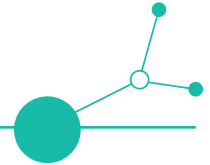


SHORT FOOD SUPPLY CHAINS CHARACTERISTICS AND NEEDS IN HUNGARY

Short report summary





Food4CE

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1. Executive summary

In Hungary, Alternative Food Networks (AFNs) are increasingly significant in shaping the landscape of short food supply chains (SFSCs), focusing on fostering local food systems that prioritize sustainability, transparency, and direct producer-consumer relationships. These networks, which include Community-Supported Agriculture (CSAs), farmers' markets, and food cooperatives, are characterized by their commitment to reducing the distance between food production and consumption, thereby supporting local economies and reducing environmental impacts.

Hungarian AFNs are distinguished by their emphasis on local and direct sales, bypassing traditional supply chains to create more direct connections between producers and consumers. This approach not only supports local economies but also helps minimize the carbon footprint associated with long-distance food transportation. The production within these networks is often small-scale and seasonal, reflecting the diverse and variable nature of agricultural outputs in Hungary. This seasonality and the involvement of numerous small producers contribute to a fragmented supply chain, which can present challenges in maintaining consistent product availability throughout the year.

To enhance their effectiveness and overcome existing challenges, Hungarian AFNs need to address several key areas. Achieving supply chain consistency is a primary concern, as the seasonal nature of production and the small scale of operations can lead to variable product availability. Improved coordination among producers and more robust logistical strategies are required to stabilize supply and reduce fluctuations. Strengthening collaboration among AFNs, local producers, and logistics providers is crucial for streamlining supply chains and achieving economies of scale, which can help mitigate some of the inefficiencies associated with fragmented production.

Technology integration is another critical need for Hungarian AFNs. Implementing digital tools for inventory management, order processing, and distribution can enhance operational efficiency and improve coordination within the supply chain. Despite some resistance to adopting new technologies, investing in these solutions is essential for better managing logistical operations. Additionally, support from government and policy frameworks is vital for the growth of AFNs. Access to funding, grants, and supportive regulations can provide the necessary resources to address logistical challenges and support the expansion of SFSCs.

About the Food4CE project:

Food4CE is a European project funded by the INTERREG Central Europe Programme, aimed at supporting Alternative Food Networks (AFNs) in their efforts to create sustainable and resilient food supply systems. Within Food4CE 5 local and 1 Transnational Innovation Hub (IH) will be established and will focus on advancing AFNs logistics efficiency through the development of innovative tools and solutions.

Two innovative tools, the Knowledge Transfer Platform and the Matchmaking Platform will be developed within the project. The former is intended for sharing logistics best practices and solutions, while the latter is intended for creating new B2B logistics solutions and services. The aim is to facilitate knowledge transfer and exchange between different regions and actors, and to create a unique mutual support network for AFNs in Central Europe.

Food4CE will also provide jointly developed regional action plans for each participating region and transnational (CE) policy guidelines for AFN support. The project aims to establish a sustainable and lasting AFN support mechanism, which will continue working even after the project end.

By establishing local and transnational Innovation Hubs and developing innovative tools and solutions, Food4CE project aims to facilitate knowledge exchange and cooperation between different actors and regions, leading to a sustainable and lasting AFN support mechanism.



2. Short Food Supply Chains (SFSC) characteristics and needs in Hungary

Recent years have seen a significant growth in the agricultural commodities market, driven by the rise of new forms of trade and the development of alternative food supply chains (SFSCs). These SFSCs represent a shift away from long, complex industrial chains towards more direct and localized producer-consumer relationships. By shortening these links, SFSCs promote environmentally sustainable practices and enhance food quality, transparency, and economic viability for local producers. The European Commission highlights that buying locally produced food supports sustainability by reducing transport costs, carbon emissions, and road wear.

In Hungary, SFSCs are characterized by their emphasis on direct links between producers and consumers, focusing on sustainable and local food production. The goal is to restore closer connections within the food supply chain to improve transparency and food quality while supporting local producers.

The aim of the research was to investigate how SFSCs can foster direct, personal relationships and address the challenges faced by small-scale production. It focuses on exploring the logistical characteristics and needs of Hungarian SFSCs to develop efficient and innovative logistics solutions.

