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Revista de Cercetare si Interventie Sociala

ISSN: 1583-3410 (print), ISSN: 1584-5397 (electronic)

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Revista de cercetare și intervenție socială, 2019, vol. 65, pp. 325-337

<https://doi.org/10.33788/rcis.65.20>

Published by:
Expert Projects Publishing House



On behalf of:
„Alexandru Ioan Cuza” University,
Department of Sociology and Social Work
and
HoltIS Association

REVISTA DE CERCETARE SI INTERVENTIE SOCIALA
is indexed by Clarivate Analytics (Web of Science) -
Social Sciences Citation Index
(Sociology and Social Work Domains)

Recycling Food to Promote Social Inclusion. An Empirical Evidence

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Abstract

The purpose of this article is to frame the current debate about food waste in developed countries and to understand what kind of inclusiveness can be promoted through social action on this topic. The research developed in two steps: first quantitative data were collected (846 questionnaires) and analyzed; then critical issues were identified and 50 interviews were conducted to better understand the experience of one project initiative connecting food gatherers and selected food wasted by merchants. Results show that donation of food otherwise wasted during local markets is a common practice, but its impact and value is underestimated by merchants. The initiative is interesting and its potential for inclusion and normalization of the gathering phenomenon is rather clear. The research shows how participants to this project, both volunteers and users realize an inclusive community adopting the same practice of food saving, despite having a different motivation. Such an initiative represents a practice of social innovation as it is not only targeted at poor people, nor it is trying to solve one specific problem: it rather tries to disseminate a different kind of consciousness around food and its waste.

Keywords: food recovery, food waste, poverty, social inclusion, social innovation, social action.

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Introduction

Food security is a fundamental concept defined during the 1996 World Food Summit: “Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”. Food security seems to be threatened by the constant increase of world population, but to this day population growth have not yet outstripped food production. Thanks to agricultural land expansions and technological innovations the overall production of calorie production per capita is higher than ever before (Godfray *et al.*, 2010). However, while many countries are witnessing an increase in obesity both among adults and children, malnutrition persists among large sections of the population (Ramankutty *et al.*, 2018).

The availability of primary elements and agricultural production has increased, but poverty has also increased, and the gap between wealthy and poor people has been widening (Brian, 2015). For example, in Italy the incidence of absolute poverty is of 6.9% for families and 8.4% for individuals (ISTAT, 2017). In 2016, 23.5 % of the European population lived in households at risk of poverty or social exclusion; (Eurostat, 2018). Absolute poverty refers to a lack of resources so severe as to endanger the survival of the individual, that are unable to meet needs that can be defined essential such as accommodation, clothing, health, hygiene and, of course, nutrition (Bradshaw & Mayhew, 2010). While people commonly believe that absolute poverty exists only in developing countries, these data confirm that, it is also increasing in Western countries. A relevant factor in creating food security for everyone is that of food waste. One third of the global production of food is lost or wasted along the production chain: “1.3 billions of tons of food destined to human consumption never reaches dinner tables, for an economic loss of 1.000 billions of dollars per year” (Segrè & Azzurro, 2016).

There are multiple causes for food waste and they differ according to phases of the food production chain. As outlined by BCFN (2012), food losses in agriculture can be imputed mainly to climatic and environmental factors, the diffusion of parasites, and illnesses. During early phases of agricultural product transformation and of the semi-finished products, causes of waste are mainly technical malfunctions and inefficiencies of the productive processes, usually identified as ‘production waste.’ In distribution and sales (gross and retail), waste has multiple causes, among which are inappropriate orders and wrong forecasts of demand (Deakin, Diamantini & Borrelli, 2015). Finally, domestic waste occurs when consumers are unable to interpret food labelling correctly, because food portions are sometimes overabundant (both in restaurants and at home), or from mistakes in the planning of food shopping.

Food waste has been subject of some previous study and reflection (Borrelli & Mela, 2018), with national and transnational institutions trying to produce

regulations that would facilitate its use as a resource. However, in Italy, the first law on the matter was adopted only in 2003 and improved in 2008. In the same year the European Union reviewed existing definitions of food recovery and reuse, introducing a focus on the prevention of food waste and its negative impacts on health and environment (CEE 98/2008).

