

MANAGING, MINIMIZING AND PREVENTING FOOD WASTE FROM ROMANIA IN THE EUROPEAN CONTEXT

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Abstract: *This paper presents the processes of management, minimization and prevention of food waste in Romania in the European context. One third of all products in Romania reach the trash can or are wasted needlessly. This amount corresponds to 2.55 million tons of food, while 5 million romanians are on the brink of poverty, and 66% of rural families can not provide their daily food. On farms, in processing and production, in shops, restaurants and at home, food is lost and scattered throughout the food chain. It is necessary for romanian citizens to better understand the notions of food waste and its causes. Without a coherent strategy for managing, minimizing and preventing food waste, without a coherent political approach and without proper financial and investment support, accompanied by advanced agricultural strategies and policies and rural development, our country's food security can be heavily affected in the future.*

Key words: *food waste, Producers and consumers, food security, food loss.*

INTRODUCTION

Food wastage is a global problem that has become more and more important on the public and political agenda of recent years. The importance of this topic will continue to grow, especially given the need to feed a growing world population. Foods are a precious asset and their production may require important resources. Current estimates indicate that around a third of food produced for human consumption worldwide is wasted or lost, which generates significant economic and environmental costs [1].

Approximately 88 million tonnes of food are spent annually in the European Union, around 20% of the total food produced, or 173 kg per person. Thus, the actions undertaken so far, as well as the way in which the various EU policy instruments contribute to reducing this phenomenon, have been analyzed.

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Food waste is a problem that occurs throughout the food chain and therefore the measures should target all its components with potential benefits for all parties involved. Emphasis should be placed on preventing the phenomenon, as the advantages of avoiding waste are superior to the benefits of subsequent solutions. Although there are a number of EU policies that can help combat food waste, this potential is not being exploited and the possibilities offered have not yet been capitalized. In particular, there has been no assessment of the impact of various EU policies on the fight against food waste.

As far as Romania is concerned, about 33% of romanian consumers spend about 30-40% of the monthly food income.

European Union statistics show that Romania ranks 9th in Europe's food waste list, with 2.55%, or 2.2 million tons of food lost each year, over 6000 tons a day. A frightening figure, especially for a country that is number one in the relative poverty line in the European Union [2].

The largest producers of food waste than us are the citizens of the UK, the Netherlands, Germany, France, Poland or Belgium. The largest food waste generators,

expressed in kilograms per person, are the Netherlands, Belgium, Cyprus and Estonia. at the smallest opposite are Slovenia, Malta and Romania.

In terms of food donation in Romania, it can not be achieved due to a series of barriers that exist, they are generated by the different interpretations of the legal provisions. It is desirable to eliminate these constraints in order to facilitate food donation, thus minimizing food waste [3].

A first step was made on 1 February 2019, when Law no. 217/2016 on the reduction of food waste, which proposes to agri-food operators to take well established measures to reduce as far as possible this worrying phenomenon. According to the normative act, economic operators will have to be more responsible for diminishing food waste through measures such as low-price selling of products near the expiration date.

MATERIALS AND METHODS

Food waste is a generalized problem in the EU, where about 88 million tons of food is wasted each year, accounting for about 20% of the total food produced. In Romania, over 10% of the purchased food is dumped [4].

A problem that is increasingly addressed at national level, but still poorly understood, is the effects of food waste. This produces important consequences both for the economy and well-being of the Romanian population, as well as for the environment, leading to an increasing need for solutions.

It is necessary for Romanian citizens to better understand the notions of food waste and its causes in order to prevent the generated negative effects. We have researched the percentage of expenditures made for the purchase of food by romanian citizens from the total monthly income. According to the research I have made, I decided to illustrate the results obtained in the form of a chart containing the following information: about 33% of romanian citizens spend between 30-40% of the monthly income for food, 29% of citizens spend between 20-30% of the monthly income, 14% of the citizens spend 50% of the monthly income, 12% of the citizens spend between 1-15% of the monthly income, 8% of the citizens spend more than 60% of the monthly income, and 4% citizens refused to answer (figure 1).

