





POLICY MEASURES TO SUPPORT LOCAL FOOD SYSTEMS

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Abstract. Enterprises engaged in food production are one of the focuses of the European Green Deal, as the implementation of its objectives will make impacts on agriculture, which is one of the most important industries supplying raw materials to food producers, as well as on energy and transport. Previous research studies have emphasized that processes within the local food system (LFS) occur over a relatively short geographical distance, thereby creating a number of economic advantages as well as making a significant impact on the community economy. In other words, this diversifies the rural economy, makes enterprises more economically independent, develops local potential and contributes to the image of the area. Most of the food produced in Latvia was sold in the domestic market, and only approximately a third of the food output was exported over the last decade. The expansion of the domestic market is therefore very important for local producers. Food production is spread throughout the country, and both home producers and rural small and medium enterprises producing food participate in the market, which contributes particularly to the socio-economic viability of the population living in rural communities. As a result, local food systems emerge, which is a complex phenomenon, as it involves more than just economic aspects. Food production, distribution and waste management are indirectly affected by several public policies, as the food production begins with the exploitation of primary production resources linked to the environment and ends with the development of cultural services, including the preservation of traditions and values. Accordingly, it might be argued that an LFS represents a very complex and diverse set of actors and their interrelationships, which is constrained by specific social, cultural, economic and institutional frameworks, and therefore the research aims to give insight into the public policy dimension in food systems and, based on the research findings, identify key problems and develop recommendations for the development of food systems in Latvia.

Keywords: local food system, resilient rural communities, sustainability.

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Introduction

Problems related to food production have been on the agenda for the last ten years both globally (WEF, 2018) and in the European Union. The contexts of the discourse are different: sustainability, food supply chains, food safety and other problems related to food production. The problem of food supply chains became relevant during the Covid-19 pandemic, yet since 2021, food production problems have also been a focus of the European Green Deal (Commission communication..., 2019). The negative impacts of food production – increasing gas emissions and declining biodiversity – have also been highlighted in UN documents (United Nations 2030..., 2015), which also emphasize public health policy problems (FAO, 2016). It is important to foster economic growth and employment in rural areas so that they do not lose their unique and added value. That is why home producers and farms, which produce local food and sell it in the market, increasingly develop in the regions of Latvia. The role of home producers and local producers is emphasized by the EU research and innovation policy Food 2030, which is consistent with and seeks to support the objectives of the From Farm to Fork Strategy of the European Green Deal (From Farm to Fork..., 2019) and the Bioeconomy Strategy. Short food supply chains are defined as a supply system for locally produced food, in which the producer is located close to the consumer and delivers the food to the consumer, as well as fewer enterprises are involved in the chain (Granvik et al., 2017). It is widely believed that a closer link between local food producers and consumers yield many positive results. Short supply

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chains increase value added and the profitability of small farms through allowing the farms to sell recognizable products that have their own "story" to consumers who are willing to pay a higher price, as well as create economic dynamism and social cohesion in rural areas. Contributing to the quality of and trade in food increases consumers' sense of responsibility for the value and waste of food, thus helping to reduce the impacts of food production on climate change. Cvijanovic et al. (2020) emphasize the interpretations of the term local, which usually involves the attributes commonly assigned to locally produced food: freshness, environmental sustainability and support for the local economy.

Food production and related activities represent a complex process involving many social agents. The food industry is also associated with areas whose contributions to the development of the industry is difficult to quantify precisely, e.g. education and the impacts of the non-governmental sector, and conclusions on the contributions could be drawn in terms of their activities and numbers. This indicates the need for high-quality and detailed industry research.

