
ROMANIAN FOOD WASTE ANALYSIS

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Abstract

Food waste is a major problem that is concerning modern world and affects all developed countries. Many international organisations tries to implement programs to reduce the food waste because it concerns the environment, social and economic issues.

Romania doesn't have a food waste in the same size as other countries from European Union, but also doesn't have a high standard of living and high income per capita.

In this paper we conduct a qualitative research through structured interview with NGOs that are present in the food waste problem to discover good practice for developing a method of cooperation between companies that are producing and selling food and NGOs that are donating food for poor people or for people that have social care.

Some of the findings suggest developing the concept of food bank in Romania, which is only a beginning, develop information campaigns for population, build canteen near retailer and develop partnership with universities.

The study is limited by small number of NGOs questioned and should be continued with focus group and quantitative research among population.

Keywords

Food, waste, logistics, NOG, consumer behavior

JEL Classification

L66, Q53, M39

Introduction

Food Waste is a problem that affects three areas of development: the environment, the economy and the social. Food Waste is defined as the decrease in the quantity and quality of food in the chain from the manufacturer to the final consumer because it has not been consumed, expired or deteriorated as a result of consumer behaviour, management Stocks or negligence. Food Waste is strongly associated with the protection of the environment and the use of resources in an efficient way, food waste having a negative impact on the environment due to the gas emissions of operators within of the food chain (producers, intermediaries, sellers, consumers) and losses generated by agricultural activities. For a country to be considered safe in terms of nutrition, it is necessary for the citizens of that country to be able to procure the necessary food without making a very large physical, social and economic effort, and the food is healthy and Suitable for the diet. Food Waste is influenced by certain contextual factors such as reasons, financial attitude, routine, surplus food, social relations or even certain religious aspects such as posts (Aktas et al., 2018).

Food Waste has come to be a problem that organisations like the United Nations or the United States Ministry of Agriculture have put on top of the priorities. Among the most polluting countries because of the gas emissions generated by food waste include the United States of America, consuming a quarter of the drinking water and 300 million barrels of oil annually to produce and distribute food, which in the end are wasted. The value of the waste totals over 161 billion U.S. dollars. It is Not only affected by the economy, but also nutrition, because of food waste losing over 1200 calories daily for each person. Research in the area of food waste has concentrated in the area of final sellers (large stores chains) and consumers. Shop Chains have a problem with excessive product stocks, and consumers have a problem with food consumption. Among The partners co-opted in the process of reducing food waste are also universities. They have been co-opted because students can be good ambassadors in educating society to consume food in an efficient way, without wasting, and because in every university there is a food service (student canters), Where consumer behaviour can be observed with regard to food and various experiments can be sought to create effective methods of reducing food waste. Among the methods used to reduce the waste in the student candies were the reduction of the portion of food, the smaller cutlery offered to students to be able to eat and educational messages. The Effect of these methods consisted in reducing by almost 20% the reduction of food waste, mostly because of students were no longer throwing food (Ahmed et al., 2018).

Not only the chains of shops that are responsible for selling the final product to consumers, but there are also producers-sellers, those producers (farmers) who sell their products in local agri-food markets. In such a market in N-V Italy, research has been conducted among 35 farmers to determine what their perception and behaviour is in relation to food waste and to determine a way of managing products that are not sold. The Result of the study showed that farmers are concerned about food waste and are willing to donate food that is not sold, with high ethical thinking in what products are not sold and end up being discarded. Younger Farmers are more willing to donate unsold products but are very little informed about the various associations aimed at donating food. The Authorities need to be more involved in popularizing activities for the donation of non-sold products, with associations that have been established with this purpose (Bonadonna et al., 2018).

