

RESPONSIBLE CONSUMPTION IN THE FOOD SECTOR: GLOBAL TRENDS AND UKRAINIAN REALITIES

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Abstract. *The article is devoted to the study of current problems in the food sector and food waste management in Ukraine at the level of individual consumers; establishing the degree of involvement of Ukrainians in world trends of responsible consumption. Based on the analysis of literary sources, it is shown that the nature of food consumption is one of the main factors influencing the state of the natural environment, which is manifested in an unreasonably high level of resource use and is one of the causes of the formation of greenhouse gases. It has been proven that Ukrainian consumers are only at the initial stage of the movement towards responsible consumption in the food sector, which is due to a number of both subjective and objective reasons. It was established that a large part of consumers is not familiar with the principles of responsible consumption and handling of food waste, does not have information about the real volumes of their formation and does not suspect the possible consequences of irresponsible handling of them. It was determined that one of the most effective ways to reduce the amount of food waste is the formation of a culture of food consumption, increasing the level of awareness and consciousness by consumers of the consequences of their eating behaviour and the impact of food waste on the environment. It was revealed that a significant problem on the way to responsible consumption in the food sector is the lack of the necessary infrastructure. It is shown that the low effectiveness of initiatives initiated by the state, business, and public organizations is explained mainly by the imperfection of communication systems with the target audience: many consumers simply do not have information about the relevant initiatives and, accordingly, do not have the opportunity to use them.*

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Introduction. The final document of the United Nations Sustainable Development Summit 2015 (September, 2015) “Transforming our world: the 2030 Agenda for Sustainable Development” is a kind of plan for dignity, peace and prosperity for people and the planet at the current stage and in the future. The 17 Sustainable Development Goals and 169 tasks announced by the Summit are aimed at developing the gains achieved within the framework of the Millennium Development Goals and at completing the implementation of tasks that could not be fulfilled (United Nations Development Programme, 2023). One of the critical tasks for the coming years is to ensure sustainable consumption and production patterns (Goal 12). Governments and all citizens have to work together to improve resource efficiency, reduce waste and pollution, and create a circular economy. One of the objectives under Goal 12 is to halve the amount of global food waste per capita by 2030, both in terms of retail trade and for consumers; reduce food losses in production and supply chains, including post-harvest losses (United Nations Development Programme, 2023; United Nations Ukraine, 2023).

Furthermore, the nature of food consumption is essential among the factors influencing the state of the natural environment (Haas, 2021). The environmental consequences of such impacts

include climate change, soil degradation, pollution and water scarcity, loss of habitats and biodiversity. Food waste causes an unreasonably high level of use of such resources as water, arable land, fertilizers, fossil fuels, and is also one of the causes of greenhouse gas formation (Kummu et al., 2012). Thus, household food consumption leads to more than 60% of global greenhouse gas emissions and 50 to 80% of total resource use (Ivanova et al., 2016).

The issue of preventing the formation of food waste is included in the EU's circular economy action plan (EIT Food, 2023). Directive 2008/98/EC also aims at reducing and monitoring food waste. The directive obliges member states to implement food waste prevention programs, encourage food donations and other redistribution; create incentives to apply the waste hierarchy, for example, promoting charitable food donation (The European Parliament and the Council of the European Union, 2008; 20018).

For Ukraine, as a candidate country for joining the European Union, reducing the amount of waste, including food waste, should be one of the priorities of the state environmental and social policy. Reducing the amount of food waste per capita at the level of retail trade, hospitality establishments and consumers themselves is crucial for creating food security and transitioning to a resource-efficient economy (Teodorovych & Kyianytsia, 2022). One of the effective ways to reduce the amount of food waste is the formation of a culture of food consumption, increasing the level of awareness and consciousness by consumers of the consequences of their eating behaviour and the impact of food waste on the environment.

