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FOODBANK

FROM FOOD SURPLUS TO COMMUNITY VALUE

*STRATEGIC OPPORTUNITIES FOR FOOD RESCUE IN LOCAL SELF-
SUFFICIENCY AND NON-PROFIT COMMUNITY COLLABORATION*

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*Good neighbours
creating
common future*

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1. Introduction

1.1. The social and environmental significance of food waste

One of the greatest structural and moral paradoxes of modern societies is the massive waste generated within food supply chains. Whilst a significant proportion of the global population struggles with malnutrition or food security risks, around a third of the food produced never reaches consumers' tables. This systemic waste goes far beyond mere material loss; it reflects a complex social, ethical and ecological crisis.

From a social perspective, food waste exacerbates inequalities in well-being, as the surplus consumption and waste of higher-income households diverts resources from the market, the scarcity of which increases food insecurity amongst lower-income groups. The presence of edible goods that become surplus to requirements and are subsequently destroyed generates moral tension in a global context where the fundamental human right to access food is being violated for vulnerable social groups. Through the effective redistribution of losses accumulated at various stages of the supply chain – from agricultural production through retail to households – the burden on the social safety net could be significantly reduced.

Food waste does not merely mean throwing away a finished product, but also the squandering of all the natural resources used during production, processing, transport and refrigeration. The later the stage at which the loss occurs, the greater the cumulative environmental footprint. A significant proportion of global freshwater consumption and agricultural land is attributable to food produced unnecessarily. When food sent to landfill decomposes, huge quantities of methane and carbon dioxide are released, contributing directly and significantly to greenhouse gas emissions and, consequently, to global climate change. Methanogenic bacteria, which thrive in the compacted, anaerobic environment of landfill sites, are primarily responsible for this process. Reducing food waste is therefore not merely an economic choice, but an essential prerequisite for sustainable resource management and for reducing our ecological footprint.

1.2. The role of food rescue in sustainability

Among the responses to the global crisis caused by food waste, food rescue is one of the most important pillars of the theory and practice of sustainability. This activity involves direct and active intervention at those points in the supply chain where surplus arises, preventing edible goods from becoming waste. Food rescue thus not only addresses the immediate problem but also actively contributes to the achievement of the Sustainable Development Goals.

From an economic and ecological perspective, food rescue is the pure embodiment of the circular economy model. In contrast to the linear ‘extract, consume, discard’ logic, rescue processes support a closed-loop system where the value of resources is retained within the economy for as long as possible. By returning surplus food to the human consumption chain, the pressure on agriculture and the food industry to overproduce is reduced, which directly mitigates biodiversity loss and the strain on ecosystems.

Within the three-pronged framework of sustainability – environmental, economic and social – food rescue is uniquely capable of having a positive impact on all three fronts simultaneously. It generates economic benefits for businesses by reducing loss and waste management costs, relieves pressure on the environment by reducing greenhouse gas emissions, and creates significant social value by supplying food to those in need. The institutionalisation and support of rescue operations are therefore fundamental prerequisites for forward-looking, responsible resource management.

1.3. Specific features of the rescue of raw/field-grown fruit and vegetables

In the fight against food waste, particular attention should be paid to the very first stage of the supply chain – the agricultural sector – where a significant proportion of losses occur even before the produce leaves the field. The recovery and utilisation of surplus produce accumulating in the field environment differs fundamentally from recovery activities carried out in the processing or retail sectors, as the processes take place directly on the farmland. As the quality and aesthetic standards underlying losses at the agricultural level, together with the rigid expectations of retail chains, constitute an extremely complex set of issues, this study subsequently devotes an entire, separate chapter (Chapter 5) to a detailed and systematic analysis of these factors.

1.4. Local self-sufficiency and sustainable land use

The fight against food waste and food rescue initiatives find a real, tangible space at the level of local communities, within the framework of local self-sufficiency and conscious land use. In response to modern urbanisation and environmental challenges, it is becoming increasingly important for local communities to be not merely passive consumers but also active shapers of their own food supply. Sustainable land use – whether in the form of urban gardens, municipal model farms or the integration of agricultural land surrounding the settlement – is key to shortening logistics routes and strengthening local food security.

When developing circular food systems at city and local authority level, the main objectives are to minimise waste and make maximum use of local resources. Local authorities and communities play a key role in this process: on the one hand, they must support forms of land use that provide fresh produce locally; on the other hand, they must establish effective channels for the local redistribution of surplus food.

Efforts towards self-sufficiency at the local level and sustainable landscape management thus form an integral whole with food rescue. When we optimise production based on local conditions and immediately recirculate any surplus back into the local system via community or charitable channels, we create a more resilient community model that is both environmentally and economically sustainable.

2. The conceptual and technical foundations of food rescue

2.1. The concept and types of food rescue

A precise definition of the concept of food rescue is essential to understanding how sustainable food management works. As set out in Act CLI of 2021: *“food rescue: the utilisation and redistribution, to the greatest extent possible, of food that is expected to become food waste but is still safe for human consumption;”*

In the international literature, the most important theoretical framework for food rescue was established by the EU research project FUSIONS (¹). According to the project's definition, *“Food redistribution is a process whereby food intended for human consumption but unsold through the original commercial channels or rendered surplus, safe and perfectly suitable for human consumption (food surplus) are collected and distributed to those in need, either directly or via intermediaries (e.g. food banks, charitable organisations).”*

The main dimensions of the concept can be categorised as follows in other academic sources:

- Environmental and sustainability approach: The aim of food rescue is to reduce food waste, thereby cutting unnecessary greenhouse gas emissions associated with food production and reducing excessive resource use.
- Social dimension: Returning edible food that has been discarded from the retail or logistics chain back into human consumption (e.g. through food banks and social donations) in order to improve food security and reduce food poverty.
- Circular economy: Maximising the food value chain, where the prevention and redistribution of surplus food sit at the top of the food waste hierarchy.
- Digitalisation and business innovation: Modern research (such as studies of Munch.hu and similar applications) defines food rescue as a dynamically evolving business model, a sharing economy and a preventative tool.

The types of food rescue can essentially be categorised according to the nature of the source and the target group:

- Primary (producer) level rescue: The rescue of high-quality fruit and vegetables left in the fields during the agricultural harvest which, due to aesthetic flaws, are not sold commercially (for example, through ‘pick-your-own’ schemes or direct offers from producers).

¹ Food Use for Social Innovation through the Optimisation of Waste Prevention Strategies

- Secondary (processing and logistics) level rescue: The removal and redirection of products from food factories and warehouses that are damaged in packaging, result from overproduction, or are nearing their use-by date.
- Tertiary (retail and hospitality) level recovery: The professional handling and distribution of daily surplus stock remaining on the shelves of supermarket chains, as well as ready-made meals left over in hotels, restaurants and communal catering facilities.

2.2. Differences between food waste prevention, redistribution and recycling

In the literature and the regulatory framework, the concepts of prevention, redistribution and reuse are often conflated, even though their positions within the sustainability hierarchy (the food waste pyramid) and their social utility differ fundamentally.

- Prevention: This is the highest-level and most effective measure, which eliminates the very root cause of surplus generation. This includes more accurate demand forecasting, conscious consumer behaviour and the organisation of efficient logistical processes at production facilities.
- Redistribution (food rescue itself): If surplus has already been generated but is still safe for human consumption, redistribution comes into play. This is the noblest form, as it preserves the existing value in its original function: providing food for those in need.
- Recycling: When food becomes completely unsuitable for human consumption, it is removed from the rescue cycle. At this stage, the aim is to extract its physical or chemical value, for example through animal feed, composting or biogas production. This step reduces the environmental impact but no longer creates any social or human value.

This hierarchical classification can be compared with the principles of the well-known 5R model in sustainable development, which I analyse in detail later in this study (see sub-section 8.1). The trio of prevention, redistribution and recycling applied in the food chain essentially constitutes a practical implementation of the principles of conscious refusal, reduction and reuse, ensuring that resources remain in the cycle for as long as possible.

The relevant legislative framework: In Hungary, the legal framework is primarily governed by Act CXXIV of 2025 on waste and the amendments to Act XLVI of 2008 on food chain supervision. Of particular significance is the legislation adopted at the end of 2021, which obliges the largest food retailers (those with net turnover exceeding 100 billion forints) to offer food that is still safe to eat

to the Food Rescue Centre Non-profit Ltd. (ÉMK), or to establish partnerships with charitable organisations. This legal requirement and opportunity has fundamentally reshaped food rescue at the retail level in Hungary.

2.3. Differences between the rescue of raw and processed food

In practice, food rescue requires completely different logistical, hygiene and storage approaches for raw materials (such as fresh vegetables, fruit and raw meat) than for processed foods (tinned goods, dry goods and ready meals).

- Rescue of raw foods: The greatest challenge in this category is the extremely short shelf life and physical fragility of the products. Saving fresh produce requires an immediate logistical response, as maintaining the cold chain at all times is critical to preventing microbiological spoilage. If the chain is broken, the product becomes irreversibly waste due to food safety risks; therefore, speed and adequate refrigeration capacity are crucial at this stage.
- Rescuing processed foods: The handling of preserved, packaged or processed foods can be planned with much greater logistical predictability, as these have longer shelf lives and are less sensitive to environmental factors. Here, the rescue process focuses primarily on the timely reallocation of items affected by packaging defects, surplus stock resulting from overproduction, or batches approaching their expiry dates.

The fundamental difference between the two categories therefore lies in the handling technology and the time factor. Whilst the rescue of raw materials is a logistical task requiring immediate, ad hoc intervention, the rescue of processed products takes the form of a much more predictable, warehouse-oriented process in day-to-day practice.

In Chapter 3 of this thesis, I present the precise food chain safety regulations governing the rescue of raw and processed foodstuffs, the issue of the transfer of responsibilities, and the detailed legal framework of the relevant national and EU provisions.

2.4. Best practices in Hungary and an international overview

The theoretical models and legal frameworks of food rescue only become genuine value-creating factors if they are underpinned by well-functioning, professionally organised logistical and social networks. Both globally and in Hungary, there are numerous initiatives that serve as models for the efficient redistribution of surplus food.

In Hungary, the Hungarian Food Bank Association represents the foundation of institutionalised food rescue and its most significant civil society actor; I analyse its systematic operation, logistical network and cooperation with its charitable partners in detail in later chapters of this study. Alongside the Food Bank's traditional system, based on warehousing and bulk distribution, alternative, market-based, digital initiatives are also making remarkable headway in Hungary. A good example of this is the domestically developed Munch platform, which enables restaurants, bakeries and food shops to sell their high-quality products left over at the end of the day to consumers at discounted prices via a mobile app. In addition to its environmental benefits, this model also has a significant influence on shaping attitudes amongst younger generations.

An international perspective: Looking at international practice, it is clear that the most successful schemes arise from a combination of strict government regulation and digital innovation.

- France: As a world leader, it introduced legislation that strictly prohibits supermarkets from destroying edible food and obliges them to enter into contracts with food rescue organisations. This top-down, mandatory yet supportive model has drastically increased the volume of food saved.
- Italy: Unlike France, it operates not through penalties but through positive incentives. Italian regulations encourage companies to donate through tax breaks and a reduction in administrative burdens, which has also proved extremely effective.
- Too Good To Go: One of the most widely used smartphone apps globally, operating on a similar principle to Munch, it has now saved millions of portions of food across Europe, proving that digitalisation is one of the most important tools for sustainable consumption in the modern age.

Both domestic and international examples confirm that the success of food rescue depends on cross-sector collaboration, flexible logistics and the smart use of technology.

3. The legal framework for food rescue in Hungary

3.1. A brief overview of relevant EU regulations

In this sub-chapter, I outline the European Union's 'Farm to Fork' strategy (Figure 1).

The primary aim of the strategy is to make European food healthier and more sustainable.

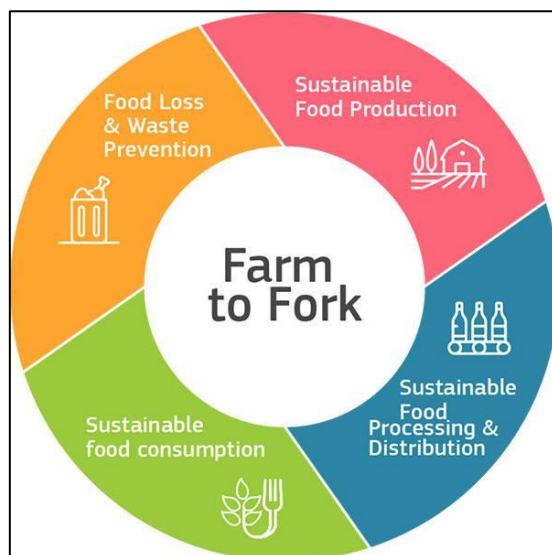


Figure 1: Official European Commission diagram relating to the strategy²

The agri-food sector has a significant impact on the environment: food production accounts for around a third of global greenhouse gas emissions. The other major problem is that more than half of European adults are overweight.

