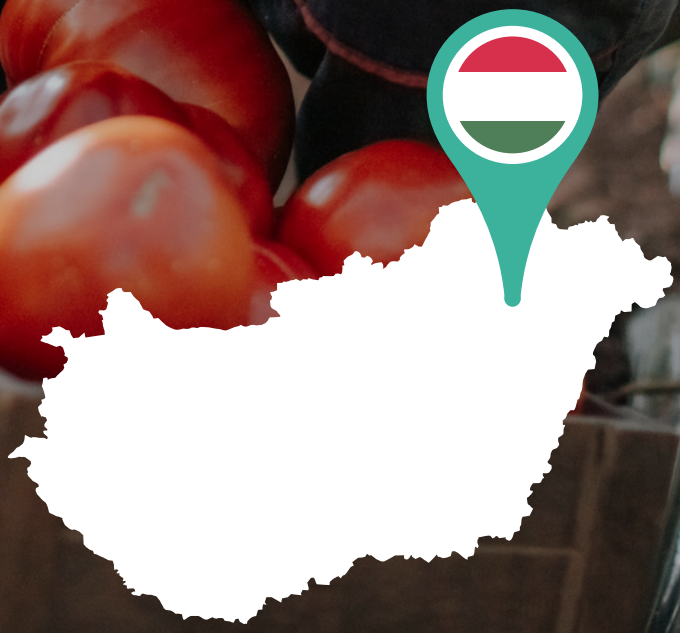
SHERPA
Rural Science-Society-Policy Interfaces

MAP Position Paper

TOWARDS SUSTAINABLE & RESILIENT VALUE CHAINS



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Authors

AKI | Csaba Bálint, PhD

Contributors

Members of the SHERPA Hungarian Rural Prosperity Multi Actor Platform.

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Summary and key messages

In Hungary, agriculture and the food industry have considerable potential both to meet domestic needs and to be present on external markets, but the country is not fully exploiting its potential for food production. Hungarian food exports can play an important role not only in terms of income but also in supplying the world market in both quantity and quality. At the same time, food businesses face increasing competition both at national and international level, and their position is not helped by asymmetries in bargaining power, revenue share, access to information and overall levels of organisation within the supply chain.

Hungary's food verticals are characterised by the dominance of retail, the limited competitiveness of the food industry, and the fragmentation, vulnerability and disorganised nature of commodity producers, despite increasing concentration and some well-functioning integrations. The food production and processing segments in general are characterised by a lack of capital and innovation and a low level of digitalisation. Generally, horizontal cooperation and vertical coordination is weak, and can be characterised with a general lack of trust.

Alternative supply chains are also limited in their ability to meet the needs of the niche markets they reach: consumers looking for healthy, safe, locally produced food, and a direct experience of contact with the producer and the countryside, often cannot find this in their own locality, and indeed the majority of consumers are still not looking for local and/or farm-grown food and are not aware – for example – of the existence, meaning and importance of trademarks and geographical indications.

Little information is yet available on the exact extent of losses, pollution and negative externalities along the food chain. Food losses occur during agricultural production, food processing generates a wide range of waste and by-products, while households produce a significant amount of food waste. Little attention is currently paid to this area and regulation often does not facilitate their proper recovery.

The problems summarised above are addressed by the new CAP and its Hungarian strategic plan, the legislations (e.g. unfair trading practices, national quality schemes), and also different programs and campaigns targeting a wide range of stakeholders from production to consumption. At the same time, a considerable amount of efforts is made by local actors and organisations to overcome these challenges, and to realise social, environmental and economic gains.

The role of policy makers and institutions is to develop efficient and equitable distribution and regulatory policies, to ensure a balanced competitive environment, to promote dialogue and reconciliation of interests between food chain actors, to encourage local initiatives and to shape attitudes from producer to consumer. The research sector needs to provide evidence, policy options, measurement, evaluation, intervention criteria and tools for policy, market and societal organisations and decision-makers from a variety of perspectives and along novel theoretical and methodological paradigms.

1. Introduction

In Hungary, a significant part of the resources, value production, employment and transactions of the food economy are linked to rural spaces. According to the strategy document "Hungary's Food Economy Concept 2017-2050", the Hungarian food economy has several key tasks that make strategic thinking and foresight essential. On the one hand, like all countries in the world, it is a strategic issue for Hungary to supply its population with sufficient quantities and quality of food, and on the other hand, together with its related sectors, it constitutes a substantial part of the national economy with a high potential for development and considerable rural employment potential (Ministry of Agriculture, 2017).

Agribusiness actors around the world have to adapt to a rapidly changing global environment (Csáki, 2012). The world population explosion is creating increased demand for food, but global food demand is not only increasing in quantity but also changing in quality: relative prices of agricultural commodities fall, integrated vertical product pipelines gain importance, concentration accelerates in food processing and trade, while world trade liberalisation and agricultural policy reforms are taking place. In the context of increasing integration of national and international agricultural markets, the focus is shifting from the traditional quantitative approach to the production of goods and the income that can be generated from them (Popp, Lakner & Oláh, 2019). The current trends of global food consumption do not seem sustainable in terms of social, environmental, and health impacts (Fróna, Szenderák & Harangi-Rákos, 2019). At the same time, high quality, safe and healthy food, sustainability and the multifunctionality of agriculture are increasingly in the minds of EU citizens (Lakner, Kiss & Pfeiffer, 2020). Open economies like Hungary cannot exclude themselves from global and European competition: food producers have to fight not only for export markets but also for domestic consumers (Udovecz, 2014). The growing positive trade balance of the agri-food sectors is necessary for the national economy, but the Hungarian food economy can also play a role in the world food supply (Mészáros & Szabó, 2014).

According to Hungary's concept for food economy (Ministry of Agriculture, 2017), the country's vision is a competitive, economically, environmentally and socially sustainable food economy, which actively contributes to the development of the national economy and the growth of jobs in rural areas through continuous increase in its performance and added value, guarantees the country's safe food supply, while maintaining its non-GMO status, preserves natural values and biodiversity, protects the environment and manages natural resources prudently. Local farms - small farmers, family businesses, small and medium-sized enterprises - play an important role in local and regional supply with their traditional, fresh, specialised or other diversified products, while large-scale domestic and international market needs can be met by producer cooperatives, integrations, concentrated and specialised agricultural and food businesses and cooperatives. The strategy for the agricultural sector (Ministry of Agriculture, 2020) sets the goal of increasing the added value of the agricultural economy and the export share of processed products. It aims to strengthen horizontal integration between farmers and vertical integration between processors and producers, by regulating integration relationships, as well as increasing the share of products reaching consumers in the total food trade through short food chain sales.

The aim of this paper is to present the situation, interconnections and potential conflicts of interest of the different levels of the food supply chain in Hungary (production of raw materials, processing, trade), to give an overview of the situation of solutions to promote more sustainable and equitable supply chain operations (e.g. short supply chains, local products, quality systems), and to provide insights into one of the most important sustainability problems of the food chain, the phenomenon of food loss and waste. The paper presents, in a non-exhaustive way, relevant strategic and practical policy efforts, as well as locally based, socially driven initiatives and good practices. The Rural Prosperity MAP has identified needs and problems for which it makes policy recommendations, while also making suggestions for future research directions.