In high-income countries, the transformation of food consumption is considered essential for achieving the global goals of sustainable development (UN, 2016). Increasing the ecological sustainability of food models is gaining more and more importance (Springmann et al., 2016; Hartmann and Siegrist, 2017; Magrini et al., 2018; Hedin et al., 2019).

The article aims to identify current problems in handling food products and food waste in Ukraine at the level of individual consumers, as well as to establish the degree of involvement of Ukrainians in global trends of responsible consumption.

Materials and Methods. The article uses the analysis of scientific literature sources, systematization, synthesis, generalization, methods of quantitative research and data processing. The main tool of the research was a questionnaire, which included 17 questions with multiple choices, closed and open type. The questionnaire focused on the following main areas: demographic data of respondents (age, gender, field of activity, region of residence); familiarization with the basics of responsible consumption; nature of behaviour with food waste (causes and frequency of formation, method of disposal); use by consumers ways to reduce food waste (buying goods at discounts, using food banks, etc.); the main factors affecting consumer choice when buying food products.

The current state of responsible consumption culture among domestic consumers was assessed through an anonymous survey in May 2023. The study covered 150 people of different age groups, fields of activity and regions of residence. The survey was conducted online by using Google Forms.

Results and Discussion. Every year in the world about 1.3 billion tons (17%) of food products with a total value of almost 1 trillion dollars end up in landfills, forming food waste. This amount of food is enough to feed 2 billion people (Dehtiarenko, 2021). About 30% of the world's food production, including fruits, vegetables, oilseeds, meat, dairy products, and fish, is lost or wasted. This even though about half of them are suitable for consumption. Approximately 30-50% of all waste is organic waste: clippings of vegetables, fruits and greens, leftovers, spoiled products, bones, sometimes withered flowers, leaves. This is the classic wastebasket set in its organic form (Food

Waste Index Report, 2021). The problem of food waste is relevant throughout the food chain, from the production of agricultural products to storage, processing, transportation, trade and consumption (Paužuolienė, Šimanskienė & Fiore, 2022).

The Food Waste Index 2021 report released by the United Nations Environment Program (UNEP) states that in 2019 global food waste was 931 million tonnes (about 121 kg per capita), with about 690 million people going hungry. It is noted that 61% of food waste occurred in households, 26% - on public catering and 13% - on retail trade (Food Waste Index Report 2021). Specifically, on a global scale, 17% of the food produced in the world is wasted (11% - by households, 5% - in the food sector, 2% - in retail trade). Together they lead to 8-10% of global greenhouse gas emissions. (Food Waste Index Report 2021).

The generation of waste is an equally urgent problem in all countries, regardless of their level of socio-economic development: in low-income countries a large part of it falls on production, in developed countries - on the consumption stage (Kundieieva & Kulish, 2020).

Ukraine is one of the leaders among European countries in terms of the number of landfills: each resident of Ukraine sends an average of 250-300 kg of solid household waste to the landfill per year, 60% of which is organic waste, including food products. According to statistical data, in Ukraine about 7 million tons of food products are simply thrown into the trash every year. The total value of discarded products still suitable for consumption is more than UAH 6 billion (Kundieieva & Kulish, 2020). The lack of effective measures aimed at preventing the formation, processing and utilization of food waste and losses inhibits the development of the national economy, contradicts the principles of sustainable development (All-Ukrainian Environmental League, 2019).

A significant reason for the accumulation of excessive amounts of food waste is a low consumption culture. Food preferences, choices and habits occupy a central role in human cultures, and food consumption goes far beyond its functional role as a means of survival (Vermeir, Weijters & Verbeke, 2020). The conducted research is aimed at studying the habits of Ukrainians regarding food consumption and food waste management in everyday life.

The demographic picture of the survey participants is as follows: 75.4% of women and 24.6% of men participated in the poll. The most active age group among the respondents was youth, aged 17-21 years - 67.5%. The structure of survey participants by other age groups has the following indicators: respondents under 17 years of age – 3.5%; 22-30 years old - 2.6%; 31-40 years old – 8.8%; 41-50 years old – 9.6%; over 50 years - 7.5%.

