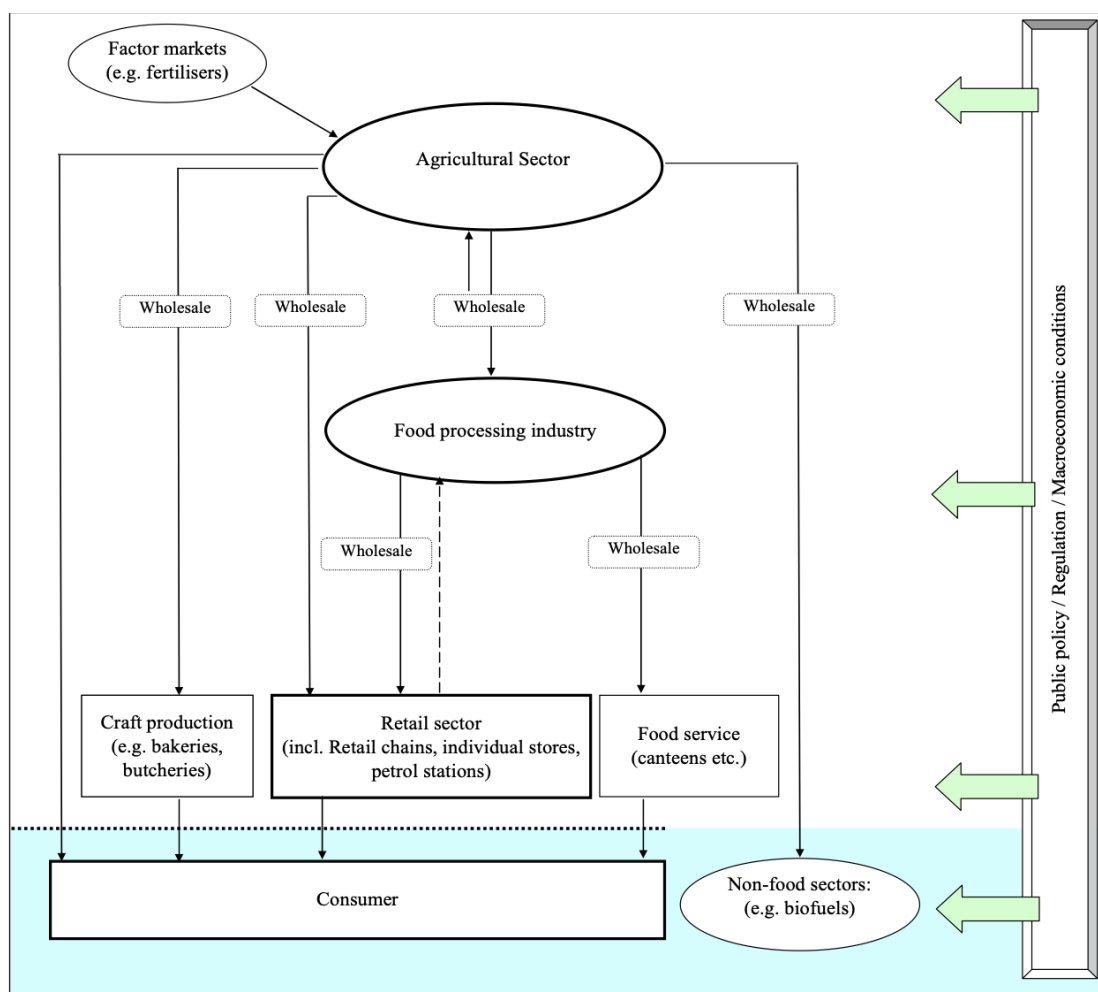
On the other hand, food equity and justice are ideally achieved only when consumers take control of supply and distribution, as it is envisaged by the commons model. This is not the case of RECUP, or better, their activity does not directly impact production, though it can do so indirectly by affecting people's awareness (people's consumption). As far as the democratic aspect is concerned, RECUP and grassroots organizations represent an important example of citizen science, as they often become experts about the phenomenon of food waste. What is desirable, though, is that this contribution to knowledge is extended to public participation at the level of decision-making, for example in institutional tables.

