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Kuznietsova Olena

Candidate of Technical Sciences

Associate Professor of the Department of Biotechnology

National University "Kyiv Aviation Institute", Ukraine

Кузнєцова Олена Олександрівна

кандидат технічних наук, доцент кафедри біотехнології

Національний університет «Київський авіаційний інститут»

ORCID: 0000-0002-1786-314X

Korniienko Iryna

Candidate of Technical Sciences

Associate Professor of the Department of Biotechnology

National University "Kyiv Aviation Institute", Ukraine

Корнієнко Ірина Михайлівна

кандидат технічних наук, доцент кафедри біотехнології

Національний університет «Київський авіаційний інститут», Україна

ORCID: 0000-0002-3872-0957

EUROPEAN EXPERIENCE OF SURPLUS FOOD DONATION IN THE CONTEXT OF FOOD WASTE PREVENTION AND CIRCULAR ECONOMY DEVELOPMENT

Abstract. Food waste has become one of the major global challenges associated with the inefficiency of food systems, environmental degradation, and inefficient use of natural resources. In this context, donation of surplus or unrealized food products is increasingly recognized as an effective instrument for preventing food waste generation and supporting the transition towards a circular economy. The aim of this research is to analyse the experience of the European Union in developing food donation systems and to identify opportunities for adapting relevant approaches in Ukraine.

The study is based on a review and analysis of European regulatory frameworks, including the Waste Framework Directive, EU Guidelines on Food Donation, and strategic documents related to food waste prevention. The research also examines practical models of redistribution of surplus food implemented in selected EU Member States with a focus on institutional mechanisms, economic incentives, and the role of food banks.

The results demonstrate that effective food donation systems require an integrated approach combining legislative support, food safety regulation, developed redistribution infrastructure, stakeholder cooperation, and economic incentives for food businesses. Food donation contributes not only to reducing the amount of food waste but also to mitigating greenhouse gas emissions, conserving natural resources, and improving social sustainability by increasing access to food for vulnerable groups.

The analysis revealed that the European experience provides valuable policy and organizational solutions for Ukraine. Adaptation of EU practices, including the development of legal mechanisms for food donation, strengthening food redistribution networks, and introducing incentives for businesses, can become an important component of Ukraine's transition towards sustainable food systems and circular economy principles.

Keywords: food waste, food donation, circular economy, waste prevention, food redistribution, food systems.

ЄВРОПЕЙСЬКИЙ ДОСВІД ДОНАЦІЇ НАДЛИШКІВ ХАРЧОВИХ ПРОДУКТІВ У КОНТЕКСТІ ПОПЕРЕДЖЕННЯ УТВОРЕННЯ ХАРЧОВИХ ВІДХОДІВ ТА РОЗВИТКУ ЦИРКУЛЯРНОЇ ЕКОНОМІКИ

Анотація. Харкові відходи стали однією з головних глобальних проблем, пов'язаних з



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неефективністю продовольчих систем, погіршенням стану навколишнього середовища та неефективним використанням природних ресурсів. У цьому контексті донація надлишкових, або нереалізованих продуктів харчування все частіше визнається ефективним інструментом запобігання утворенню харчових відходів та підтримки переходу до циркулярної економіки. Метою цього дослідження є аналіз досвіду Європейського Союзу у розробці систем донації продуктів харчування та визначення можливостей для адаптації відповідних підходів в Україні.

Дослідження базується на огляді та аналізі європейської нормативно-правової бази, включаючи Рамкову директиву про відходи, Керівні принципи ЄС щодо донації продуктів харчування та стратегічні документи, пов'язані із запобіганням утворенню харчових відходів. У дослідженні також розглядаються практичні моделі перерозподілу надлишків продуктів харчування, що впроваджуються в окремих державах-членах ЄС, з акцентом на інституційні механізми, економічні стимули та роль продовольчих банків.

Результати демонструють, що ефективні системи донації надлишків продуктів харчування вимагають комплексного підходу, що поєднує законодавчу підтримку, регулювання безпеки харчових продуктів, розвинену інфраструктуру перерозподілу, співпрацю зацікавлених сторін та економічні стимули для харчових підприємств. Донація продуктів харчування сприяє не лише зменшенню обсягу харчових відходів, але й зменшенню викидів парникових газів, збереженню природних ресурсів та покращенню соціальної стійкості шляхом розширення доступу до продуктів харчування для вразливих груп населення.

У дослідженні робиться висновок, що європейський досвід являє цінні політичні та організаційні рішення для України. Адаптація практик ЄС, включаючи розробку правових механізмів для донації продуктів харчування, розширення мереж перерозподілу продуктів харчування та запровадження стимулів для бізнесу, може стати важливим компонентом переходу України до стійких продовольчих систем та принципів циркулярної економіки.

Ключові слова: харчові відходи, донація продуктів харчування, циркулярна економіка, запобігання утворенню відходів, перерозподіл продуктів харчування, продовольчі системи.