2.1. Research overview

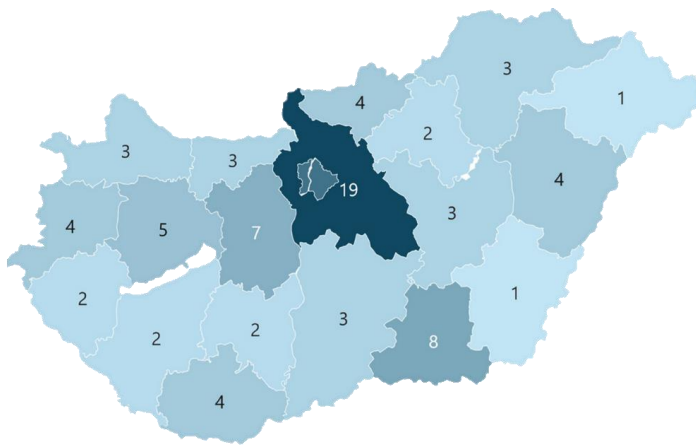
In Hungary, the mapping of Alternative Food Networks (AFNs) involved comprehensive desk research to identify and classify networks meeting specific criteria. The primary characteristics included short distances between producers and consumers, local production focus, traceability of food origins, and the avoidance of environmentally harmful transport. Additional secondary characteristics, such as small-scale production, organic methods, social embeddedness, and adherence to quality standards were considered optional but desirable. The AFNs were categorized into three levels of complexity:

- Direct, involving direct farmer-to-customer relationships with minimal cooperation;
- Intermediaries, which include intermediary solutions; and
- Advanced, featuring IT platforms or common branding.

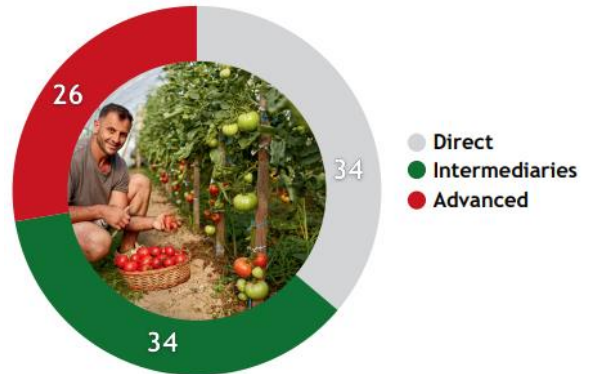
This classification aimed to capture a detailed overview of AFNs in Hungary, including their distribution channels, product ranges, and operational complexities. In the research, 94 AFNs were identified throughout Hungary. 36% of the listed AFNs were categorised as **direct**, 36% as **intermediaries** and 28% as **advanced**, based on the level of complexity. Most AFNs are located in the Közép-Magyarország (Central Hungary) region (33); this region includes the capital, Budapest, and Pest county.



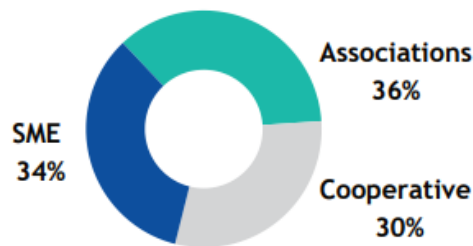
Geographical location



Level of complexity



Most of the AFNs are classified as associations, with the majority (36%) having smaller teams of 1 to 19 employees. Small and Medium-sized Enterprises (SMEs), representing 34% of the AFNs, typically have from 1 to 199 employees, while cooperatives, constituting 30% of identified AFNs, employ between 1 and 149 individuals.



In order to assess the logistical characteristics and needs of the SFSC, a detailed examination of transport, distribution, packaging and quality control aspects was considered. These factors were key to understanding the operational challenges and effectiveness of SFSCs. The analysis included extensive desktop research, complemented by surveys that provided deeper insights into each of these areas. This comprehensive approach has allowed a better understanding of the logistical frameworks underpinning these chains and the specific requirements for their optimal functioning. The results will be presented in the continuation.