Even more desirable (and necessary) is that associations of people around food waste which are trying to create, on their own, alternative spaces to our hierarchical food system are first of all brought to light, then no longer considered "a third" sector: taking into account the concept of temporal reference, meaning that local solutions cannot definitively subvert the neoliberal food regime, we still need to learn from their experiences with waste and with food and imagine these as the starting point for a real *institutionalization* of redistribution or commons as a profoundly different socio-economical arrangements of the food regime.

APPENDICES

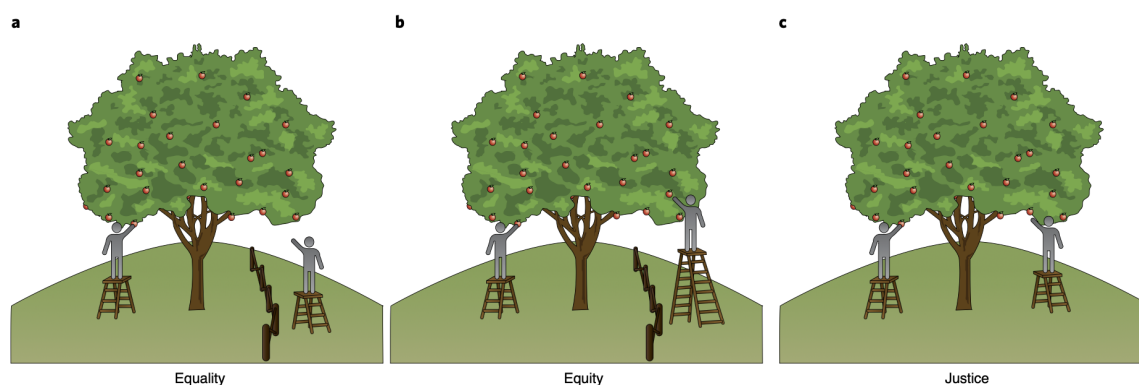
Appendix n.1. Schematic representation of the food supply chain.

From Bukevičiūtė, L., Dierx, A., & Ilzkovitz, F. (2009). The evolution of food prices in the European Union (Occasional Papers No.47). European Commission, Directorate-General for Economic and Financial Affairs. p.5.



Appendix n.2. The difference between equality, equity and justice

From Downs, S. M., & Fox, E. L. (2021). Uneven decline in food system inequality. *Nature Food*, 2(3), p. 141.



Equality (a) implies that everyone receives the same resources and support irrespective of their needs and the structural barriers they face.

Equity (b) implies that individuals receive different resources and support based on their needs, enabling them to have equal access and opportunities.

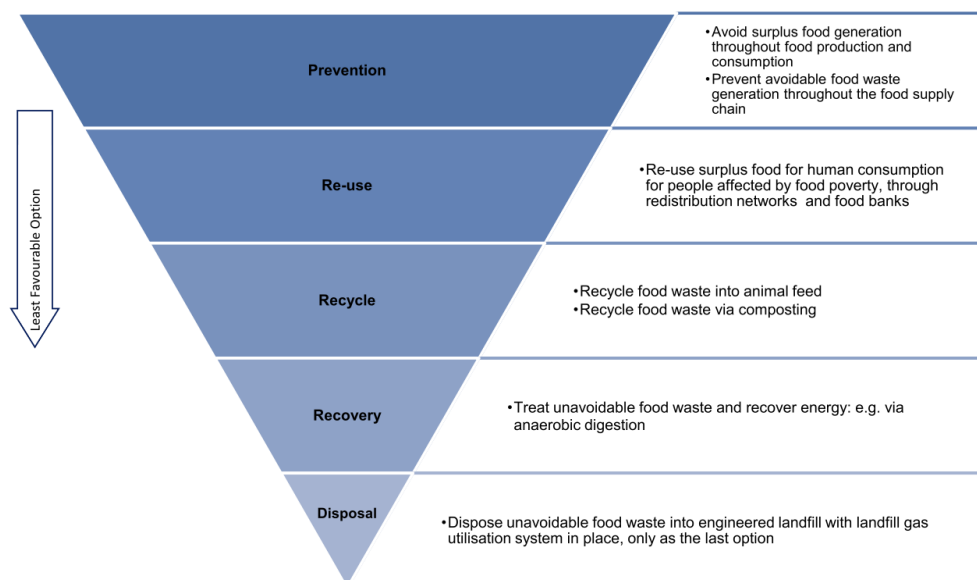
Justice (c) implies that structural and systemic barriers are removed allowing individuals to have equal access and opportunities. Figure inspired by Ruth, T. *A visual summary*. In Design in Tech Report 2019: Section 6: Addressing Imbalance (11 March 2019); <http://go.nature.com/3b56Pfx>