Formulation of the problem. Reducing food loss and food waste is one of the key areas of the transformation to a circular economy and achieving target 12.3 of Sustainable Development Goal 12 “Responsible Consumption and Production”, which envisages halving per capita food waste at the retail and consumer levels by 2030, as well as reducing food losses along production and supply chains [1]. According to assessment by the United Nations Environment Programme (UNEP), in 2022 1.05 billion tons of food waste were generated in the world, which is about 19% of food products available to consumers (at the retail, food service and household levels). At the same time, food waste is a source of significant greenhouse gas emissions, causes the ineffective use of natural resources and exacerbates the problem of food insecurity [2]. The loss of food suitable for human consumption means the wasteful use of land, water, energy and labour resources, and also creates an additional burden on waste management systems. In this regard, the priority of public policy is gradually shifting from the management of food waste that has already been generated to its prevention, which is in line with the principles of the circular economy and the waste hierarchy [3].

According to the waste hierarchy, the highest priority is given to waste prevention. One of the most effective tools for preventing food waste is the donation of surplus food, i.e. the distribution of safe but unsold or surplus food items to charitable organizations or food banks for donation in turn to those in need. The donation of surplus food items ensures the preservation of their primary value, allowing at the same time to reduce waste generation, increase resource efficiency and support socially vulnerable groups [4]. In this regard, the European Union, which is one of the world leaders in the development of circular economy and a comprehensive policy to prevent waste generation, considers the donation and redistribution of surplus food as one of the priority areas for preventing food waste in accordance with the waste hierarchy. Over the past decade, a comprehensive system of legal regulation of surplus food donation has been developed in the countries of the European Union, which combines the requirements of food safety legislation, traceability rules, tax incentives and the activities of food banks as well as charitable organizations. An important milestone was the adoption by the European Commission of the EU Guidelines on Food Donation, which contributed to the harmonization of surplus food donation practices among Member States and the removal of barriers to the distribution of surplus food items to those in need [5]. The practical experience of France, Italy, Spain, Belgium and other countries demonstrates that the creation of a supportive regulatory framework allows for a significant increase in the level of distribution of surplus food items and, accordingly, a reduction in food waste generation [6].

At the same time, a comprehensive analysis of the current legal framework and practice of surplus food

donation in the European Union is necessary to identify effective mechanisms for preventing food waste generation and opportunities for their adaptation in other countries. The EU's experience in this context is particularly important for Ukraine which is a candidate for EU membership.

Analysis of recent research and publications. The issues of food waste generation, food waste prevention, surplus food donation in the context of circular economy principles have been the subject of scientific research in recent years. Considerable attention is paid to assessing the effectiveness of surplus food distribution systems, regulatory aspects of surplus food donation, environmental benefits of food waste prevention and transition towards circular food systems.

Based on a systematic analysis of nearly 300 scientific publications, Q. Do et al. examined modern approaches to food loss and food waste prevention in the context of a circular economy. The authors identified the main directions of research in this field and emphasized that the donation of safe surplus food items is one of the key strategies for preventing food waste generation while simultaneously solving social problems [7].

Eriksson M. et al. analysed the evolution of European Union legislation on food waste prevention. The paper demonstrates the need for a comprehensive combination of food waste prevention and management policies with the principles of a circular economy and also recognizes the important role of surplus food donation within the food waste hierarchy [8].

Van der Werf S.M. et al. evaluated the environmental performance of surplus food donation by assessing the carbon footprint of different scenarios for food waste treatment. The study showed that surplus food donation can provide a significant reduction in greenhouse gas emissions compared to food waste disposal, provided that logistics processes are properly organized [9].

Reynolds et al. reviewed interventions aimed at reducing food waste generation at the consumption stage and concluded that effective food waste prevention requires evidence-based policy measures supported by robust monitoring and evaluation systems [10].

Caldeira et al. quantified food waste by product group and stage of the food supply chain in the European Union. The results of the study provide valuable evidence to identify priorities for food waste prevention and to support policy development within the framework of a circular economy development [11].

Thus, an analysis of modern scientific publications shows that the donation of surplus food may be considered as one of the key tools for implementing the principles of the circular economy and preventing the generation of food waste. At the same time, most studies focus on assessing environmental performance, developing regulatory framework and improving organizational models of surplus food distribution and donation. At the same time, the issues of adapting European practices to the national features of individual countries, in particular Ukraine, remain insufficiently studied, which determines the relevance of further research.

The purpose of this article is to analyze the European Union's experience in developing surplus food donation systems and identify opportunities for adapting relevant approaches in Ukraine.

The main material presentation. *Food waste generation and the place of surplus food donation within the waste management hierarchy.* Food waste generation is associated not only with inefficient use of resources, but also with undesirable environmental, economic and social consequences.