In light of these two facts, the EU is working to transform the way food is produced and consumed in Europe.

In May 2020, the European Commission presented the 'Farm to Fork' strategy as one of the key measures of the European Green Deal.

Whilst emphasising priorities relating to food and food security, the strategy's main objective is:

- to ensure sufficient, affordable and nutritious food within the limits of our planet's carrying capacity
- to halve the use of pesticides and fertilisers, as well as the sale of antimicrobials
- to increase the area under organic farming
- to encourage more sustainable food consumption and healthy diets
- reduce food loss and waste
- take action against food fraud in the food supply chain
- improve animal welfare

² Sustainable Food Production: Sustainable food production
 Sustainable Food Processing & Distribution: Sustainable food processing and distribution
 Sustainable Food Consumption
 Food Loss & Waste Prevention: Prevention of food loss and food waste

In October 2020, the European Council adopted conclusions on the strategy, in which it endorsed the objective of establishing a sustainable European food system, covering the entire chain from production to consumption. The leaders of the Member States emphasised that:

- Steps must be taken to ensure that sufficient and affordable food is available, whilst also meeting the EU's climate neutrality target for 2050;
- fair incomes and robust support must be provided for primary producers;
- the global competitiveness of EU agriculture must be safeguarded.

The question is why legislation on this matter has not yet been introduced.

"One of the problems is that agriculture has become a highly divisive political issue in recent months. Legislators are therefore reluctant to impose further requirements on the agricultural sector," said Robert Hodgson³, adding: "The European Parliament had originally wanted to review the directive by the end of the year and set a possible target for agriculture. However, following the EU elections, the European Parliament shifted to the right, and at the end of the negotiations it was decided that the review would take place in 2027."

This is the current status of the matter (as of April 2026):

1. The European Commission tabled an amendment to the Waste Framework Directive in July 2023.
2. In March 2024, the European Parliament adopted its position at first reading⁴.
3. Member States (including Hungary) are expected to have until 2027 to transpose the new directive, once adopted at EU level, into their national legislation.
4. The proposed changes include binding waste reduction targets to be met by the end of 2030, such as a 10 per cent reduction in the food processing and manufacturing sectors, and a 30 per cent reduction in the retail sector, restaurants, catering services and households. The specific percentage reductions will only be strictly monitored thereafter, between 2027 and 2030.

Regardless of this, the European Week for Waste Reduction (EWWR) has been running for more than 15 years. This initiative, launched in 2009, takes place during the last week of November each

³ Robert Hodgson, a journalist specialising in European Union policy issues, particularly energy, environmental and transport policy

⁴ The European Parliament and the Council of the European Union jointly adopt the legislative proposal in what is known as the first or second reading.

year, promoting sustainable resource management and waste prevention (Figure 2). Each year, the focus shifts to a different area; in 2024, food waste was the central theme (Figure 3).



Figure 2: EWWR logo



Figure 3: The 2024 national awareness-raising campaign

In this context, and although strictly speaking not covered by legislation, the following should be mentioned: In total, more than 12,700 actions were registered across 29 countries. These were organised by local authorities, schools, businesses, civil society organisations and private individuals. The individual programmes were awarded prizes in various categories. Among the Hungarian entries, EBKEKSZ came first in the 'Business/Industry' category (Figure 4).



Figure 4: Winner of the Business category: EBKEKSZ

Furthermore, the winner of the International Photo Competition was also Hungarian: a photograph taken during an event organised by MiReHu Nonprofit Kft. in Miskolc won the official 2024 photo competition (Figure 5).



Figure 5: Morzsaparti – the winning photograph

3.2. Hungarian food chain safety regulations

In this sub-chapter, I will outline the following laws:

1. Act LIII of 2020
2. Act CLXXXV of 2012

Act LIII of 2020, published in Issue 137 of the Hungarian Official Gazette, amends Act XLVI of 2008 on the food chain and its official supervision in several respects.

The amendment also includes provisions relating to dual quality in foodstuffs, which constitutes a misleading commercial practice. In accordance with Directive 2019/2161 of the European Parliament and of the Council, the above Act holds the food producer – or, in the case of food not produced domestically, the first distributor in Hungary – liable for the existence of such practices. The above amendment also addresses the reduction of administrative burdens associated with the FELÍR identification system and, in the interests of protecting human health, extends the powers of the food chain supervisory authority, enabling it to block websites selling counterfeit food, veterinary products or pesticides.

In Hungary, the management of food waste is primarily regulated by Act CLXXXV of 2012, which prohibits the uncontrolled disposal of waste and stipulates responsible management. The aim of the legislation is to reduce the generation of food waste, encourage recycling and minimise the environmental impact. The Act distinguishes between various types of waste; of particular relevance to this study is so-called bio-waste: *“biodegradable waste originating from gardens or parks; food and kitchen waste generated in households, offices, restaurants, wholesale, catering, hospitality and retail establishments; and similar waste generated in food processing plants”*.

Within this, the term ‘food waste’ is also defined as food that has become waste; in other words, food waste is the total quantity of food removed from the food chain, i.e. food that has been discarded. Food fed to animals is not considered food waste, but leftover food used in composting, for example, does fall into the food waste category.

We also distinguish between the following terms:

- Avoidable food waste: raw ingredients or ready-to-eat meals that were originally fit for human consumption but were ultimately discarded. For example, spoiled yoghurt, shrivelled whole fruit, discarded ready-made meals. This type of food waste is generally the result of human negligence. As the name suggests (i.e. that its generation could have been avoided), this is, in essence, food wastage.
- Unavoidable food waste: parts of food of animal or plant origin that are unfit for human consumption. For example: eggshells, bones, banana skins. Such waste is inevitably generated within the food supply chain.
- Potentially avoidable food waste: raw ingredients or ready-to-eat food suitable for human consumption, but discarded for health reasons (such as impaired chewing ability) or due to personal taste. For example: chicken skin, bread crusts, apple peel.

Key legal requirements:

- The accumulation and uncontrolled handling of waste is prohibited
- Environmental responsibility: The waste holder is responsible for its proper management and cannot relinquish this responsibility
- Separate collection: The waste holder is obliged to collect biodegradable waste separately and must not mix it with other materials of different properties.
- Management rules: Waste must be handed over to an authorised waste management operator; disposal in any manner other than that specified by the regulations is prohibited.
- Food chain supervision: Food waste generated in the catering and retail sectors (food waste, food scraps, expired food) must be managed in accordance with EU regulations on animal by-products (e.g. collection, disposal).

It is also worth mentioning a key milestone in the domestic regulatory process: Act CLI of 2021, which, in order to prevent food waste, made it compulsory for the largest retail chains to offer food nearing its use-by date to the state-run Food Rescue Centre

3.3. The legal framework for food donations

Under the laws described in the previous two sub-sections, the aim is therefore to reduce the volume of food waste.

There are several ways of achieving this (Figure 6). Option 2 among the solutions is 'providing food for those in need'. Donations have been made easier to facilitate this.



Figure 6: Food Waste Hierarchy

1. The possibility of VAT exemption

One of the most important legal references is Act CXXVII of 2007 on Value Added Tax. This stipulates that food donations do not constitute the sale of goods for consideration, provided that the donor transfers the goods to a recognised charitable organisation.

In practice: The farmer or trader is not liable to pay VAT, which is a key economic incentive.

2. Accessing corporation tax (TAO) relief

An additional incentive for companies is that the value of food donations can be accounted for as a deduction from the corporate tax base. This is possible under Act LXXXI of 1996 on Corporate Tax and Dividend Tax, provided that the donor holds a certificate issued by the charitable organisation. This framework not only encourages social responsibility but also makes the fight against food waste more financially sustainable for companies.

3. Allocation of responsibility

The legal framework stipulates that the donor is responsible for the safety of the goods until the moment of handover. However, once the goods have been received, the charitable organisation (such as a civil association or foundation) is responsible for their proper transport, storage and distribution to those in need.

One such organisation in Hungary is the Hungarian Food Bank Association, which has been operating since 2005 (Figure 7).



Figure 7: The association's logo

Based on the information provided on their website, we can learn the following about the Association: *"The Hungarian Food Bank Association is a non-profit organisation. Our aim is to establish a link between the food surpluses accumulating in our country and those in need. We help to reduce food waste and deprivation in Hungary, whilst also contributing to reducing the environmental impact caused by the disposal of food."*

In addition, we can read that they seek out and collect surplus food in order to distribute it to those in need, thereby reducing food waste and deprivation.

The aim is for actors in the food supply chain to use the surplus they generate – with or without the Food Bank – to feed those in need, rather than disposing of it (Figure 8).

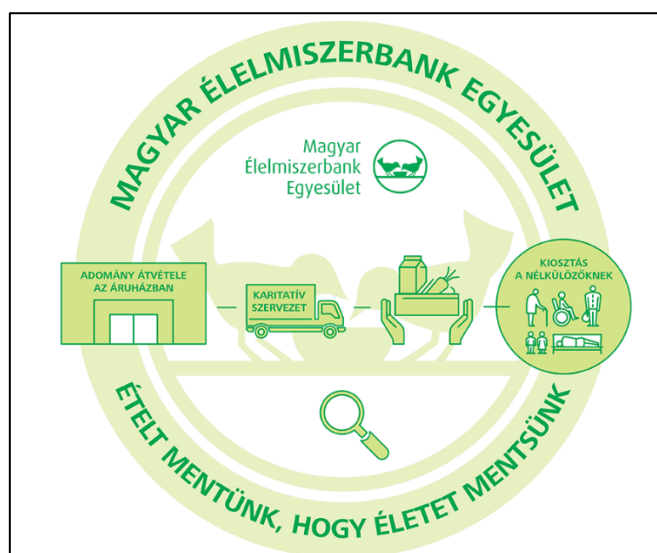


Figure 8: The journey of products

3.4. Accountability and traceability issues

Although this involves donations, the legislation makes traceability mandatory. Every donation process must be documented (delivery note, handover report), which must include:

1. The details of the donor and the recipient.
2. The name, quantity and expiry date of the product.
3. The purpose of the donation (donation in the public interest).

To elaborate: Under Regulation (EC) No 178/2002, every food business operator must be able to identify the supplier of the product they have received and the entity to which the product has been dispatched. In the case of a donation, this means, for example, that every crate of vegetables must have an identification document (delivery note) containing the name of the farm, the harvest date and the quantity

Legal accountability can be divided into three phases:

- a. Producer's responsibility: The farmer is responsible for ensuring that the harvested produce complies with hygiene and plant protection regulations (e.g. keeping a spraying log, observing waiting periods).

- b. Responsibility of the receiving organisation: The organisation collecting the produce is responsible for transport conditions (e.g. ensuring the produce is not contaminated in the lorry) and for maintaining the correct storage temperature.
- c. Consumer responsibility: Once the consumer has been informed (e.g. that the produce must be washed thoroughly before consumption), part of the responsibility falls on the user during food preparation.

Although the storage of produce from small-scale producers is subject to simplified regulations, it is also worth mentioning HACCP ⁽⁵⁾, as there are so-called critical control points in the storage process. For example: keeping a temperature log if the produce requires refrigeration during storage

NÉBIH also draws attention to the fact that, in the case of donated food, particular care must be taken *to preserve its quality* and to distinguish between the terms '*preserves its quality*' and '*fit for consumption*'.

This distinction is crucial from a legal perspective:

- Suitable for consumption: Donations are prohibited after the use-by date (e.g. dairy products, meat).
- 'Retains its quality': May be donated even after the expiry date, provided the organisation is satisfied that it is safe (e.g. dry goods, non-perishable items).

To ensure clarity, Aldi has produced the following information posters for consumers (Figure 9)

⁵ HACCP = Hazard Analysis and Critical Control Points



Figure 9: Aldi's educational poster

However, the introduction of a strict tracking system (in theory) does not hinder but rather facilitates food rescue, as it provides a guarantee of trust for all parties involved. Accurate documentation protects both the donor and the recipient in the event of a potential complaint or illness.

3.5. Specific regulations concerning the rescue of raw fruit and vegetables

The legislation governing the rescue of raw fruit and vegetables is more flexible than that for processed foods, but stricter with regard to microbiological and phytosanitary risks.

