

Romania Facing the Problem of Food Waste

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Abstract

In Europe, an estimated 87.6 million tonnes of food is wasted in one year. Romania is in the middle of the European ranking in terms of the volume of food thrown away, a fact mentioned in the study published by the ONU. It is estimated that 1.35 million tons of food are dumped annually in our country, indicating only food from people's households. So, every year, 70 kilograms of food per person is thrown in the trash. The COVID pandemic has caused an increase in food waste, both because of the population that has procured very large quantities to stock up and because of the distribution chains that have undergone changes in their functioning.

The EU and its Member States have set themselves the goal of reducing food waste by 50% by 2030, using the ONU targets. Concrete measures have been taken to reduce food waste and losses. Where this cannot be done, they urge the reuse, recycle and use the food for another purpose. Citizens of the EU are urged: to reduce the production of food waste from production to distribution, to reduce the amount of food thrown away from households, to stimulate food donations, to monitor and account for the application of measures to combat food waste.

Keywords: food waste, food security, households, losses

1. Introduction

Food waste refers to the entire amount of food created for consumption that is lost from the moment of production to the plate. The value chain includes production, storage, processing, distribution in the network of shops, restaurants, food establishments and finally people's homes. Each stage causes sector-specific problems, and the longer the supply chain, the greater the chances of waste. It is very difficult to determine the exact amount of food waste. There is currently no way in the EU to quantify food waste, which is an obstacle to the monitoring by specialized institutions of its volume and provenance. In the near future, the European Commission will develop a common EU method

for assessing food waste with the Member States concerned.

The main problem of humanity with food waste is that we buy much larger quantities than we really need. For this reason, the amount available is much higher than the amount consumed and food losses are caused either because the food deteriorates or that it passes its shelf life. So, although the amount of food that ends up being waste is very high, the change depends primarily on the consumer itself. All people have a significant role in reducing food waste and therefore the population is encouraged to achieve the following objectives:

- Plan a menu in advance for all days of the week
- Create a shopping list
- Keeping food properly
- Understanding the terms "best before" and "expire on"
- Consumption of locally produced food

Food waste, namely the large loss of food, has effects on the economy, environment and health of

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mankind. From an economic point of view, we are not only talking about the amounts invested in food, but also about those spent in harvesting, transport, packaging, storage. According to the Food and Agriculture Organization of the United Nations, food losses occur every year worth around \$1 trillion. In terms of the environment, the Food and Agriculture Organization reports that 50% of the land area of habitable land corresponds to the agricultural field, even if a quantity of food production does not end up being consumed. If the food system does not experience a major change and agriculture is forced to increase production due to demand, greenhouse gas emissions will increase by 30% in the near future. Also, due to the lack of land for farms and agriculture, large areas of forests are cut or burned. This results in fewer trees absorbing carbon dioxide, and destroyed trees produce even more gas at the time of decomposition. In addition, food that ends up as waste releases methane, a greenhouse gas that is stronger than carbon dioxide. All of these actions can have far more serious long-term consequences.

2. Materials and methods

External third-party data were analyzed in this research, data which came from relevant organizations in the area of competence, and scientific papers from consecrated authors. The Food and Agriculture Organization (FAO), as a specialized agency of the United Nations that leads international efforts to defeat hunger, was the main source of data, along with some other relevant institutions.

3. Results and discussion

Romania, a country where there are more than 4 million inhabitants who cannot afford to buy daily food, and yet about 2 million tons of food are thrown away every year. In rural areas, people use traditional methods of valuing food waste, but in urban areas over 95% of the waste ends up in the landfill. Unfortunately, few people recycle, freeze or pass on food waste. The main reason why food is thrown away is that people buy far too much for various reasons, such as lack of time to shop more often and more balanced, or not making a shopping list. Also, one thing that should not be neglected regarding food waste is

the fact that 40% of Romanians’ incomes are consumed on food, and 33-50% of this will be discarded.