According to the United Nations Environment Programme (UNEP), the largest share of food waste is generated by households (about 60%), food service (28%) and retail (12%) [2].

The high level of food waste generation creates a significant burden on the environment due to the inefficient use of natural resources involved in food production. Every product that is not consumed represents a loss of resources, including water, energy, labour and materials used at all stages of its life cycle. In addition, the disposal of food waste to landfills is accompanied by the formation of methane during the anaerobic decomposition of organic matter, which increases the impact of food systems on climate change. In this regard, the approach to food waste management is gradually changing in international and European environmental policy: from a predominant emphasis on food waste disposal to a priority for its prevention. This approach is consistent with the principles of the circular economy. The concept of the circular economy involves a transition from a linear model of resource use to a closed-loop system, in which priority is given to preserving the value of products, recycling resources and minimizing waste generation [12]. In the context of food systems, this means the need to implement measures aimed not only at treating the food waste generated, but primarily at its prevention and distribution of surplus food items for those in need.

The practical implementation of the principles of the circular economy in the field of waste management in the European Union is based, in particular, on the waste hierarchy presented in Directive 2008/98/EC (Waste Framework Directive) [13], which sets priorities in the field of waste management. According to Article 4 of the said Directive, the priority of actions in the field of waste management is determined in the following sequence: 1) prevention of waste (the highest priority); 2) preparation for reuse; 3) recycling; 4) other recovery methods, including energy recovery; 5) disposal of waste (the least desirable option).

In the context of food waste management, this hierarchy can be represented by an inverted pyramid (Fig. 1), which shows which actions fall into the category of “prevention of food waste”, which includes, in particular, the donation of surplus food.

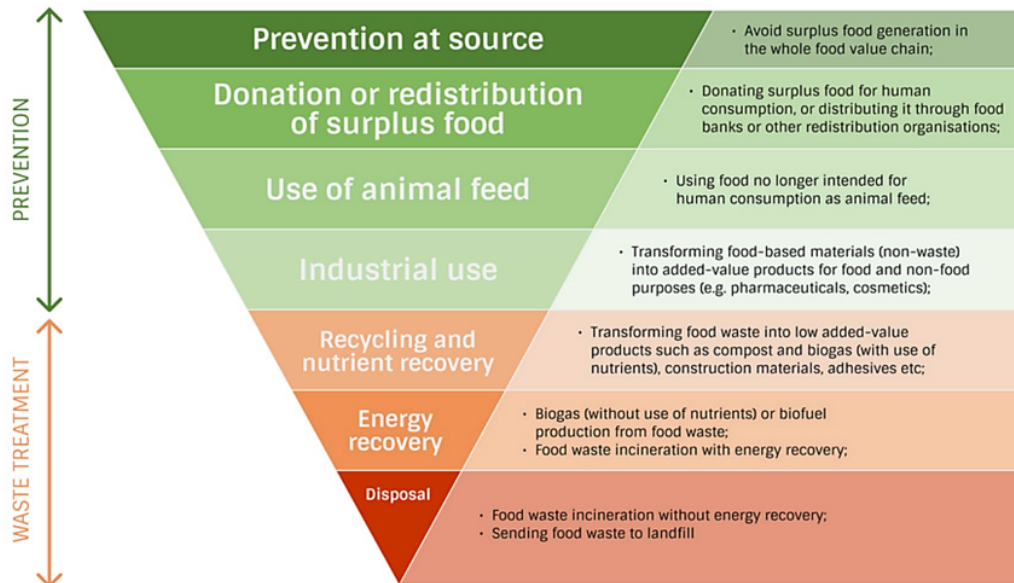


Fig. 1. Hierarchy for the prioritisation of options to manage surplus food, by-products from food processing and food waste
Source: adapted from [14]

Thus, the donation and redistribution of surplus food is one of the priority tools for preventing food waste in accordance with waste hierarchy. The transfer of safe and edible surplus food through charities and food banks allows to extend the life cycle of food items, reduce waste and related greenhouse gas emissions, use natural resources more efficiently, and at the same time contribute to solving the problem of food insecurity by supporting socially vulnerable groups. It should be noted that the spread of surplus food donation practices requires not only organizational interaction among stakeholders across the food chain, but also appropriate regulatory support. The following section discusses the main documents of the European Union regulating the food waste management issues and the donation of surplus food items for human consumption.

EU policy and legislation on food waste management and surplus food donation. The development of an effective surplus food donation system in the European Union is based on an integrated approach that combines waste management legislation, food safety issues, the functioning of the internal market and social policy. The European Commission considers surplus food donation as a priority area for preventing food waste after the possibilities of preventing it at source have been exhausted, since the distribution and donation of edible surplus food ensures its highest value use and helps to reduce food insecurity [15].

One of the basic EU regulatory documents in the field of waste management is Directive 2008/98/EC of the European Parliament and of the Council on waste. This document establishes general principles for waste management and defines a waste hierarchy, according to which prevention of waste has the highest priority [13].