Traditionally, the components of a food production system are analysed with the aim of increasing the efficiency of a particular element or activity, based on an assumption that it will also increase the efficiency of the system as a whole. In recent decades, however, it has become clear that the holistic approach is needed to deal with such complex problems; therefore, a comprehensive approach to the food system is applied to identify, analyse and assess the impacts of and feedback from the various actors engaged in the system, as well as help to identify intervention areas for improving food security. In this respect, the processes and impacts of food production and trade on the economy could also be explained through the regularities of the system, which focus on the holistic unity of the system without neglecting the components. It seeks to understand the role of each component of the system, while understanding how the whole system works, its synergies with the environment and its impacts on it. The expansion of the system also occurs because of labour division that is characteristic of socio-economic systems.

Statistics are available on various socio-economic processes in Latvia at national or regional level, yet there are relatively few reliable and available statistical data at the level of individual local governments (communities). The present research was based on a blended research-design approach and employed a variety of quantitative and qualitative social research methods: (1) content analysis of policy documents to better identify the availability of current support schemes and instruments to various target groups and analyse specific policy programmes needed to create and strengthen the LFS at community level; (2) an electronic survey of municipal employees involved in local business support (n=32) (February-March 2021); (3) online focus group discussions with LFS stakeholder representatives (3 discussions were held in Jelgava municipality, Talsi municipality, Pierīga region (Saulkrasti and Carnikava municipalities)); (4) semi-structured interviews with local food producers (in person).

The research aims to give insight into the public policy dimension in food systems and, based on the research findings, identify key problems and develop recommendations for the development of food systems in Latvia.

Research results and discussion

Researchers have researched food systems both from the territorial perspective (Galli F., 2015), focusing on the local, regional and global scales, and from the industrial perspective (Doernberg A. et al., 2016), viewing the food system as a complex network of activities related to production, processing, food chain formation and consumption.

The systems approach to examining food systems in a territorial context is comprehensive and shows that the formation of cooperation systems in food production could represent an international process that

is affected by both the countries producing food and the regions where the food is sold; and the geographical area where cooperation between food business partners occurs and is also influenced by exogenous factors (Peters et al., 2009).

In a regional context, cooperation systems in food production represent the result of a process of effective interaction that involves focused relationships and changes over time between cooperation partners directly and indirectly involved in the food industry. Interestingly, Marsden et al. (2000) acknowledge that "with a short food supply chain, it is not the number of times a product is handled or the distance over which it is ultimately transported, but the fact that the product reaches the consumer embedded with information". Consumers associate local food with short supply chains. In fact, most of the products sold through short food chains come from local areas, except for spatially extended short supply chains.

The food system is made up of two basic elements: economic, which generally consists of production and consumption, and cultural, as the relationship cannot be reduced to a market system, which is rather a pattern for interactive exchange of information (Shideler D., Watson P., 2019). Of course, we can also observe the impact of the cultural element on the economic pattern, which actually takes the form of use of human capital in production. A typical approach applied to explain the differences between short and global food supply chains is geographical proximity between the production site and the consumer as well as the number of actors involved; however, there are a number of research studies focusing on the link between local food production and the local community and the extent of social and environmental impacts of local food production (Rossi et al., 2017), which is not the case under the global industrial food system (Schoolman E.D., 2020). A research study by Le Velly (2017) emphasizes the territorial dimension and collective identity as key factors in the sustainability and permanence of short or local food supply chains based on social, organizational and territorial innovations that are still being structured. The policy context represents the human desire to influence one's own food security and the ability to influence (through the cultural element) the way it is implemented. Food production, distribution and waste management are indirectly affected by a number of policies, as the food production begins with the exploitation of primary production resources linked to the environment and ends with the development of cultural services, including the preservation of traditions and the development of values. At regional and local level, support for rural development and direct contact with producers are also important drivers of the food supply chain. Higher-level policies need to be supportive, removing the main barriers identified and bringing producers and consumers closer together. This aspect supplements food systems with the political aspect, as the food industry system represents specialized enterprises, organizations and institutions and other social agents involved in product development, considering not only the traditional perspective that is mainly linked to food supply chains in the traditional sense but also emphasizing the role of social agents in shaping food policies and the relevant legal framework. Each element contributes to the food system, while at the same time acquiring system-specific properties that it did not have before. In view of the above, the conceptual model of a comprehensive food production system includes a core system consisting of a producer and a consumer and four important groups of support systems, which could also be viewed in more detail. It should be noted that today no system is isolated, any system includes internal subsystems, e.g. agricultural systems, ecosystems, economic systems and social systems, and they in turn include subsets of additional systems: water, energy, finance, marketing, policies, cooking etc. (Tendall et al., 2015). Accordingly, it could be concluded that the system functions in a certain environment; therefore, the authors emphasize five essential elements of the external environment: nature, culture, the economy, society and technologies.