An important fact to note from a study is that during the pandemic, about 50% of 18-25-year-olds said they had procured more food than before the pandemic. The most worrying is that about 2% said they bought double the amount of the previous years. [1] These things unfortunately have negative consequences because they contribute to the increase in the amount of food waste in our country.

Speaking about the food waste generated at the level of EU Member States, Romania ranks ninth, with 2,69 percent of the total waste at EU level. At the top of the ranking are the English, followed by the Germans, the Dutch and the French.

Table 1. The total waste generated in EU

No.	Specification	Total	% of TOTAL
	EU	84.448.000	100,00
1	United Kingdom	14.391.000	17,04
2	Germany	10.387.000	12,30
3	Netherlands	9.456.000	11,20
4	France	9.078.000	10,75
5	Poland	8.972.000	10,62
6	Italy	8.778.000	10,39
7	Spain	7.696.000	9,11
8	Belgium	4.192.000	4,96
9	Romania	2.274.000	2,69
10	Sweden	2.053.000	2,43
11	Hungary	1.858.000	2,20
12	Austria	1.858.000	2,20
13	Portugal	1.391.000	1,65
14	Ireland	1.051.000	1,24
15	Finland	1.013.000	1,20

Source: <https://www.euractiv.ro/we-develop/ue-promite-injumatatirea-risipei-alimentare-pana-in-2020-2006>

Food waste does not correspond to a specific social or demographic category. [2] We recall that food waste consists of 3 main components: Food waste from households, the food industry and retail. Of the total food thrown away, only 7% comes from the retail system, which is to be

stressed because chain stores are often blamed for wasting food. In fact, the vast majority of losses come from those who produce and those who consume, reports the Director General of Eurocommerce.

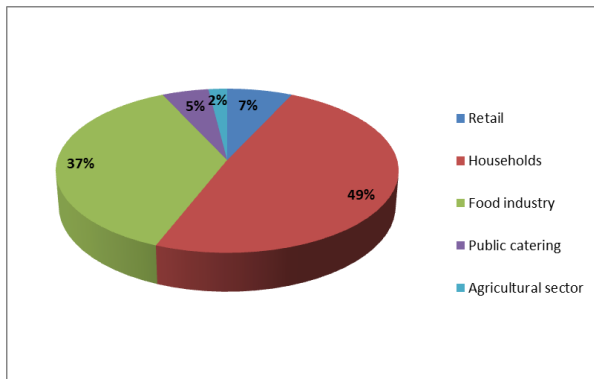


Figure 1. The origin of food waste in Romania
 Source: https://www.dpsv.ro/uploads/Promovarea_Sanatatii/Alimentatie%202019/Analiza%20de%20situatie%202019%20-%20Ziua%20Nationala%20a%20Alimentatiei%20Osi%20a%20Combaterii%20Risipei%20Alimentare.pdf

The most common food category Romanians throw away is that of cooked food, bread and bakery products, following processed products, vegetables and fruits, according to a study conducted by the Department for sustainable Development. The 26% percentage corresponds to non-valid responses.

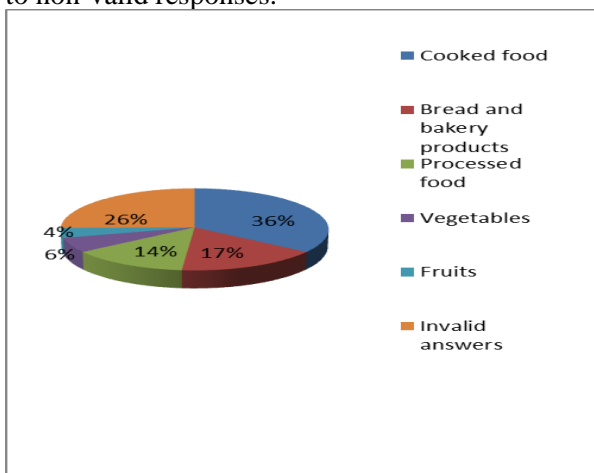


Figure 2. The category of food that Romanians throw away
 Source: https://adevarul.ro/economie/stiri-economice/risipa-alimentara-romania-alimentaruncate-mai-frecvent-bani-cheltuiti-mancare-lunar-1_6159a8ad5163ec4271ee0621/index.html

Regarding the financial part, we can mention that in Romania food has a high price compared to the population incomes. The data of the study conducted by the Department for sustainable Development shows that almost 40% of respondents spend between 500 and 1.000 lei per month on food.

