

FOOD WASTE AND FOOD LOSS IN ROMANIA

GHEORGHESCU IONUT COSMIN¹, BALAN IOANA MIHAELA*¹¹Banat University of Agricultural Sciences and Veterinary Medicine, "King Michael I of Romania", Timisoara, Faculty of Management and Agricultural Tourism

*Corresponding author's e-mail: ioanambalan@yahoo.com

Abstract: The paper presents aspects of food security as a priority issue of global safety, an issue that is increasingly addressed in the world, but still poorly understood. Food wastage exerts undue pressure on limited natural resources and the environment. Every opportunity must be taken to prevent food waste and to strengthen the sustainability of the food system. Legislative regulations on food safety, which may be exaggerated in certain situations, must prevent food waste and biodegradable waste going to landfills without a solution for recovery, but also for poverty and exclusion.

Key words: food safety, food waste, food security, food loss.

INTRODUCTION

A problem that is increasingly addressed in the world, but still poorly understood, is the effects of food waste. This has important consequences both for the economy and well-being of the inhabitants of developed and developing countries as well as for the environment, leading to an increasing need for solutions.

The United Nations Food and Agriculture Organization (FAO) estimates that one third of its food is wasted worldwide, which is three times the amount of nutrition needed for the entire world population and six times the amount of global support allocated for development. At the level of the Member States of the European Union, food waste is over 89 million tons, of which 2.5% is Romania. A multi-stakeholder partnership published in June 2016 a global standard on accounting and reporting of losses and waste of food (figure 1) [1].

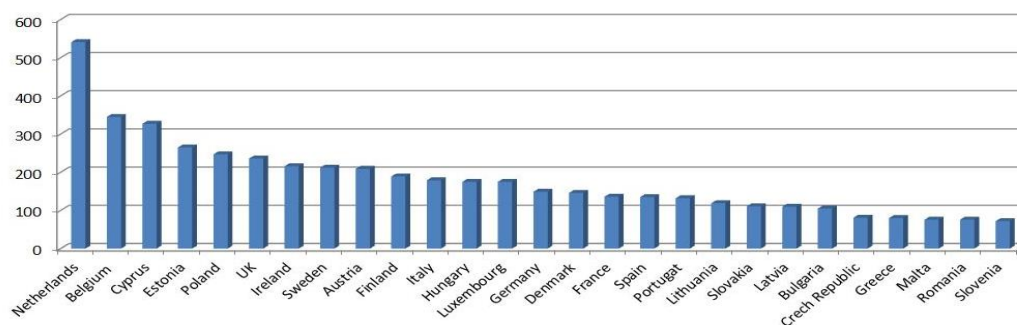


Figure 1. Total food waste in EU (kg. per pers)

Source: https://en.wikipedia.org/wiki/Food_waste, year 2016

Food is lost or is wasted throughout the food supply chain: on the farm, in processing and production facilities, in shops, restaurants, canteens and at home. Food wastage exerts undue pressure on limited natural resources and the environment. Every opportunity must be taken to prevent food waste and to strengthen the sustainability of the food system.

According to estimates made by the European Commission in 2014, a third of people's food is lost or is scattered worldwide. Studies also indicate significant global losses as follows:

- the scattered food volume is estimated at 1.6 billion tonnes of raw material;
- the amount of water used annually to produce lost or wasted food is equivalent to the Volga River's annual flow, or three times the volume of Lake Geneva;

- 28% of the global agricultural area is used to produce scattered food;
- the carbon footprint of food waste is estimated at 3.3 billion tonnes of CO₂;
- the direct economic consequences of the phenomenon reach dollars 750 billion annually.

As far as Romania is concerned, every citizen throws every day a portion of food, according to EU statistics, which shows that food waste rises in Romania to 6,000 tons a day. Annually, the amount of food that Romanians dispose of reaches 2.2 billion pounds, or about 110 kg of food per person (meaning about 300 grams of food each day), was revealed in the discussions at the Leftovers event [2].

MATERIALS AND METHODS

The food problem has two basic components: food policy and nutrition policy. Food policy comes in two dimensions: one relating to the supply and quality of products, and the other one directly to the consumer and his consumption capacity.

These interventions address one or more of the following objectives:

- storage of food prices against strong fluctuations in international prices;
- secure a certain nutritional level of the undernourished population;
- control of food prices;
- limiting inflationary pressure by controlling food prices.