Proponents of a system emphasize the impacts of the system and the qualitative difference between the system and a simple sum of its components (Fonte, 2008); however, to gain a holistic view that states that any part of the system directly or indirectly affects the system as a whole, it is important to understand the functioning of each component.

Basically, an LFS involves establishing a variety of relationships with consumers, the relationships that create value and significance concerning the product and its origin, as the farms involved perform not only agricultural production but also other essential functions: activities related to environment protection and landscape maintenance, biodiversity preservation, preserving and passing on cultural traditions to future generations, the contribution to local values, maintaining population in rural areas and sprucing up the rural environment (Enthoven L., Van den Broeck G., 2021). Synergies (multiplier effect) are generated through preserving traditions, local customs and other intangible, cultural and historical values, as well as producing regional and traditional products (Jibb S.B.A., 2019).

Identifying and assessing the multiplier effect of an LFS, special emphasis is placed on the interaction of the LFS with local rural communities, which are defined by the present research as particular municipalities and regions. An analysis of support for local food producers at local community level has revealed that currently there are many municipalities and NGOs in Latvia that support home producers, yet the support is irregular and territorially and structurally unbalanced. This might be largely explained by the fact that at municipal level, the municipalities often do not really know their home producers of food as well as their number. For this reason, regular support activities are limited. An analysis of the results of surveys and focus group interviews conducted in municipalities allowed identifying the following problems: local food producers faced difficulty in complying with accounting and Food and Veterinary Service requirements, which to some extent was affected by a lack of knowledge and motivation. There was also insufficient buying power of the population, logistical problems, a disadvantaged geographical location, i.e. the producers were located too far from consumers, inability to compete with nearby cities, a lack of production facilities, limited opportunities for the municipality to support home producers, a lack of labour resources, including no possibility to pay decent wages and salaries, as well as poor-quality labour. Consequently, the potential for socio-economic development is insufficient.

The first step towards improving the socio-economic situation is to create a competitive advantage for LFS actors. M.Porter (2008) defined a competitive advantage as a difference in any comparable dimension between firms that allows one firm to compete better than the others. According to M.Porter's theory of competitive advantage (2008), the processes that ensure the operation of a firm are considered to be elements of competitive advantage, which also affect the positioning and competitive strategy of the firm. An important driver of short food supply chains is product quality, which is a key element encouraging consumers to buy directly from producers.

Next, the authors of the paper focus on the policy dimension in local food systems, as the political decisions make the most direct impact on every social agent involved in the food system. The EU Common Agricultural Policy aims to support the transition to flexible, sustainable and climate-friendly farming systems and value chains in order to ensure healthy and nutritious food in the long term. To achieve this goal, the national business environment also receives financial support through various institutions. More cross-sectoral cooperation and a favourable food policy are crucial for the development of local food systems in Latvia. Political actors with large decision-making capacity at local and national level (Ministry of Agriculture, Ministry of Environmental protection and Regional Development, local governments) have so far shown little interest in the supply of local food. It would be important to address food problems in an integrated strategy or plan at national as well as municipal level. Practical technical support for food

producers is provided by the Rural Support Service, the Latvian Rural Advisory and Training Centre and the Latvian Association of Agricultural Cooperatives (Figure 1).