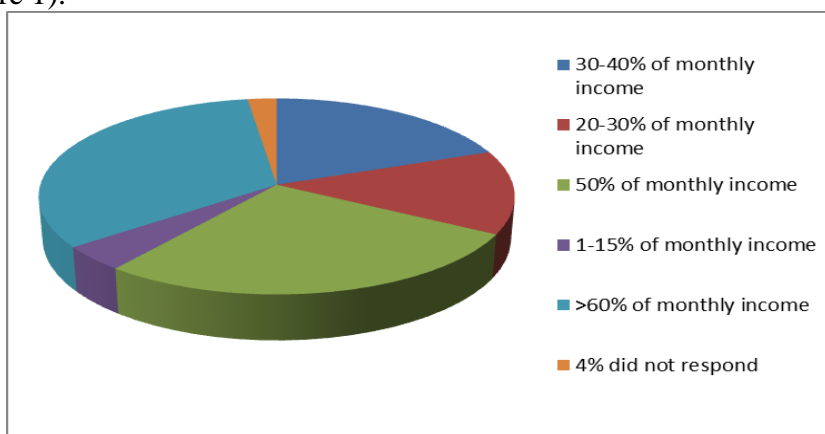


Figure 1. The percentage spent by Romanian citizens on the monthly income for the purchase of food

Source: <https://www.chep.com/uk/en/fresh/case-study-fight-food-waste-romania, year2016>

The waste of food is not just a matter of ethics and economics, but also a phenomenon that deprives the environment of natural resources, and so limited [5].

If we look economically, food waste can lead to price volatility, rising food costs, and transport and waste treatment costs. Since the biggest food loss occurs at household level, In Romania, the losses in the consumer sector are two to three times higher than in

other European countries, where the percentage of the average monthly income is much lower (example: France - 14%, Switzerland - 10%).

All food chain actors have a role in preventing and reducing food waste in Romania, starting with those who produce and process food (farmers, food and processors), those who market food on the market (hospitality sector, retailers) and in the latter, the final consumer [6].

According to the European Commission's study of waste wastage, it is estimated that the largest food waste at European level is estimated to be 49% for final consumers, followed by the processing sector, which has a weight of 37% while at the level of distribution and trade this represents 7%. While the food sector was estimated at 5%, and the agricultural sector was just 2% of the total food waste [7].

What you can do as a consumer to reduce food waste (figure 2):

- make shopping lists;
- check the data and make sure you understand the meaning of the labels;
- store the food as indicated on the package;
- donate food that you no longer use;
- food debris you can use to feed some animals;
- frozen.

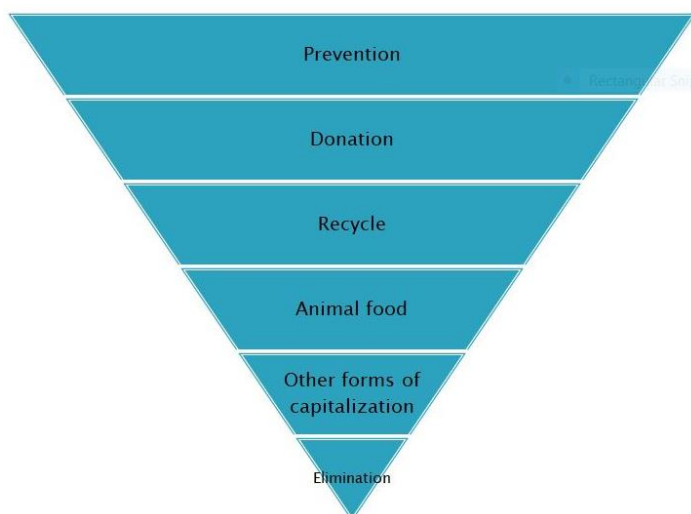


Figure 2. Steps to avoid waste of food in Romania

Source: <http://foodwaste.ro/>, year2017

RESEARCH RESULTS

At the initiative of the Ministry of Agriculture and Rural Development and the Ministry of Environment, a working group of over 25 national authorities, institutions and organizations has been set up to implement the National Action Plan to reduce food waste and develop a national reduction of food waste.