Therefore, food policies are all legislative, regulatory, administrative and financial measures that take into account the objectives previously defined. Nutritional policy aims at ensuring a balance between the physiological needs of food consumption and the contribution of nutrients to their satisfaction. The legitimacy of a state is the ability to provide security, namely to protect and maintain the rights of its citizens and to provide them with the right environment to meet all needs [3].

The causes and influences that threaten food security are: global warming, desertification and land degradation, the lack of use of its own agricultural potential to the detriment of excessive imports, a national food security strategy, the global economic crisis, the lack of food security independence, regions and countries, price volatility, lack of immediate action, lack of coherent policies, lack of control and traceability on the food chain, lack of control and practical action at global level, food security is closely linked to economic growth and social progress, political stability and peace. The food security of a country is the most important dimension of national security [4].

A state has national security only when it has food security and only when it has enough available agricultural and food products capable of covering the food needs of all the inhabitants of the border. Failure to ensure food security can rapidly generate internal convulsions and social tensions, may cause physical and mental health damage to the population, create conditions of economic and political instability, and externally can exert diplomatic, economic and political pressures undesirable and dangerous effects for national security.

Romania, a country that has the potential to feed 80 million people (according to the Romanian Academy), occupies 38th position in the ranking of global food security, on par with China. We are downsized by lower incomes and weak investment in research and development in the agricultural field. Also, the volatility of agricultural production is also undermining us. Not having an irrigation system (it covers only 10% of the agricultural area) we are exposed to the weather, so there are large variations in production from year to year [5].

On the same plan, we recall the forecast made by Japan's Nomura Bank, which emphasizes that the food problem in Romania will become more acute. According to her, our country ranks 12th in the world in terms of food risk, mainly driven by the food price

volatility (vulnerability). In Romania, it is necessary to create and implement, as urgently, an effective food security strategy at national level. For Romania, agriculture with its sub-branches, representing one of the most important resources of national development, is represented by livestock breeding and development, agro-food industry, exploitation of agricultural potential and agricultural land (mainly for own use) [6].

Also, by identifying the threats, threats and risks to food security, one can predict the main vulnerabilities in agriculture and the agro-food industry, which are among the most diverse:

- vulnerabilities directly affecting the natural environment - soil, water, air, energy resources;

- excessive population or exploitation: underdeveloped infrastructure, mainly critical, starting with production: morally and physically used agricultural machinery, storage facilities, underdeveloped energy networks, food transport networks;

- the high concentration of agricultural land, which is mostly owned by farmers - where only 4% of the national arable land is owned by 50 leading agricultural producers with potential for exploitation and exploitation, only 7 million hectares can be the subject of EU funds because 2,4 million hectares are of subsistence farms [7];

- lack of adapting the legal status of farmers to micro-farms to qualify for both accessing funds for rural infrastructure development and improving farmers' living standards through national funding and by accessing agricultural funds from specific funds;

- the use of their own agricultural land to ensure food security in other countries (through possible over-exports of agri-food products) at the expense of its own food security can become a vulnerability and a threat to its own food security and implicitly to economic and social stability, the national security of the Romanian state (considering that food security is the basic component of the national security of a state);

- depreciation of the technical base and investment stagnation, asset destruction (irrigation systems, plantations, machinery, zootechnical complexes).

For Romania, there is no need to make predictions about the possible occurrence of a food crisis because a large part of the population is already affected by this phenomenon. The increasingly precarious food security of the Romanians is not the consequence of the lack of food for the time being, but of a sharp drop in indigenous production at the expense of increased imports, of its agricultural potential, purchasing power generated by at least four factors: salary adjustment, recalculation and taxing pensions and rising inflation [8].

These factors contribute substantially to reducing food consumption, both quantitatively and qualitatively, by volatilizing food prices, reducing self-consumption, along with the steadily increasing imports [9].

Applying a food safety system would create a number of advantages, such as:

- increasing the food industry in Romania to EU requirements for food production;
- preventing outbreaks of food poisoning that would affect the health of consumers;
- favoring constructive dialogue between manufacturers and consumers, between manufacturers and control bodies.

RESULTS AND DISCUSSIONS:

At the initiative of the Ministry of Agriculture and Rural Development and the Ministry of Environment and Climate Change, a working group of over 20 national authorities, institutions and organizations has been set up to implement the National Action Plan for Waste Reduction food and the elaboration of the National Strategy for the reduction of food waste.