Strategies of food waste prevention and reduction

As confirmed by research (Garrone, Melacini, & Perego, 2012), reduction of food waste cannot address malnutrition in poor countries at the moment, but there is some potential for developed economies. The debate is still open on the possibilities lying in the management of food waste and the reduction of food insecurity in countries such as Italy. At an international level, many actions have been undertaken to address the issues of food waste, adopting various strategies and approaches. In UK one of the most recognized programs is WRAP, the *Waste and Resources Action Programme* (Quested *et al.*, 2011). The not for profit organization helps companies and individuals to take advantage of the benefits of surpluses, to use resources efficiently, and to exploit the development of sustainable products. The company establishes actions to reduce waste, optimizes product design, and helps companies to study more effective and functional packaging to reduce surpluses. In France, the '*Association Nationale de Développement des Epiceries Solidaires*' (ANDES) promotes the inclusion of disadvantaged people in the society via food management, for example through the creation of shops selling products of daily use with rates that are 10%-20% lower than average market rates. In Italy more than 16,000 non-profit organizations operate in the field of food poverty adopting a "Food Bank" approach.

In the last few years, thanks to the use of ICT and tool like websites, blogs and apps, there has been a flurry of activities to promote a more ethical, informed and food-respectful life style. Among the most innovative initiatives to fight food waste are free applications for smart phones that allow users to share residual food, to donate unsold food to charities or individuals, and to facilitate large providers to gift their excess goods. These kinds of practices can be considered as a specific branch of the sharing economy - "food sharing" - that focus on strategies to prevent the waste of food, promote the access to local products, and enhance connections inside communities (Bernardi & Diamantini, 2017). Increasingly, developing initiatives differentiate themselves by intention (main objectives and aims), origin (public or private) and different methods of implementations (Rombach&Bitsch, 2015). Four elements are recurring in food sharing practice (Diamantini *et al.*, 2018): (1) The reduction of waste (recycling and redistribution of food); (2) New forms of food production inside urban areas (urban vegetable garden); (3) The building of connections inside local communities (creation of points to collect food, promotion of barter timing); (4) The "charitable/supportive" factor.

At the moment however, these initiatives are still quite small both in their dimension and impact, since they cannot reach the critical mass needed to become a common practice (Schor, 2014).

Policies of food recovery and social inclusion

The concept of “food justice” refers to the possibility for people of low income to access food that is healthy and of high quality (Guthman, 2008). Food justice has become a social movement that is involved not only in the definition of food consumption, but also in the dynamics that control the food system (Agyeman & Loh, 2017; Holt-Giménez, 2011). This approach considers race and social class as elements that, if not taken into account, can increase inequalities inside the food system (White, 2010; Gottlieb & Joshi, 2010; Alkon & Agyeman, 2011; Morales 2011). Agyeman and McEntee (2014) think that forms of institutional and structural racism are part of the market itself. Moreover, in the mainstream debate around food systems there is not an explicit recognition of themes like justice, race and racism (Slocum, 2006). Since the main narratives in the field originated from middle/high income white-race perspectives they are more concerned about environmental sustainability, local economy, health, taste and nutrition than they are about social justice (Guthman, 2008).

A focus on justice and social inclusion, together with the ability to build a cohesive and active community (Cappelletti & Martinelli, 2010) that attends to these themes, can foster the development of a local food system that is fair and respectful of the people who are implementing it (Feenstra, 1997). Research along these lines has been looking into the impact of different policies (Neff, Kanter, & Vandevijvere, 2015), the factors influencing attitudes and behaviours toward food waste/food recovery and distribution (Koivupuro *et al.*, 2012; Evans, 2012; Gaiani *et al.*, 2018), or the ways to transform wasted food into social capital (Segre & Falasconi, 2011). Along with the studies that conceptualize the redistribution of discarded food as a resource, others have pointed out the risk of creating a system that does not solve the problems of its beneficiaries, feeding instead a “welfare system” that blocks a real solution of the problem (Winne, 2005). The research reported here is intended to improve the understanding of how practices of inclusion, embedded into food policies and practices, are able to promote the identity and the sense belonging of marginalized groups (Bernardi & Diamantini, 2018).