2. Current situation based on background research and evidence

2.1. Agriculture in the Hungarian food economy

In Hungary, EU membership has not brought significant reorganisation in the production and farm structure of the agricultural sector, nor in its role in the national economy: despite the concentration process in the sector (Bojnec & Fertő, 2019; Kovách, 2018) its weight in employment, investment and value added has not substantially changed, its dual farm structure (many small and few large) has remained, its cereal-centricity has persisted, and livestock production has continued to decline. While long-term stable farm structures and subsidies have improved profitability in crop production, the backbone of agricultural output, this has not been the case in the livestock and horticulture sectors. (fi-compass, 2020; Kapronczai, Keszthelyi & Takács, 2014; Illés B. & Dunay, 2014). Structural change is not expected until it is stimulated by both market and subsidy policies, while the gradual phasing out of subsidies will lead to inefficient, non-economic farms facing liquidity and then profitability problems (Popp et al., 2017).

Box 1. Statistical evidence on the concentration and polarisation in the Hungarian agriculture

At the time of the 2020 agricultural census conducted by the Hungarian Central Statistical Office, there were 241,000 farms in Hungary. Since 2010, the number of farms has declined by 31%, with those using agricultural land decreasing less than those keeping livestock. The largest group of farms, 40% were specialised arable crop farmers. The degree of specialisation is shown by the fact that these farms used 67% of the agricultural area, but only about 5% of the livestock value in livestock units was held by these farms. The number of farms specialising in arable crops increased by 28% between 2010 and 2020, while the number of farms specialising in horticulture also increased. The number of domestic livestock farms has been steadily declining: it has shrunk by more than half (53%) since 2010, but even compared to 2016, the drop is still 31%. The size of the livestock has remained unchanged, but has become concentrated due to the disappearance of farms with few animals.

The concentration of agricultural production, the vanishing of small household farms, has led to a significant increase in the standard output per farm. The share of small farms, with an SO of less than €4,000, fell significantly from 70% to 53%, while the share of medium-sized farms (mainly in the €15,000-99,999 size category) increased from 9% to 17%. The concentration of production is also indicated by the fact that 53% of farms belong to the smallest size category, but 45% of the standard output is found on farms in the largest size category, which represent about 1% of all farms.

Source: Hungarian Central Statistical Office (2020)

So, while agricultural production has been being concentrated, especially in terms of land use, and economic efficiency has increased at the sector level, the farm structure is still fragmented and labour productivity is low. Farmers are price-takers, as their activities are largely undiversified and their output undifferentiated. Competition in the sector is cost-based and the segment is exposed to significant price volatility. In particular, small producers and family farms have higher production and transaction costs and find it more difficult to meet conditions and standards than larger farms. Producers of raw materials may be constrained by their individual contractual relationships with buyers, and the need for fast and stable supplies may drive small producers out of the market. At the same time, if an effective regulatory system can be developed to take advantage of the benefits of coordinated production, those producers who are able to take advantage of and sustain the strengthening of contractual relationships will benefit in the long run, and the supply of raw materials to buyers will become more stable (Szenderák & Popp, 2022 based on EC, 2020; Saitone & Sexton, 2017; Adjemian et al., 2016; Juhász et al., 2010; Györe et al., 2009)

A crucial element of farm viability is diversification. Taking Hungarian practice into account, Hamza (2018) classifies farms engaged in business diversification into three types: 1. Expansion of basic agricultural activity: cultivation of new, specialised plant species and breeding of animal species, organic farming, cultivation of energy crops, animal husbandry, forestry, fish farming; 2. Added value (vertical diversification): food and/or non-food product processing, marketing, direct sales produced in the core agricultural activity; 3. Non-agricultural activity expansion: rural and agro-tourism, catering, recreational services (e.g. horse riding, hunting, sport fishing), handicrafts, agricultural services (mechanical, technical), storage, landscape maintenance and management (maintenance of wetlands, roadside verges, afforestation), collection of wild medicinal plants, forest by-products.

For Hungarian farm businesses, Hamza (2018) identifies risk reduction, more even capacity utilisation, balanced use of current assets, higher disposable income, the possibility to continue the family tradition, hobby/pleasure as benefits and motivating factors of diversification. As constraints/threats, she identifies a lack of capital and labour, a lack of market knowledge and information, additional management and work organisation costs, excessive fragmentation of resource capacities, limited production volumes, the need for higher levels of expertise and competence, low levels of cooperation, and increased investment costs, taxes, contributions and administrative burdens.

The fact that livestock and crop production are becoming increasingly separated is an unfavourable direction considering farm multifunctionality: according to the 2020 agricultural census, 51% of farms have some or all agricultural land without livestock, while 15% of farms with livestock units have no agricultural area at all. In terms of diversification of activities, meat processing (including e.g. pig slaughtering) is the most important non-agricultural activity for the smallest farms, while contract farming is the most common activity for larger farms. (HCSO, 2020)

2.2. Links with food processing

The survival and development of the primary sector cannot be imagined without the next level up in the supply chain, food processing. The embeddedness of the food industry in domestic production processes is outstanding: the share of internal consumption of the food industry is the highest among all sectors (Várnai, 2020). 96% of Hungarian food enterprises are micro, small and medium-sized enterprises (EIT Food, 2020), but even the most dominant companies are at most considered medium-sized at international level, which in itself represents a competitive disadvantage (Jankuné Kürthy et al., 2016). The sector faces competitive disadvantages in EU (and V4) comparisons, especially in the areas of productivity, efficiency, financial stability, innovation and marketing (Várnai, 2020; Szalka & Tamándl, 2019; Török, Tóth & Balogh, 2019; Panyor, 2017; Jankuné Kürthy et al., 2016). However, the investment performance and efficiency of the sector has been steadily increasing in the 2010s (Kiss, 2020), thanks to the general economic cycle, favourable credit rates, subsidy schemes, investment-related tax incentives and good raw material supply (Túróczi, Tóth & Gyurcsik, 2019).

Hungarian agri-food exports are characterised by a predominance of unprocessed raw materials (cereals, oilseeds, feed), while imports of processed goods are significant (Mizik, 2021). The goal should be to increase the processed and value-added content of the domestic food economy (Panyor, 2017; Mizik, 2021), even if processed products are more difficult to enter demanding foreign markets than raw materials. Branded, quality food products often have difficulty finding a target market because of the weak innovation capacity of Hungarian food firms, which can be partly attributed to insufficient profitability. Another problem is that, with a few exceptions, Hungarian quality has not yet been fully recognised abroad as a reliable premium category, and for some products Hungarian food does not match foreign tastes (Jankuné Kürthy et al., 2016).

The procurement of raw materials is of strategic importance for food companies: those branches where the supply of raw materials is ensured at a reasonable price and in sufficient quantities are in an advantageous position. Integration and formal supplier relationships further improve the position of processors, as they can

even influence the quality parameters of the raw material (Jankuné Kürthy et al., 2016). The fact that raw material production is typically specialised in low value-added, unprocessed bulk products increases competition between food industry actors (EIT Food, 2020; Popp & Juhász, 2011).