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

Organizations and informal groups that have projects or services to reduce food waste consider that the main barriers to harnessing the surplus of food are the lack of clear regulations that non-consumer products can be distributed even 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.

They argue that there is a need for a law obliging companies to enter into a sponsorship contract with a non-profit organization as well as better collaboration between the representatives of the suppliers (hypermarket, producer / distributor) and representatives of NGOs / social centers would be some extremely useful tools in the process of simplifying the procedures for the capitalization of food products.

The main causes for the food to be thrown are: they are degrading too quickly, erroneously estimated the amount of food consumed at a meal, excess shopping.

Foods that most often get into the garbage are: cooked foods, dairy products, bread / bakery products, vegetables and fruits (figure 2).

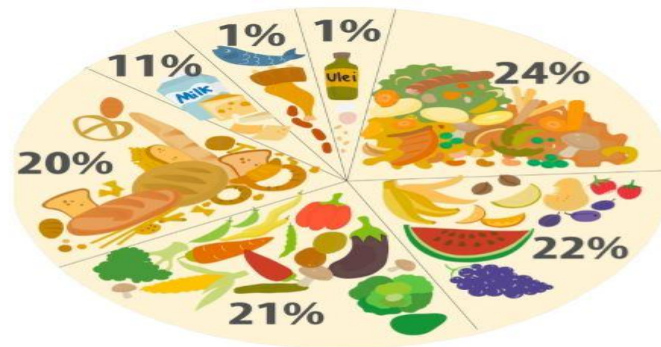


Figure 2. The food waste structure in Romania

Source: <https://www.dutchromaniannetwork.nl/wp-content/uploads/2017/01/Food-Report-Romania-2016.pdf>, year2016

To combat food waste, we need to understand where and why we waste food (figure 3).

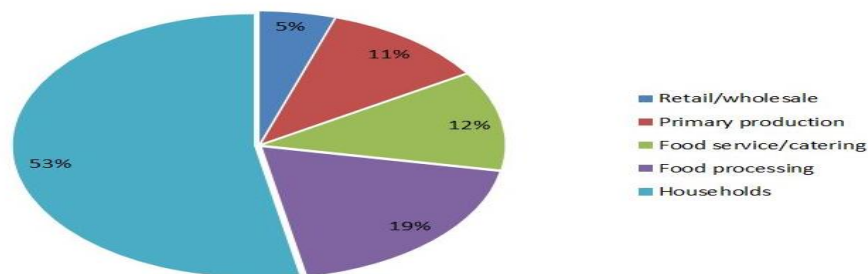


Figure 3. Weight of food waste in Romania

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

Food wastage situations should be prevented on the basis of studies, and additional foods should be donated for use for certain purposes, for example feed, recycled, recovered or disposed of (figure 4).

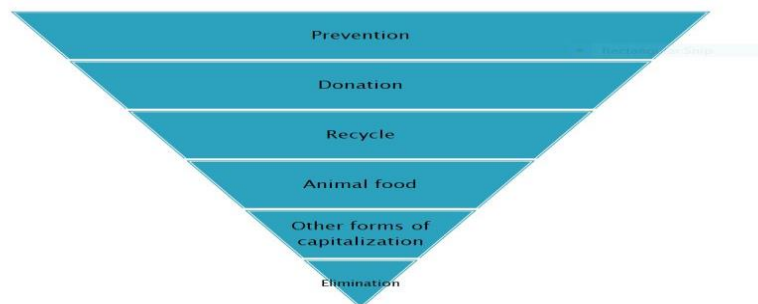


Figure 4. Steps to avoid waste of food in Romani

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

A significant reduction in the negative effects of food waste on both the economy and the environment can all contribute to the life of a product - from producer to consumer. In this respect, a very important role is played by access to correct information, but also the understanding of the current situation on a global level [10].

CONCLUSIONS

In conclusion, it is obvious that Romania's situation is not one of the best because:

- is one of the most powerful countries in the world in terms of agricultural potential but nevertheless occupies 38th place, according to the 2012 Annual Food Security Report;

- Romania is ranked 12th in the world as a vulnerability (through price volatility) in the event of a global (global) food crisis;

- Romania is a net importer of agro-food products (about 60-70% of the agri-food products come from import), which is definitely determined by the non-exploitation of its own agricultural potential [11].