One of the impetus for the spread of surplus food donation in the EU was the publication in 2017 of the EU Guidelines on Food Donation, which were designed to remove practical barriers to the distribution of surplus food in the EU. The document identified surplus food donation as one of the key tools for preventing food waste and established recommendations for the distribution of surplus but safe food for human consumption. The Guidelines clarified requirements for food safety, traceability, storage and distribution of surplus food items, and defined the role of producers, retailers, charitable organizations and food banks in the surplus food donation system. In addition, the document aims to simplify surplus food donation procedures and support Member States in actions that contribute to the reduction of food waste generation [16].

Important changes to the EU regulatory framework on food waste were introduced by Directive (EU) 2018/851, which amended Directive 2008/98/EC. The document obliges EU Member States to implement measures to prevent and reduce food waste at all stages of the food chain, to monitor them and evaluate the effectiveness of such measures. In addition, the Directive encourages the distribution of safe surplus food items, in particular through their transfer for human consumption (surplus food donation), as one of the ways to prevent food waste generation [17].

The EU Action Plan for the Circular Economy [18] broadened the approach to food waste management by strengthening the emphasis on preventing food waste. In this context, surplus food donation is recognized as one of the practical mechanisms for implementing the principles of the circular economy, as it allows redistribute surplus but safe food for human consumption instead of becoming waste. The Farm to Fork Strategy further developed the EU approach to food waste prevention, expanding the approach from separate waste regulation to the formation of a sustainable food system. In conjunction with Directive (EU) 2018/851 and the Circular Economy Action Plan, it supports the distribution of safe surplus food and donation as a means of preserving the value of food resources and reducing food waste [19].

The latest development in EU waste management policy was Directive (EU) 2025/1892, which strengthened the requirements for food waste prevention and reduction and set binding food waste reduction targets for Member States to be achieved by 2030. The document continues the approach initiated by Directive (EU) 2018/851 and promotes the prevention of food waste, including the distribution of safe surplus food items through food donation for those in need. [20].

Thus, the European Union's policy and regulatory framework for food waste prevention and surplus food donation is structured as a multi-level model, in which environmental waste reduction objectives are combined with food safety requirements and social objectives. The European approach demonstrates a shift from traditional waste management to a model of preserving the resource value of food, where surplus food donation is considered as one of the most priority ways to prevent food waste while solving the problem of food poverty among those in need.

Food donation practices in EU Member States. In the European Union countries, the surplus food donation system has been formed as a comprehensive mechanism for interaction between the state, food market operators, charitable organizations and food banks. Its main goal is not only to provide food support to socially vulnerable categories of the population, but above all to prevent the formation of food waste by preserving surplus food suitable for consumption in the food chain.

The organizational model of donation in the EU countries is mainly based on the activities of food banks and other non-profit or charitable organizations that act as intermediaries between surplus food donors and final recipients, for example, those who need it. The main donors of food products include food manufacturers, supermarkets, logistics companies, catering establishments and agricultural producers. Such organizations provide sorting, quality control, storage and transfer of surplus food items to food banks or charitable institutions, which allows to avoid their transformation into waste [21].

One of the most developed models of food redistribution is the organization system established in France. In 2016, France adopted Law No. 2016-138, which became one of the first legislative acts specifically focused on preventing food waste through the promotion of surplus food donation. The law required large food retailers to conclude agreements with charitable organizations to transfer unsold but safe surplus food products instead of destroying them. This approach changed the role of retail chains, transforming them from a source of waste generation to active participants in the food loss prevention system [22].

The French model demonstrates the advantages of a regulatory approach, but its effectiveness depends on the availability of an appropriate infrastructure for the collection and distribution of surplus food. This is why organizations such as food banks play an important role, providing a logistical link between food retailers and charitable organizations. It should be noted that to support the effective implementation of Law No. 2016-138, it is also necessary the development of a collection, transportation and quality control systems ensuring the functioning of the surplus food donation mechanism.

Another approach is demonstrated by Italy, where the incentive model was adopted instead of imposing direct mandatory obligations on businesses. In 2016, Law No. 166/2016, known as the "Gadda Law", was introduced, which established a comprehensive framework to support surplus food donations. The law simplified the procedures for the donation and redistribution of surplus food, defined the rules for interaction between donors and recipient organizations, and introduced economic incentives for businesses, including the possibility of reducing the local waste tax depending on the amount of food donated [23].

In Spain, the development of food donations has long occurred mainly through the activities of food banks and cooperation between food sector enterprises and charitable organizations or food banks. Unlike France, where donations were enshrined through mandatory requirements for large retailers, the Italian and Spanish models were more focused on stimulating food redistribution by simplifying procedures and developing partnerships. In 2025, Spain adopted the Law on the Prevention of Losses and Food Waste (Ley de prevención de las pérdidas y el desperdicio alimentario), which strengthened the requirements for the food chain operators and established a hierarchy of measures to prevent food waste, recognizing the donation of safe surplus food for human consumption as one of the priority options [24].