2.3. The power of retail chains

Three main groups of food retailers emerged after the regime change in Hungary: multinationals with concentrated ownership structures and centrally managed hypermarkets and discount stores, domestic chains with deconcentrated ownership structures and mainly grocery chains, and independent micro and small enterprises (Sütő, 2021; Pénzes & Pólya, 2018; Agárdi & Bauer, 2000). The emergence of large chains and their recognition by consumers has significantly weakened the market position of capital-poor independent retailers, which has been further complicated by changes in consumer behaviour, rising consumer awareness, the possibility of online shopping, the rapid development of information technology and its impact on consumer behaviour (Pénzes & Pólya, 2018). Foreign multinational chains account for more than 70% of sales, while domestically owned retail chains account for less than 30% of turnover. Ten retail chains control more than 90% of food sales. (Trade Magazin, 2022)

The relationship between food retailers and food suppliers is asymmetric: the former use their buyer power to pay mostly reduced purchase prices, which is a constraint for them due to the low solvency of the market and price competition (Szenderák & Popp, 2022; Jankuné Kürthy et al., 2016). In turn, consumers' price sensitivity also increases the popularity of the retailers' private label foods, which negatively affects the manufacturer brands of food processors (Jankuné Kürthy & Dudás, 2015) (As concluded by Dudás et al. (2020), regarding private label products there are actually pros and cons for suppliers, this is why there is no need for specific policy intervention but leaving the issue to the rules of the market). Retail chains have incomparably more information about the market conditions, buying habits of customers, the economic situation of the suppliers etc (Lisányi-Beke, 2018). Despite low procurement prices, it is still worthwhile for suppliers to sell to retailers because retailers are sure to pay and alternative distribution channels are difficult to find. For suppliers, this is an additional risk, as they may suffer a significant loss of income if contractual cooperation with retail chains terminates. The volume sold by a supplier is a negligible part of the retailer's acquisition, and therefore it is easy for them to switch suppliers. Price changes occur with a phase lag between the different levels of the food supply chain. Lower prices are immediately observable in the food industry's transfer price when commercial prices fall, while in the case of a supplier discount, the retail sector tends to prolong the price transmission period and exploit the resulting gap to generate extra profits. The manufacturing sector has also been unable to pass on fluctuations in commodity prices to retailers over the past decade, similarly to the producers who are exposed to input price fluctuations without the ability of being compensated. (Szenderák & Popp, 2022 based on Ministry of Agriculture, 2017; Popp & Juhász, 2011)

In countries that host multinationals interested in profit-maximising, low supplier prices, imports of food and raw materials are increasing. The increase in food imports, in turn, has a negative impact on local agricultural and food producers and processors (Szabó, Szilágyi & Gera, 2019). The National Food Chain Safety Office (NÉBiH) conducted a survey in 2020 of the 10 largest retail chains operating in Hungary, covering 16 priority product categories. The share of Hungarian products was two-thirds for international chains and nearly 80% for domestic chains, representing an overall decrease of about 8% compared to the 2014 survey. Out of the 10 chains examined, 9 showed a decrease compared to the results of previous reports. The expansion of products from abroad is mainly observed for highly processed products (NÉBiH, 2021). Despite the retail sector's strict requirements for suppliers, it also gives them a broad market presence. Retail has also led to the spread of quality management systems in the Hungarian food industry. Although this has been a source of some problems for the food industry due to its cost implications, companies themselves admit that it has increased their efficiency and improved the safety of food produced in Hungary (Jankuné Kürthy et al., 2016; Popp & Juhász, 2011; Juhász et al., 2010).

2.4. Cooperation along the food supply chain

In the long run, the positioning on the internal and external markets, the satisfaction of consumer needs, the achievement of sustainability goals, the exploitation of competitive advantages, the creation of transparency, the requirements of technological development and digitalisation can be achieved in a transparent and cost-effective way by the organisation of product chains, the strengthening of cooperation and mutual commitment between the actors of product chains, both vertically (from producer to retail) and horizontally (producer organisations with a larger commodity base). Vertical coordination is also a critical condition because investments and developments in the food industry in Hungary are limited by the solvency of domestic demand (Ministry of Agriculture, 2020).

After the change of regime, the earlier forms of economic cooperation (cooperatives) were dismantled, leading to a decline in economic performance and economic empowerment, and a reduction in the capacity utilisation of already shrinking skilled human resources. Fair business relations have been eroded by economic egoism and a lack of forward-looking management. Legislation, preferential loans, grants, tax incentives and the development of tendering conditions should be used to encourage all forms of genuine cooperation (OTP, 2017). There are only few good examples of cooperation in Hungary, little vertical and horizontal cooperation between actors can be observed in the product chains (Jankuné Kürthy & Dudás, 2018). Among the horizontal cooperation in the food economy, the most prominent are cooperatives, EU-supported producer groups, producer-seller organisations in the fruit and vegetable sector and often informal machinery pools, while vertical coordination is carried out by larger integrators and the harmonisation of interests of entire product chains is conducted by interprofessional organisations and product councils. Today, the role of horizontal cooperation is still focused on joint purchasing and marketing, with only a limited presence of value-adding and innovation activities. The benefits of cooperation are not yet widely recognised and may be deterred by the controllability, accountability and short-term benefits of the black and grey economy (Biró & Rácz, 2015; Rácz, 2017).

In all cases of cooperation, due to weak enforcement and inconsistencies in contractual relations, Szabó G. (2013) stresses the importance of trust, which has become a specific economic factor and on which the success of cooperation may depend. In general, there is a low level of trust among SMEs in the food sector, which makes it difficult to share information and to increase the efficiency of supply chain cooperation. However, where there is the proper level of trust, coupled with a mature supply chain management approach, more profitable operations can be achieved (Morvai & Szegedi, 2015).

2.5. Short supply chains, local foods and quality schemes

Kujáni (2014) and Kiss & Takácsné György (2017) draw attention to the possibility of cooperation, but also to the lack of it, in the context of so-called short supply chains. In Hungary, direct sales of food products as a primary channel are most common on small farms with lower production incomes, while on many farms selling through mixed channels, direct sales are only used to supplement income (Dunay et al., 2018; Csíkné Mácsai & Lehota, 2013). In addition to financial considerations, Benedek et al. (2020) find that instant cash payment, less vulnerability to buyers and direct contact with consumers are among the motivations for smallholder participation in short supply chains. Studying the relocalisation of food production, Benedek & Balázs (2015) and Inzsöl (2021) point out the spatial differences in the functioning and potential of local food systems, identify significant untapped potential and, through further empirical studies, believe that regions with different production and direct sales potential can be identified more precisely, and that different ways and amounts of support can lead to targeted growth and development of the segment with rapid and spectacular results.

Commercial markets and farmers' markets are the most widespread forms of SFSC in Hungary, but online sales have also gained importance and there are a few examples of successful community channels as well

(Malak-Rawlikowska et al., 2019; Kacz, 2019; Szabó, Juhász & Kujáni, 2018). Sales forms with little face-to-face contact (e.g. online ordering, home delivery, pick-up points) became particularly valued during the COVID-19 epidemic restrictions, while sales related to tourism and catering virtually disappeared, although before the pandemic, visiting festivals and events was one of the most important SFSC channels (Nemes et al., 2020; Benedek et al., 2021).