As for the respondents' field of activity, 53.5% of the respondents are students of educational institutions; 8.8% – employees and civil servants; 3.5% – private entrepreneurs; 1.8% do not study or work anywhere; 21.1% are working students; 8.8% – lecturers and scientists; 2.6% are employed in the household.

Representatives of almost all regions of Ukraine are presented in the survey (Fig. 1). At the same time, the vast majority of respondents live in Kyiv region (47.4%) and the city of Kyiv (8.8%). A large part of the survey participants live in cities - 64%; 23.7% of respondents live in villages, 12.3% live in urban settlements.

Despite the fact that 66.7% of respondents know and understand the essence of the concept of “responsible consumption”, a large part of those interviewed have heard such a term, but do not understand its meaning (26.3%) or have not come across such a concept at all (7%).

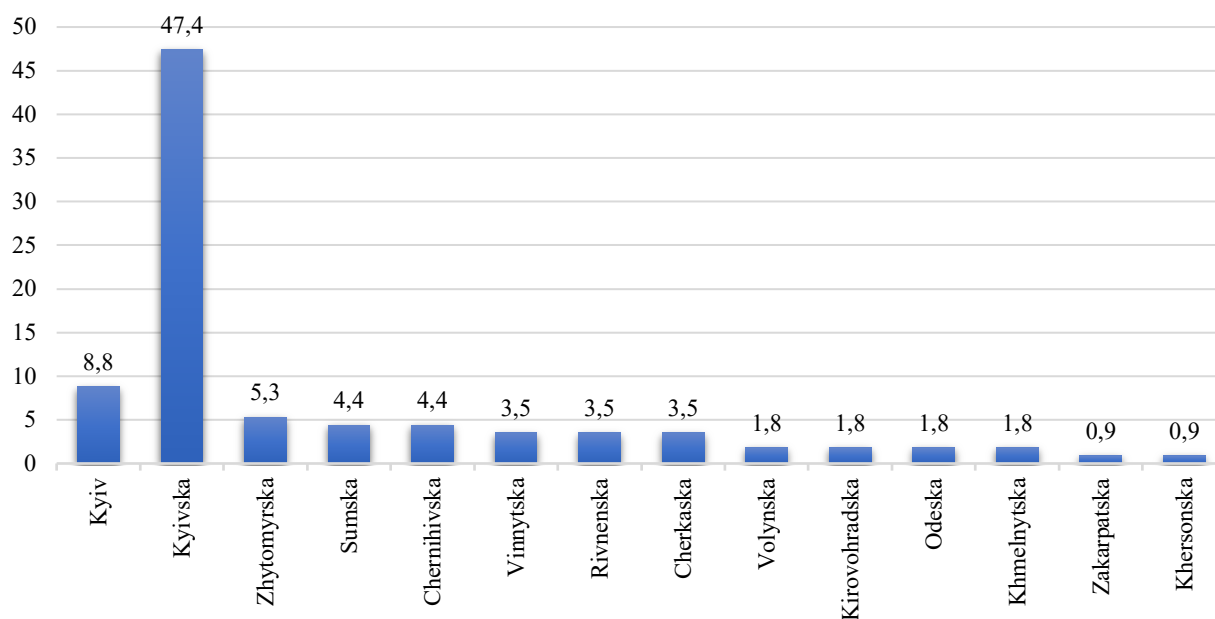


Fig. 1. Distribution of survey participants by region of residence, %

Regarding the behaviour of respondents with food and food waste, the study showed: only 16.7% of respondents never throw food in the trash; they do it occasionally - 68.4%; 14.9% often do it. At the same time, only spoiled products are thrown away by 85.1% of respondents; and 7.9% of survey participants noted that they also throw away products that are still suitable for consumption.