1. Exemption from marketing and quality standards

Regulation (EU) No 1308/2013 now sets out the marketing quality standards for fruit and vegetables, replacing the previous Implementing Regulation (EU) No 543/2011. During food rescue, aesthetic standards (size, shape, skin defects) are not mandatory. Instead, a specific requirement applies: the produce must be marketable, which, in the case of rescue, means that it must be free from spoilage, pests and deep bruises that render it unfit for consumption; however, a 'crooked' or 'non-standard' shape is not grounds for exclusion.

2. Plant health regulations and pesticide residues

Compliance with maximum residue limits for plant protection products is also mandatory for rescued produce. The farmer must declare (or present the spraying log) that the prescribed food-

safety waiting period has been observed. During rescue harvesting, particular care must be taken with vegetables that come into contact with the soil (e.g. lettuce, strawberries) due to the risk of Salmonella and E. coli.

3. Labelling requirements in the event of rescue

For unpackaged produce, certain information must be provided even in the absence of packaging (e.g. when stored in crates):

- Country of origin: This is a mandatory element for consumer information.
- Producer details: For traceability purposes.
- Specification of variety: Where required by the nature of the product (e.g. apple varieties).

4. Sensory assessment as a basis for legal compliance

As raw produce does not carry a 'best before' date, the legislation makes sensory assessment the basis for determining suitability for consumption. Requirement: Only products that are clean, free from foreign odours and tastes, and show no signs of abnormal external moisture (which is a sign of dampness and rot) may be donated or rescued.

5. Stock records and write-offs

Legislation stipulates that goods set aside for rescue must be removed from the normal stock records.

Administrative simplification: In the case of raw produce (where there is a high risk of natural wastage and rapid spoilage), the disposal report and the donation certificate, taken together, confirm that the goods did not leave the farm 'under the table', but entered a legal rescue chain.

The legal framework discussed in this chapter provides the opportunity for food rescue to be implemented in practice, following the methodological steps outlined in the next chapter.

4. Methodological Foundations of Food Rescue

In this chapter, I outline the practical implementation of food rescue, the logistical processes and the safety protocols. The aim of the methodology is to maintain the highest level of food safety whilst minimising waste.

4.1. The steps in the food rescue process

The Food Bank's activities take three main forms: warehouse rescue, supermarket rescue and ready-meal rescue.

Warehouse rescue: (Figure 10) generally refers to foodstuffs with longer use-by dates. After collection, these are stored in the association's 3,000-square-metre warehouse in Budapest, where representatives of the aforementioned 600 smaller charitable organisations visit. During these visits, which take place several times a year, staff from these civil society organisations take non-perishable food – which can therefore be allocated and planned for, and is thus extremely valuable – to those in need living in their local areas.

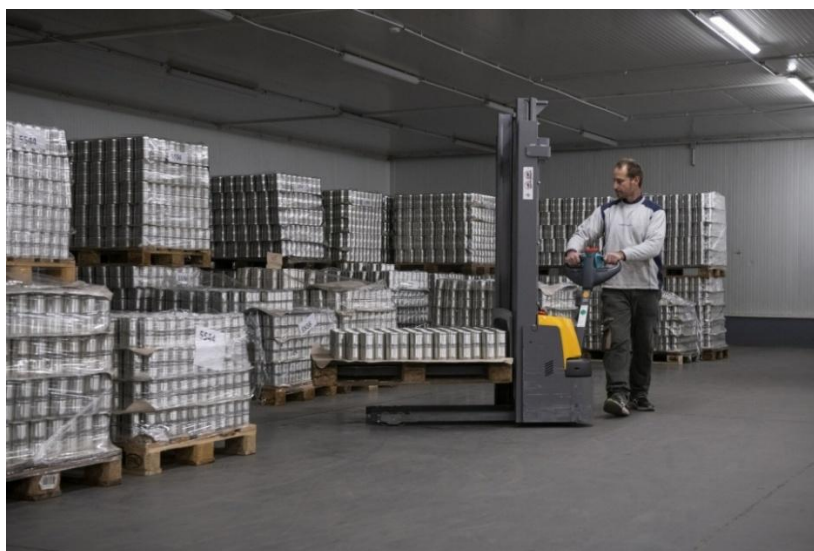


Figure 10: Rescue operation from the Bonduelle warehouse

Supermarket food rescue: (Figure 11) requires a daily presence. In practice, volunteers usually visit the approximately 700 supermarkets across the country in the morning to collect the food for rescue that has been sorted by staff, portion it out and distribute it on the same day. (Food rescued on a daily basis usually consists of vegetables, fruit and baked goods, but occasionally ready meals, meat products and other longer-lasting foods are also included in the parcels.)



Figure 11: A member of staff from the Maltese Charity Service rescuing food received from a supermarket

The rescue of ready meals: (Figure 12) is the latest addition to the Food Bank's activities. A huge amount of surplus food is generated on a daily basis in school canteens or larger conference centres during buffet-style catering. Furthermore, time is of the essence, as legislation allows only a three-hour window following collection for the distribution of highly perishable food. The solution could lie in a specialised blast chiller, which can reduce the temperature of food to below five degrees Celsius in a matter of seconds, allowing it to be stored for up to 48 hours. This means there is more time available for transport and distribution.



Figure 12: Food rescue from schools

Food rescue is not merely a matter of removing surplus stock, but involves a multi-stage process:

1. Stock assessment, during which goods that cannot be placed on the market but are fit for consumption are set aside at source (for example, at a producer's premises).

2. Sorting, to determine what is edible.
3. Transport – logistical planning, where the organisation carrying out the rescue operation determines the necessary capacity and route.
4. Handover. Time is a key factor here: the shorter the supply chain, the lower the wastage due to spoilage. Rapid distribution is a critical stage in the process, as rescued goods – by their very nature – often have a short remaining shelf life.

Looking at the process from Nébih's perspective, we see the following steps:

1. Offer and coordination: The donor contacts Nébih or its partners to discuss the nature and quantity of the donation.
2. Handover: Donations are handed over in person at designated collection points. The programme ensures traceability, so the names and addresses of donors are recorded.
3. Documentation and acknowledgement: At the end of the donation programme, Nébih will post a certificate of appreciation to donors and then destroy personal data in accordance with the law.
4. Partner organisations: The process involves close cooperation with the partners of the Hungarian Food Bank Association.

4.2. Cooperation with suppliers (producers, markets, retailers)

The success of food rescue depends not only on logistics, but also on long-term, trust-based collaborations established with supply-side stakeholders. Each type of source requires a different methodological approach during the rescue process.

Farmers: The rescue of surplus produce generated at the farm level often takes place on-site, in the fields or orchards. Here, the methodology is based on the practice of manually collecting crops left on the ground after industrial mechanical harvesting, or those that do not meet strict aesthetic standards (size, shape, colour). This process requires a high degree of flexibility from the rescue organisation, as harvest periods and weather conditions impose a tight timeframe for action.

Markets and local traders: Markets are specific collection points where rescue operations typically take place in the hours after the market closes for the day. Here, traders hand over fresh produce (such as leafy vegetables and soft fruits) that cannot be safely stored until the next market day, or that has already sustained cosmetic damage during transport. The methodology here is based on speed and direct contact: the rescue organisation must respond immediately to surplus stock so that the produce reaches consumers on the same day.

Wholesalers and retail chains: In the commercial sector, the process is much more structured and regulated. Here, cooperation is based on pre-planned ‘forecast-based’ stock management. Rescue operations focus mainly on products with expiry dates approaching but which are still safe to consume, as well as goods with damaged packaging. In wholesale warehouses, the rescue operation takes place on a scheduled basis, often weekly, with items intended for donation set aside on logistics platforms. An important part of the methodology here is accurate stock-taking and sorting by product category (e.g. dairy products, baked goods, frozen foods).

4.3. Quality control and food safety

No compromises may be made regarding food safety during the rescue operation. The most important tool in the methodology is sensory inspection: every single unit (crate, box) must be examined. In the case of fruit and vegetables, physical integrity, the absence of mould and the absence of foreign odours are decisive factors. If any signs of spoilage are visible on the produce, it must be immediately removed from the supply chain and treated as organic waste (for composting).

A more detailed section, which also outlines the legal framework, can be found in Chapter 3

4.4. Storage, packaging and transport

Food rescue aims to reduce environmental impact, which is why it favours reusable packaging systems (such as plastic crates) over single-use cardboard boxes. A good example of this is the Combo Fructus system shown in Figure 13, which is essentially a large, collapsible container (IBC⁶) specifically designed for the damage-free transport of berries and juicy fruits. These innovative solutions enable the simple and safe transport of products, reduce transport costs and improve efficiency, whilst also meeting sustainability requirements and regulations.

⁶ Intermediate Bulk Container



Figure 13: Combo Fructus system

During transport, the 'shortest route' principle must be applied to prevent spoilage. In storage, the FEFO⁽⁷⁾ principle applies, ensuring rapid stock turnover. In practice, this means that products with the shortest shelf life are placed at the front of shop shelves (or in the warehouse).

The greatest challenge in the logistics process is ensuring the continuity of the cold chain, particularly in the case of perishable produce. Passive cooling solutions used during transport (such as insulated blankets or cool boxes) enable products to be transported from collection points to end users without any loss of quality.

It is important to emphasise that the equipment used during storage and transport must not only provide mechanical protection but must also be easy to clean and disinfect. This hygiene requirement is a fundamental prerequisite for ensuring that the rescued food remains legally and hygienically sound, in compliance with the food chain safety regulations detailed earlier.

4.5. Documentation and transparency

The final step in the process is precise record-keeping, which ensures traceability.

This is covered in detail in Chapter 3.

⁷ First Expired, First Out – the product with the earliest expiry date is dispensed first

5. The practice of raw fruit and vegetables rescue

In this chapter, I detail the specific challenges and solutions involved in salvaging fresh produce, the most sensitive food category. Salvaging fruit and vegetables requires a specific methodology because these goods are not only physically fragile but also remain biologically active after harvest.

5.1. Managing seasonal overproduction

In agriculture, overproduction often arises due to the unpredictability of the weather. When a particular crop (such as apples or tomatoes) ripens in huge quantities all at once, the market becomes saturated, prices fall, and it is often not worth the producer's while to cover the costs of harvesting. In such cases, the rescue strategy relies on rapid mobilisation: rescue organisations must transport the produce directly from the fields before it spoils whilst left on the ground.

There are several options available for this. One solution could be a 'pick-your-own' scheme (Figure 14).



Figure 14: Awareness-raising poster

Through this initiative, the producer saves on harvesting, packaging and transport costs. This ensures that surplus produce does not rot in the fields, but is utilised at a lower price or as a donation.

The Pick-Your-Own Movement was launched in 1980; within its framework, interested people can now pick 28 different types of produce outdoors. Year on year, these gardens are becoming increasingly popular amongst those who prefer not to buy the fruit and vegetables they need from large supermarket chains.

In the early days, visitors could only pick a few types of fruit, such as strawberries, sour cherries, peaches and apples; today, however, those interested can choose from a wider range of products. We can harvest raspberries, walnuts, grapes and even kiwis. If you'd like to pick vegetables, in addition to tomatoes and peppers, you can now even get your hands on asparagus. Those who are really keen can plan their whole year's foraging trips right now, in January, as the gyumolcsvadasz.hu website also provides information on events planned for 2026 (Figure 15).



Figure 15: Planned events (screenshot)⁸

It can be said that this movement is not just about food rescue, but also about raising awareness. Participants come into direct contact with the source of the food, thereby gaining a greater appreciation for the produce. There is also a charitable variant, in which groups of volunteers organise themselves to visit individual farmers to harvest quantities intended for those in need.

5.2. Aesthetic flaws and the issue of edibility

One of the most baffling sources of food waste is the pressure to comply with commercial standards. In the case of fruit and vegetables, aesthetic appearance often takes precedence over actual quality: a significant proportion of produce that is irregular in shape or size is excluded from the food supply chain whilst still in the fields or at sorting facilities, regardless of the fact that it is biologically sound and perfectly edible. Retail chains impose strict aesthetic requirements: a crooked carrot, an apple with a blemished skin or a potato that is too small often never even make

⁸ The word 'kiwi' on the website is correctly spelled 'kivi', as it refers to the fruit rather than the bird.

it onto the shelves. It is important to emphasise, however, that an aesthetic flaw does not constitute a quality defect. The aim of this methodology is to raise awareness: the nutritional value and enjoyment value of 'ugly' vegetables are the same as those of their flawless counterparts, so saving them is a priority.