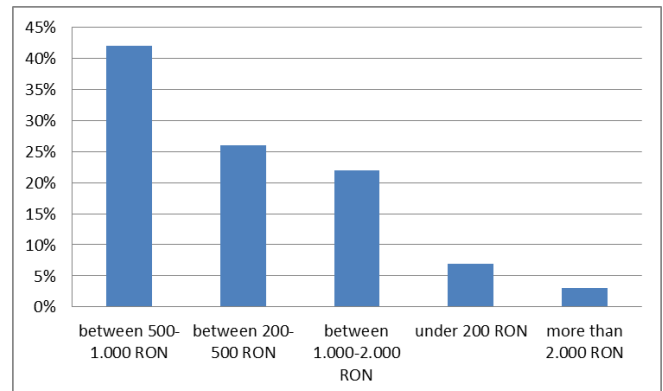


Figure 3. The average amount spent per month on food in Romania

Source: https://adevarul.ro/economie/stiri-economice/risipa-alimentara-romania-alimentaruncate-mai-frecvent-bani-cheltuiti-mancare-lunar-1_6159a8ad5163ec4271ee0621/index.html

The problem is that some of the food that this money is spent on ends up in the trash. What would happen if we only got the food we really needed? We buy a lot and end up consuming a little. Food waste causes economic losses both in households and at the government level because we basically throw money in the trash. [3] The United Nations Food and Agriculture Organization (FAO) estimates that a third of its food is lost globally, three times the amount of food needed for the entire world population and six times the global support allocated to development. [4]

Every inhabitant of the planet can help reduce food waste. It is necessary for Romanian citizens to better understand the notions of food waste and its causes in order to prevent negative effects. [5] These negative effects have important consequences both on the economy and on the well-being of the inhabitants of Romania and the environment, which leads to an increasing need to find solutions. [6] Change lies in the hands of each of us, so to avoid food waste try the following:

- prepare the menu in advance for the next few days
- never shop without a list that you stick to

- do not go shopping when you are hungry
- keep food in a proper way
- to freeze food
- buy fruits and vegetables they don't look perfect, often on sale

These are just some of the actions that we all should follow and that will certainly have a positive impact on the environment. In 2016, the European Commission launched the Stop Food Waste Campaign, which urges people to make a minimum effort to help tackle food waste. [7]

Indeed, the biggest food waste occurs in the household, but it is not the only place where it takes place.

Food losses occur throughout the entire life cycle of food. Each stage causes a problem, and the longer the supply chain, the more food waste increases. [8,9,10]

The production stage may cause food loss due to the following:

- improperly practiced agriculture
- presence of pests
- bad weather conditions [11]

The storage and handling stage may cause food loss due to the following:

- improper storage conditions
- stock management in error
- keeping food in hot and humid areas [12]

The processing and packaging stage may cause food loss due to the following:

- improper installations
- human errors
- technology related failures [13]

The distribution stage and once the food reaches the stores can cause food losses due to the following:

- loading and unloading in the wrong way
- food transported in an inappropriate way
- supply when old food has not been sold [14]

In developed countries, more than 40% of food waste occurs after harvest and during processing. [15] In industrialized countries, more than 40% of food waste occurs at the time of sale and in households. [16]

4. Conclusions

In conclusion, each of us can participate in stopping this phenomenon by following simple steps: shop responsibly, purchase fruits and

vegetables that don't look the best, keep in mind the expiration date of the products, cook and consume strictly as you need, and save leftovers. [17,18] In order to truly understand the problem of food waste, we need to sum up and research data on food losses, namely a country-wide strategy. [19] There are already economic agents in Romania that comply with commitments related to food waste, but all these actions need to be carried out on a larger scale to see major results. [20]