Appendix n.3. Example of marketing standards of food items, according to Regulation (EU) No. 1308/2013 and Commission Delegated Regulation (EU) 2023/2429 of the European Parliament.

Food / Product Category	Visual & Physical Appearance Standards	Permitted Defects & Grading
General Fresh Produce	Must be intact, sound (free of rot/bruising), clean, practically free from pests, free of abnormal external moisture, and at an appropriate development/ripeness stage.	Extra Class: Virtually defect-free. Class I: Minor defects in skin, shape, or color. Class II: Noticeable defects in shape, color, or skin blemishes
Apples	Strict skin coloring criteria (e.g., required % of red blush per class); minimum diameter or weight requirements (e.g., ≥60 mm diameter for Extra Class/Class I).	Surface russeting (rough brown patches) and skin defects strictly limited by total surface area.
Citrus Fruits (Oranges, Lemons,	Characteristic coloring required; light green fruit allowed only if minimum juice content is met. Must be free from major skin blemishes or punctures.	Strict percentage limits on skin defects caused by pests (e.g., thrips), chafing, or mechanical damage per quality class.
Bananas	Unripened green bananas must be intact, firm, and free of bruising. Must meet minimum length (typically ≥14 cm) and thickness (grade) standards.	Finger malformations, severe curvature, or skin scarring downgrade or disqualify fruit from fresh retail display.
Tomatoes	Categorized by commercial type (round, ribbed, oblong, cherry). Strict size uniformity within packages required (e.g., 5–10 mm diameter variance in Class I).	Unhealed skin cracks, severe greening at the stem end, or physical skin damage disqualify fruit from Class I.
Eggs	Class A: Clean, undamaged, unbroken shells with normal shape; internal air cell height ≤ 6 mm (≤ 4 mm for Extra Fresh).	Class B: Eggs with minor shell defects, discoloration, or rough textures are restricted to industrial processing.
Olive Oil	Standardized clarity and color requirements corresponding to designated quality grades (Extra Virgin, Virgin).	Free from visual sediment or organoleptic defects.