For consumers, the most characteristic feature of local products is that they are produced and sold in the same geographical area (Szegedyné Fricz, 2020), although Miklós (2019) argues that for them a local product is more likely to be a product of Hungarian origin than a product of smaller geographical distance or a more famous region. The decades-long tradition of centralisation, i.e. capital-centredness, centralised education and public catering has not helped regional areas with environmental and special ecosystems to become self-sufficient (Miklós, 2019). The segments most committed to local products are middle-aged, well-off people (Garai-Fodor & Popovics, 2021). For younger generations, Kovács et al. (2022) identified emotional factors such as nostalgia and fun, as well as the motivational elements of hedonism, curiosity, nutritional value, and tradition in relation to local products. Local products have distinct positive attributes (more delicious, more natural and more environmentally friendly) in consumers' perception (Szegedyné Fricz et al., 2020). The preliminary source of information gathering for local products is word of mouth, all other sources tend to be more of an awareness-raising, additional information function, reinforcing the trustworthiness of local products (T. Nagy Pető, 2021). The availability of local products varies greatly from one municipality or region to another. In those municipalities with local producers' markets, there is greater awareness and acceptance of local products (Szegedyné Fricz, 2020).

In Hungary, society's loss of values, distrust and fear of global processes, and ignorance of its own environment all contribute to the low awareness and perception of trademarks and geographical indications. For Hungarian consumers, geographical indications are basically a symbol of risk-free status, and only slightly a symbol of health, sustainability and social solidarity (Miklós, 2019). Although, according to Török, Maró & Jantyik (2019), trust in the EU quality schemes is stronger than the European, especially Central and Eastern European average. Panyor and Vörös (2021) find that there is a markedly low proportion of consumers who consciously seek out products with different labels or pay attention to these labels on product packaging. The more information and knowledge consumers have about trademarks, the more positive their attitudes towards trademarks are likely to be (Kontor et al., 2019). The variety of trademarks used for local food products and their lack of transparency for consumers may jeopardise the basic functions they provide, namely their distinctive and trust-building functions (Nagyné Pércsi, 2019).

Among local products, organic goods represent a niche market in Hungary, mostly for qualified, high-income urban women. There is competition for this narrow market (Szente, Torma & Szendrő, 2017). Despite the growing consumption of organic products, lack of information, high prices and difficulty of access are a deterrent for the majority of households (Kertész & Török, 2021). Awareness of organic labels is also still low and only a moderately important decision factor for consumers (Török, Jantyik & Maró, 2019; Szente, 2015).

Hungarian consumers are not particularly ethnocentric (Panyor & Vörös, 2021), despite e.g. the positive tendency regarding the labelling of the place of Hungarian origin (Szakály et al., 2016). One of the most important product attributes that influence consumer ethnocentrism is the place of origin, which is also related to the importance of the product's certifications, ingredients and, where relevant, its organic nature (Mucha et al., 2020). The preference system for Hungarian food purchases differs from that for other food products: the importance of the nutritional content is more dominant, as is the geographical origin and the fact that the food is made from Hungarian ingredients. However, the criterion of cheapness is less important when buying Hungarian food. Generally, amenity factors became as valuable as the price (Garai-Fodor & Popovics, 2021).

2.6. Food loss and food waste along the supply chain

In relation to one of the biggest sustainability issues of food supply chains, the Institute of Agricultural Economics (Jankuné Kürthy & Dudás, eds., 2019) reviewed the relevant literature and data and conducted a survey among Hungarian food industry companies within a comprehensive, gap-filling research. In the following paragraphs the main findings of this publication are quoted: "During the food processing phase, a wide range of wastes and by-products are produced, most of which are valuable biological materials, and their utilisation can therefore have many advantages in terms of environmental protection, sustainability and economy. Despite this, little attention is currently being paid to this area, and regulation often does not help their proper utilisation." (ibid. p. 88) "Developing solutions to this complex problem is hampered by the fact that so far little is known about the occurrence of food losses. Although several studies have been conducted on the subject, most of them focus on consumers, while those targeting other parts of the food chain mostly result in the formulation of general recommendations. Analyses often lack exploration of detailed cause and effect relationships, and the quantities of loss and wastage are only estimated in most cases." (ibid. p. 83) According to their results, "most of the respondents do not consider the presence of losses to be a major problem because it is considered an evident part of the technological process. (…) The companies consider the generation of food losses to be mainly a financial issue: they are trying to achieve improved production costs and indicators, and to make the best use of unavoidable losses, or at least transport and dispose of them as cheaply as possible. (…) Food processors are faced with several obstacles if they are looking for a good recovery for their food losses: most of these are regulatory issues but there is also a significant market failure for by-products, lack of adequate chain-based cooperation between stakeholders and the currently insufficient incentive to reduce losses. Accordingly, the reduction or better utilisation of food losses could only be achieved if there is a fundamental change of attitude in the regulation of food losses: there should be incentives for companies to avoid or reduce the waste produced and to make the best use of the losses." (ibid. p. 88)

In Hungary, around 1.8 million tonnes of food waste is generated every year. A significant proportion of this - about one third - is produced in households. According to NÉBiH's 2016 research results, this is 68 kg per capita per year, almost half of which could have been avoided. According to the survey, repeated at the end of 2019, this amount has decreased by 4% in 3 years, to 65 kg. While both volumes are below some of the most wasteful countries, they still account for a significant share of the domestic consumer's basket. However, food waste is not only a painful loss for households, but also a serious environmental burden. Altogether, we are faced with 300,000 tonnes of excess biological waste, which not only has a serious impact on our environment when it is disposed of, but also when it is produced for food. (National Food Chain Safety Office, 2019)

3. Position of the Multi-Actor Platform

3.1. Identified needs

The findings of the SHERPA discussion paper are fundamentally correct (asymmetric power relations in supply chains, volatility of producer prices, climate risks, vulnerability to external shocks, hence the need for new value-based, equitable, sustainable, resilient value chains and a just transition).

In Hungary, food supply chains are dominated by the retail sector, where the high volume of margins and the possibility of imports make them insensitive to the situation downstream.

On the side of the raw material producers, climate change, labour shortages and a continued lack of cooperation are huge risks. High VAT rates mean that tax evasion and black sales are significant, while integrations can only work in the white market - partly why there is no "demand" for them. In the absence of economic incentives and of actors (intermediaries) to promote cooperation, no improvement in integration is expected.

In the field of integration, there are Polish success stories worth studying. There are also examples of well-organised product pathways in Hungary too, e.g. sweet corn, green pea vertical.

Alternative supply chains tend to operate in niche markets, but the quality of the goods they produce is often not as much better as they are more expensive. Access to market information on short chains should also be improved, e.g. by developing databases.

In the case of brands and trademarks, it is important to have a stable, organised product trajectory and a disciplined producer base behind them, because it is much easier to destroy a brand's reputation than to build it. However, in the field of quality schemes, the intention is not to create an unmanageable proliferation of trademarks.

As regards trademarks, there is a wide range of examples of good practice from France, Italy and Austria, but also from other Member States.

In addition to improving positioning within supply chains, diversification remains an important aspect, and not necessarily on an agricultural basis. This would be another foundation for rural retention/sustainability, alongside improving overall living conditions.