In Romania there are organizations concerned with the redistribution and capitalization of the surplus food. Although they are still in the beginning, there are ideas and the ability to do so [8].

Organizations and informal groups that have projects or services that reduce food waste consider that the main barriers to harnessing the surplus food are the lack of clear regulations that non-consumer products can be distributed after the expiration of the warranty period and the lack of a legal framework to indicate the circuit of these foods and to take binding measures towards chain stores or manufacturers [9].

They argue that a law is required to force companies to enter into a sponsorship contract with a non-profit organization as well as a better collaboration between suppliers

representatives (hypermarket, producer / distributor) and representatives of NGOs /social centers would be some instruments that are extremely useful in simplifying the procedures for capitalizing on food. The main causes for which food is thrown are: they are degrading too quickly, it is erroneously estimated the amount of food consumed at a meal, excess shopping.

According to the research, in Romania, those who have the highest salary are making the biggest waste, and the bigger the family is, the more food is thrown out. At the same time, a child of two, aged 6 and over, was at risk of poverty and social exclusion [10].

Since most of the money earned is found in food, it is to be noticed that over 10% of the food gets to the garbage. According to the study, those who dispose of food more than 10% are mainly supplied by supermarkets and in relatively balanced proportions from other sources, such as small shops, the agri-food market or the country. Those who buy from supermarkets are throwing the most food, with an average of 11.9% [11].

By age groups, young people under 35 years old scatter most of all consumer categories. The size of families leads to increased waste, and families with juvenile children have a high level of waste. The study also shows that university graduates throw the most food, 13.2% respectively. Thus, if you portray the person who is making the biggest food waste, he appears to be under 35, living in the city, having higher education, shopping at the supermarket, and having a higher salary.

From the point of view of the discarded quantity, the paper shows that a three-member household in the urban area, on average, throws an average of 0.83 kilograms, but there are cases when some households throw 2 kilograms [12].

According to the National Waste Management Plan, produced by the Ministry of the Environment, households generate more food waste than the manufacturing industry, retailers and hotels together, with households accounting for about 1.7 million tons of food waste, and the sectors mentioned a little over 1 million tons.

Specifically, in Romania the biggest waste is related to households (about 49%), followed by the food industry (37%), retail (7%), public food (5%), respectively agricultural sector (2%), according to data provided by the representatives of the Ministry of Agriculture and Rural Development (figure 3) [13].

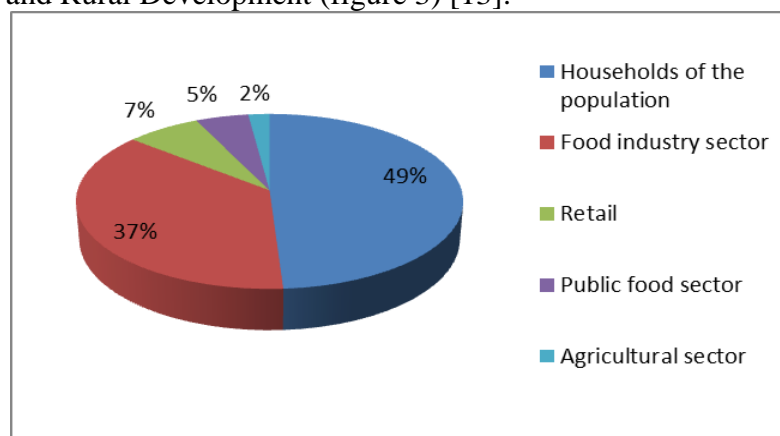


Figure 3. Food waste report in Romania

Source: <https://www.chep.com/uk/en/fresh/case-study-fight-food-waste-romania, year2016>

The Romanians claim that the main reasons for their disposing of food are the rapid degradation (26%), the wrong estimation of the amount of food consumed at a meal (21%), and the excess purchases (14%), according to a study conducted by the Romanian Association of Commerce Networks [14].

Causes of food waste in Romania are not always the same, they differ according to the food supply chain stage, the type of product and the place where food is wasted. According to the study, the foods most often found in the garbage are: 24% cooked meals, 22% fruits, 21% vegetables, 20% bread / bread, 11% milk and cheese, 1% meat products 1% did not respond (figure 4) [15].