2.2. An analysis of SFSC logistics characteristics and needs

The group of advanced AFNs that was studied included 16 AFNs. Only advanced complexity level AFNs were chosen, as their practices are more likely to be potential examples of best practices. It is important to note that a high level of complexity refers to AFNs that have their own online platforms for selling products and offer delivery either through their own vehicles, logistics operators, etc. The AFNs we surveyed consider it important to trace the origin of their products, to optimise the transportation of products, to reduce the number of intermediaries, to ensure fair pricing, to offer local products to nearby customers and to support local producers.



2.2.1. Order processing

The survey revealed a robust and sophisticated order management system among the surveyed Alternative Food Networks (AFNs). Notably, 93% of AFNs receive orders from customers, with a strong preference for **online platforms**, reflecting the sector's emphasis on digital engagement and automation. 64% also take orders by **email**. This high level of online ordering capability indicates that many AFNs have well-developed digital infrastructure, which facilitates seamless order placement and processing for both producers and consumers. Taking orders via **phone**, **social media** and **instant messaging apps** account for roughly similar 50%, while only 14% is taking orders in person **at the store**.



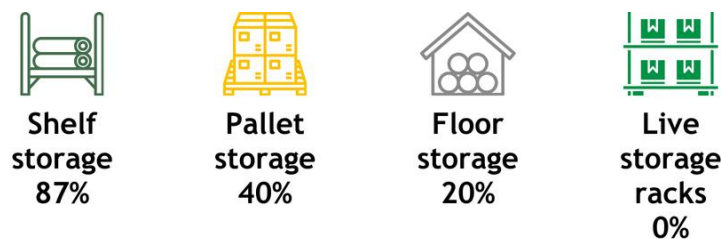
The frequent order-taking reported - 43% daily, 29% weekly, and 21% several times a week - suggests that these AFNs are not only operationally efficient but also well-established in the market.

Order volumes vary, with most AFNs handling **between 0-100 orders per week**, though a few manage significantly higher volumes, indicating a range of operational scales. The data on weekly order lines shows that while most AFNs process a manageable number of order lines, one AFN stands out with a significantly higher volume, suggesting possible higher capacity or market demand.

Regarding product availability, most AFNs (74%) offer products **year-round**, while 61% provide **seasonal** items and 33% offer products tied to specific periods or events. This variety in product offerings aligns with consumer demand for both consistent and seasonal goods.

2.2.2. Warehousing

The survey revealed that Alternative Food Networks (AFNs) predominantly utilize **shelf storage** and manual handling methods, indicating a focus on manageable and accessible stock management.



The **heavy reliance on boxes for in-house transport**, coupled with the **preference for single order picking**, underscores the small scale and individualized nature of these operations. This is supported by the **relatively low use of advanced warehousing equipment** like forklifts and conveyor systems, and a minimal adoption of zone or batch picking methods. The storage practices reflect a need for flexibility, with most AFNs employing traditional storage and cold storage methods to handle a range of perishable and non-perishable goods.

Additionally, the temperature control practices align with the nature of the products handled by AFNs, with a significant portion requiring cold or frozen storage. The **predominance of traditional storage**, coupled with the use of cold and frozen storage for specific items, highlights the sector's emphasis on maintaining product quality and freshness. The low use of live storage racks and advanced warehousing technologies



further suggests that AFNs operate on a smaller scale, focusing on efficient, straightforward solutions that cater to their specific logistical needs. This overall operational strategy points to a sector that balances practicality with the need for effective inventory management.



87 %



53 %



33 %

2.2.3. Transport processing

All surveyed Alternative Food Networks (AFNs) offer delivery services, utilizing their **own resources** for in-house deliveries. While 40% also rely on **third-party services** for home delivery, 27% allow customers to **collect their orders directly**, and one AFN delivers to a designated pickup point. This suggests a diverse range of delivery methods catering to different customer preferences and logistical capabilities.

Internally



100%

Externally



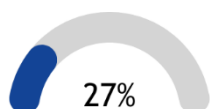
40%

Personal collection

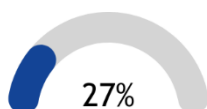


27%

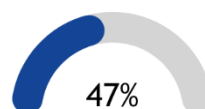
Coverage areas vary significantly, with nearly half of the AFNs serving regions **larger than 100 km**, thereby reaching across the country, while others focus on more localized delivery areas of **50 to 100 km or less**.