The strengthening and integration of the productive segment in value chains is also supported and complemented by the involvement in social networks, alongside horizontal cooperation and greater vertical organisation. Integrated, broad-based territorial partnerships such as LEADER should play a key role in the development of diversified small-scale economies, equitably functioning value chains and improved local living conditions, but only a few local action groups can approach this, and there is a distinct underperforming class of action groups. Though, local some action groups (the "top one third") have remarkable innovative economic and community development solutions.

There is a significant lack of knowledge about the factors that prevent the development of producer empowerment and the deeper reasons why integrations fail to take place.

In the new period there is/will be scope for more intensive networking of CAP stakeholders (AKIS, EIP groups, ENRD, national rural networks, etc.)

Much depends on the development of synergies in development policy, e.g. between the CAP and other operational programmes.

3.2. Existing interventions and actions

3.2.1. Objectives and measures of the 2023-27 CAP strategic plan

In the 2020 document of the European Commission's country-specific recommendations for the CAP strategic plan of Hungary related to the general objective of 'Foster a smart, resilient and diversified agricultural sector ensuring food security', the further points were supposed to be prioritised: 1. Improving the viability of farms by better addressing the income gaps among different (professional) farm sizes, sectors and territories, with strengthened redistribution for small farmers. 2. Promoting market orientation and competitiveness of the farming and agrifood sector by further supporting investments in logistics and processing. 3. Strengthening the position of farmers by supporting: farmer cooperation – in particular through producer organisations which integrate their economic activities; farmers' engagement in more downstream activities; innovation; and the development of new markets. 4. Increasing the resilience of the farm sector by supporting it to add value to products – e.g. via EU quality schemes (including organic farming), processing or specialisation in products for which Hungary has a competitive advantage. (European Commission, 2020)

The vision of the initial Hungarian CAP Strategic Plan is that farming will be a profitable and socially recognised activity, in an attractive rural environment, with modern technology, providing quality food through the sustainable use of natural resources. The policy objectives specifically for economic development include that, in the context of CAP rural development support, food industry is the main development priority, while in agriculture the aim is to reduce the per hectare and an investment support structure to increase the cost-effectiveness of production, with particular emphasis on sectors such as horticulture, seed production, poultry, dairy, pig production and processing. 51% of CAP Pillar II is planned to be spent on economic development policy objectives. Key concepts related to the objectives are competitiveness, resource efficiency, added value, exportability, resilience. A new development direction is the establishment of a network of medium-sized food processors, often selling to regional markets, which enables them to stabilise and develop their own sales, either in competition with concentrated retail trade or with large corporate players in their own sector. In the case of support for complex food industry development, the strategic objective is to encourage exports based on Hungarian producer brands. A priority objective is to encourage joint development and investment by producer partnerships, particularly in the food processing sector. (Ministry of Agriculture, 2021)

In addition to direct income support schemes and a range of environmental, forestry and rural development measures, the planned agricultural policy will support farm development, food processing through value addition, small farm development, diversification of activities, producer groups and integration organisations, the creation and promotion of quality schemes, short supply chain cooperation, tourism partnerships, integrated local development, and knowledge transfer and innovation. (Ministry of Agriculture, 2021)

3.2.2. Legislation on unfair trading practices

According to the definition of the European Commission (2014), unfair trading practices are practices that grossly deviate from good commercial conduct, are contrary to good faith and fair dealing and are unilaterally imposed by one trading partner on another. The Directive (EU) 2019/633 of the European Parliament and of the Council on unfair trading practices in business-to-business relationships in the agricultural and food supply chain ensure the protection of operators in the food supply chain by harmonising the rules, in particular by introducing common standards and harmonising enforcement. Member States had to adopt and publish the provisions necessary to comply with the Directive by 1 May 2021 and apply them from 1 November 2021 at the latest. Supplier agreements concluded before the date of publication of the provisions must be brought into conformity with the Directive no later than 12 months after that date. (Information Service for MPs, 2021)

For more than a decade, Hungary has regulated trade practices in agricultural and food products by law to ensure a balanced bargaining position between suppliers and trading groups; and to uphold ethical standards of business conduct. The Act XCV of 2009 on the agricultural and food products in relation with supplier's unfair distribution practices prohibiting regulates the prohibition of unfair commercial practices, including the possibility of sanctions in case of infringement. The general purpose of the Act is to prohibit the use of commercial practices - between suppliers and traders in the case of agricultural and food products - which allow the trader to abuse unequal bargaining power and economic power between the two parties. The official controls are carried out by the Directorate for Control of Surveillance Fees and Distributors of the National Food Chain Safety Office, which investigates the notifications and carries out priority targeted inspections. During the pandemic emergency COVID-19, additional provisions on unfair market practices have been incorporated into the law. (Information Service for MPs, 2021)

3.2.3. National quality scheme

Ministry of Agriculture Decree No 26/2018 of 1 October 2018 on the national recognition of quality schemes for agricultural products and foodstuffs and voluntary agricultural product certification schemes meant a breakthrough in terms of the legislation of quality schemes. National recognition may be granted to quality schemes for agricultural and food products with a registered certification trademark or to voluntary agricultural product certification schemes. A quality system can be recognised if it ensures that the specific character of the final product is attributable to clearly defined obligations which guarantee the specific characteristics of the product, specific farming or production methods, or the quality of the final product goes beyond the quality required by the commercial standards for goods in terms of human, animal or plant health, animal welfare or environmental protection; the scheme is impartial, non-discriminatory and open to all producers; it contains binding product specifications and compliance with these specifications is checked by a public authority or an independent control body; the scheme is transparent and ensures full traceability of the products; the scheme clearly defines the organisational structure, the rules of responsibility and powers, the resources required, the certification procedure, the conditions and requirements for joining, the way in which members are registered and the control of products and their producers.

Producers may join a quality scheme with product(s) for which a product specification is included in the rules of operation of the quality scheme. At present, the only recognised national quality scheme is the "High Quality Food" (Kiváló Minőségű Élelmiszer, KMÉ). A brand owner can apply for the KMÉ following the release of a product specification, the so-called specific certification requirement, for the given product range, which contains the criteria of excellence, i.e. the requirements that the product wishing to be awarded the KMÉ trademark must meet. The specific requirements consist of mandatory and voluntary elements. The mandatory element is legal compliance, while the voluntary elements are grouped as follows: *Product:* a description of the specific 'attribute(s)' that make the product itself stand out in terms of quality? *Technology/production process:* what is the added value that is achieved in the production of the product? *Sustainability:* what sustainability commitments does the applicant make? (Hungarian Chamber of Agriculture, 2022) The KMÉ trademark was introduced by the Ministry of Agriculture in 2020, the owner of the trademark is a non-profit limited liability company. The trademark has two classes, basic and gold. Currently, 36 products have been awarded the KMÉ trademark.