An example is the Spanish Federation of Food Banks, a non-governmental organization founded in 1995 that brings together a network of food banks throughout Spain. FESBAL's main objective is to combat

food poverty (i.e., the inability to afford a healthy and balanced diet) and decrease food waste generation by collecting surplus food suitable for human consumption, sorting and storing it and distributing it through charitable organizations to those in need. The organization also promotes a culture of responsible consumption and supports coordination between surplus food donors, food banks and beneficiaries. The FESBAL website features an interactive map of food banks in Spain (Buscador de Bancos de Alimentos), which enables users to find local banks by region and obtain information about their activities. This tool increases the accessibility of the donation system and facilitates interaction between citizens, donor companies, charitable organizations and food banks [25].

In addition, food banks in Spain conduct educational activities aimed at raising public awareness of the problem of food waste generation, responsible consumption and social solidarity. Thus, the educational activities of the food bank of Barcelona, which is part of the FESBAL network, are aimed at forming a culture of responsible consumption, preventing food waste and raising public awareness of the problem of food insecurity. The bank implements a special educational program for educational institutions, which includes information materials and practical activities for students and teachers [26].

Fig. 2 shows the work of volunteers in the food bank of Barcelona, which is part of the FESBAL network.



Fig. 2. Volunteer work at a food bank in Barcelona, Spain.

Source: [27]

In Germany, the surplus food donation system is largely based on the activities of non-governmental or charitable organizations, for example, the Tafel food bank network [28]. Unlike France, the German model is not based on a strict legislative obligation for large supermarkets to donate surplus food items, but is formed through a partnership between businesses and civil society organizations. Food banks cooperate with retailers, producers and local organizations, ensuring the distribution or donation of food items that are unsold or are no longer marketable, but remain safe for human consumption. Fig. 3 shows the workflow in one of the local Tafel organizations.



Fig. 3. Receiving and unloading food donations

Source: [29]

Tafel also carries out educational activities. In particular, the Tafel Academy provides training for food bank managers and prepares volunteers for leadership and management roles within food banks. As part of the framework of a comprehensive twelve-month training program, participants acquire essential knowledge and skills [30].

Another important area in the development of the donation system in the EU is the use of digital platforms that ensure rapid communication between enterprises that have food surpluses for one reason or another and organizations capable of accepting and distributing them. The adoption of digital technologies contributes to increasing the efficiency of the distribution of surplus food items through the tracking of donations, coordination of food donors and recipients, optimization of logistics and ensuring product traceability. Digital platforms allow real-time registration of available donations, identifying suitable recipient organisations and monitoring the process of surplus food distribution. Examples of such solutions include FoodCloud and other digital systems that connect businesses, food banks, and charitable organizations [31].

The use of digital technologies also helps to collect data on the volume of donations, the reduction of food waste and the social impact, which increases the transparency of the system and trust among stakeholders. At the same time, the main challenges remain the need to finance digital infrastructure, train users and integrate digital platforms into organizations' day-to-day operations.

Overall, the experience of the European Union countries demonstrates that an effective food donation system requires a combination of three key components: a favourable regulatory environment, a developed distribution infrastructure and economic incentives for food chain operators. Regardless of the chosen model - regulatory or incentive - the end result is a reduction in food waste generation, making more efficient use of food resources and a reduction on food poverty.

Opportunities and challenges of adapting the European Union's experience in the context of surplus food donation in Ukraine. The problem of reducing waste generation is becoming particularly relevant for Ukraine in the context of the transformation of the waste management system and the harmonization of national legislation with the law of the European Union. For a long time, the Ukrainian model of waste management was focused primarily on the disposal of waste in landfills, while the modern European approach is based on the principles of waste prevention, resource reuse and the development of a circular economy. In Ukraine, this approach, i.e. mainly landfilling waste, applies to various categories of waste, including food waste. At the same time, in the conditions of a full-scale war in Ukraine, there is a tendency towards an increase in the share of the population that, due to economic difficulties, cannot afford a healthy and balanced diet. In this context, the implementation of an effective surplus food donation system can become one of the practical tools for reducing food waste, reducing food poverty among vulnerable groups, and aligning Ukraine with EU standards.