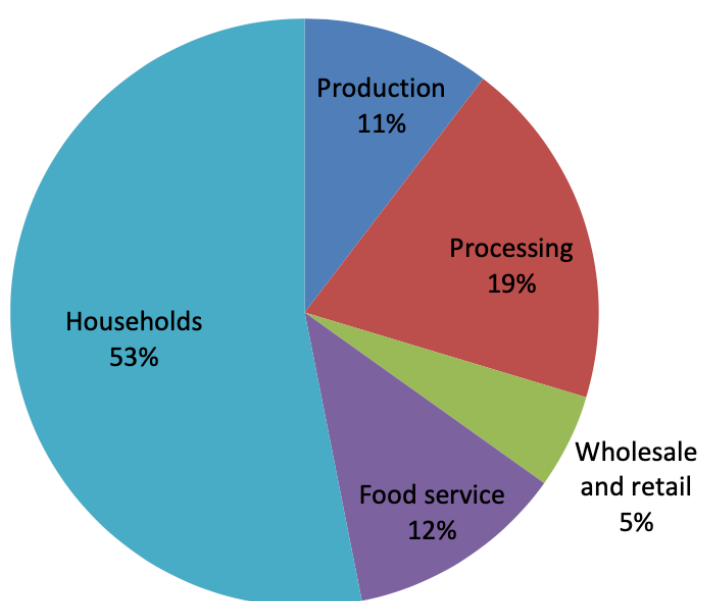
Appendix n.4. The Food Waste hierarchy

From Papargyropoulou, E., Lozano, R., Steinberger, J. K., Wright, N., & Ujang, Z. B. (2014). The food waste hierarchy as a framework for the management of food surplus and food waste. *Journal of Cleaner Production*, p. 148.



Appendix n.5. Split of EU-28 food waste in 2012 by sector; includes food and inedible parts associated with food.

From Stenmarck, Å., Jensen, C., Quested, T., & Moates, G. (2016). Estimates of European food waste levels. IVL Swedish Environmental Research Institute / FUSIONS Project, p. 27.



Appendix 6. Annex E: Countries providing data - Table summarizing evaluation of data provided by member states.

From Stenmarck, Å., Jensen, C., Quested, T., & Moates, G. (2016). Estimates of European food waste levels. IVL Swedish Environmental Research Institute / FUSIONS Project, p. 63.

Country	1. Production (NACE 1-3)	2. Processing (NACE 10-11)	3. Wholesale and logistics (NACE 46)	4. Retail and markets (NACE 47)	5. Redistribution (food donation etc.)	6. Food service (NACE 56)	7. Household
Austria	No data available	Food waste data of low quality	No data available	Data of sufficient quality	Data has been submitted but no estimation of food waste amounts has been made.	Data of sufficient quality	Data of sufficient quality
Belgium	Food waste data of low quality	Food waste data of low quality	Food waste data of low quality	Food waste data of low quality	No data available	Food waste data of low quality	Food waste data of low quality
Bulgaria	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Croatia	Low food waste amounts	Low food waste amounts	Low food waste amounts. Several or major waste flows not being covered.	Low food waste amounts. Several or major waste flows not being covered.	No data available	Low food waste amounts. Several or major waste flows not being covered.	Low food waste amounts. Several or major waste flows not being covered.
Cyprus	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Czech republic	Low food waste amounts without any explanation given	Low food waste amounts	Food waste data of low quality	Food waste data of low quality	No data available	Low food waste amounts. No explanation on what was included.	Several or major waste flows not being covered.
Denmark	Data of sufficient quality	Data of insufficient quality as only edible food waste was reported.	Data of sufficient quality	Data of sufficient quality	No data available	Data of sufficient quality	Data of sufficient quality
Estonia	No data available	Low food waste amounts	Data of sufficient quality	Data of sufficient quality	No data available	Low food waste amounts	Data of sufficient quality
Finland	Data of sufficient quality	Data of insufficient quality as only edible food waste was reported.	No data available	High food waste amounts. No explanation on what was included.	No data available	Data of sufficient quality	Data of sufficient quality
France	Data of sufficient quality	Data of sufficient quality	High food waste amounts. No explanation on what was included.	High food waste amounts. No explanation on what was included.	No data available	Data of sufficient quality	No information on what was included was retrieved.
Germany	Data of sufficient quality	Data of sufficient quality	Data of sufficient quality	Data of sufficient quality	No data available	Data of sufficient quality	Data of sufficient quality
Greece	Low food waste amounts without any explanation given	High food waste amounts.	Data of sufficient quality	Data of sufficient quality	No data available	Low food waste amounts. No information on what was included was retrieved.	No information on what was included was retrieved.
Hungary	No data available	No data available	No data available	No data available	No data available	No data available	No data available