3.2.4. 'Földrajzi Árujelzők Program' (Geographical Indication Program)

In 2015, the Ministry of Agriculture launched a programme with a twofold objective: to increase the number of protected geographical indications and to better exploit the potential of existing geographical indications. The first objective of the programme is to increase the number of geographical indications (designations of origin and geographical indications) protected for Hungary, and the Ministry of Agriculture's Department of Wine and Horticulture carries out research throughout the country. Identifying potential candidates, mapping their protection potential and providing technical assistance in the preparation of product specifications are

the backbone of this work. In addition, the agricultural policy and rural development context of geographical indications and the rights and enforcement possibilities arising from protection are presented to the producer communities concerned. In order to promote geographical indications, a country tour has been launched, which provides an opportunity to involve more and more producers in the programme through round table discussions and presentations in a number of rural locations. The second objective of the programme is to better exploit the potential of existing geographical indications. This includes a review of product specifications setting out naming rules, the adaptation of geographical indications to market positioning, and information on origin protection schemes and geographical indication products. (Ministry of Agriculture, 2022) As a result of the programme, the number of Hungarian geographical indications registered by the European Union increased from 56 to 78 in the period 2014-2021. Hungary ranks seventh among the 27 EU Member States in terms of the total number of registered geographical indications. (Hungarian Chamber of Agriculture, 2022)

3.2.5. 'Maradék nélkül' (No Leftovers) program

Recognising the problem of household food waste, the National Food Chain Safety Office, with the financial support of the LIFE Environment sub-programme of the European Union, launched its programme called 'Maradék nélkül' (No Leftovers), which focuses on reducing domestic food waste. The thematic priorities of the European Union's Seventh Environmental Action Programme have been taken into account in defining the objectives of the programme: 1. To reduce food waste in Hungarian households by changing consumer attitudes and behavioural patterns. 2. Increasing the level of knowledge and awareness of primary school children on food waste. 3. Collecting good practices on food waste prevention and, on the basis of these, developing a guide for the relevant actors in the food chain, in line with national legislation. 4. Establish cooperation links with other EU Member States to facilitate the international implementation of the project elements.

Table 1 – Examples of actions taken by local actors

DélKerTÉSZ – Délalföldi Kertészek Szövetkezete (Southern Plain Gardeners' Cooperative)

DélKerTÉSZ is a vegetable growers' cooperative and the largest producer organisation in Hungary. Since its establishment in 2002, the organisation has brought together producers, family farms and co-entrepreneurs from the town of Szentes and its surroundings. The community of more than 500 people is based on the principles of localisation, environmental protection and high quality. Szentes is the home of peppers, so the majority of the cooperative's products are peppers (edible white peppers, capicum peppers, hot peppers.) The organisation also deals with tomatoes, cucumbers, cabbage and Chinese kippers. Their best known product is the Szentesi Paprika, a pepper brand with a protected geographical indication since 2014.

The cooperative cultivates nearly 50 hectares of glass greenhouse and 100 hectares of foil tent area. The producers work under a GlobalGAP quality system, which includes the application of HACCP and environmental requirements. 97% of the members produce under integrated biological control. The organisation provides its members with expert advisory at every stage of production, and DélKerTÉSZ is responsible for the packaging, logistics and marketing of uniform, high-quality products. Financial support and the possibility of deferred payment are also provided to members. They can take part in regular training courses and professional events, where they can obtain the latest professional information. Producers keep an up-to-date production logbook to help plan and monitor their production processes.

Sustainability and the protection of natural resources play a key role in the short and long-term goals of the organisation. In this context, the cooperative has been conducting experiments on sustainable packaging since 2017. In the near future, it plans a full switch to sustainable packaging

materials. Sustainability and optimisation of energy efficiency will be supported by the solar farm to be built in 2020. Some greenhouses already use biodegradable tying agents, reducing waste from the growing process.

More information: https://www.delkertesz.hu/

KISLÉPTÉK Egyesület (National Association of Interest Representations for Small-scale producers and service providers)

The aim of the association is to encourage the spread of environmentally friendly forms of farming on a scale adapted to the characteristics of the landscape, as well as the spread of local processing and marketing systems and short supply chains related to these, and the development of related services by rationalising the legal system and promoting market access for local producers and service providers. The following topics and activities are emphasised:

- Facilitating the conditions of production and promotion of small-scale producers of food and handicrafts.
- Creation of a flexible regulatory framework for the production of foodstuffs in private dwelling houses.
- Stimulation of non-profit trade and short food supply chains
- Development of ecologically sound rural tourism that is based on traditions (Green road, Fish road, etc.)
- Assistance for self-employment
- Assessment and support of producers, expansion of their knowledge
- Creation of a union for representing interests
- Legal assistance in requesting modification of legislations, or official standpoints.
- Establishment of an international partnership and co-operation in interests
- Presentation of good practices

The Association operates a knowledge base on legal issues, short supply chains, innovations, and good practices with a wide international scope, publishes analyses, provides expert advisory on different issues (e.g. taxation, land regulation, sanitation, agrotourism, trademarks, small farmers). The organisation maintains strong EU and domestic networking relations, participates in numerous research projects funded by Horizon, Erasmus etc. Educational and information events are continuously organised by them, the largest initiative is the so-called REL EXPO, an annual expo for a wide range of short supply chain actors. The Association runs the 'Élményparaszt' (farm experience) program which is based on the consumer demand that we not only want to buy a product, but also to visit a farm, to learn about the secrets of the farm, to try out the knowledge of the farm and to visit the farmer at an open day.

More information: https://kisleptek.hu/

Nyitott Porták – Zala Völgye (Open Farm Network in Zala Thermal Valley)

The network operates as a professional network as part of the Zala Thermal Valley Association. It was founded in 2018, based on the comprehensive analysis of the local food system's development

needs in the Zala Valley region which found that locally there is no need for farmers' market but open farms. It started with 16 farms, currently (2022) consists of 29 qualified members (including fruit growing farms, producer and processor of herbs and spices, beekeepers, vineries, livestock farms, riding schools, cheese making workshops, horticulture farms). The decision-making of the network is democratic on the basis of commonly agreed network rules.

Membership is open, the most important entry criteria are: carrying out the activity in the settlements of the region (30 settlements); being agricultural producer, local product producer or agro-tourism service provider, having a product or service intended for sale; providing conditions suitable for hospitality; agreeing to organise open days and events on a regular basis.

The functions of the network (as outlined in its charta) is building trust-based cooperation; production, presentation, sale of quality local products, provision of quality services; forming attitudes, encouraging a healthy lifestyle; showcasing the beauty and uniqueness of the Zala landscape; preservation of local values, nurturing traditions; preserving and building on existing diversity; incorporating innovation to increase attractiveness but preserve core values.

Their events include lectures, workshops, teambuilding programs, hosting kindergarten and school groups, demonstrational programs etc. The local LEADER local action group is the financing and managing organisation, so this NGO has strong links to the members as well.

More information: https://nyitottportak.hu/

Vidék Minősége Védjegyrendszer (Rural Quality Trademark System)

Hungary is a member of the 'Association of the European Territorial Quality Mark'. The 'Magyar Vidék Minősége Egyesület' (Hungarian Rural Quality Association), which provides complex expert services, was founded by those rural development associations and their experts who were the first in Hungary to introduce the regional "Rural Quality" trademarks in their own areas of operation. The founders of the Association were the following associations: Alpokalja-Fertő táj Vidékfejlesztési Egyesület, "A BAKONYÉRT" Vidékfejlesztési Akciócsoport Egyesület, Éltető Balaton-felvidékért Egyesület, DIPO Egyesület.