Analysis of the reasons for which food products end up in the trash led to the formulation of the following conclusions. This most often happens during the holidays, when consumers buy more products and prepare meals for the festive table - 48.2%. Quite often there is a situation when the consumer discovered that they purchased a low-quality product, but for various reasons cannot / does not want to return them to the seller - 31.6%. Also, some respondents (29.8%) noted that they often buy products in advance and forget their expiration date (fig. 2).

Most often, ready-made first courses end up in the trash - 46.5%; fruits and vegetables - 46.5%; as well as milk and dairy products - 27.2% (fig. 3). The results of the survey showed that the vast majority of surveyed consumers use spoiled or useless food as animal feed (50.9%) or throw it in the general trash (60.5%) – fig. 4.

In general, it should be noted that life in rural areas, from the point of view of minimizing food waste, is more ecological and socially responsible. Almost all leftover food (organic waste) is used as animal feed or disposed of in a compost pit, turning into a humus. Surplus food is either distributed to neighbours or also fed to animals. Most of the city dwellers throw all their organic waste into the trash.

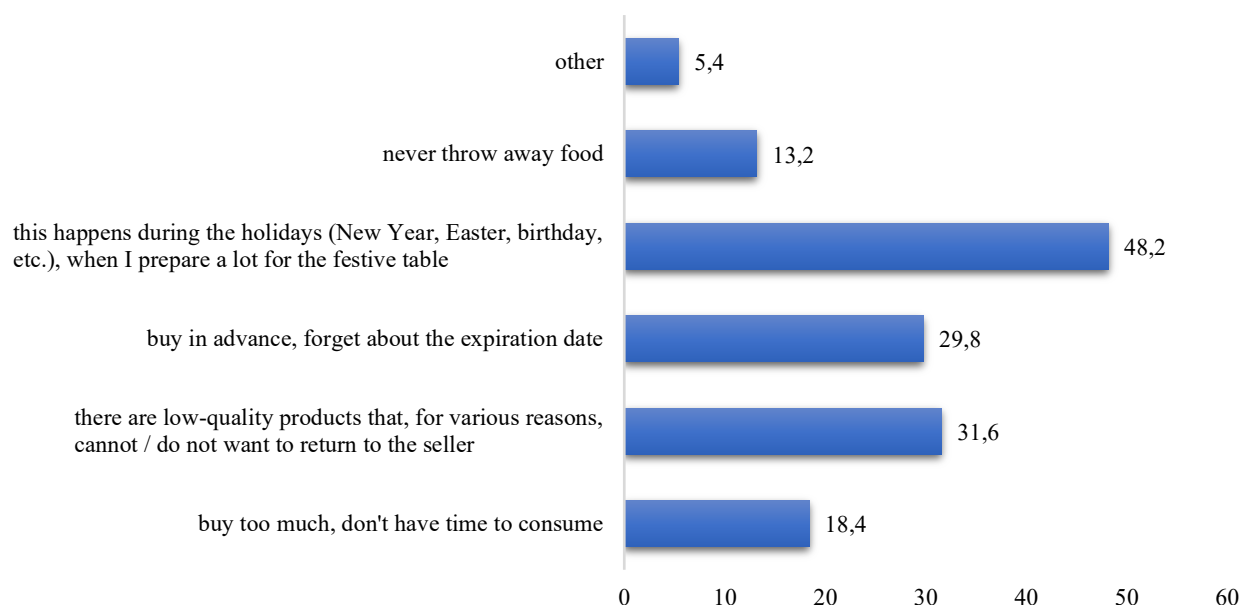


Fig. 2. The main reasons why consumers throw away food products, %

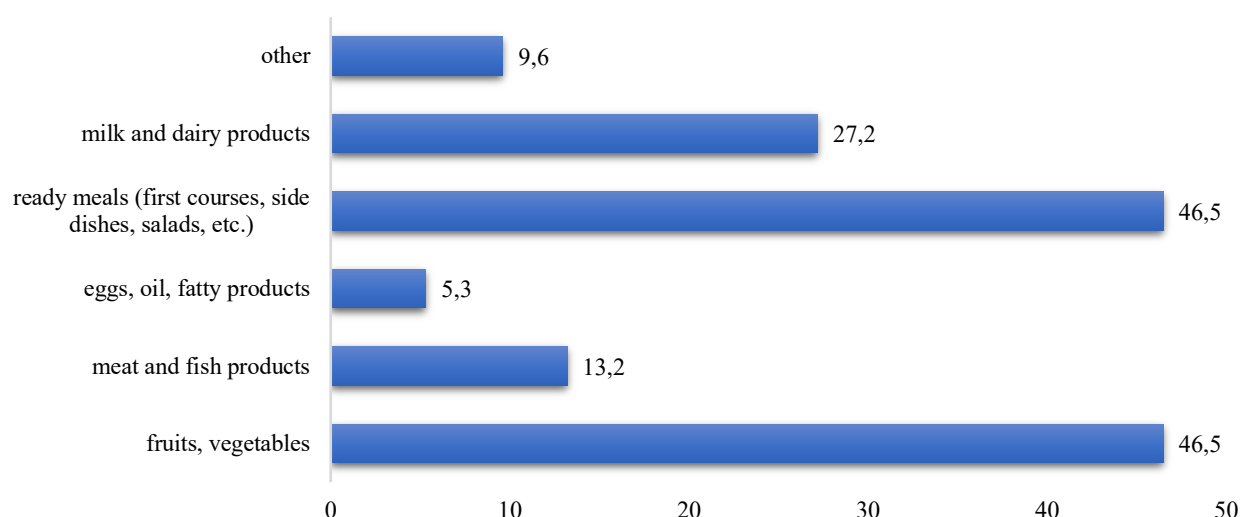


Fig. 3. Groups of food products that most often end up in the trash, %

A number of global initiatives are aimed at preventing an irresponsible attitude to food and avoiding the threat of hunger. One of the directions for reducing the amount of food waste, which has long gained popularity abroad, is the creation of food banks. These organizations are engaged in distributing food products from private individuals or businesses (manufacturers, trade organizations, catering establishments and other suppliers). Food banks operate in more than 40 countries, providing more than 40 million people with products whose shelf life is ending, or the appearance of which does not suit stores. The largest global networks of food banks include (Dehtiarenko, 2021): Global Food Banking Network (GFN), Feeding America, European Food Banks (FEBA). Social trends - food sharing and food saving - are also spreading in the world (Teodorovych & Kyianytsia, 2022).