Ireland	No data available	No data available	High food waste amounts. No information on what was included was retrieved.	High food waste amounts. No explanation on what was included.	Data has been submitted but no estimation of food waste amounts has been made.	Data of sufficient quality	Data of sufficient quality
Italy	Data of sufficient quality	Data of insufficient quality as only edible food waste was reported.	Data of sufficient quality	Data of sufficient quality	No data available	Data of insufficient quality as only edible food waste was reported.	No information on what was included was retrieved.
Latvia	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Lithuania	Low food waste amounts	Data of sufficient quality	Data of insufficient quality.	Data of insufficient quality.	No data available	Data of insufficient quality.	No information on what was included was retrieved.
Luxembourg	No data available	Low food waste amounts without any explanation given	Data of sufficient quality	Data of sufficient quality	No data available	Low food waste amounts without any explanation given	Data of sufficient quality (excluding sewer and home composting)
Malta	No data available	Data of insufficient quality.	No data available	No data available	No data available	No data available	Data of sufficient quality (excluding sewer and home composting)
Netherlands	No data available	No data available	No data available	Data of sufficient quality	Data has been submitted but no estimation of food waste amounts has been made.	Several or major waste flows not being covered.	Data of sufficient quality (excluding home composting)
Poland	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Portugal	No information on what was included was retrieved.	No information on what was included was retrieved.	No data available	No data available	No data available	No data available	No data available
Romania	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Slovakia	Low food waste amounts. Several or major waste flows not being covered.	Several or major waste flows not being covered.	No data available	No data available	No data available	No data available	No data available
Slovenia	Low food waste amounts. Several or major waste flows not being covered.	No explanation of what was included in the amounts could be given.	Data of sufficient quality	Data of sufficient quality	No data available	Low food waste amounts. Several or major waste flows not being covered.	Park waste and non household MSW are included in the amounts
Spain	No data available	No data available	No data available	No data available	No data available	No data available	No data available
Sweden	Data of sufficient quality	Byproducts are included in the amounts.	No data available	Data of sufficient quality	No data available	Data of sufficient quality	Data of sufficient quality
United Kingdom	Data of insufficient quality.	Data of sufficient quality	Data of sufficient quality	Data of sufficient quality	No data available	Data of sufficient quality	Data of sufficient quality

Appendix 7. Tables collecting data on the impact of RECUP activity.

July-December 2025 Impact Analysis Report						
Social Impact						
Month	Days	Hours	People Assisted	Total Volunteers	Recup Volunteers	Corporate Volunteers
July	14	42	11.897	171	111	60
September	13	39	10.901	157	107	50
October	16	48	15.125	291	89	202
November	12	36	12.451	214	110	104
December	10	30	5.200	96	78	18
TOTAL	65	195	55.574	929	495	434
Environmental & Economic Impact						
Month	Collected Food (kg)	Distributed Food (kg)	Wasted Food / Surplus (kg)	CO2 Saved (kg)	Water Saved (m³)	Money Saved (C)
July	46.229,09	33.312,67	12.916,42	30.954,44	377.121,70	91065
September	48.406,70	30.522,60	17.884,10	34.790,67	289.196,23	78304
October	59.407,55	42.350,52	17.057,03	40.649,66	530.981,27	119424
November	54.069,20	34.862,62	19.206,58	34.394,92	462.635,38	93846
December	22.063,60	14.560,90	7.502,70	16.327,85	89.431,25	42693
TOTAL	230.176,14	155.609,31	74.566,83	157.117,54	1.749.365,83	425333