Results

In 2017 the municipality of Milan started an initiative for the recouping of wasted food in local markets: groups of volunteers and associations started to harvest all the still-edible fruits and vegetables merchants were throwing away. This kind of practice re-distributes produce in an organised way, directly on site, to people searching for free food at the end of the market session.

The activity has been promoted by an association named RECUP. It is an active citizenship project born in 2014 from a voluntary initiative of two female students who were able to involve other citizens, as well as other associations and foundations. The goals of the project include the recycling of food waste, but they also focus on changing the habits of the community inside Milan local markets. When the market closes, volunteers rescue the abandoned food and bring it in a single point, where it is selected and redistributed to people who ask for it and also among volunteers.

Members of the association say “in this way we create a concept of collaboration and a sense of community between different people, an intercultural and intergenerational contact that was lacking”. Only in the last year this initiative was able to rescue 25 tons of food (RECUP, February 2018).

Food waste in urban markets

The universe of reference of this research is represented by the 86 local markets of the city of Milan. Of these, 72 were included in the research. A total of 846 questionnaires were collected and used for the quantitative analysis. Data collection was carried out in May 2017, through paper questionnaires compiled by respondents with the assistance of researchers. Respondents were contacted personally during their work in the markets, informed of research purposes and expressed informed consent for the anonymous processing of collected data. After the analysis of quantitative data, relevant questions were identified and explored adopting qualitative strategies (interviews).

The quantitative sample is composed mainly by middle aged men, with a medium-low schooling level (47% have a middle school diploma or a professional diploma, 43% only finished compulsory education and left school at 14). Products sold in their stands include: vegetables (46%), fruits, (46%), milk and dairy products (16%), sausage and cured meats (14%), eggs (12%), steaks (12%), bread and baked goods (10%), pasta (7%), oil (6%), preserves (6%), rice (5%), jam (5%), honey and beehive products (5%), wine (4%), flours (4%), legumes (4%). Mostly, the stands sell either fresh fruit and/or veggies, or a combination of the other products.

When asked to estimate the quantity of food that they waste each day, 30% of the responders answer they don't throw away anything, 28% very little, 31% little, while only 7% think the food they have to waste every day is significant or a

lot. Overall merchants don't seem to be preoccupied with the produce waste, (not at all/mildly concerned 69%; quite concerned 12%; very much concerned 18%). Respondents who are less worried about discarded food explain their position with observations that the quantity of food wasted is very low (66%), that anyhow there is a problem of quality that cannot be overlooked and they can only offer the best to their clients (20%), and that some waste of food is just inevitable (15%). Reasons in support of the recovery of wasted food are identified as money loss (61%) and the fact that it would be a pity to discard edible food (43%). However, the amount of discarded food is highly connected with the sale of fresh food (Kendall's tau $b = .216$; $p > .001$). Also, respondents with higher level of food waste are clearly more concerned about the problem (Kendall's tau $b = .356$; $p > .001$) while other variables such as socio- biographic data or the years of work do not show significant correlation. Responders highly worried about food waste are also more pessimistic about the costs of food waste reduction (Cramer's $V = .388$; $p > .001$).

Of the food that remains on the stand at the end of the market, 55% is sold in other markets during the following, days, 8% is wasted, 7% is sold at a cheaper price or to restaurants (5%), while 16% is donated. Most of the respondents (44%) declare donating the food directly to people in need that attend the market, while the 22% of them donate inside the circle of known people such as family or friends, and 24% of them turn to the Church or associations (*Table 1*). The terms adopted to define the people in need receiving the donations include the "hungry", the "hobos", "old people", the "poor", the "beggars", the "gypsies" and the "homeless".

Table 1. Who receive the food that is donated?