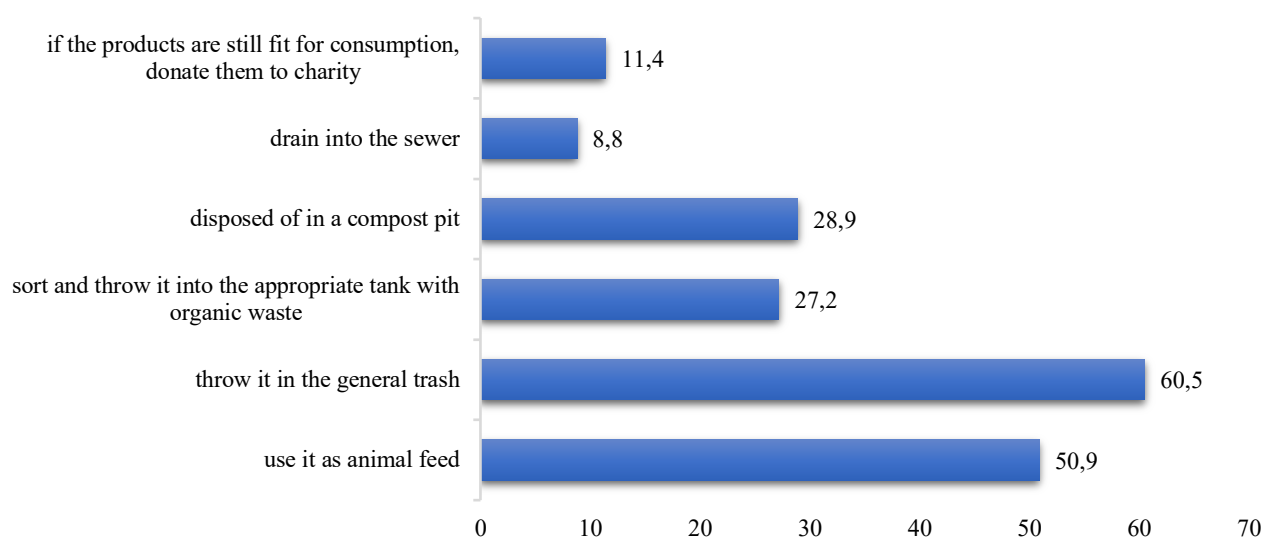


Fig. 4. Main methods of food waste disposal, %

Ukraine is gradually joining the global trends of responsible consumption. In 2011, the Ukrainian food bank “Kyiv City Charitable Fund Foodbank” began its work with the support of the European Food Bank Federation (KCCF “Food Bank”, 2012), which unites 240 Foodbank organizations in 21 European countries (European Food Banks federation, 2023). In 2021, the Food and Agricultural Organization of the United Nations (FAO) launched a pilot project aimed at reducing food waste in Kyiv and Lviv. In the same year, the first food bank “Tarilka” started working in Lviv, and in 2022 - in Kherson. The main mission of the projects is to reduce waste, provide food to people experiencing poverty, form a culture of food banks in Ukraine, spread ideas about a rational attitude towards products and help others. However, for various reasons such initiatives have not yet become widespread.

The results of our research showed that consumers in Ukraine practically do not use the services of food banks. Most of the respondents (70%) had not heard about the existence of such organizations and their mission at all (Fig. 5). Only 23% of respondents know about domestic food banks and initiatives such as “Tarilka”, food sharing and food saving (Fig. 6). It should be noted that urban residents (79.4%) and young people (76.5%) predominate among respondents who have at least minimal information about the activities of food banks.

Physical, economic, and social access to food products is one of the key priorities in ensuring the country's food security. Under the conditions of military aggression, the problem of overcoming the hunger of the Ukrainian population acquired its urgency. The popularization and further development of the activities of food banks can become an effective tool for ensuring the food needs of the civilian population in wartime conditions.

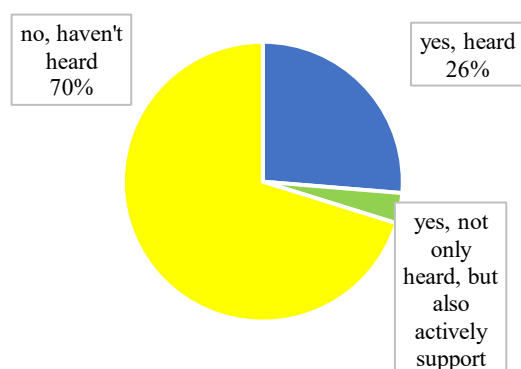


Fig. 5. Consumer awareness of food banks

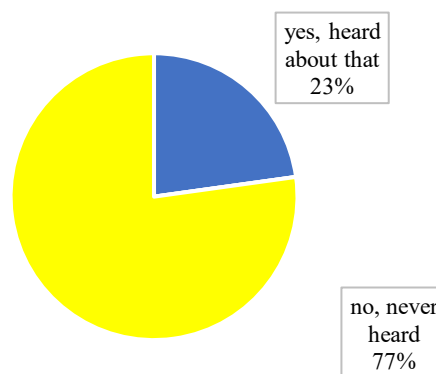


Fig. 6. Awareness of consumers in Ukraine about national initiatives such as “Tarilka”, “Lunch without Trouble”, #foodsharing, etc.