January-June 2026 Impact Analysis Report						
Social Impact						
Month	Days	Hours	People Assisted	Total Volunteers	Recup Volunteers	Corporate
January	14	42	7.156	100	84	16
February	16	48	9.283	111	94	17
March	18	54	10.272	240	222	18
April	16	48	10.998	167	119	48
May	16	48	11.861	217	114	103
June	16	48	13.863	189	106	83
TOTAL	96	288	63.433	1.024	739	285
Environmental & Economic Impact						
Month	Collected Food	Distributed Food	Wasted Food(kg)	CO2 Saved (kg)	Water Saved	Money Saved (C)
January	31.645,10	20.036,70	11.608,40	29.525,70	118.304,11	58552
February	37.911,80	25.993,30	11.918,50	35.030,65	263.481,33	69579
March	43.158,50	28.761,36	14.397,14	30.712,05	248.940,40	85273
April	51.696,77	30.795,06	20.901,71	43.572,40	335.569,30	106638
May	54.600,65	33.209,75	21.390,90	33.827,82	257.913,34	103788
June	62.404,60	38.815,00	23.589,60	33.885,33	400.382,85	120472
TOTAL	281.417,42	177.611,17	103.806,25	206.553,97	1.624.591,32	544302

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Dichiarazione del ricorso a strumenti di Intelligenza Artificiale (IA)

Il/La sottoscritto/a [Anna Bonavia](#), matricola numero [890011](#), iscritto/a presso Ca' Foscari al corso di Laurea/Laurea magistrale in [Environmental Humanities](#), autore/autrice dell'elaborato finale/tesi di laurea [Contact with food waste and the non-profit redistribution of surpluses: challenges to the neoliberal food regime? The case of RECUP](#), relatrice [Valentina Bonifacio](#), consapevole delle sanzioni previste dall'art. 76 del Testo unico, D.P.R. 28/12/2000 n.445, e della decadenza dei benefici prevista dall'art. 75 del medesimo Testo unico in caso di dichiarazioni false o mendaci, sotto la propria personale responsabilità ai sensi degli artt. 46 e 47 del D.P.R. 28/12/2000 n. 445,

DICHIARA

☐ di NON aver fatto ricorso a tecnologie di intelligenza artificiale generativa per supportare vari aspetti della ricerca e della scrittura del suo elaborato finale/della sua tesi di laurea;

☒ di aver fatto ricorso a tecnologie di intelligenza artificiale generativa per supportare vari aspetti della ricerca e della scrittura del suo elaborato finale/della mia tesi di laurea, in particolare:

- *Google Gemini 3.6 Flash (rilasciata luglio 2026), Gemini 3.5 Flash (maggio 2026), Gemini 3.1 Flash (febbraio 2026) con accesso tramite account istituzionale di Ca' Foscari; Claude Sonnet 5 (giugno 2026); DEEPL e Google Translate come traduttori.*
- *Usate prevalentemente per :*
 - *NON per revisione e ottimizzazione dei testi per migliorare chiarezza e coerenza; SI per correzione errori grammaticali in lingua (Grammarly);*
 - *NON per generazione di grafici e diagrammi per la presentazione dei dati; ma SI per la conversione di immagini .JPG contenenti dati, in file .numbers, per il trasferimento dei dati stessi;*
 - *NON per supporto alla scrittura automatica di frasi;*
 - *NON per produzione di immagini illustrative per integrare la parte metodologica;*
 - *Altro: Curare la traduzione di diario/appunti scritti personalmente, dall'italiano all'inglese; condurre un esperimento che prevedesse esplicitamente un prompt all'Intelligenza Artificiale; estrapolare con rapidità informazioni mirate da fonti bibliografiche lette in passato*.*

sezioni/capitoli interessate/i (in ordine rispettivamente agli utilizzi sopra citati):

- *Appendice n. 7.*
- *Capitolo III sezione 1.*
- *Capitolo I, sezione 1.2.4.*
- *Capitolo I, sezione 1.1.2.*

**la correttezza, la qualità e l'attendibilità delle risposte generate sono state validate dalle conoscenze dell'autrice e da un prompt di verifica del processo generativo.*

DICHIARA INOLTRE

che tutto il materiale generato dall'IA è stato attentamente verificato, rivisto e rielaborato dall'autore/dall'autrice, che si assume la piena responsabilità per la qualità, l'accuratezza e l'integrità scientifica del lavoro.