This is the basis of Nébih's well-known campaign, 'Vegyél számba!' (Figure 16), the main aim of which is to draw shoppers' attention to the fact that

1. it is not only the freshest, most standard-compliant and most aesthetically pleasing fruit and vegetables that are nutritious,
2. but that the shelf life of fruit and vegetables can be extended through proper storage in the supermarket and at home,
3. it is worth buying domestic produce, as it is guaranteed to be fresher than its counterparts that have travelled hundreds of kilometres.



Figure 16: Poster for the Nébih campaign

It is also worth visiting the Tesco website, where their 'Perfectly – Imperfect' campaign highlights this issue⁹, and LIDL has also launched a similar programme aimed at reducing food waste.

⁹ 'Perfectly Imperfect' is Tesco's new programme to combat food waste in Central Europe. It was launched on a trial basis in January 2017 in 50 Central European stores, including 12 in Hungary

Rescuing fresh produce is like racing against time. The key to this approach is maintaining the cold chain or – in the absence of refrigeration – immediate distribution. Due to their short shelf life, vegetables cannot be stored in warehouses; the produce must reach the end user's table within 24–48 hours of leaving the source (e.g. the market). According to the NAK publication¹⁰, perishable foods requiring refrigeration are defined as those that will not undergo further heat treatment by the consumer, meaning that refrigeration is the only preservation method available. These should be stored at temperatures between 0 and +5 °C. Fresh fruit and vegetables should be stored in their prepared state at temperatures between +1 and +5 degrees. Another publication,¹¹, provides information on exactly which regulations set out best practice for maintaining the cold chain. If you'd prefer information that's easier to understand, it's worth keeping an eye on the maradeknelkul.hu website, where you can find practical advice on storage (Figure 18).



Figure 18: Storage guide

¹⁰ National Chamber of Agriculture

¹¹ GUIDELINES FOR GOOD HYGIENE PRACTICES IN RETAIL FOOD DISTRIBUTION Prepared by the National Trade Association, under the professional guidance of the National Food Chain Safety Office

5.4. Unprocessed and minimally processed solutions

A fundamental dilemma in food rescue is determining in what form the rescued produce should be delivered to those in need. The methodology distinguishes between two main approaches, depending on the amount of additional work involved and the shelf life.

Unprocessed rescue: This is the most common and quickest method. The produce (for example, a crate of apples or a sack of potatoes) is handed over exactly as it arrived from the source.

- Advantage: There is no need for expensive kitchen facilities, the cold chain is not compromised by complex processing procedures, and costs are minimal.
- Challenge: The consumer must have the tools and knowledge required for processing (e.g. they must know how to cook the potatoes).

Minimally processed solutions: Where the condition of the produce or the needs of the target group require it, we use minimal processing. This does not involve preservation, merely preparation.

- Cleaning and cutting: After removing any damaged parts (e.g. a bruise on an apple), the fruit is still perfectly suitable for use in fruit salads, as grated apple, or in smoothies.
- Vacuum packaging: Vacuum-sealing cleaned, chopped vegetables prevents oxidation, thereby extending their shelf life by several days (Figure 19)
- Shock cooling: a process in which food is rapidly cooled or frozen, thereby preserving its freshness, texture and flavour. Shock cooling helps to ensure that vegetables and fruit remain in perfect condition for a long time (Figure 20).



Figure 19: Vacuum-packed tomatoes



Figure 20: Foodstuffs that have undergone blast freezing

The efficiency of preservation is increased if the produce is supplied in the simplest possible form. Delivering produce without any processing is the cheapest option, but minimal processing (such as removing damaged parts, cutting into pieces, or vacuum-packing) can significantly extend the product's shelf life. However, the latter requires a more robust food safety infrastructure and the necessary licences.

5.5. The role of volunteers in the food rescue process

Food rescue is a labour-intensive process that would be unsustainable without the commitment of volunteers. At this point, it is worth highlighting three critical functions of volunteer work:

1. The 'human filter' of quality assurance: During the rescue of raw fruit and vegetables, the sorting process cannot be automated (see sub-section 5.2), as each individual item requires individual attention. The volunteers' hands and eyes provide the most important guarantee of quality: they make the responsible decision as to what is still fit for human consumption and what should be sent for composting. It is this personal attention and empathy that ensures that food rescue is not merely a logistical task, but a means of providing quality assistance.

2. Community and mental health benefits: Volunteering in food rescue goes beyond mere physical assistance; it is a genuine resource for community building and mental wellbeing. For volunteers, the activity offers a twofold reward: on the one hand, they experience the joy of social responsibility; on the other, working together strengthens their sense of belonging. The success of 'rescuing' food, putting surplus to good use and connecting with those in need are effective antidotes to social isolation. This process noticeably boosts the sense of personal effectiveness and helps volunteers to see themselves as active members of the community.

3. Raising awareness and shaping attitude: Volunteers become authentic ambassadors for food rescue within their own communities. By being directly confronted with the vast quantities of high-

quality food destined for the bin, their own consumer habits undergo a radical transformation. They pass on this practical knowledge and experience, almost without realising it, to their families and friends. In this way, the rescue process does not stop at the warehouse walls, but triggers a wider social education initiative that steers the community towards a more sustainable way of life. You can apply to volunteer on the Food Bank's website (Figure 21). As we can see, they are looking for enthusiastic applicants not only for physical work but also for creative and intellectual work.

Amiben segítenék

Önkéntes vezetői lehetőségek (heti min 10 óra)

☐ Élelmiszeripari cég account
☐ Agrár projekt

Folyamatos önkéntességi lehetőségek (heti minimum 6 óra):

☐ irodai
☐ raktár
☐ sofőr
☐ kertész

Alkalmankénti önkéntességi lehetőségek:

☐ újságírás
☐ grafikus
☐ filmes
☐ fotós
☐ egyéb

Figure 21: Opportunities offered to volunteers

Volunteering centred on food rescue is not merely a domestic phenomenon, but part of a growing European movement. In the UK and France, the *Gleaning Network* organises regular field rescues, where volunteers help farmers with the harvest. The *European Federation of Food Banks* (FEBA) also assigns a key role to volunteers, whom it identifies as pillars of social cohesion and solidarity. These international examples also demonstrate that participation in food rescue has a kind of identity-forming power in Europe, linking a commitment to sustainability with community action. The rescued produce goes directly from the volunteers to the social welfare system, where food assistance is seen not only as physical nourishment but also as a means of social care.

6. The methodological background of social support

In this chapter, I present food rescue as a specialised tool of social work and mental health support. The aim is to demonstrate that food distribution goes beyond the mere satisfaction of physical needs.

6.1. The fundamental principles of social work

According to Judit Kozma's approach, social work is fundamentally based on value judgements, which must be distinguished from verifiable scientific facts. In the practice of food rescue, this means that whilst logistical processes are based on our knowledge-based observations, the provision of assistance itself stems from a deep ethical conviction: the value of social solidarity. On this basis, the following two points can be highlighted:

- The primacy of values: food rescue is not merely a technical task, but an ethical stance. The belief that 'we do not throw food away whilst there are people going hungry' is a value-based statement that defines the work of helping others.
- The role of knowledge: for example, knowledge of domestic poverty statistics or the rules of the cold chain provides the tools for food rescue, but the motivation comes from 'values'.

When providing assistance, the following points must also be borne in mind:

1. Unconditional respect for human dignity

This is the overarching principle. In food assistance, this means that the person being helped is not treated *as a passive victim or a beggar*, but *as an equal partner*. The method of donation must not be humiliating.

2. The right to self-determination

The person receiving assistance has the right to decide whether to accept the help and – as far as possible – what they need. We must not force the donation upon them in a way that infringes on their freedom of choice.

3. Equal opportunities and non-discrimination

Access to food is a fundamental right. In the distribution of rescued goods, discrimination on the grounds of origin, religion, political views or any other affiliation is prohibited.

4. Confidentiality and discretion

The fact of being in need is sensitive information. During food distribution, care must be taken to ensure that the privacy of those receiving assistance is not compromised and that they are not exposed to judgement from those around them (for example, they should not have to wait in public, in full view of everyone).

5. Freedom from paternalism

This approach rejects so-called top-down assistance. The helper must not assume that they know better what is good for the recipient, but should strive for a partnership.

6.2. Access to food as a basic need

Access to food is not merely a biological issue, but a fundamental prerequisite for mental stability. In Abraham Maslow's hierarchy of needs (Figure 22), the satisfaction of physiological needs takes precedence over all other psychological or social aspirations; food insecurity generates constant anxiety, which hinders an individual's social integration and psychological balance.

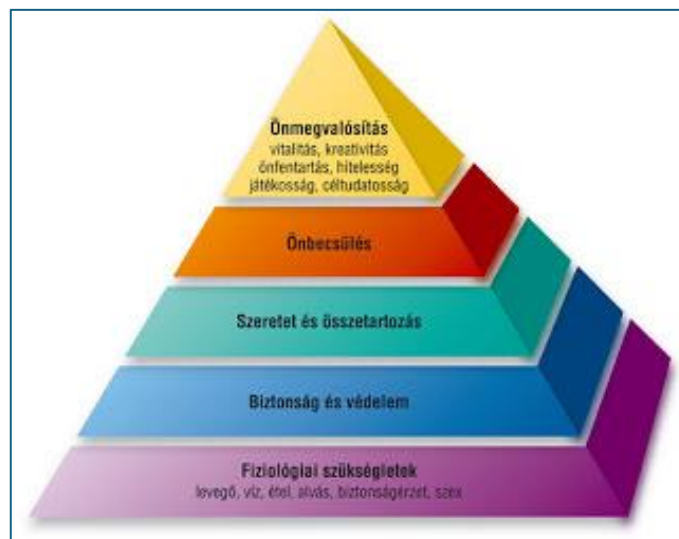


Figure 22: Maslow's pyramid

The structure of the pyramid is based on the principle that a person can only move up the hierarchy of needs once the lower levels have been satisfied.

It is also worth mentioning the phenomenon known as the 'psychology of deprivation'. Its key characteristics are:

- **Reduced mental bandwidth:** Deprivation consumes a great deal of mental energy. The brain is constantly preoccupied with the lack, which ties up cognitive capacity, leaving less 'bandwidth' for planning, decision-making and problem-solving.
- **'Tunnel vision':** Attention narrows, focusing only on immediate, pressing needs. Whilst this may be effective for survival in the short term, in the long term it hinders rational decision-making.
- **Decline in cognitive performance:** Research suggests that stress caused by poverty significantly impairs cognitive functions. According to one study, the impact of stress

caused by deprivation can reduce current performance by approximately 13–14 IQ points, which is comparable to the effect of losing a night's sleep.

- Self-defeating decisions: As mental capacity is depleted, individuals are more likely to overlook long-term consequences and make poorer financial or lifestyle decisions, which further exacerbates their situation (the poverty trap).

Food rescue therefore helps to free up this mental energy, which the person concerned can then devote to other things (such as dealing with administrative matters, studying or self-care).

6.3. Target groups in food rescue

The range of groups that can be reached through food rescue is much broader than the group of people living in extreme poverty in the traditional sense. The focus of assistance is on those sections of society where limited ability to purchase food directly jeopardises physical and mental well-being.

- The working poor: This group is one of the most important target groups for food rescue. It includes individuals and families who have a regular income, but for whom this income, after covering living costs, loans or medication expenses, is insufficient to provide a nutritious diet. For them, food assistance acts as a safety net, preventing them from falling into debt.
- Elderly people living alone and pensioners: For those living on a fixed income, inflation and rising food prices can quickly lead to a crisis. For them, food rescue offers significant mental health benefits: this support reduces feelings of social isolation and the anxiety of feeling redundant.
- Large families: Where there are many children to care for, food is the biggest variable cost. Donated fruit and vegetables ensure the children's right to healthy development (vitamin intake), which the family would often be unable to afford on its own.
- Single-parent families: It is usually the mother who remains the primary carer for the child or children; often, the other parent is unable or unwilling to help, so there is no sharing of the burden, either in providing food or in carrying out other parental responsibilities.
- Homeless people and those living in housing poverty: For them, rescued food often takes the form of ready-made meals or ingredients that can be consumed immediately, providing an essential means of survival.

The groups listed above are often invisible. They do not live on the streets (with the exception of the last group), but sit next to us on the bus or live in the flat next door. Food rescue helps them maintain a semblance of social normality, whilst internally they are struggling to survive.

6.4. Dignity-centred support and participation

The greatest challenge in the methodology of social support is ensuring that the process of receiving aid does not undermine the self-esteem of those in need. When receiving food assistance, the person being helped often experiences shame or stigmatisation, as in the eyes of society, asking for help can be interpreted as a sign of failure. The aim of dignity-centred assistance is to reverse this negative psychological process.