Other important participants in the supply and delivery chain are also restaurants. They procure raw materials and provide final consumer with finished products – different dishes. An important aspect in any restaurant is represented by the kitchen. In the kitchen, the finished products are realized, the menus are taken and the raw materials from the suppliers are taken over. The Relationship with suppliers is important because a change in the menu of a restaurant or the demand for certain products requires a correlation with stocks of raw materials and the time when the supply is carried out. Also, the way in which they treat employees, especially the chief chef, the problem of waste will have an influence on the level of food waste. But food waste has more to do with products that have lower caloric intake and less with protein-rich products (Charlebois et al., 2015).

The aim of the present paper is to find good practice, from Romania, regarding logistics for combat food waste from companies (retailers and producers) to beneficiaries (NGOs and people that don't have what to eat).

Good practice for reducing food waste logistics activities need to be coordinated within the framework of a functional industry system in which manufacturers, distributors and sellers are present. ALL participants in the supply chain must be coordinated among themselves through a unified system within an industry, so that they work in a coordinated way, leading to reduced losses (Liljestrand, 2017). The logistic system and the increasing efficiency of its management can also be complemented by increasing the duration of the product's presence on the shelf. These two combined actions would lead to a reduction in waste (Gadde and Amani, 2016).

1. Food waste in Romania

Worldwide it is estimated that a third of the food products used to feed people are wasted in one form or another. This statistic is transformed into 1.3 billion tones in absolute value. At European Union Level It is estimated that a quantity of 88 million tons of food is wasted each year, with these foods being divided throughout the food chain, from the manufacturer to the final consumer. In other words, a person wastes 173 kilograms per year of food and is consumed 170 million tons of CO₂ for this waste, from the manufacturer to the destruction of food by economic operators and the destruction of food thrown by the final consumer. The final consumer represents more than half of these food waste, the second place in which food processing is processed by 19% and 12% food services. At the European Union level Romania is on the penultimate spot in terms of the level of food waste reported in each inhabitant by 76 kilograms. Consumers are still very few informed about food waste and the significance of food labels, so many consumers do not know how to read a product label and often discard the product, although it may have Be consumed (if retained in accordance with the instructions), even if the term stated on the label has been exceeded, if the label is mentioned “best before”. However, that reference must not be confused with the indication on the label “expire date”, which means that after that date it is no longer safe to consume that product (European Parliament, 2017).

The Romanian Parliament adopted a law in 2016, Law No. 217/2016, in which agri-food operators must take well-established measures to reduce as much as possible waste of food but could not be applied due to the absence of the implementing rules. The implementing Rules were adopted at the end of January 2019 by Government Decision. These rules will be able to donate food products to reduce food waste. The economic Agents that will opt for this measure will have tax facilities, i.e. they will be deducted from the profit tax on donated foods. The Food to be donated shall be those which have a validity of up to 10 days until the expiry of the validity of the products. Perishable foods such as vegetable juices and unpasteurized fruit, vegetables and pre-cut fruits, as well as microbiological perishable animal products like the different types of meat (bovine, swine, goats, sheep), may Not be donated, Milk and milk products, fish or eggs. The Donation will also be made to economic operators such as public catering establishments or social canons (Ministry of Agriculture and Rural Development, 2019).

According to the National Waste Management plan, produced by the Ministry of environment, households generate more food waste than the manufacturing industry, retailers and combined hotels, with responsible households for almost 1.7 million tons of food waste, and the sectors mentioned slightly above 1 million tones. In a research conducted by the Foodcare.ro platform, young people under 35 waste food more than any other age groups, and families with children below the legal limit have an increased level of waste. The biggest waste of food is recorded in the urban environment, while rural communities use traditional methods of harvesting food waste in the household. The Money spent by a household on discarded food is about 40 euros/monthly, given that 10% of the food reaches the litter, and average expenditure on food amounts to almost 400 euros monthly/household, three quarters of the level Average income per household (Foodcare, 2017).

2. Methodology

The purpose of the research

The main purpose of the research process was to find good practice, from Romania, regarding logistics for combat food waste from companies (retailers and producers) to beneficiaries (NGOs and people that don't have what to eat) . Our research question was “Which is the best way (methodology) of taking food (food that is wasting from companies) and giving to the people that are in need (through NGOs)?”