	Frequency	%
People in need	67	44
Family, friends and private use	30	20
Caritas/Church	20	13
Associations	14	9
Clients, passers	7	5
Tot	152	100

Practices and perception of food recovery in urban market

Overall, 50 in-depth interviews were conducted for the qualitative data of this research. Interviewees were market merchants (20), spontaneous gatherers (10), gatherers adhering to the RECUP project (10), RECUP project volunteers (7), and local waste company cleaners (AMSA) (3). Merchants were men (11) and women (9), all Italians except five men who had a different cultural background (2 from Egypt, 2 from Tunisia, 1 from Morocco). Age of the sample ranged from 35 to 62 years old. Spontaneous gatherers were 7 women, out of which 2 were originally

from Moldova and Romania (age 55 to 70) and 3 were Italian men (age 60 to 73). Gatherers interviewed in front of the RECUP table stand included some of Chinese origin (3, age 60 to 75) and 7 Italians (age 65 to 75); RECUP volunteers are all Italians (3 women, 3 men) ranging from 23 to 55 years old; cleaners (3) were all Italian men ranging from 25 to 60.

The sample was chosen based on availability during markets, directed for representation of both female and male subjects. Interviewers chose three markets where the project RECUP is present and three markets where it is not present. All interviews were recorded and transcribed, and codified by letter and number. Privacy fulfillments have been attended to and data are completely anonymous.

Emerging themes and patterns

Perception of the phenomenon of food recovery on the merchants' side

Merchants, particularly food and veggies stand vendors, were very cooperative and generally available during interviews. About 50% of them, both female and male, consider the phenomenon of gathering as a way for poor old people to save some money here and there, considering gatherers as a category of marginalized old people who need assistance from the state or from charities. They seem to stigmatize the gatherers as unwanted elements of society, or in several cases, as pitiable:

“They are always the same people in every market, perhaps they don't have a family supporting them, or they are willing to live with the waste. Were they to go to a church, they probably would make a better deal” [male merchant, Italian, 53 years old, non RECUP market M14].

“They are people who could ask for help to social services but they prefer not to. Why raveling through waste otherwise? We need to consider them perhaps as people with some mental issues” [female merchant, Italian, 60 years old, RECUP market M17].

Overall the interviewees showed awareness of the issue of waste but not real concern. Market waste of produce is a natural factor for most of them. They all showed to interviewers the waste bins provided by the municipality of Milan for leaves and organic debris. About 30% of interviewees offered sincere concern about food waste in the world in general and about waste induced by laws of the European Union that constantly force producers to discard huge amounts of produce to keep up with EU requirements of price and quantities. About 7 interviewees declared they needed to keep up with the standards of large distribution shopping, therefore

the presentation of food needs to be impeccable and hence the waste of produce that is even mildly touched.

Six merchants said they “adopted” one or two families in every market. The merchants put produce away for these people who come at the end of the market to get their box of veggies and fruit on the verge of or just expired for personal consumption. At the question: “how did you choose these families? What were the criteria?” People answered

“It is by intuition. Families who are in real need come to you and ask directly” [female merchant, Italian, 55 years old, RECUP market M2].

“Once you see people asking once or twice, you know they will come back: it becomes a tacit pact” [male merchant, Egyptian, 61 years old, NON RECUP market M2].

Self- perception of gatherers

Spontaneous gatherers (SG) were the most difficult component of the sample. Shyness and avoidance characterized all encounters. Only after seeing the interviewers several times as a presence at the end of the market did they allow themselves to be interviewed. In contrast, gatherers waiting at the RECUP stand (RG) were easily intercepted and made themselves available for interview. This behavior marks a difference to begin with: the SG seemed to be engaging in an activity they were ashamed of, while the second (RG) were part of a sanctioned initiative mostly for them and hence inclusive.

Six out of ten SG have declared in the interviews most of their daily loot was going to charities and only a small part of it was for them. When asked expressively “which charities”, they became very vague

“I give it to monasteries (there are no open monasteries in the city, A/N) so they can make a better use of it: it is for people who don't have anything” [female SG, Italian, 55 years old, non RECUP market, SG2].

“Schools where they have poor people need it for children who cannot afford the cost of the canteen (this would be completely illegal in Italy N/A)” [female SG, Italian 65yrs old, RECUP market, not informed about the project, SG6].