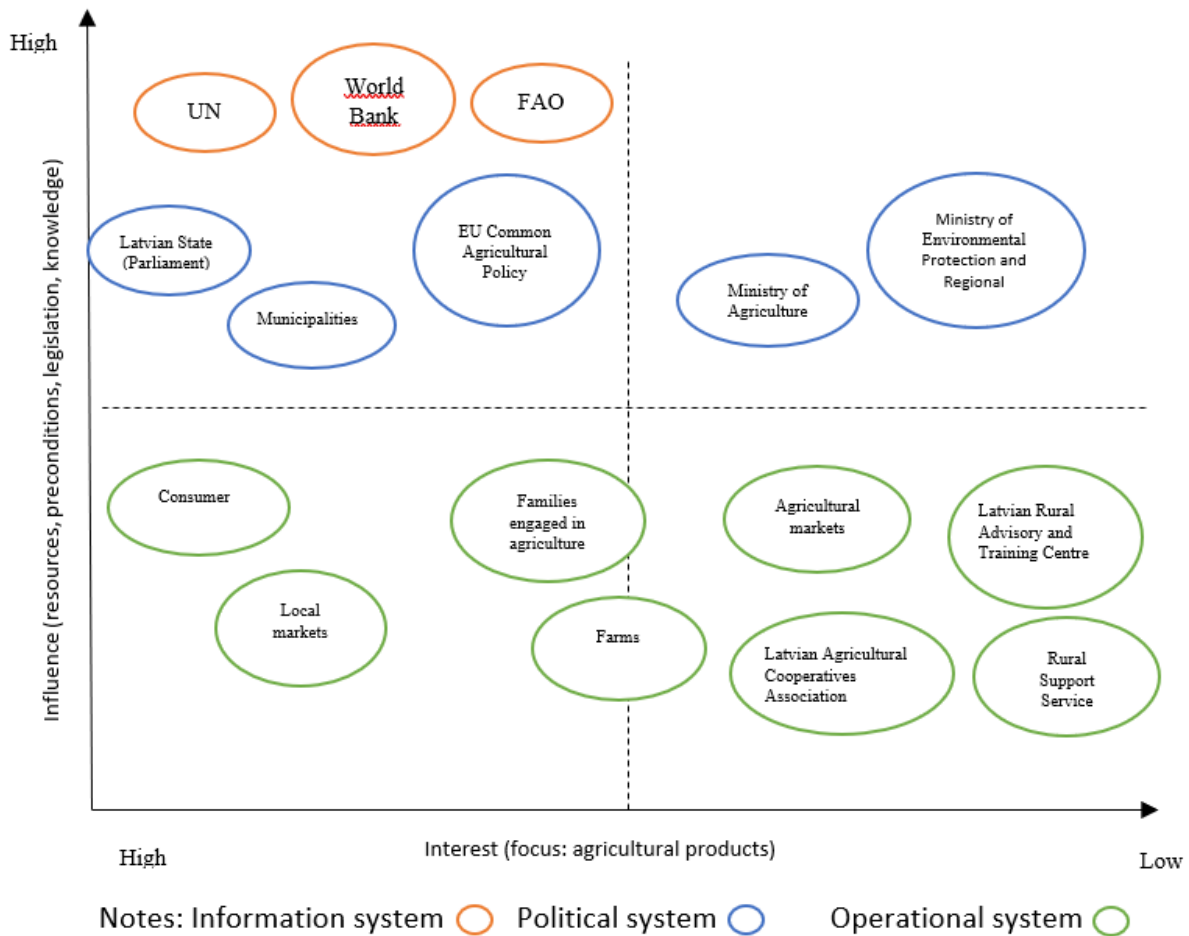


Fig. 1. **Scheme of the influence and interests of stakeholders in Latvia**

The analysis also shows that local food systems involve not only challenges but also opportunities for development (Figure 2). In Latvia, local food systems are given some ideas about identifying their potential in "opportunity places", i.e. special places where to test how the link between the environment, the economy and society (i.e. public health) could work in practice.