References

1. Balan I. M., Gencia A. D., Dincu A-M, Youth's Food Waste In 2020-2021 – Intermediate Study On Food Waste During The Covid–19 Pandemic, *Lucrări Științifice, Seria I, Vol. XXIII(2)*
2. Balan I.M., Popescu C. A, Iancu T., Gencia A., D., Dincu A-M, Household Food Waste Estimated In Europe - Intermediate Study On Food Waste During The Covid - 19 Pandemic, *Lucrări Științifice, Seria I, Vol. XXIII(2)*
3. Balan I.M., Popescu A.C., Iancu T., Popescu G., Tulcan C., 2020, Food safety versus food security in a world of famine *Journal of Advanced Research in Social Sciences and Humanities (JARSSH) 5, 1, 20-31*
4. Gheorghescu I.C., Balan I.M., 2018, Food waste and food loss in Romania, *Lucrari Stiintifice Management Agricol, Seria I, 20(3)*
5. Gheorghescu, I. C., & Balan, I. M. (2019). Managing, minimizing and preventing food waste from Romania in the European context. *Journal Agricultural Management, 21(3), 58-70.*
6. Gheorghescu I.C., Gherman E.D., Balan I.M., 2021, The importance of food waste reduction measures in order to ensure food security in Romania in the context of Covid-19, *Lucrări Științifice Management Agricol 22 (3), 187*
7. Gheorghescu, I. C., Velcota, I. I., Martin, A. R., & Balan, I. M. (2019). Food waste a major problem in the European Union. *Journal Agricultural Management, 21(3), 65-80.*
8. SALASAN C, BALAN I. (2022) The acceptability of environmental acceptable damage and the future of the EU's rural development policy (Part I: Economic Emergencies-4.), *Economics and Engineering of Unpredictable Events-Modelling, Planning and Policies–Editor.Economics and Engineering of Unpredictable Events - Modelling, Planning and Policies - ISBN 9780367641900*
9. *** FAO <https://www.fao.org/about/en/>
10. *** ANSVSA <http://www.ansvsa.ro/informatii-pentru-public/risipa-alimentara/>
11. *** Europa Libera <https://romania.europalibera.org/a/onu-romania-arunca->

- 1-3-mil-de-tone-de-mâncare-la-gunoi-avem-o-lege-a-risipei-alimentare-însă-e-ineficientă/31135315.html
12. *** Food Waste Romania <https://foodwaste.ro>
13. *** Ministerul Agriculturii si Dezvoltarii Rurale <https://www.madr.ro/risipa-alimentara.html>
14. *** Directia de Sanatate Publica Suceava <https://www.dspsv.ro/uploads/PromovareaSanatatii/Alimentatie%202019/Analiza%20de%20situatie%202019%20-%20Ziua%20Nationala%20a%20Alimentatiei%20si%20a%20Combaterii%20Risipei%20Alimentare.pdf>
15. *** Hot News <https://www.hotnews.ro/stiri-esential-25114398-romania-arunca-fiecare-aproximativ-2-55-milioane-tone-mancare-topul-alimentelor-care-romanii-arunca-gunoi.htm>
16. *** Adevarul https://adevarul.ro/economie/stiri-economice/risipa-alimentara-romania-alimente-aruncate-mai-frecvent-bani-cheltuiti-mancare-lunar-1_6159a8ad5163ec4271ee0621/index.html
17. *** European Parliament <https://www.europarl.europa.eu/news/ro/headlines/society/20170505STO73528/risipa-alimentara-in-ue-milioane-de-tone-de-alimente-la-gunoi>
18. *** European Council <https://www.consilium.europa.eu/ro/policies/food-losses-waste/>
19. *** MEDIAFAX <https://www.mediafax.ro/>
<https://www.mediafax.ro/economic/p-stocurile-prea-mari-de-produse-alimentare-cresc-risipa-alimentara-20666800>
20. *** Forbes <https://www.forbes.com/>