We saw a practical example of this approach in the following incident in Sopron in February 2026: Instead of holding its cancelled charity ball, the Rotary Club of Sopron treated 130 people in need – including lonely elderly people, homeless people and people with disabilities – to a meal at a local four-star hotel (Figure 23). Organised in collaboration with the Sopron Social Institution (SOSZI), the event not only provided participants with a high-quality meal but also gave them the opportunity to experience the support they received as guests in an elegant setting. Zoltán Németh, the institution's director, emphasised in connection with the event that being in need is not a stigma, as illness or loneliness can put anyone in this situation. The fact that those in need were able to choose from the buffet (for example, Burgundy-style roast beef or gnocchi with almonds and spinach) restored their freedom of choice and a sense of social respect, which is the cornerstone of mental health support. *"I've never been to a hotel or such a lovely place in my life, and I've probably never eaten anything this good either,"* said one participant. *"We've collected plenty of donations and helped out many times, but this is different. It's direct and very human,"* István Schneider, one of the founders of the Sopron club, told reporters. He even made sure that any uneaten leftovers were packed up and given to the dinner guests.



Figure 23: Food prepared for the Rotary Ball, with guests in the background

The preservation of dignity is supported by the following methodological elements:

- Freedom of choice: Where the distribution venue (such as a charity shop or distribution point) allows, people in need should not simply be given a pre-packed parcel, but should be able to choose from the available items. This restores their sense of control over their own lives.
- The principle of participation: Involving the person being helped in the process (for example, in packing crates or tidying up the distribution site) reduces their sense of vulnerability. Instead of being a passive recipient, they become an active participant, which increases their sense of personal efficacy.
- Environmental factors: The circumstances surrounding the handover of food (cleanliness, tranquillity, discretion) determine whether the recipient experiences the support as a human right or as a humiliating favour.

Also an event from February 2026, but certainly a negative example, is the following news item, which was reported by several news portals¹² :

“Alarming reports have emerged that M. B., a Member of Parliament, and R. R., a local councillor, distributed packets of sweets to nurseries and crèches in Szeged, some of which contained mouldy, near-expiry or even past-expiry products,” politician H. N. told our editorial team. H. N. became aware from a photo posted on a social media group that one of the products may have been mouldy. Whilst damage to or quality defects in individual packets can occur from time to time, careful inspection is particularly

¹² As the current political situation in Hungary can be described as rather tense, the author of this study uses only initials and omits any mention of political parties.

important in the case of donations intended for young children, which appears not to have taken place here – he added. Several products were close to their use-by date,

- including some that had already passed their use-by date,
- there were sweets in an unsuitable condition
- and a serious problem is that the packaging is exclusively in German.

The latter is particularly serious, as the sweets may contain allergenic ingredients, and parents and institutions would only be able to make responsible decisions based on labelling in Hungarian. It cannot be expected that everyone concerned will be able to understand packaging in a foreign language – particularly not in the case of children.”

The article cited includes images that demonstrate the negligence described above (Figures 24 and 25).



1Figure 24: Mould spot on the sweets given as a gift



Figure 25: Labels in a foreign language and the expiry date on the sweets distributed

In the Szeged case, children and parents were objectified: they were merely tools of the political campaign. In the Sopron case, those in need were treated as subjects, as people of equal standing.

6.5. The helper–recipient relationship in food distribution

The helper–recipient relationship that develops during food distribution is a special, deep interpersonal bond in which the helper's aim is to support the other person's dignity and personal growth. This encounter is not merely a technical transaction or a logistical task, but a collaboration built on an atmosphere of trust, in which the helper is fully present as a person.

Based on Carl Rogers' definition, the three cornerstones of an effective helping relationship are also indispensable in the practice of food donation:

- Empathy: The helper's ability to empathise with the inner world of the person in need and to genuinely understand the life situation caused by deprivation. This attentiveness helps ensure that the donation is not merely a handout, but genuine assistance.
- Unconditional acceptance: Valuing and welcoming the person being helped without any form of judgement. In food rescue, this means that everyone receives the donation with respect for their humanity, regardless of their personal history or lifestyle choices.
- Congruence (authenticity): The helper's genuine and sincere presence. Authenticity creates the safe environment in which the person in need becomes able to accept assistance.

7. The role of food rescue in the social welfare system

In this chapter, I examine the symbiosis between food rescue and the social welfare system. I will demonstrate how rescued food becomes a tool for professional support work, how it upholds the dignity of those in need, and what effective models of cooperation can be established between the local government sector and civil society organisations. Through practical examples, I explore the community-building power of the process and the long-term mental health benefits that serve to restore individual autonomy.

7.1. Linkages with local social services

Food rescue does not operate as a parallel system to social care, but is organically integrated into existing services. In Hungarian practice, food donations are most frequently channelled through Family and Child Welfare Services and basic service centres. The methodological advantage of this is that the food reaches clients who are already within the care system's remit; thus, the assistance is not haphazard but forms part of a deliberate care process.

The most important areas of connection:

- The 'door-opener' function: The most difficult step in providing support is building trust. In many cases, food donations are the first tangible form of assistance that opens the client's door to the family support worker. The donation reduces resistance and provides an opportunity for the professional to identify deeper, structural problems (housing, debt management, mental health).
- Relieving the burden on institutions: In the case of day centres or temporary accommodation, rescued food directly improves the standard of care. As these institutions often have limited resources, meals prepared from rescued ingredients allow the freed-up resources to be channelled into other types of rehabilitation or programmes.
- Prevention and crisis management: Food assistance can also serve a preventative purpose. For a family facing a temporary financial crisis (for example, due to unexpected illness or job loss), rescued food can prevent them from falling into a spiral of debt, thereby helping the family to stay together.

Presentation of Good Practices:

1. The Food Bank and the Family Support Network: The Hungarian Food Bank Association distributes donations through local partner organisations. In many towns and villages, the Family Support Service itself is the contracted partner, so the professional knows exactly which families are in crisis. When the parcel is handed over (Figure 26), a brief

conversation also takes place , so the food becomes a means of maintaining contact and building trust.



Figure 26: Distribution of food parcels assembled from rescued food at the Óbuda Family Counselling and Child Protection Centre

2. The Közös Lábos initiative

This project fills the ‘supply gaps’ at weekends. At the Szimplakerti Háztáji Market, civil society organisations cook using rescued ingredients, and the donations are put towards charitable causes. The flexibility of civil society organisations (such as the Budapest Bike Maffia) ensures that food reaches homeless shelters or children’s homes even when official kitchens are closed (Figure 27). There have also been occasions when they have brought a taste of life on Lake Balaton to homeless shelters and children’s homes (Figure 28).



Figure 27: Cooking as part of the ‘Közös Lábos’ initiative



Figure 28: “Balaton for Us”

3. Social shop-type initiatives

These are, in fact, donation centres where those in need can choose from rescued food items with dignity in a civilised shop environment, rather than queuing on the street (Figure 29). The model operating in the village of Rozsály, for example, collects surplus produce from local farmers, thereby creating a local base for self-sufficiency.



Figure 29: Social shop in Rozsály

An article published in 2012 reported on the following chaos: *“Those involved either point fingers at one another or remain silent regarding the situation of the Social Shop Network. According to the shopkeepers, the network has ceased to exist; according to the founders, it has not; whilst others claim that the organisation has been restructured. The traders blame the producers, whilst the producers blame the changing market conditions. We found the shutters down at the network’s member shops in Budapest.”*

Also this year, a social shop opened in the small village of Rozsály; a news portal reported on it as follows: *“There is no rent to pay; those bringing in fruit and vegetables simply need to present the spraying record. In summer, the shop receives such a wide variety of produce from local people that we don’t even need to order from anywhere else.”*

7.2. Cooperation between civil society organisations and local authorities

The effectiveness of food rescue in Hungary is based on the principle of subsidiarity: tasks must be tackled at the level where the greatest insight and expertise are available. In this process, local authorities and civil society organisations (foundations, associations, church organisations) are interdependent partners, as neither party possesses all the necessary resources.

The basic model for cooperation is built around the following ‘exchange of resources’:

- The role of the local authority: The local authority holds the real estate assets. In the course of such collaborations, the local authority most often supports the rescue effort by providing premises (storage facilities, distribution points) free of charge or at a reduced rate, by covering utility costs, and by offering communication support in the local media. Furthermore, the local authority provides legitimacy: the public and local businesses have greater confidence in an initiative that is also supported by the official city administration.
- The role of civil society organisations: Civil society organisations bring flexibility and a dedicated team of volunteers to the process. They are the ones capable of mobilising their members, even at weekends or in the evenings, to transport an unexpected donation (for example, rescuing baked goods just before a bakery closes, Figure 30). Civil society organisations possess specialist knowledge (e.g. links with the Food Bank, expertise in food safety) which, within an institutional framework, would sometimes be too bureaucratic.



2Figure 30: Bakery goods rescued from supermarkets being loaded at the Food Bank’s premises

One of the greatest constraints on cooperation is a lack of resources. Whilst civil society organisations often struggle with logistical costs (fuel, maintenance of refrigerated lorries), local authorities have limited discretionary budgets for such non-mandatory tasks. The key to successful models therefore lies in long-term cooperation agreements and joint participation in calls for proposals.

7.3. Community-building effects

Services centred on food rescue go far beyond logistics, as these locations become venues for social interaction. One of the most serious mental health issues in modern society is loneliness and social isolation, which particularly affects the elderly and those living with long-term illnesses. Food distribution sites – whether they are donation points or community kitchens – create opportunities for social connection.

The community-building effect manifests itself at three distinct levels:

1. Relationships between service users: Whilst waiting or sharing a meal, people in similar life situations share their experiences with one another. This community of shared experience reduces feelings of shame. Here, being in need is not seen as an individual failure, but as a shared condition in which individuals provide emotional support to one another.
2. The blurring of boundaries between helper and recipient: In dignity-centred models, clients are often involved in preparatory tasks. When the person receiving support helps to unpack the crates or organise the baked goods, their passive, receptive role ceases. This joint action restores the individual's sense of usefulness, which is the first step towards a fresh start mentally.
3. Raising awareness in the local community: By involving volunteers, members of the local community gain first-hand experience of the difficulties caused by poverty or illness. This breaks down prejudices and strengthens neighbourhood solidarity.

The most important outcome of this community-building effect is an increase in social capital. At each of these points, it is not just bread that changes hands, but information too: where there are job vacancies, which doctor to consult, or how to fill in an official form. It is this network that is capable of supporting the individual in the long term when the capacity of the official welfare system is exhausted.

7.4. Long-term social benefits

A change in mindset and environmental awareness: Food rescue draws society's attention to the unethical nature of waste. When rescued food becomes a valuable resource, public awareness also increases: surplus is no longer defined as waste, but as a resource. This results in the interconnection of environmental and social considerations, which is one of the cornerstones of sustainable development.

Strengthening social solidarity: Successful cooperation between local authorities and civil society organisations boosts social trust. It conveys the message that the community is capable of coming together for its most vulnerable members. This cohesion makes local communities far more resilient in times of crisis (such as during an economic downturn).

Reducing the economic burden: Food rescue enables people to access high-quality food more cheaply or for free. For example, through the Munch app, more than 700,000 portions of food have been rescued, saving users significant amounts of money.

Reducing environmental impact at a community level: As discarded food decomposes, methane is released, which contributes to climate change. By saving food, local communities are actively working to reduce carbon dioxide emissions.

Restoring individual autonomy: In the long term, the greatest benefit of food rescue is not physical survival, but mental stability. By reducing the anxiety caused by daily deprivation, an individual's cognitive capacities are freed up. This creates the opportunity to start afresh: to learn, to look for work, or to adapt to a changed physical condition.

Final thought: On 15 March 2026, Zoltán Bóka (farm caretaker) was awarded the Ruzsa Public Service Award. According to news websites, he carried out his work *'quietly, for decades'*. He primarily delivered parcels of rescued food to elderly people living in isolation in the rural communities of Ruzsa. To those for whom rescued food is not merely financial assistance, but a basic necessity for survival.

8. Waste-free and loss-reducing production

The process of food rescue does not actually begin at distribution points, but rather on the farmland and in processing plants. As a significant proportion of food waste is generated right at the start of the production chain (see Figure 31), the key to effective rescue lies in intervening at source. In this chapter, I examine how surplus generated during the production process can be transformed from waste into real value, and how this approach contributes to more sustainable farming.