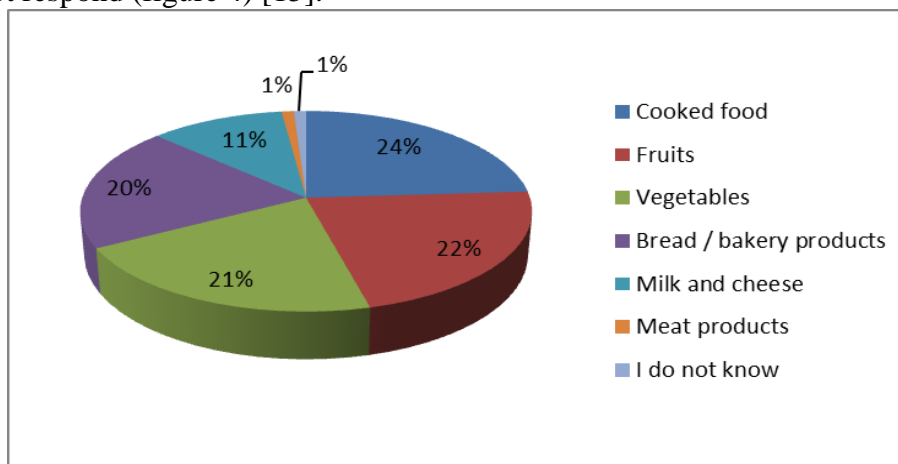


Figure 4. The report of food that most often arrives at the garbage

Source: <http://foodwaste.ro/>

If the food chain is divided into five sectors (agricultural production, management and storage, processing, distribution and consumption), one can see how different behaviors in each sector lead to the elimination of perfectly edible food: starting with the recording losses during harvesting and storage, to unsafe transport, labeling mistakes and end user habits when buying and using food. The production of surplus food that we do not consume involves a high cost in ecological terms, from the use of energy and natural resources (primarily water). Thus, reducing the waste of food at the level of small and medium enterprises also reduces the losses [16].

Relative to family income, the correlation of the national average with the existing financial resources is confirmed, ranging from simple to double, respectively a waste rate of 6.9% is correlated with incomes below 1500 ron and a waste level of 13.4% is correlated with incomes over 3500 ron. As regards the evolution over a longer period (6 months), there is a national average of 10.4% urban food waste, for a household with a calculated average of 2.73 members. The level is included in the specific estimates for countries with medium to low incomes such as Romania at European level [17].

The results of research by the Institute of Food Bioresources indicate a weighted average of food waste weekly in urban households of 0.83 kg for a household with an average number of 2.73 members. The appreciation is the relative stagnation of the phenomenon compared to last year. However, 12.7% of respondents reported households' growth. About 9% of respondents said they were throwing over 2 kg of food per week. Of them 6% declare income over 2500 ron/month, 59.5% are from families of over 3 persons and 2% are from Bucharest, 6.3% of respondents who say that they throw over 2 kg of food are from cities over 50.000 inhabitants [18].

The results of the study lead to the identification, analysis and interpretation of problems related to food waste in Romania in a European context. The topic addressed highlights the effects of food waste, the legislative part that has an important contribution and the methods that can be used to manage, minimize and prevent food losses.

CONCLUSIONS

In conclusion, a state has national security only when it has food security, when it has sufficient agricultural and food supplies available to meet the food needs of all the inhabitants of the country. Failure to provide food security can rapidly generate internal convulsions and social tensions, may damage physical and mental health of the population, create conditions of economic and political instability, and externally can exert diplomatic, economic and political pressures undesirable and dangerous effects on national security.

Without a coherent strategy for managing, minimizing, and preventing food waste without a sound political approach and without proper financial and investment support, accompanied by advanced agricultural strategies and policies and rural development, our country's food security can be greatly affected future. It should be borne in mind that this issue will be greatly amplified by the effects of volatility as well as global warming and climate instability in general by the accentuation and widening of the territory of drought and other natural phenomena with a negative impact on romania's agriculture.

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