Up to 50 km



Between 50 and 100 km



Above 100 km

Regarding delivery logistics, the average weekly delivery volume is modest at 17 deliveries per week, though each delivery covers an average of 41 delivery points, indicating a broad distribution network. The majority of AFNs use vans for deliveries (78%), followed by cars (64%), with trucks and bicycles being less common.



Bike
14%



Car
64%



Van
78%



Truck
43%

Notably, **73% of AFNs claim to maintain the cold chain during delivery**, though it is unclear how this is managed for refrigerated goods. The delivery volumes by category reveal that while meat and fish are delivered most frequently, they are delivered in smaller quantities. Conversely, eggs and dairy, as well as vegetables, account for significant delivery volumes, indicating high demand in these categories. Overall, the data reflects **a well-organized delivery system** with a mix of in-house and third-party services, a **focus on maintaining product quality**, and a comprehensive approach to **servicing diverse geographic areas**.



2.2.4. Digital competence

In Hungary, digital competence within Short Food Supply Chains (SFSCs) plays a critical role in optimizing logistics and enhancing operational efficiency. AFNs typically leverage digital tools and platforms to streamline various aspects of their logistics processes. These include **using online ordering systems and e-commerce platforms** to facilitate direct producer-consumer transactions, which significantly improves order management and customer interaction. The **high prevalence of online order-taking**—93% of surveyed AFNs use online platforms—demonstrates the sector's robust digital infrastructure, allowing for efficient order processing and automation.

In addition to order management, digital competence extends to inventory and warehousing practices. While traditional storage methods are commonly used, **digital tools for tracking inventory and managing logistics are increasingly adopted** to enhance accuracy and efficiency. The integration of digital solutions into logistics also supports real-time tracking and coordination, which is essential for maintaining the integrity of the cold chain and ensuring timely deliveries. Despite these advancements, the sector faces challenges in fully utilizing digital tools for optimizing routes and managing complex logistics. Overall, the focus on digital competence within Hungarian SFSCs reflects a commitment to modernizing logistics operations, improving customer service, and supporting the sustainability of local food systems.

2.2.5. Business practices

In Hungary, Short Food Supply Chains (SFSCs) are characterized by their emphasis on direct producer-consumer relationships and sustainability. These networks focus on **minimizing intermediaries, enhancing transparency, and connecting consumers with locally sourced products**. Their logistics practices prioritize **reducing transportation distances** to lower carbon emissions and **maintain product quality**, often using **eco-friendly packaging**. Digital tools are increasingly integrated into their operations to streamline order management and inventory control. AFNs typically manage their own deliveries, ensuring quality and adherence to the cold chain, while some offer self-collection options. Despite these practices, challenges such as high operational costs and efficient logistics management persist, prompting AFNs to explore collaborative logistics solutions to improve efficiency. Overall, **Hungarian SFSCs combine local production, sustainability, and digital integration to enhance their logistics and distribution processes**.

2.2.6. Challenging areas for AFNs

AFNs identified **transport and warehouse management** as the most demanding challenges for their businesses, with 50% of AFNs identifying them as the most challenging. **IT tools** and **orders processes** share a similar level of concern, identified by 36% of AFNs. **Packaging** and **reverse logistics processes** are seen less problematic, as they were identified by 21% and 14% AFNs, respectively.





2.3. Challenges and opportunities for SFSC

The traditional SFSCs are accessible, their sustainability and the spread of modern types are uncertain without partnerships. Small farms struggle with challenges due to an aging population and insufficient professional skills, particularly in marketing and food hygiene. Consumer demand for low-priced global products complicates the situation.

To boost SFSCs, **increasing consumer awareness and engagement is crucial**, as demand drives supply. **Financial support** and **infrastructure development** are also important, with the potential for significant growth in the agricultural sector in the coming decade. Overall, **the main challenges for SFSCs include social acceptance, slow adaptation, an aging producer population, and competition from global supply chains**, while **opportunities lie in consumer education and government support**.

Despite promoting the environmental benefits of SFSCs, the scientific backing for these claims is often weak, suggesting that conventional supply chains may sometimes offer more cost-effective and greener solutions. The ideal approach may involve minimizing environmental impacts through cooperation among producers and consumers while aligning products with local conditions and seasons.