Currently, waste management in Ukraine is regulated by a number of legal acts, but a comprehensive system for food waste prevention and donation or distribution of surplus food items is still in the process of formation. An important step was the adoption of the National Waste Management Strategy in Ukraine until 2030, which defines the transition from the traditional waste disposal model to a sustainable resource management system based on the principles of the waste management hierarchy, the priority of which is the prevention of waste generation, reuse and recycling of resources [32]. The practical implementation of the provisions of the Strategy is detailed in the National Waste Management Plan until 2030, which provides for specific organizational, regulatory and technological measures to reform the waste management system, including infrastructure development, improved record keeping and implementation of the principles of the circular economy [33]. An additional legal basis is the Law of Ukraine "On Waste Management" No. 2320-IX of 20.06.2022, which introduces European approaches to waste management and establishes the waste management hierarchy: prevention of generation, preparation for reuse, recycling, recovery and disposal [34]. At the same time, the issue of surplus food donation as a separate mechanism for preventing food waste requires a dedicated regulatory framework, in particular, the definition of clear rules for the donation of surplus food, the responsibility of participants in the process and the development of a network of organizations (i.e., food banks) that ensure surplus food distribution. One of the key areas of adaptation of the EU experience may be the formal recognition surplus food donation in national legislation. European practice demonstrates that a clear regulatory definition of the rules for the transfer of surplus food allows reducing legal uncertainty for businesses and charitable organizations.

An important area is the harmonization of Ukrainian legislation with EU legislation in the field of food safety. The experience of the European Union shows that the development of surplus food donation is possible only if the responsibility of all food chain operators — including producers, retailers, food banks, and recipient organizations—are clearly defined. At the same time, it is necessary to ensure a balance between two goals: preventing unsafe food items from reaching recipients and avoiding situations where overly complicated procedures hinder the donation of safe surplus food.

Of particular importance for Ukraine is the development of the infrastructure of food banks and food redistribution organizations. The experience of countries such as France, Italy, and Germany, among others, demonstrates that an effective surplus food donation system is impossible without organizations that perform a logistical function between businesses and end recipients. In Ukraine, there are already separate initiatives in the field of surplus food redistribution and donation to those in need, but they require systematic support, stable financing, and integration into the state policy of waste prevention.

One of the promising areas is the creation of economic incentives for enterprises that donate surplus food products. The experience of EU Member States demonstrates that tax reduction mechanisms and financial incentives can significantly increase the interest of businesses in donating surplus food items instead of disposing them. For Ukraine, such tools may include tax relief, simplification of administrative procedures, compensation of part of logistics costs or other mechanisms to support enterprises participating in surplus food donation programs.

An important task is also to form a culture of responsible food handling among businesses and consumers. A significant part of food waste arises from improper procurement planning, overproduction, incorrect interpretation of date marking ("use by" and "best before" dates), and low awareness of the possibilities of donating surplus food. In this context, Ukraine can use the EU experience in awareness-raising campaigns, educational programs and development of digital platforms that contribute to more effective management of surplus food.

Another key area is the implementation of a system for monitoring and assessing the effectiveness of measures to prevent food waste. For Ukraine, the creation of a reliable system for collecting statistical data will allow assessing the scale of the problem, identifying the most effective measures, and monitoring the results of implementing the surplus food donation programmes.

At the same time, the adaptation of European experience must take into account the national characteristics of Ukraine. Such factors include the structure of food production, the role of small and medium-sized businesses, territorial unevenness in the development of logistics, the consequences of the ongoing full-scale war, and the growing need for food support for those in need. Under these conditions, the surplus food donation system can perform a dual function: to contribute to the reduction of waste generation and at the same time provide an additional tool to assist vulnerable groups of the population.

Thus, the experience of the European Union demonstrates that an effective surplus food donation system is formed not by a single regulatory decision, but through a complex combination of legislative, economic, organizational, and informational tools. For Ukraine, adapting such experience can become an important element of the transition to a circular economy, improving the waste management system, resolution of social problems, and fulfilling its European integration commitments.

Conclusions. The analysis of the European Union's experience in the field of surplus food donation has shown that this mechanism is one of the most effective tools for preventing food waste generation and an important element of the transition to a circular economy. Unlike traditional approaches focused mainly on recycling or waste disposal, surplus food donation ensures the preservation of the intrinsic value of food products by reusing them for their intended purpose - for human consumption.

A study of the experience of EU Member States has shown that the effectiveness of the surplus food donation system depends on a combination of several factors: the presence of a favourable legislative environment, the development of a network of food banks, the participation of businesses, the use of economic incentives, and relevant educational work among the general public.

It has been determined that surplus food donation has a complex positive impact on the environment and society. It contributes to the reduction of food waste generation, the decrease of greenhouse gas emissions associated with food production and disposal, the conservation of natural resources used in food production, and the reduction of the burden on waste management systems. At the same time, surplus food items donation performs an important social function, providing support to the population with limited access to sufficient food. For Ukraine, the adaptation of European experience in the field of surplus food donation is a promising direction for improving the waste management system and aligning national legislation with the EU acquis. Priority tasks should be the regulatory definition of surplus food donation mechanisms, harmonization of food safety requirements, development of food bank infrastructure, creation of incentives for businesses and implementation of an appropriate monitoring system.