Another popular initiative is gradually conquering the world - the “Too Good To Go” application. The project was launched in 2016 and aims to reduce food waste due to the purchase at reduced prices of expired products and dishes. In 2021, Google joined the initiative with its “Waze” application (Dehtiarenko, 2021). Unfortunately, such an initiative is currently not available for Ukrainians. However, the prospects are still optimistic - the survey showed that only 13% of respondents categorically say that they will never buy food products at reduced prices, the expiration date of which will soon expire. While 13% of respondents do so often, 48% sometimes, and 26% do not currently buy, but do not rule out such a possibility in the future (fig. 7).

It is likely that a mobile application like “Too Good To Go” or “Waze” would gain popularity among domestic consumers. According to the results of the study, 25% of respondents indicated that they would definitely use such an application, 43% did not reject the possibility of using such an application (fig. 8)

A significant percentage of consumers (55.3%) are not against joining initiatives aimed at reducing food waste; 38.6% were undecided, and 6.1% of respondents indicated they were not interested in this issue. At the same time, the analysis of the factors that are a priority for consumers when deciding to buy food products showed that the determining factors are mainly factors that directly concern the consumer here and now – expiration date, product composition, manufacturer, etc. And such factors as the possibility of reprocessing packaging, environmental friendliness of production occupy the last positions (fig. 9).

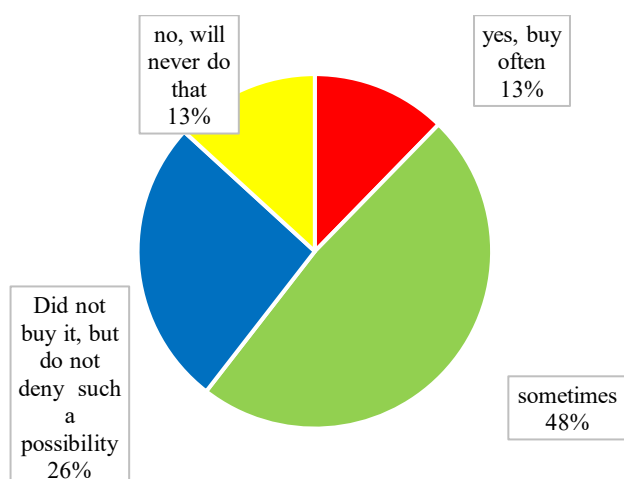


Fig. 7. Attitude of the respondents towards the purchase of food products at reduced prices, the expiration date of which will soon expire

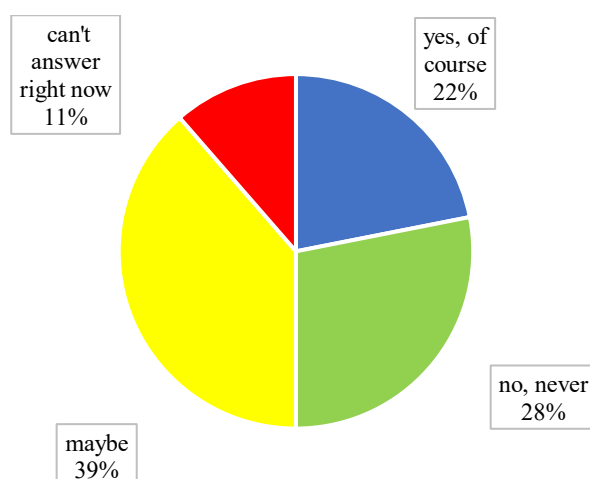


Fig. 8. Respondents' assessment of the likelihood of using an application with information that helps to purchase at reduced prices products or ready-made meals whose expiration date is coming up