Taking these three aspects into account, we can draw our own conclusions:

- Romania's food security must be a component of national security;

- Romania does not have a strategy for food security;

- ensuring adequate production of basic food and agricultural products;

- the maximization of the supply-flow stability of agricultural products;

- the Romanian agriculture must be able to offer year after year large and reliable production and the people who need such products have the necessary incomes for their purchase;

- transporting Romania from a net importer of agro-food products to an exporter through real production only by using its agricultural potential;

- to find some forms of support from the national budget, in order to re-establish in the agricultural circuit the approximately 4 million hectares of uncultivated and left-over agricultural land;

- development and refurbishment of irrigation systems, the land will degrade and can even lead to the irreversible process of desertification.

Increasing the degree of exploitation of the agricultural potential can turn Romania into an independent state in terms of ensuring the food security of the population, but also by providing such security to other countries through a net export of agricultural products, raw materials and food.

Without a coherent strategy for national food security, without a systemic 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. 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, of accelerating and expanding the territory of drought and other natural phenomena with a negative impact on agriculture Romania.

REFERENCES

- [1]. **ALEXA ERSILIA, POIANA MARIANA-ATENA, DEHELEAN CRISTINA ADRIANA, RADULOV ISIDORA, CIMPEAN ANCA-MARIA, BORDEAN DESPINA-MARIA, TULCAN CAMELIA, POP GEORGETA**, The occurrence of mycotoxins in wheat from western Romania and histopathological impact as effect of feed intake , Chemistry Central Journal - <https://ccj.springeropen.com/articles/10.1186/1752-153X> , 7-99
- [2]. **BALAN IOANA M. , 2007**, Managementul calitatii carniei de porc (Porc quality management), Artpress Publishing House, Timisoara
- [3]. **CRISTINA ROMEO, HANGANU FLAVIA, LAZĂR ROMEU, CONSTANTIN ADRIANA, TULCAN CAMELIA, MORAR DORU, ȘTEF DUCU S., HUȚU IOAN, 2015**, Prevalence of steroid hormone residues by GC-MS/MS screening in animal matrices in Romania, Romanian Biotechnological Letters https://www.rombio.eu/vol22nr1/---1_2015-RBL.pdf
- [4]. **ENE CORINA, 2005,-** “Impactul Securitatii alimentare in elaborarea politicilor nutritionale si alimentare”, PhD Thesis, pg.10
- [5]. **HANNING IRENE B., O’BYRAN CORLISS A., CRANDALL PHILIP G., RICKE STEVEN C. 4, 2012**, Food Safety and Food Security, by © 2012 Nature Education
- [6]. **JANGULASHVILI TAMAR, BALAN IOANA MIHAELA, IANCU TIBERIU, JANGULASHVILI LEVAN, PIRVULESCU LUMINITA , 2017**, Research Regarding Food Security in Georgia – Dynamics of Livestock, Animal Productions and Self-Sufficiency, <https://www.degruyter.com/downloadpdf/j/arls.2017.1.issue-1/arls-2017-0009/arls-2017-0009.pdf>
- [7]. **SHIKLOMANOV I. A., 2000**, "Appraisal and Assessment of World Water Resources" (PDF), Water International. International Water Resources Association. pp. 11–32
- [8]. **SPERBER WILLIAM H., STIER, RICHARD F., (December 2009)** Retrieved 11 January 2015, "Happy 50th Birthday to HACCP: Retrospective and Prospective", FoodSafety magazine. pp. 42–46.
- [9]. **SALASAN COSMIN, FRITZSCH JANA**, Structural Change in Europe's Rural Regions–Farm Livelihoods Between Subsistence Orientation, Modernization and Non-farm Diversification, Coord.: G Buchenrieder, J Möllers,...23-41 Comparative Analysis of the contribution of subsistence production to household incomes in five EU New Member States: Lessons learnt;
- [10.] **ZAHIU LETITIA, 2001**,“Politici agroalimentare comparate”, Publishing House “Economica”, pg.53-54
- [11]. ***, <http://www.anpc.gov.ro/>
- [12]. ***, <http://www.ansvsa.ro/>
- [13].***, https://ec.europa.eu/commission/index_ro
- [14].***, <http://foodwaste.ro/>
- [15]. ***, <http://www.madr.ro/>
- [16].***, <https://www.nature.com/scitable/knowledge/library/food-safety-and-food-security-68168348>