Therefore, the donation of surplus food can simultaneously be considered as a mechanism for reducing food poverty among the needy and a means of preventing waste generation. European experience confirms that, if there is proper regulatory support, effective coordination of stakeholders, and economic or other incentives, surplus food donation can significantly contribute to reducing food waste generation, increasing the resource efficiency of food systems, and implementing the principles of sustainable development.

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References

1. United Nations. Transforming our world: the 2030 Agenda for Sustainable Development : A/RES/70/1 [Electronic resource]. New York : United Nations, 2015. URL: <https://docs.un.org/en/A/RES/70/1> (accessed: 12.03.2026).
2. Food Waste Index Report 2024: Think Eat Save – Tracking Progress to Halve Global Food Waste [Electronic resource]. Nairobi: United Nations Environment Programme, 2024. DOI: 10.59117/20.500.11822/45230. URL: <https://doi.org/10.59117/20.500.11822/45230> (Accessed: 15 March 2026).
3. European Environment Agency. Preventing Waste in Europe: Progress and Challenges, with a Focus on Food Waste. EEA Report No. 02/2025. Luxembourg : Publications Office of the European Union, 2025. DOI: 10.2800/9052533. URL: <https://doi.org/10.2800/9052533> (Accessed: 18 March 2026).
4. Van der Werf S. M., Seabrook J. A., Gilliland J. A. Surplus food donation: Effectiveness, carbon footprint, and rebound effect. *Resources, Conservation and Recycling*. 2022. Vol. 181. Article 106271. DOI: 10.1016/j.resconrec.2022.106271.
5. European Commission. EU guidelines on food donation. Official Journal of the European Union. 2017. C 361. P. 1–29. URL: [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52017XC1025\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52017XC1025(01)) (Accessed: 21 March 2026).
6. European Commission. Redistribution of surplus food: Examples of practices in the Member States. Brussels: European Commission, 2019. URL: https://food.ec.europa.eu/safety/food-waste/eu-actions-against-food-waste/food-donation_en (Accessed: 24 March 2026).
7. Do Q., Ramudhin A., Colicchia C., Creazza A., Li D. A systematic review of research on food loss and waste prevention and management for the circular economy. *International Journal of Production Economics*. 2021. Vol. 239. Article 108209. DOI: 10.1016/j.ijpe.2021.108209.
8. Eriksson M., Giovannini S., Ghosh R. K. Is there a need for greater integration and shift in policy to tackle food waste? Insights from a review of European Union legislations. *SN Applied Sciences*. 2020. Vol. 2. Article 1347. DOI: 10.1007/s42452-020-3147-8.
9. Van der Werf S. M., Seabrook J. A., Gilliland J. A. Surplus food donation: Effectiveness, carbon footprint, and rebound effect. *Resources, Conservation and Recycling*. 2022. Vol. 181. Article 106271. DOI: 10.1016/j.resconrec.2022.106271.
10. Reynolds C., Goucher L., Quested T. et al. Review: Consumption-stage food waste reduction interventions – What works and how to design better interventions. *Food Policy*. 2019. Vol. 83. P. 7–27. DOI: 10.1016/j.foodpol.2019.01.009.
11. Caldeira C., De Laurentiis V., Corrado S., van Holsteijn F., Sala S. Quantification of food waste per product group along the food supply chain in the European Union: A mass flow analysis. *Resources, Conservation and Recycling*. 2019. Vol. 149. P. 479–488. DOI: 10.1016/j.resconrec.2019.06.011.
12. Geißdörfer M., Savaget P., Bocken N. M. P., Hultink E.-J. The Circular Economy: A new sustainability paradigm? *Journal of Cleaner Production*. 2017. Vol. 143. P. 757–768. DOI: 10.1016/j.jclepro.2016.12.048.
13. Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives : Directive of the European Parliament and of the Council. *Official Journal of the European Union*. 2008. L 312. P. 3–30. URL: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0098> (Accessed: 14 March 2026).
14. De Laurentiis V., Casonato C., Mancini L., García Herrero L. et al. Building Evidence on Food Waste Prevention Interventions. Luxembourg : Publications Office of the European Union, 2024. DOI: 10.2760/684291. URL: <https://data.europa.eu/doi/10.2760/684291> (Accessed: 20 March 2026).
15. European Commission. Food donation. Food Safety. URL: https://food.ec.europa.eu/food-safety/food-waste/eu-actions-against-food-waste/food-donation_en (Accessed: 11 March 2026).
16. European Commission. Commission Notice – EU guidelines on food donation (2017/C 361/01).

Official Journal of the European Union. 2017. C 361. P. 1–29. URL: [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52017XC1025\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52017XC1025(01)) (Accessed: 16 March 2026).

17. Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste : Directive of the European Parliament and of the Council. *Official Journal of the European Union*. 2018. L 150. P. 109–140. URL: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32018L0851> (Accessed: 18 March 2026).