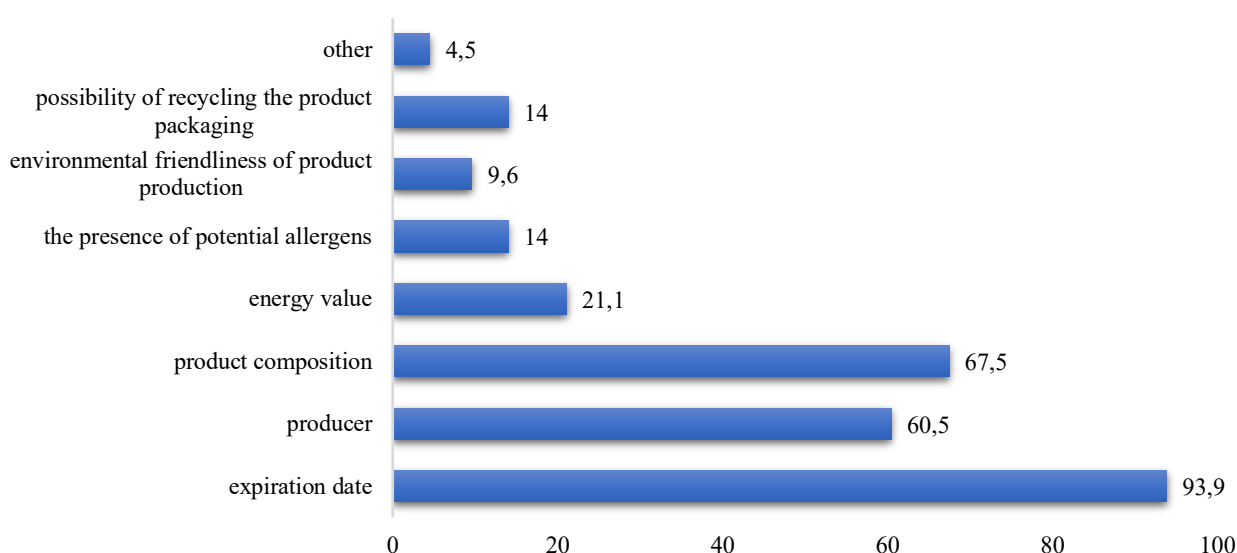


Fig. 9. Priority selection criteria for consumers when buying food products, %

Altogether, a socially responsible consumer, making a consumer choice, has to take into account a number of additional parameters, in particular (Kundieieva & Kulish, 2020): product quality and its impact on health; product safety for the environment at all stages of its life cycle; the service life of the product and the method of disposal after its end; the region of production and the distance over which the products are transported; the reputation of the company-manufacturer and the company-seller of the product, as well as the level of their social responsibility.

Conclusions. The problem of food security is closely related to climate change, waste sorting and processing, as well as other issues of humanity: ecological, economic, and social. An essential prerequisite for reducing the amount of food waste generation is the formation of a high culture of

responsible consumption of food products. Changes in consumer behaviour can significantly reduce food waste.

The conducted research has shown that the culture of responsible consumption in the food sector is just beginning to take shape in Ukraine. This is due to a number of both subjective and objective reasons.

Firstly, a significant part of consumers is not familiar with the principles of responsible consumption and handling of food waste, does not have information about the real volumes of their generation and does not suspect the possible consequences of irresponsible handling of them. Educational activities, training and informing people are decisive in solving this problem. Understanding the problem of food waste will stimulate a reorientation of the economic behaviour of consumers with an emphasis on saving food, avoiding impulse purchases and planning one's grocery basket to minimize the loss of edible food.

Secondly, there is a problem related to the lack of infrastructure that would promote responsible food waste management. In particular, for example, such options for handling food waste as animal feed or composting are practically unavailable to city dwellers. On the other hand, in rural communities there are practically no waste sorting points, no access to food banks, etc.

Third, many consumers simply do not have information about government, corporate or public initiatives to reduce food waste. The study showed that the majority of consumers are not familiar with initiatives in this direction and, accordingly, do not have the opportunity to join them. As a rule, food retail chains build their communication strategies, starting more from their commercial interests than from the principles of responsible consumption.

Thus, the solution to the problem of food waste should be comprehensive. At the same time, the main efforts should be focused on forming a culture of responsible consumption among the population; creating a full-fledged infrastructure in the field of food waste management; building an effective communication system between consumers and entities whose activities are aimed at reducing the amount of food waste generation.

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