The founders have worked with producers, creators and businesses in their own region to develop the content of the "Rural Quality Trademark" for the area. The principles of the association's work are: to encourage social cooperation and community thinking to develop production, processing and marketing; to raise consumer awareness of the importance of buying local products. The certification procedure for persons and businesses wishing to obtain the mark is carried out in accordance with the international certification and promotion rules for the 'Rural Quality' mark. Domestic businesses that have been awarded the Rural Quality Trademark are also members of the international Rural Quality Trademark scheme.

The service areas covered by the trademarked members are local food products, local handicraft products, grocery shops and convenience stores, catering businesses (restaurants, vineries, breweries etc.), accommodation hosts, entertainment services, sights and attractions.

More information: https://videkminosege.hu/

Lidl 'Hazánk Kincsei' brand

As an example of the retailing of quality local products and domestic brands, a prominent initiative is the Lidl discount supermarket chain's 'Hazánk Kincsei' (treasures of our homeland) product line.

The brand is embodied in the high quality products that are sought after by customers, with traditional Hungarian flavours and methods. The brand was launched in August 2017 as a proprietary development of Lidl Hungary in domestic supermarkets. By now, nearly 70 products have been part of the permanent and discount assortment. The Hazánk Kincsei products are all from Hungarian suppliers, with trademarks of Hungarian materials, production and provenance. The brand makes it easier for customers to choose and ensures that they buy Hungarian products off the shelves. The packaging of the products is also unique, evoking the world of Hungarian folk tales and bringing the traditional flavours of Hungarian cuisine closer to the consumers.

More information: https://www.lidl.hu/termekkinalatunk/hazank-kincsei-termekeink

3.3. Recommendations from the MAP

3.3.1. Recommendations for future rural policies

In addition to long-term increasing global competition, scarcity of resources, unsustainability of prevailing production, consumption and distribution patterns, in the 2020s the pandemics, unfolding economic downturn, energy crisis, political and geopolitical conflicts, and reorganising markets will also pose challenges for the rural and food economy in Hungary, from producers to consumers. Countering these threats and exploiting the opportunities and potentials require the conscious efforts and cooperation of all actors in the national economy, i.e. the state and local governments, businesses, civil society, researchers, households and individuals.

The asymmetry between the actors in the food value chain, in terms of capital strength, intra- and extra-chain power, and share of the revenues generated in the product chain, is in some ways inherent to the value chain, but from another perspective unsustainable and requires intervention. It is evident that unfair market behaviour needs to be addressed through fair, non-discriminatory and non-distortive regulation, which requires both a commitment from policy-makers and legislators and flexible legislation and enforcement, uninfluenced by group interests. At the same time, a significant part of the problems arises from the horizontal specificities of the actors at each level, their deficit in competitiveness and organisation, their lack of strategic thinking, cooperation, innovation and other capabilities.

In agricultural commodity production, it is proposed to encourage an entrepreneurial and competitive approach, the need for more self-reliance and thinking in terms of long-term sustainability. One of the pillars is multifunctionality, especially on small and medium-sized farms, which means a combination of crop, horticultural, livestock, game and fish farming and primary food processing activities based on reasonable possibilities. The other pillar is the diversification of farm activities into non-agricultural activities, industrial and service activities (food production, landscape and environmental protection, energy production, tourism, etc.). The uncertainty of the future availability of development funds and support also justifies the need for the operation of food economy verticals at all levels to be based essentially on market principles, bearing in mind that local food producers must assume certain social and community functions, and that large-scale production, processing, trade and service organisations must strengthen their real social and environmental responsibility.

Climate change, market volatility, risks related to energy and input procurement, labour shortages in terms of quantity and quality are raising strategic issues for the agricultural sector. Structural change is only a partial solution to the problems outlined above, as a shift to lower-risk sectors, crops, varieties, etc., which are marketable but less climate-sensitive or labour-intensive, may lead to further one-sidedness of the production structure. It is clear that production must be adapted to market needs, to the requirements of competition (driven by technology), but also to the conditions of the land, the environment and the social and labour situation. The (partial) substitution of natural and human resources by artificial capital,

technology, machinery, automation and digitalisation is inevitable for the survival of the sectors. Knowledge-intensive adaptation and innovation are essential not only in primary production but also in manufacturing. However, apart from the external economic, natural and other risks of product production, one of the biggest risks to be avoided in the food value chain is clearly the total dependence of suppliers on buyers. Diversification not only of activities, but also of customer relationships is an important element to protect against vulnerability.

In the light of the above, both the modernisation and adaptability of production, value addition, quality improvement and sales require appropriate organisation. The latter cannot be achieved without the much-vaunted (but currently still inadequate) cooperation. It is a cliché to say that horizontal cooperation is the only way to achieve more secure market access for the fragmented producer segment, to assert its interests, increase its bargaining power and broaden its outlets. It is necessary to create an environment conducive to the transparency and efficient functioning of models that work well at European level (e.g. producer organisations), and to the development of cooperatives, sharing economies and other forms of common market access (e.g. joint product innovation, short supply chain market organisation).

The development of value chains that operate more equitably, sustainably, as less wastefully as possible and with the public good in mind requires better coordination of vertically linked actors. It is important that there is not only a minimum level of reconciliation and coordination motivated by compliance with the law and interdependence, but also closer and more solidarity-based cooperation based on dialogue, shared problem identification and a willingness to find solutions. All players in the food supply chain (including consumers) should be encouraged to orient their roles and decisions not only towards the maximum achievable but also towards the organisational and individual benefits that are optimal from the point of view of society as a whole. However, such an attitude cannot be enforced, but should be promoted by using the available economic policy incentives, which are always appropriate to the economic situation, by promoting communication between the parties, by shaping attitudes from producer to consumer, by communicating the above values through education, training and information, and by working in partnership with civil society.

For rural areas, and for individuals and communities seeking conscious, experiential consumption, it is of utmost importance that local producers are able to meet consumer demand with good quality, quantity and value for money, while ensuring at least part of their livelihoods. The requirement for healthy, hygienic and traceable food must be insisted on and, where possible, food chains and distribution channels must be fully monitored by the inspectorate. At the same time, consideration should be given to defining more precisely the boundaries of food production beyond the scale of the subsistence but not yet food industry, and to supporting and regulating it in a way that is appropriate to its significance and potential. An essential element of traceability is to inform the consumer about the origin and quality of the product, but the tools for this are not complicated, lengthy descriptions and databases, but rather the already widely used labels and trademarks. However, there must be no room for the unmanageable over-proliferation of quality schemes, and labels with misleading or ambiguous information and a questionable background must be specifically prevented. Up-to-date, information-rich databases already play an important role in accessing information on short supply chain channels, but quality control must also be in place for these.

Many good practices in local food systems are linked to LEADER communities. Without denying the importance of farm improvement and sustainable farming practices, community innovation and learning, market organisation, partnership building, networking would help rural development based on local needs and resources (and at the same time the development of local food economies) to achieve more spectacular results than the still highly sectoral rural development support policy. There is also a need for increased support for learning from good practices, not only at domestic level, but also internationally. In the various development programmes, complementary and reinforcing measures should be developed in synergy with each other, in line with needs and funding possibilities. In the context of integrated territorial development, it is appropriate to enable, encourage and support urban-rural cooperation in the formulation and implementation of spatially oriented development objectives.