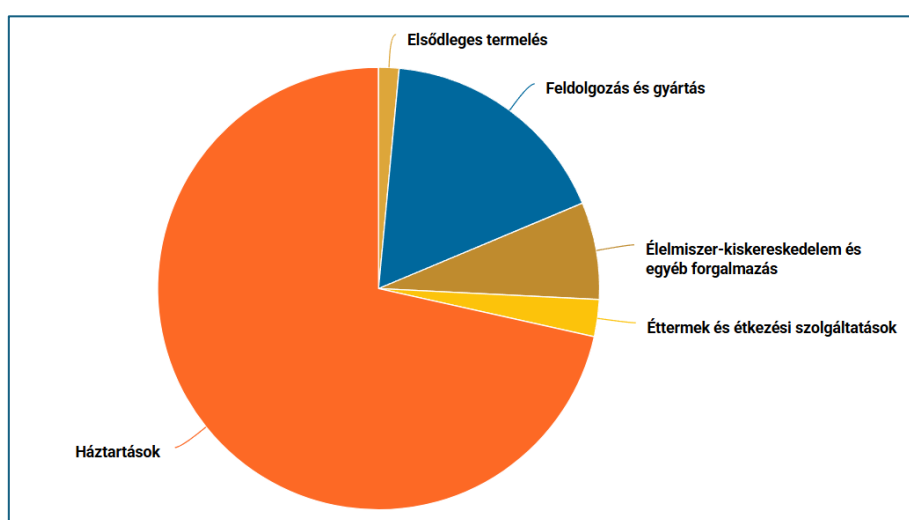


Figure 31: Breakdown of food waste by source, 2022

8.1. The concept of zero-waste production

Waste-free production is not merely a technical objective, but a mindset. Its essence lies in keeping resources in a cycle: by-products generated during production, or food that is no longer suitable for consumption but is still safe, belong not in the bin but in a new utilisation process. This approach breaks with the linear (produce-consume-dispose) model and points towards a circular economy.

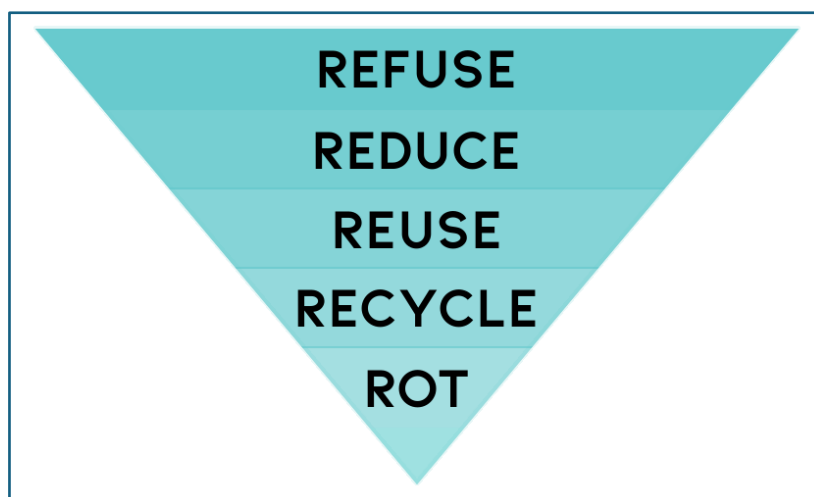
The main characteristics of zero-waste production:

- Circular model: It replaces the traditional linear 'extract-produce-dispose' model and creates closed material loops.
- Life-cycle approach: Minimises the environmental impact from design through to raw material procurement, manufacturing and the end of the product's life.
- Resource efficiency: The aim is to make maximum use of raw materials, whilst waste is treated as a raw material.

- Avoiding landfill: Waste-free production does not involve incinerating or burying waste, but instead uses technologies that render these methods unnecessary.

The principles of waste-free production (application of the 5R method, Figure 32):

1. Refuse: Eliminating unnecessary materials and packaging from the production process.
2. Reduce: Minimising resource consumption through more efficient manufacturing processes.
3. Reuse: Direct reuse of components and materials within production.
4. Recycle: Processing residual materials generated during the process into new products.
5. Rot (Compost/Break down): In the case of organic materials, the aim is to break them down and return them to the cycle.



3Figure 32: The principles of waste-free production (the 5R method)

8.2. Food loss in the production chain

Loss occurs at every stage of the chain: in agriculture, in the form of unharvested crops; in the processing industry, as technological waste (such as products with aesthetic defects); and in the retail sector, in the form of goods nearing their expiry date.

A comprehensive survey by the Agricultural Economics Research Institute (AKI) highlights that, after households, the food industry is the second-largest source of waste in the domestic food supply chain. The research emphasises that a significant proportion of the surplus generated consists of valuable biological material, the disposal of which causes a serious environmental burden and negative externalities¹³.

¹³ external economic impact

Based on primary research conducted amongst Hungarian food industry companies, the main characteristics of waste generation can be summarised as follows:

- Perception of the problem: The majority of domestic processors do not regard losses as a serious problem, but rather treat them as a natural consequence of technological processes. For more than half of the respondents, the proportion of unavoidable technological causes (e.g. cleaning losses, production line characteristics) exceeds 80 per cent.
- Main contributing factors: In addition to technical and product faults, significant factors include human error, substandard raw materials, and the stringent requirements of the retail sector (e.g. aesthetic standards, delivery conditions). For large companies, overproduction and returns also pose a serious challenge due to planning based on market demand forecasts.
- Motivations and barriers: Companies are primarily driven by financial considerations and cost-cutting objectives when it comes to minimising losses, whilst ethical considerations and building corporate image have so far taken a back seat. More effective action is hampered by an overly strict and sometimes contradictory regulatory environment (particularly in the area of donations), the lack of a market for by-products, and high investment costs.

The data show that large companies which use a more sophisticated, controlling system are more sensitive to the problem, as the value of their losses can be precisely quantified. Effective loss reduction therefore requires not only technological modernisation, but also a fundamental change in mindset and closer cooperation between stakeholders

This survey was published in 2018. In 2024, the National Chamber of Agriculture issued a call for proposals to carry out a similar study. It is no longer possible to complete the questionnaire, although the results have not yet been published.¹⁴ However, a trend analysis states that: *“The issue of sustainability is not going away, but real efficiency is coming to the fore instead of the previous communication slogans. One of the industry’s greatest challenges is water consumption: due to water scarcity and rising resource prices, companies must switch to technologies that reduce water demand and production waste. The phrase ‘water as a strategic resource’ is appearing with increasing frequency in development plans.”*

¹⁴ April 2026

8.3. Rescue as a loss-reduction tool

The best way to tackle food loss – in line with the European Union’s food waste hierarchy (sub-chapter 9.3) – is to preserve the suitability of food for human consumption and to ensure it reaches those in need. In this context, food rescue is an active loss-reduction technology that prevents food that has already been produced – and for which energy and resources have been expended – from becoming waste.

The rescue process intervenes at two critical points in the production chain:

1. Rescuing high-quality but ‘non-standard’ products: A significant proportion of surplus from the agricultural and processing sectors arises due to aesthetic flaws (such as undersized vegetables or misshapen fruit) or packaging irregularities. Rescue networks ensure that these foods, which are perfectly safe to eat, do not end up in the compost bin or landfill, but are delivered directly to consumers.
2. Saving sudden surpluses The specialised logistical capacity of food rescue organisations (such as the Food Bank) enables producers to quickly and safely remove sudden surpluses (such as a failed export consignment or seasonal overproduction) from the storage process, thereby reducing their own losses.

From an economic perspective, any form of rescue offers an alternative to disposal. Whilst waste management represents a cost to the company, donation can serve as a tax-deductible expense and improves the company’s public image.

8.4. Environmental and economic benefits

From an environmental perspective, all food that is not saved represents a waste of water, soil depletion and unnecessary carbon dioxide emissions. Research describes this as *the ‘hidden footprint’*, as when food is thrown away, all the resources invested in it are also discarded. Based on comprehensive research by the Food and Agriculture Organisation of the United Nations (FAO) and the World Wide Fund¹⁵ (WWF), the following global and regional figures are the most significant:

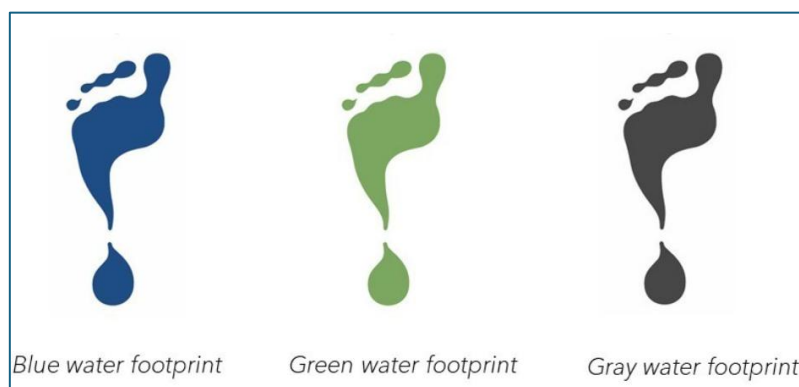
1. Greenhouse gas emissions: Globally, we throw away around 931 million tonnes of food every year. What’s more, a significant proportion of this ends up in landfill sites, where greenhouse gases are released as it decomposes. According to FAO experts, one-tenth of the gases responsible for global warming originate from this source. To get a visual sense of the scale of the problem, it is

¹⁵ World Wide Fund for Nature, known in Hungarian as the World Fund for Nature

worth considering food waste for a moment as if it were a sovereign state: if food waste were a country with a population of , it would rank as the world's third-largest emitter of carbon dioxide, after China and the United States.

It has also been shown that approximately 8–10 per cent of global anthropogenic greenhouse gas emissions are attributable to uneaten food. The decomposition of food in landfill sites produces methane, which, in the short term, warms the atmosphere 25 times more effectively than CO_2

2. Water wastage: The literature divides the water footprint¹⁶ into three parts (Figure 33):



4Figure 33: Types of water footprints

1. Green water: Natural precipitation absorbed by fodder. This accounts for the vast majority (approx. 90–94 per cent) of the water footprint of meat products.
2. Blue water: Surface or groundwater used for artificial irrigation, watering and cleaning in the processing industry. This accounts for only a fraction of the total footprint.
3. Grey water: The virtual water required to treat contaminated water generated during production.

Around 250 km^3 of water is wasted annually through food waste. This is equivalent to 130 times the volume of Lake Balaton.

The greatest waste of water comes from the disposal of meat and cereals, as their production requires the most irrigation water (Table 1). On a global average, producing a single kilogram of beef requires approximately 15,000 litres (according to other sources, 'only' 13,000 litres) of water. Of this, direct watering and slaughterhouse processing account for a mere 1–2 per cent. The remaining 98 per cent is required for the production of animal feed. Although the proportion of

¹⁶ The water footprint indicates the amount of water used directly and indirectly by a given product, service or person. This includes: direct water consumption: drinking, cooking, washing, bathing + indirect water consumption: water used in the production of consumed products (e.g. agriculture, industry)

blue water (irrigation) is smaller, from an environmental perspective this is the most critical factor, as it diverts water from drinking water supplies and rivers.

Table 1: Water requirements for selected foods (litres/kg)

Food	Water requirement
Beef	15,400
Pork	6,000
Chicken	3900
Lentils	5000
Potatoes	290
Tomatoes	180

Economic benefits

Food rescue is not merely an ecological necessity, but also a rational economic decision that has a positive impact at both the micro- and macroeconomic levels.

- **Corporate cost reduction:** For producers and retailers, managing surplus stock represents a significant expense. Landfill levies, transport and disposal costs place a significant burden on the budget. By saving food through donation, these costs can be minimised, whilst the company may also become eligible for tax relief (for example, by deducting the purchase value of the donated goods).
- **Resource optimisation:** From an economic perspective, food that has been produced but not consumed is 'dead capital'. Through rescue, the labour, energy and raw materials already invested in the system do not become a permanent loss but are utilised – albeit in a different form. This increases the efficiency of the entire food supply chain.
- **Social savings:** At a macroeconomic level, every kilogramme of food saved reduces the burden of state social expenditure. If those in need have access to rescued food, more of their own income can be spent on other basic necessities (medicines, utility bills, education), which in the long term reduces the demand for state transfers arising from poverty.

8.5. Raising awareness and educating producers

A radical reduction in food loss cannot be achieved through technological developments or stricter regulations alone. Real change requires raising awareness and providing ongoing education amongst those involved in the production chain. The concept of 'waste' must be reframed in the minds of decision-makers: they must view surplus not as rubbish to be disposed of, but as a social resource.

The key pillars of changing mindsets are:

Raising awareness of corporate social responsibility (CSR): Companies must recognise that they bear a moral responsibility for the surplus generated by their activities. In educational initiatives, it is important to emphasise that donation is not 'charity', but an integral part of corporate culture, which increases employee commitment and the company's social standing.