18. A New Circular Economy Action Plan: For a Cleaner and More Competitive Europe (COM(2020) 98 final) / European Commission. Luxembourg: Publications Office of the European Union, 2020. URL: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0098> (Accessed: 22 March 2026).

19. A Farm to Fork Strategy for a Fair, Healthy and Environmentally-Friendly Food System (COM(2020) 381 final) / European Commission. Luxembourg: Publications Office of the European Union, 2020. URL: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0381> (Accessed: 24 March 2026).

20. Directive (EU) 2025/1892 of the European Parliament and of the Council of 10 September 2025 amending Directive 2008/98/EC on waste : Directive of the European Parliament and of the Council. *Official Journal of the European Union*. 2025. OJ L, 26.9.2025. URL: <https://eur-lex.europa.eu/eli/dir/2025/1892/oj> (Accessed: 27 March 2026).

21. European Food Banks Federation. Food Banks and Food Donation in Europe. URL: <https://www.eurofoodbank.org/> (Accessed: 10 March 2026).

22. Assemblée nationale. Loi n° 2016-138 du 11 février 2016 relative à la lutte contre le gaspillage alimentaire. 2016. URL: <https://www.legifrance.gouv.fr/loda/id/LEGITEXT000032040179/> (Accessed: 12 March 2026).

23. Repubblica Italiana. Legge 19 agosto 2016, n. 166: Disposizioni concernenti la donazione e la distribuzione di prodotti alimentari e farmaceutici a fini di solidarietà sociale e per la limitazione degli sprechi. *Gazzetta Ufficiale della Repubblica Italiana*. 2016. URL: <https://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2016;166> (Accessed: 15 March 2026).

24. Jefatura del Estado. Ley 1/2025, de 1 de abril, de prevención de las pérdidas y el desperdicio alimentario. *Boletín Oficial del Estado*. 2025. No. 80. P. 44747–44790. URL: <https://www.boe.es/eli/es/l/2025/04/01/1> (Accessed: 18 March 2026).

25. Federación Española de Bancos de Alimentos (FESBAL). Buscador de Bancos de Alimentos. URL: <https://fesbal.org/buscador-de-bancos/> (Accessed: 20 March 2026).

26. Fundació Banc dels Aliments de Barcelona. Centres educatius / Centres educatius. Programa de sensibilització para centres educatius. URL: <https://www.bancdelsaliments.org/es/programas-centros-educativos/> (Accessed: 22 March 2026).

27. GR-2025-11-13-scaled-aspect-ratio-1742-1592-2048x1872.jpg [Electronic resource] / Fundació Banc dels Aliments. Available at: <https://www.bancdelsaliments.org/wp-content/uploads/2025/11/GR-2025-11-13-scaled-aspect-ratio-1742-1592-2048x1872.jpg> (accessed: 21.04.2026).

28. Tafel Deutschland e. V. Die Tafeln: Lebensmittel retten. Menschen helfen. URL: <https://www.tafel.de/> (Accessed: 24 March 2026).

29. Press Photos [Electronic resource] / Tafel Deutschland e.V. Available at: <https://www.tafel.de/presse/pressebilder> (accessed: 30.04.2026).

30. Tafel-Akademie gGmbH. Zertifikatskurs „Verantwortliche in Tafeln“. URL: <https://www.tafel-akademie.de/bildungsangebot/zertifikatskurs/verantwortliche-in-tafeln/> (Accessed: 26 March 2026).

31. Michalis K. Digital Technologies and Food Waste: A Description of the FoodCloud Redistribution Platform. 2026. DOI: 10.2139/ssrn.6861118. URL: <https://ssrn.com/abstract=6861118> (Accessed: 28 March 2026).

32. Pro skhvalennia Natsionalnoi stratehii upravlinnia vidkhodamy v Ukraini do 2030 roku: Rozporiadzhennia vid 08.11.2017 № 820-r [On approval of the National Waste Management Strategy in Ukraine until 2030: Order of the Cabinet of Ministers of Ukraine dated 08.11.2017 No. 820-r]. Kabinet Ministriv Ukrainy. 2017. URL: <https://zakon.rada.gov.ua/go/820-2017-r> (Accessed: 28 April 2026).

33. Pro zatverdzhennia Natsionalnoho planu upravlinnia vidkhodamy do 2030 roku: Rozporiadzhennia vid 20.02.2019 № 117-r [On approval of the National Waste Management Plan until 2030: Order of the Cabinet of Ministers of Ukraine dated 20.02.2019 No. 117-r]. Kabinet Ministriv Ukrainy. 2019. URL: <https://zakon.rada.gov.ua/go/117-2019-r> (Accessed: 28 April 2026).

34. Pro upravlinnia vidkhodamy: Zakon Ukrainy vid 20.06.2022 № 2320-IX. Verkhovna Rada Ukrainy. 2022. URL: <https://zakon.rada.gov.ua/go/2320-20> (Accessed: 28 April 2026).

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