RECUP gatherers were in line waiting for boxes of produce to be delivered by volunteers at the end of the market. They all declared it was for personal consumption either because their pension was not enough to sustain them (RG2,

RG 6, RG8, RG10) or because they thought it was a shame to waste food that for the most part was edible and good if consumed on the same day (RG1, RG3, RG7). The attitude towards the practice was clearly transparent and they all said they were afraid for too many people to become acquainted with the process and to have too much competition for resources. Self-perception of the RG was decisively different that of the SG: body posture was completely different and RECUP gatherers maintained eye contact, as opposed to spontaneous gatherers who were avoiding it.

Impact of the project as a social innovation

RECUP volunteers (RV) reported a definitive increase in trust from the former spontaneous gatherers:

Initially we had to convince them we were doing it as a way of supporting them and, especially in the case of older people, in order to ease the collection. They almost did not believe us. It is hard work and finding already selected produce in reasonable quantity has changed their attitude entirely. Now they come here, line up as if they were buying and they can choose whatever they want. [RV, male, Italian, 35 years old RV7].

Regaining a sense of trust could be interpreted as a first step to a more dignified identity, and self-esteem/inclusion is an important aspect of this project, in addition to the recovery of food.

Normalization of food gathering behaviors and de-stigmatization of poverty is another result.

“Merchants sensitized to the issue of food waste are collaborating with the association by organizing produce as if it needed to be used again” (RV1, RV2).... “They are more and more proactive in their behavior and tend not to ridicule or despise the gathering behavior” (RV5).

Keywords of this initiative of inclusion could be: trust, dignity, self-esteem, normalization, de-stigmatization.

Factors of inclusion

Volunteers seem to be more known in some markets rather than in other ones, regardless of whether they are RECUP markets or not. Even in markets where RECUP has been present for some time, volunteers are confused by some merchants with members of charitable organizations (RV3, RV4, RV6). This reveals one of weakest points of this initiative: too little communication inside markets, not only towards vendors but also towards other clients and even street cleaners. Unraveling the connection of the issue of poverty to charitable organizations and the politics

of 'assistance' is becoming more and more important as the number of people on the verge of poverty is growing.

Beyond food recovery and waste does a complex issue need more holistic attention not only at the market but also in supermarkets, regular shops and in households. Communicating the initiative better would also create more impact for the inclusion variable of the project above mentioned: attention to the elements of dignity of indigent people is not only an inspiration for reflection in an over-consuming society but a normalization variable for poverty without shame. In this regard we can talk of social innovation: whenever we can attest a change of behavior in a given time as a plausible result of an intentional effort we can say there is an impact on society. This research is heuristic at this point and a more longitudinal effort needs to be in place in order to make a real impact assessment.

Conclusion

The systemic impact of this initiative is rather modest; however the potential for a social innovation of larger scale is greater. For instance, RECUP volunteers have begun using wasted produce for their own personal consumption. Some former gatherers have also become RECUP volunteers. In other words, the initiative is not only a project for poor people, it is a seed of a different ethic of behavior towards food and its waste. Loopstra&Tarasuk (2015) notice the number of people using food banks is insensitive to the level of household food insecurity in the population.

In terms of inclusion, this kind of initiative creates a community, albeit small and only partially recognized, putting on the same level gatherers and volunteers. As observed in the research, volunteers are not performing a charitable action, but adhere to a value system against waste and respecting food as a basic constituency of human survival. Users, despite their instrumentality, contribute to a sustainable practice by changing role, at times, with volunteers thus fulfilling the concept and practice of inclusiveness. The number of people slightly above and almost below poverty threshold is increasing in all developed countries where the hiatus of inequity between the rich and the poor is enlarging every day. Food banks represent the kind of primitive welfare no longer conceivable in binge consuming societies, and for some (Riches, 2002) they undermine the state's obligation to respect, protect and fulfill the human right to food. The presented initiative needs to be framed in a larger context of food justice, where social inclusion is one of the aims. Raising awareness among vendors and clients in open markets seems to be a first, simple step toward a larger food waste ecological consciousness.

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