Accepting 'imperfection': One of the biggest obstacles on the producer side is excessive aesthetic expectations. Part of changing attitudes involves manufacturers and retailers accepting that a crooked cucumber or packaging with minor imperfections does not imply a decline in quality (we have already read about related initiatives in sub-section 5.2). If producers do not automatically reject these products but instead channel them into rescue schemes, they also minimise their own losses.

Communication on safety: Many producers, fearing legal consequences (food safety liability), prefer to destroy the product. The role of education is to clarify areas of responsibility, demonstrate best practice (e.g. the Food Bank's logistical protocols) and help companies overcome bureaucratic obstacles.

Setting an example and networking: Successful examples (such as the daily food rescue routines of large supermarket chains) act as catalysts for smaller producers. Professional forums and workshops provide an opportunity for food rescue to become part of the industry standard rather than an individual initiative.

The ultimate aim of raising awareness is for producers to recognise that sustainability is not a marketing tool, but a fundamental prerequisite for their future operations. This internal shift in attitude forms the basis of the social solidarity capable of bridging the gap between abundance (surplus) and scarcity (need).

9. The community basket scheme

In this chapter, I present one of the most direct forms of food self-determination: the community basket method. This model is not merely a tool for sustainable consumption, but also the cornerstone of a local economy built on trust, capable of bridging the physical and emotional distance between producer and consumer.

9.1. The concept and origins of the community basket

The literature and everyday language use a number of terms to describe this phenomenon: we may also come across expressions such as 'shopping community', 'basket community' or 'shopping bag community'. Although these terms may reflect subtle differences, their essence is the same: cooperation between consumers and producers based on a conscious, mutual commitment.

In order to shed light on the concept from multiple perspectives, I have organised the following list of domestic and international definitions. These definitions include theoretical approaches from academic journals, as well as the practical principles of the organisations that run the communities themselves.

In the simplest terms, shopping communities are groups of shoppers organised on a voluntary basis, in which producers and consumers come into direct contact with one another. The organisers and volunteers running the community play a key role in this process. These non-profit initiatives are set up across the country to bring together local Hungarian producers, small businesses and conscious consumers, thereby strengthening the local economy.

Another perspective focuses on the role played in the food supply chain and on quality. According to this view, a CSA is a form of direct food supply that promotes sustainable farming practices whilst providing consumers with fresh, seasonal produce. In this model, 'proximity' is not only a geographical but also a spiritual concept: a close relationship is forged between farmers and the local community that consumes their food.

The most comprehensive definitions now regard the community support scheme as a form of economic and legal cooperation. In this form, consumers committed to healthy and safe food enter into a genuine partnership with producers seeking a stable market. This alliance goes beyond a mere exchange of goods: the participants pledge their support for the farm, recognising that the land belongs, in spirit, to the community. The parties support one another and share in all the benefits of food production, as well as its risks. In some models, consumers can become directly involved in the production process, for example in growing vegetables.

The concept of the community basket is not only popular in Hungary; it is practised in numerous countries worldwide, adapted to local needs and cultural contexts. Below, I present a few international examples, without claiming to be exhaustive:

Japan: The concept dates back to the 1970s, when the movement began under the name 'Teikei'. The term means 'partnership', which accurately reflects the relationship of trust between producers and consumers.

The USA, Canada and the United Kingdom: In these countries, the term 'CSA' (Community Supported Agriculture) has become commonplace, referring to community-supported agriculture. Germany, Austria and Switzerland: In German-speaking countries, the term 'Solidarische Landwirtschaft' (abbreviated to SoLaWi) is used, which can be translated as 'solidarity-based agriculture', emphasising the community's financial and moral responsibility.

France: The system is known as AMAP (Associations pour le Maintien d'une Agriculture Paysanne), whose primary aim is to preserve and protect traditional small-scale farming.

Other countries: The flexibility of the model is demonstrated by the fact that similar initiatives exist from China through Mali to Palestine and South America, all of which serve to promote self-sufficiency and food security within local communities.

The history of the community basket's development runs along several strands, but one of its most significant roots lies in European intellectual traditions. Although similar initiatives emerged in Japan and Chile in the early 1970s, it was the practice of so-called biodynamic agriculture that had the greatest influence on the CSA (Community Supported Agriculture) movement, which began in the United States in 1986.

The foundations of the concept were laid by the Austrian philosopher Rudolf Steiner (1861–1925) in the 1920s. In 1924, Steiner highlighted the connection that later became the basis of the American CSA model: he defined the farm as a self-sustaining, closed system. According to his vision, the key to balance lies in the economy keeping only as many animals as can be fed by locally produced fodder, whilst the animals, in turn, provide exactly the amount of manure required for crop production. Steiner urged his audience not to take the theoretical knowledge he had gained from his research at face value, but rather to put it all into practice.

In response, experienced farmers established the research circle of the anthroposophical ¹⁷ farmers, in 1928 they named their products 'Demeter' after the goddess of fertility. To this day, this

¹⁷ A word of Greek origin: anthropos (human) + sophia (wisdom), meaning human wisdom or knowledge of humanity

name symbolises the spiritual roots of the biodynamic method and outstanding quality. This principle was further developed in post-World War II Europe, and after several decades of maturation, it took on its modern form in 1986. Independently of one another, but at the same time, the CSA model was launched at Indian Line Farm in Massachusetts and at Temple-Wilton Community Farm in New Hampshire, paving the way for today's community-supported food systems.

9.2. Operational models and organisational principles

Shopping communities are typically run by a civil society organisation or a parish. Options include a foundation, a TÉSZ (Producers' and Marketing Cooperative) or an association. For example, the Kiskosár Shopping Community is run by the Esztergom Environmental Culture Association, whilst the Nyíregyháza Kosár community is run by the 'Our Future is Here' Association

The technical framework for their operation is that the community typically maintains an online platform, for the purposes of, amongst other things, providing information, facilitating the flow of information, and, most importantly, enabling customers to place pre-orders.

How it works in practice

In practice, once customers have placed their pre-orders, volunteers from the shopping community forward the requested orders to the producers. The producers deliver the requested quantities to the collection point. The volunteers then assemble the parcels ordered by the customers. On the collection day, customers can collect their produce within a pre-determined time slot, usually lasting 2 or 4 hours. As payment is made on the spot, this is a system based on trust. There are also examples in Hungary where the shopping community can take delivery of the produce from the producer on consignment, meaning that payment is made on a weekly basis. This practice, which is also authorised by the tax authorities, is implemented, for example, by the shopping community operated by the Nyíregyháza Basket Community (nyiregyhazikosar.hu). In most cases, on-site purchases are not possible.

It is also possible to strengthen these ties through 1% tax donations. The essence of this is that the community donates 1% of its operating income to support the work of local civil society organisations. After making their weekly purchase, every customer can donate 1 per cent of the amount spent with that particular shopping basket community to a civil society cause whose existence and operation they are keen to support

I illustrate this using diagrams found on the websites of two Hungarian communities (Figures 34 and 35)

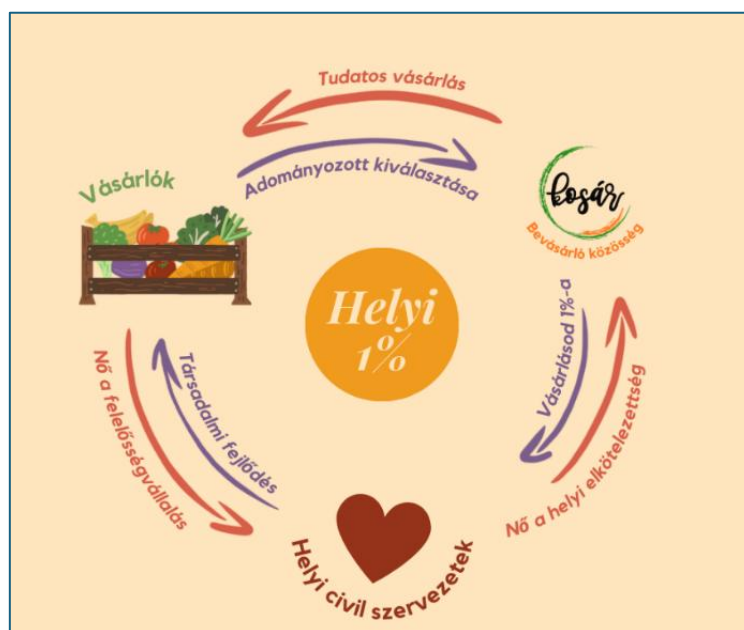


Figure 34: The principle of the 1% tax donation

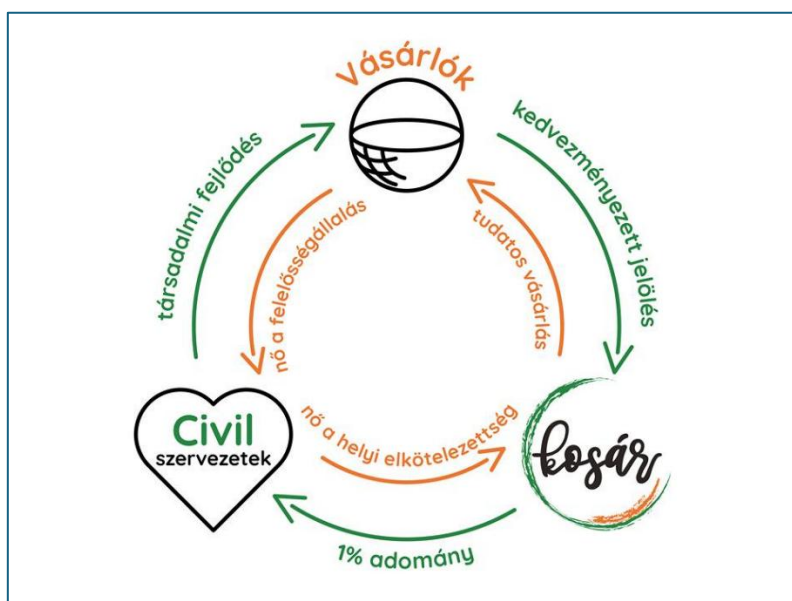


Figure 35: The principle of the 1 percent tax donation

9.3. The link between the community basket and food rescue

I shall illustrate this link by presenting the following two case studies:

The first study, conducted in the United Kingdom, examines food waste by looking at the volume of fresh vegetable and salad waste generated within the food industry system controlled by supermarkets, compared with a community-supported agriculture (CSA) system. The research found that when every stage of the food system was examined in terms of waste, the CSA significantly outperformed the supermarket system, as it wasted only 6.71 per cent by weight, compared with 40.7–47.7 per cent generated elsewhere. The results highlight the differences between the two systems.

The concept of Net Yield Efficiency (NYE), developed by the researchers, offers a simple method for combining yield and food waste. It can serve as a starting point for further developing indicators that measure the efficiency of the system as a whole, for example by incorporating nutrient losses during food processing and overconsumption.

The other study highlights that Community-Supported Agriculture (CSA) is capable of reducing food loss and waste, as it establishes a direct link between consumers and producers, thereby lowering aesthetic requirements for produce and consumer preferences. Accordingly, CSA can compensate for any differences in yield compared with conventional agriculture. In this study, food loss and waste (FLW) and yields were assessed over the course of a year in the Leipzig region of Germany and compared with reference data. The results show that FLW arising during production, distribution and consumption was, on average, 22–70 per cent lower than the reference data. Due to the lower FLW, the farms were able to compensate for a 32 per cent yield loss, which reflects the yield loss generally observed between organic and conventional farming.

In addition to the international case studies described above, the waste pyramid shown in Figure 3 also highlights the importance of food rescue. Here, the community basket appears at the 'Prevention' level.



Figure 36: Waste pyramid

9.4. Integration of fresh fruit and vegetables into the basket system

In this sub-chapter, I will outline the principles that demonstrate how fresh fruit and vegetables relate to the community basket.

1. The principle of seasonality management

The basis of the basket scheme is that members receive whatever is currently in season.

Challenge: Many consumers are no longer used to seasonality (they look for tomatoes even in winter).

Solution: The farmer communicates the 'planting plan' in advance, so that consumers can consciously prepare to receive seasonal produce (e.g. they know that there will be asparagus in June and pumpkin in October in their basket).

I can illustrate this principle even more clearly using Table 2.

Table 2: Vegetables and fruit that can be grown in each period

Month / Season	Typical basket ingredients
Spring (April–May)	Radishes, spring onions, spinach, wild garlic, sorrel, lettuces.
Summer (June–August)	Tomatoes, peppers, squash, young carrots, berries.
Autumn (September–November)	Pumpkins, beetroot, apples, pears, walnuts, brassicas.
Winter (December–March)	Stored root vegetables, potatoes, apples, pickles, pulses.