Objectives

One of the main objectives pursued of this work is to improve the food donation process regarding the ways in which associations get in touch with companies (retailers, restaurants and producers) and with the people, both people who help them in this process and people who receive.

Also, one other important objective in this paper is to find (to be familiar) the people opinion about saving waste food in order to change their thoughts and their attitude when they want to throw the food, to find good methods to involve more and more people in this process.

Hypotheses

Starting from the objectives and purpose of our research outlined above, we could formulate the following hypotheses to be tested in this paper.

We said that combat of food waste is not so developed in Romania and need to be done a lot of things, because there is not a law implemented, retailers are not so interested in donating food to NGOs, infrastructure that NGOs have is at low level and they are not so many campaigns about saving food waste.

Research design

Because we didn't know so much things about food waste process in Romania, we wanted to be familiar with this subject and we had to ask questions in order to find answers to detail our study, for that we used explanatory research. The technique used to collect data was the interview, which was structured. Each respondent had a list of open-questions for answering, the purpose was to get descriptive information from individuals. Questions were presented to each participant in the same order. The questions (13) were separated in two parts. First 7 questions refer to ways of reducing waste food, and the second part contains 6 questions regarding recommendations for improving collecting food waste and how to aware the citizens about the food waste problem.

Having questions split in two helped us to answer easily to objectives and to achieve the goal of the research. However, respondents who answered by phone had some extra questions, depending on how discussion where directed or less questions depending of which type NGO represented. As we said before some of the interview were via phone and others where held on internet, via E-mails, Facebook Messenger or Skype.

Population of this research was formed by all NGOs which are working in this type of activity. We sampled using nonprobability method, convenience and snowball sample because the selection of respondent was via internet (we found one file on *Mai mult verde* website that contained some of the most important NGOs fighting against food waste) and after we asked the name of the other representative persons, if they knew (*Mai mult verde*, 2017).

The sample unit in our research we considered to be on NGOs (an individual person that is representing an NGO).

Respondents

We found eight NGOs, with e-mails and phone numbers, in the document about how food waste can be saved in Romania on *Mai mult verde* (Greener in English) website. We sent e-mails to all NGOs and we didn't receive any answer. After this we contacted persons who represent this NGOs on Facebook, Skype and via phone. We managed to obtain two answer via Facebook, one via Skype and two via phone. Using recommendations from previous respondents we obtained four answers, three via phone and one via Facebook. From our research (on Google) we had one other answer, which was via e-mail.

In conclusion were ten answers: one from e-mail, five from phone calls, one from Skype and three from Facebook Messenger.

We grouped respondents in three type of category:

- NGOs that are donating food to different categories of disadvantages people: these NGOs receive food donations from food bank, companies (retailers or producers) and individuals and give the food to the disadvantage's categories (i.e. poor people, homeless, family with many children) direct to their homes, on the street or canteen;
- Food bank: NGOs that are receiving food donations from companies (retailers and producers) and give the food to different types of NGOs;
- Social store: NGO that is receiving food donations from companies (retailers and producers) and sell the products to poor people (low income, social care beneficiaries) at a very low price;
- Other: one ex-worker from Ministry of Agriculture who was responsible of coordinating group work for the law and presented different materials on website of Ministry of Agriculture about food waste and means of combating it.

Period

The answers were gathered between 17th of December 2018 and 8th of January 2019.

Places

The NGOs, which were questioned, have the activity in three cities: Bucharest, Cluj-Napoca and Aiud (Cluj County).

3. Discussion

In Romania was voted in 2016 a law regarding food waste combating. After 2 years the law suffered some modifications and now companies (retailers and producers) can choose if they want to donate the food that is about to expire. Unfortunately, the norms of law application are not available, so the law cannot be applied, and NGOs have problems in discussion with companies about receiving food donations. Many companies prefer to destroy the food instead of donating to a social cause. NGOs are not satisfied with the law because companies should have an obligation to donate the food and not destroying. In exchange, companies should have free tax on food that is donated.