3.3.2. Recommendations for future research agendas

There is a significant lack of knowledge about the factors that prevent the emergence of producer empowerment in traditional value chains, and the underlying reasons why integrations fail to take place. Understanding the problem requires an examination of the presence, influence and interaction of structural, economic, regulatory, cultural and other relevant factors. In particular, it would be useful to examine, through the principles of behavioural economics, the set of personal characteristics that influence bargaining power and through which someone can become a force that mobilises the community.

At the moment, the presence, characteristics and linkages of emissions, losses, externalities and opportunities to reduce adverse environmental impacts at each level of the food supply chain and in the transactions between them are largely unexplored. It is proposed to identify and internalise the complex system of these impacts within the value chain and to promote a targeted development of a circular approach to production and consumption, by considering and applying measurement, monitoring, intervention and control options.

Research is needed to measure the real, local and higher-level market, employment, income, economic diversification, social, environmental and other impacts of local food systems, and to systematise information and methodologies to help adapt to local production and marketing characteristics. Deeper knowledge is needed on consumer behaviour, expectations, attitudes and all the factors that help or hinder the functioning and development of sustainable local food systems and short supply chains.

In general, there is also a need for a deeper analysis and understanding of the behaviour, motivations, values and preferences of individuals and communities as consumers and as social actors, in order to shape individual and community mind-sets, and to develop the necessary and forward-looking cooperation for responsible consumption and social solidarity.

Updated information and more comprehensive analyses are needed on the shorter-term specific and longer-term complex impacts and synergies of Community and national policies, development interventions and support that regulate and foster the rural and food economy, in order to better target assistance, choose more effective instruments and use public resources efficiently and in the broader public interest.

The potential of smart solutions and digital technologies, at producer, distributor, consumer and institutional level, needs to be assessed and further explored in order to achieve a resource and cost efficient, clean, controlled, transparent and equitable food chain.

In the longer-term future, one of the biggest challenges for the food economy is expected to be to ensure food supply to the population in the face of significantly and adversely changing climatic conditions. In both arable and horticultural production, great emphasis will need to be placed on breeding species and varieties that are more tolerant to changing climatic conditions, or on finding and adapting existing ones to the appropriate ecological environment, and on developing cultivation techniques that mitigate or enhance tolerance to climatic stresses. In addition to food security, food safety is also becoming a key issue, i.e. the production of high quality food that is good for human health and free from pesticides or other extraneous substances (e.g. animal antibiotics). This will require a major effort in research into resistance breeding, biological crop protection, plant and animal health and immune system stimulation, and the development of agro technical elements to make this happen.

Conclusions

In Hungary, the food economy is a sector of strategic importance, not only because of its role in food security, but also because of its impact on the national economy, land use, value and income generation, employment, spill-over effects and social functions. Agriculture and the food industry have considerable potential both to meet domestic needs and to be present on external markets, but the country is not fully exploiting its potential for food production. Hungarian food exports can play an important role not only in terms of income but also in supplying the world market in both quantity and quality. At the same time, food businesses face increasing competition both at national and international level, and their position is not helped by asymmetries in bargaining power, revenue share, access to information and overall levels of organisation within the supply chain.

Hungary's food production sector is characterised by the dominance of retail, the limited competitiveness of the food industry, and the fragmentation, vulnerability and disorganised nature of commodity producers, despite increasing concentration and some well-functioning integrations. The food production and processing segments in general are characterised by a lack of capital and innovation and a low level of digitalisation. Weak horizontal cooperation and vertical coordination, which can be described as a general lack of trust, are problems identified and addressed in a number of sectoral analyses, concepts and programme documents. Strengthening downstream food supply chains, better meeting consumer needs, increasing export competitiveness and improving sustainability and resilience requires added value, more and better innovation, closer cooperation, fairer and more solidarity-based behaviour from food distribution actors. The expansion of multifunctional and non-agricultural activities on farms and the diversification of distribution channels and purchasers can reduce the sector's vulnerability and dependence on the higher levels of the vertical.

Alternative supply chains are also limited in their ability to meet the needs of the niche markets they reach: consumers looking for healthy, safe, locally produced food, a direct experience of contact with the producer and the countryside, often cannot find this in their own locality, and indeed the majority of consumers are still not looking to buy local and/or farm-grown food and are not aware of the existence, meaning and importance of trademarks and geographical indications. The organisation, infrastructure development and promotion of local marketing, the development of a system of offerings and product links are also areas that require the cooperation of local food producers, market organisers and conscientious consumers (and their organisations).

Little information is yet available on the exact extent of losses, pollution and negative externalities along the food chain. Not only the measurement of these, but also the possibilities for their prevention, reduction and internalisation need to be investigated, and the necessary measures require more conscious operation and cooperation between the actors in the vertical chain. In creating the circular functioning of the food chain and strengthening its general resilience, significant emphasis is placed not only on the activity of the producing, processing and distributing actors, but also on consumer awareness and the shaping of attitudes.

The role of policy makers and institutions is to develop efficient and equitable distribution and regulatory policies, to ensure a balanced competitive environment, to promote dialogue and reconciliation of interests between food chain actors, to encourage local initiatives and to shape attitudes from producer to consumer. The research sector needs to provide evidence, policy options, measurement, evaluation, intervention criteria and tools for policy, market and societal organisations and decision-makers from a variety of perspectives and along novel theoretical and methodological paradigms.

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Annex 1 Methodology used by the MAP

The Hungarian Rural Prosperity MAP was founded in August-September 2021, initially named as Hungarian Rural Economy MAP. The group consists of 12 members, with the balance of policy, science and civilian or business expert stakeholders.

At first, the 'Possibilities of the diversification of rural economy in Hungary' discussion paper was prepared by the facilitator of the MAP which was discussed on the 1st of October 2021 within the framework of an online meeting. The participants identified the growth of demand for local products and foods and the increasing quality expectations on the global food market as the largest real opportunities for the development of the Hungarian rural economies. At the same time, the MAP claimed the concentration of resources and incomes at the elites as the highest threat for the long-term development of the Hungarian rural economy, while also mentioning undiversified small-scale producer livelihoods, shortage of skilled labour, climate change, technological disadvantages and lack of innovation. The solutions seemed to be focused on the tighter harmonisation of policies' objectives and tools, allocating resources for the existing strategies (e.g. digital agriculture), strengthening networking and knowledge exchange, promoting community planning, take advantage of multifunctionality, bioeconomy diversification etc., while research should be focused on the deeper investigation of community involvement, local strategies, competitive environment, consumer behaviour, and the effects of climate change and environmental policies.

In January 2022, the MAP members contributed to the recommendation of keywords for the topic "Entrepreneurship and social economy, just transition, including sustainable value chains" of the next MAP cycle. Based on the choice of topic, the MAP has been operating named 'Hungarian Rural Prosperity MAP' since.

After circulating the SHERPA discussion paper in the topic, the questions to be answered (current situation, identified needs, existing policy interventions, actions taken by local actors, and recommendations) in the position paper were discussed in the form of a personal meeting, on the 8th of June, 2022. The main findings of the meeting can be read in the current position paper. The members of the MAP commented on the draft of the position paper and approved the final version.

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