2. The whole-plant approach

This point is most closely linked to food rescue.

Practical example: In the community basket, vegetables often arrive in their original form, complete with leaves and stalks (e.g. beetroot tops, kohlrabi leaves, beetroot stalks).

Value: Members learn that these parts are also edible, e.g.:

- The fresh greens of radishes and spring onions should not be thrown away; they are excellent for making pesto or as a base for cream soups.
- Carrot tops are rich in vitamins and can be used in salads or as a seasoning.
- Beetroot leaves and stalks can be prepared in a similar way to Swiss chard, meaning 100% of the plant is used.
- Wilted vegetables can be saved from the bin by using them to make stock, roasting them or turning them into a purée.

In this way, 100 per cent of the raw produce is utilised, in contrast to shop-bought 'cleaned' vegetables, where 30–40 per cent of the edible parts are discarded during processing.

3. Logistics and the principle of shortening the cold chain

Speed is key to maintaining the quality of fresh produce.

Direct delivery: As there is no intermediate storage, the vegetables do not sit on the shelf for days. Thanks to the 'harvested at dawn – delivered in the afternoon' model, the produce stays fresh for much longer in the consumer's fridge than the shop-bought version. Table 3 compares the two options

Table 3: Comparison of traditional and food-rescue logistics

Criterion	Traditional supply chain	Food rescue / Basket logistics
Duration	3–7 days (between harvest and reaching the shelves)	12–48 hours (between harvest and use)
Intermediate stages	Collection point, wholesaler, retail warehouse	Direct handover from producer or 1 logistics point
Packaging requirements	High (protection during long-distance transport)	Minimal (due to rapid consumption)
Risk of wastage	High (at any point in the supply chain)	Low (due to speed)

Packaging-free: Raw vegetables often arrive in crates or paper bags, which reduces stifling and mould growth – a common source of wastage with shop-bought goods in plastic packaging.

The following alternatives help to minimise packaging:

- Returnable crates (M30 crates): The most sustainable option, and logistically stable.

- Recycled paper bags: They absorb moisture but allow the produce to 'breathe'.
- Canvas bags: Items brought by community members themselves, which also reinforce the sense of 'active participation' from a mental health perspective.

4. Food education (Recipe sharing)

The integration of fresh produce is successful when consumers know what to do with it. Most box schemes send out a weekly newsletter featuring recipes specifically based on that week's produce. This helps members make the most of 'unusual' or large quantities of fresh vegetables, preventing them from going off at the back of the fridge.

What practical tips do consumers usually receive?

- Using the whole plant – as I've already explained
- Fermentation (lactic acid fermentation)

This is the oldest and most natural method of preservation, which is currently enjoying a renaissance. For example, preserving larger quantities of brassicas or root vegetables left over in the shopping basket in brine. It requires no expensive equipment, and the end result has probiotic, health-promoting effects

- Blanching and freezing

One of the cornerstones of raw vegetable preservation is managing seasonal surpluses. Freezing summer courgettes or spring spinach after brief heat treatment helps bridge the period when the contents of the shopping basket exceed what the family can consume whilst fresh.

- Making creative 'basic sauces' and purées is a good way to make use of vegetables that are slightly wilted or no longer aesthetically perfect (e.g. slightly soft peppers or tomatoes). You can make roasted vegetable purées, which can be frozen or preserved.
- Dehydration (Drying) Reducing the water content halts the spoilage process. It is an excellent and inexpensive way to make herb, apple or even thinly sliced vegetable crisps from leftovers. As well as preserving food, it allows for space-saving storage without the need for refrigeration.

9.5. Benefits for producers, consumers and communities

When examining the benefits of the community basket and the CSA model, we can see a three-way win in which economic, environmental and psychological aspects are inextricably intertwined. Based on the literature and good practices in Hungary, the benefits can be organised around the following three pillars:

1. Financial and professional security for the farmer

For the farmer, the model's greatest virtue is predictability. Members often commit at the start of the season, which provides financial stability and immediate capital for the purchase of seeds or equipment, thereby avoiding the need to take out loans. The guaranteed market frees the producer from the pressure to sell and from market price fluctuations, as the crop already has an 'owner' whilst still in the ground. The principle of risk-sharing is of paramount importance: in a year of adverse weather, the community collectively bears the burden of lower yields, thereby protecting the farm from bankruptcy. Direct feedback from consumers, meanwhile, provides an internal motivation that encourages continuous quality improvement.

2. Quality and transparency for the consumer

For members, the primary benefits are freshness and health. Produce typically goes from the field to the shopping basket within 24 hours, retaining its maximum vitamin content. As the majority of these farms use organic or regenerative methods, consumers have access to chemical-free, clean food. The scheme is also beneficial from an economic perspective: by cutting out the middlemen, the full amount paid goes to the farmer, whilst members often get premium quality produce at a better price than in shops. Transparency, meanwhile, provides peace of mind: consumers know exactly who produced the food on their table and under what conditions.

3. Sustainability and social capital for the community

At a systemic level, the community basket strengthens the local economy, as capital remains within the community, supporting rural livelihoods. The environmental impact is drastically reduced thanks to the short supply chain (SSC) and minimal packaging. The diversity of CSA farms protects biodiversity, conserves soil and supports pollinators. Last but not least, the model builds social capital: during communal harvests and open days, genuine, trust-based human relationships are forged between urban and rural populations, which is one of the most important elements of social cohesion.

10. Summary and future prospects

This chapter sets out the conclusions and recommendations that can be drawn from the previous nine chapters.

10.1. The complex social impact of food rescue

The social impact of food rescue is extremely complex, as it goes beyond the mere provision of food to induce mental health benefits, community-building and structural changes within society.

1. Food security and the alleviation of pressure on the social safety net

One of the fundamental paradoxes of modern society is that, whilst food waste is significant, a section of the population faces food security risks. Food rescue helps **to mitigate** these **inequalities**, as the effective redistribution of surplus food **can substantially reduce the burden on the social safety net**. For those in need, rescued food acts as a kind of **safety net**, which can prevent them from falling into debt or getting caught in a spiral of debt.

2. Psychological effects and individual autonomy

The sources highlight the ‘psychology of deprivation’, according to which food insecurity generates constant anxiety and erodes an individual’s **mental well-being**.

- **Freeing up cognitive capacity:** Food rescue helps to free up the mental energy tied up in worrying about shortages, thereby enabling those affected to engage in long-term planning, learning or job-seeking.
- **Preserving human dignity:** Dignity-centred assistance (such as ensuring freedom of choice rather than providing standardised food parcels) restores the recipient’s self-esteem and sense of control over their own life.

3. Social integration and community building

Food rescue venues (distribution points, community kitchens) become **spaces for social interaction**, which is particularly important for older people living in isolation.

- **Increased social capital:** At these locations, not only food but also information is exchanged (e.g. job opportunities, assistance with administrative procedures), which strengthens the cohesion of the local community.
- **Communities of peers:** Whilst waiting or eating together, the experience of need ceases to be a personal failure and becomes a shared experience, which reduces feelings of shame.

- **‘Door-opener’ function:** For family support professionals, food donations are often the first tool for building trust, which in turn enables deeper, structural problems to be addressed.

4. Raising awareness and volunteering

For **volunteers** involved in food rescue, the activity acts as an effective antidote to social isolation, increases the sense of personal efficacy and strengthens a sense of social responsibility. In the long term, food rescue draws the attention of society as a whole **to the unethical nature of waste**, thereby increasing environmental awareness and solidarity.

5. Target groups and hidden poverty

The impact is particularly significant amongst **the** so-called **‘working poor’**, the elderly living alone, large families and single-parent families. Food rescue helps them **to maintain their social standing** and human dignity whilst struggling to survive on a day-to-day basis.

10.2. Development trends and innovations

In the field of food rescue, development trends and innovations can be categorised according to technological solutions, digitalisation, and strategic and regulatory frameworks.

1. Digitalisation and business innovations

One of the most dynamic trends in modern food rescue is the rise of **digitalisation and the sharing economy**.

- **Mobile apps:** Platforms such as the Hungarian-developed **Munch** or the international **Too Good To Go** enable catering establishments and shops to sell their leftover stock at a discount.
- **Awareness-raising:** These technological solutions are proving particularly effective amongst younger generations, demonstrating that digitalisation is a key tool for sustainable consumption.

2. Technological innovations in processes

A number of new solutions have been developed to extend the shelf life of rescued food and improve the efficiency of logistics:

- **Ready-meal rescue and blast chilling:** Specialised **blast chillers** represent a breakthrough in the rescue of highly perishable ready meals (e.g. from canteens or conferences), enabling the shelf life of food to be extended from 3 hours to as long as 48 hours.

- **Innovative storage and transport:** Foldable containers, such as those in the **Combo Fructus** system, enable the safe transport of fragile, soft-fleshed fruits, for example.
- **Minimal processing:** The use of **vacuum packaging** and **flash freezing** helps to preserve the texture and freshness of raw materials, significantly extending the product's shelf life.

3. Strategic and regulatory directions

Both European Union and national legislation are setting out new directions to reduce waste:

- **'Farm to Fork' strategy:** This EU framework aims to completely transform food production and consumption, with a focus on more sustainable diets and reducing waste.
- **Mandatory waste reduction targets:** The targets set for the end of 2030 require **a 30 per cent reduction** in the retail sector and households, and **a 10 per cent reduction** in food processing.
- **Legal incentives:** In Hungary, the largest retail chains are already required to donate food nearing its use-by date to the Food Rescue Centre.

4. Methodological innovations: Community-based models

Developments are taking place not only at a technical level but also at a community level:

- **Community Supported Agriculture (CSA):** This model, based on trust, cuts out the middlemen in the supply chain, thereby reducing delivery times to 12–48 hours and minimising waste to a fraction of that in supermarkets.
- **'Whole plant' approach:** Through innovative culinary education, consumers learn how to utilise 100% of the plant
- **Sustainable land use:** One direction for the future is the integration of local self-sufficiency and short supply chains, where local surpluses are immediately returned to the community cycle. Future developments will focus on the protection of **water as a strategic resource** and the technological minimisation of production waste.

10.3. Policy recommendations and regulatory directions

- **National legislative harmonisation and legislative tasks:** A targeted and phased overhaul of the domestic regulatory framework is essential to achieving the waste reduction targets set by the European Union. The most important policy task for Hungary is to transpose EU directives fully and effectively into national law by the mandatory deadline, i.e. by the end of 2027, thereby establishing a solid legal basis for implementation and enforcement.
- **Extension of economic incentives:** It is recommended that **VAT exemptions** and **allowances reducing the corporate tax base** be actively applied, as these provide key financial incentives for producers and retailers to donate.
- **Mandatory donation schemes:** The mandatory donation of food nearing its use-by date, which is already required of the largest retail chains, is a best practice that ensures safe food does not end up as waste.
- **Reliable traceability:** The cornerstone of this policy is **rigorous documentation** (delivery notes, handover reports), which protects both the donor and the recipient and provides a guarantee of trust for all parties involved in the process.

Community and awareness-raising recommendations

- **Support for community-supported agriculture (CSA):** It is recommended to promote the **community basket (shopping community)** model, as this direct producer-consumer relationship can result in **food losses** that **are 22–70 per cent lower** than those of traditional supermarket chains,
- **Promoting the ‘whole plant’ approach:** Community-level education is needed so that consumers learn to make use of all parts of plants (e.g. carrot tops, beetroot leaves), which significantly reduces household waste.
- **Organising ‘pick-your-own’ events:** Direct community harvesting is the most effective method of salvaging crops left in the fields due to agricultural overproduction or aesthetic flaws, which also results in cost savings for the producer.
- **Volunteering as social capital:** Involving volunteers is crucial not only for logistical processes (e.g. sorting) but also because they become **credible ambassadors** for a sustainable lifestyle within their own communities.

Social and methodological recommendations for providing assistance

- **Dignity-centred assistance: Respect for human dignity** is a fundamental recommendation during food distribution. It is recommended to ensure freedom of choice (e.g. a buffet-style system or the option to choose instead of standardised packages), which restores the self-esteem of those in need.
- **Cooperation between local authorities and civil society** organisations: Local authorities should support civil society organisations by providing premises (warehouses, distribution points) and official recognition, as these organisations provide the flexible volunteer base and professional expertise required for relief efforts.
- **Application of technological innovations:** for example, the use of shock-cooling technology, as detailed in sub-chapter 10.2, at community cooking events.

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