From the all NGO questioned about food waste food banks are the best structured regarding infrastructure, because they have specialized warehouse and car for transport. The rest of NGO are in partnership with local authorities or with some producer or food retailer, but these partnerships are not very well developed.

Respondents said that the current law should be improved, in the sense of the obligation for economic agents to donate those products that are about to expire and not optional. Companies should also benefit from tax facilities for the fact that they donate and the law to bring predictability, recurrence and cost reduction. There should be more consultation of the associations with all ministries involved such as the Ministry of Agriculture, the Ministry of Finance and the Ministry of Labor the various issues pertaining to each ministry.

The Part of the legislation could also be helped by co-operating management specialists to work free of charge and provide efficient and sustainable solutions both from a legislative and operational point of view (law enforcement).

There is a need for relevant and complete data on the amount of money that is saved because food is donated and not destroyed in order to make it easier for associations to discuss and obtain sponsorships from economic operators.

It would be necessary to redefine the term to be consumed preferably before for different categories of food. And There is a term for sale and a term for consumption. The Term for sales should be prior to consumption.

For products that can no longer be consumed by humans, they should be directed to animals or transformed into fertilizer for agriculture.

Associations responded that pilot projects are needed for economic operators for a limited period in which they donate products to an association, and if the donation is more

economically efficient than the destruction of products, Then the project should be applied globally as regards the trader (all shops in the case of a chain of shops).

Among the modalities most often used to contact the economic operators include the phone, the recommendation, the visit to the premises, the e-mail or the networking.

Some of the respondents said that it would be better if canteen would be developed in social areas, where are more poor people. So, NGOs and companies would be more present in this kind of areas.

One of the solution for developing more projects about food waste and have a better law is to have private experts in management and involved them (pro-bono) among other people from public sector, who could be trained, to know how to deal with any problem that occur and find sustainable solutions. When this kind of solutions would be developed lobby (from retailers and producers) must not interfere with politics.

Conclusions

Food bank should be more developed in Romania. It should be a food bank in each county from Romania. These food banks should be supported by the local authorities and private companies. Each food bank should have an adequate infrastructure (warehouse, cars for transporting) and employees to manage all the food that is received and given to NGOs.

NGOs should be specialized and have volunteers and workers to know how to deal with food (in terms of hygiene food). Besides this, they need to have a minimum infrastructure, which includes warehouse, cars and a place where to give food. Local authorities could support the NGOs by helping in all their activities with list of beneficiaries, canteen where to cook the food and so on.

Restaurant should implement hardware and software solutions (Win-now) to reduce the waste of food. They should have contracts with NGOs to donate the food at the end of the day.

Food can be used also as compost or like food for animals, if the conditions are not proper for people to consume it.

Canteen should be built near retailers and in social areas. Like this, retailers won't have a long distance for transporting the food and it would save time, which is very important for food that have few times till expire.

Law should support more the NGOs and the retailers by encouraging working and collaborating. Central authorities should realize that food waste is an important problem for society, and they should improve the law. Experts should be consulted to have solutions for different kind of problems regarding all the process of food donations, food collecting and infrastructure. Law should regulate terms of consuming and expiring and these terms should have different dates. This way would be easier for companies to donate and for food banks and NGOs to collect the donations. Poor people should have more to gain.

Beneficiaries that are receiving food donations should be encouraged to work (if they are not on pension) and adapt to today's requirements or needed professions.

NGOs should make campaigns to inform people that food waste is not normal, and they lose money. This could be done with media support and by making attractive videos and prints. Another channel to inform and encouraging saving food waste would be developing a mobile app and integrate in that all major stakeholders: companies, intermediaries, media and beneficiaries.

Universities should be taken as partners by NGOs and authorities and developed food waste through students like it happens in other countries and were presented in introduction. They would be encouraged to support and think about food waste and, in the future, we will have important results.

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