The Common Agricultural Policy (CAP) offers a unique opportunity for Europe, given its objectives: "to support farmers and increase agricultural productivity so that consumers have safe and affordable food; ensure that farmers in the European Union can earn viable incomes; deal with climate change through the sustainable management of natural resources; maintain rural areas and landscapes throughout the EU; and support the rural economy, thereby creating jobs in agriculture, the agri-food industry and related industries" (European Commission, 2018). Agricultural policies are linked to health policies through food and the way food is produced. It strengthens the link with health policies, in particular with regard to healthy eating and the reduction of pesticide use. The CAP should continue focusing on public goods: safe and healthy food, food management, responsibility for climate change, environmental protection and its contribution to the circular economy.

Common Agricultural Policy (CAP)	<ul style="list-style-type: none"> • Environment. The CAP already includes requirements for sustainable production. • Economy. The goal is to support farmers to produce food while earning a reasonable living, as well as to keep rural areas economically viable. • Society. The goal is to ensure that consumers pay steady and affordable food prices.
Investment in SMEs	<ul style="list-style-type: none"> • Environment. 'Sustainable food' business has grown significantly. • Economy. Businesspersons care about making profits in new markets. • Society. Opportunity to focus on nutritious food.
Public procurement	<ul style="list-style-type: none"> • Environment. Sustainability criteria could be incorporated in the procurement specifications. • Economy. Countries spend significant funds on food; it is needed to contribute to farmers' livings through providing them with a market. • Society. Preferred nutritional standards could be incorporated in the procurement specifications.
School Milk and Fruit programme	<ul style="list-style-type: none"> • Environment. Opportunity to implement the environmental sustainability of production, transport and waste. • Economy. Increasing the market for fruit and vegetable producers. • Society. Availability of nutritious fruits and vegetables.
Short supply chains	<ul style="list-style-type: none"> • Environment. Many of the farmers involved already apply sustainable production methods. • Economy. An economic opportunity to sell food directly to consumers and increase the producer value of the food. • Society. Opportunity to focus on nutritious food.
Educational opportunities	<ul style="list-style-type: none"> • Environment. Opportunity to improve one's knowledge of sustainability. • Economy. Productivity in the food industry is low, indicating the economic potential of improving the knowledge. • Society. Opportunity to improve one's knowledge of nutrition.

Fig. 2. **Opportunity places for the local food system in Latvia**

Significant socio-economic benefits resulting from the development of the LFS have also been stressed by respondents of the surveys and focus group interviews conducted in municipalities. The most important ones were as follows: increase in the number of jobs, stronger cash flows, increase in overall prosperity and economic growth, the market share of locally produced products and territorial visibility, growth in tourism, preservation of cultural heritage and traditions and the promotion of patriotism and the feeling of belonging to the local community. Local (municipal, regional) and national policies on, e.g. land use, and the legal framework for environmental and food safety, food processing and transport make a major impact on the development of the community food system. Public policies also play a key role in developing the infrastructure of food systems, as well as in combining stimuli, direct investments and research and training funding. Finally, funding public programme or project activities as well as the zoning of a municipality can make an impact on the LFS.

The European Agricultural Fund for Rural Development (EAFRD) is an instrument of the EU Common Agricultural Policy that supports rural development strategies and projects. It is also one of the European Structural and Investment Funds (ESIF). The EAFRD budget for the 2014-2020 programming period was approximately EUR 100 billion a year. This funding was spent throughout the period on rural development programmes to be finished until the end of 2023. The funding was distributed according to the following six priorities: knowledge, agricultural profitability, competitiveness, economic development in rural areas and social inclusion. Each of the priorities contributes to the cross-sectoral goals of innovation, the environment, climate change mitigation and adaptation.

To design and manage the relevant legal frameworks and policy funding programmes, there is a need clearly distinguish and understand the policy levels related to local food systems. Food policies involve laws and regulations, as well as the decisions made and activities carried out by governments and other institutions that affect the production, distribution and consumption of food.

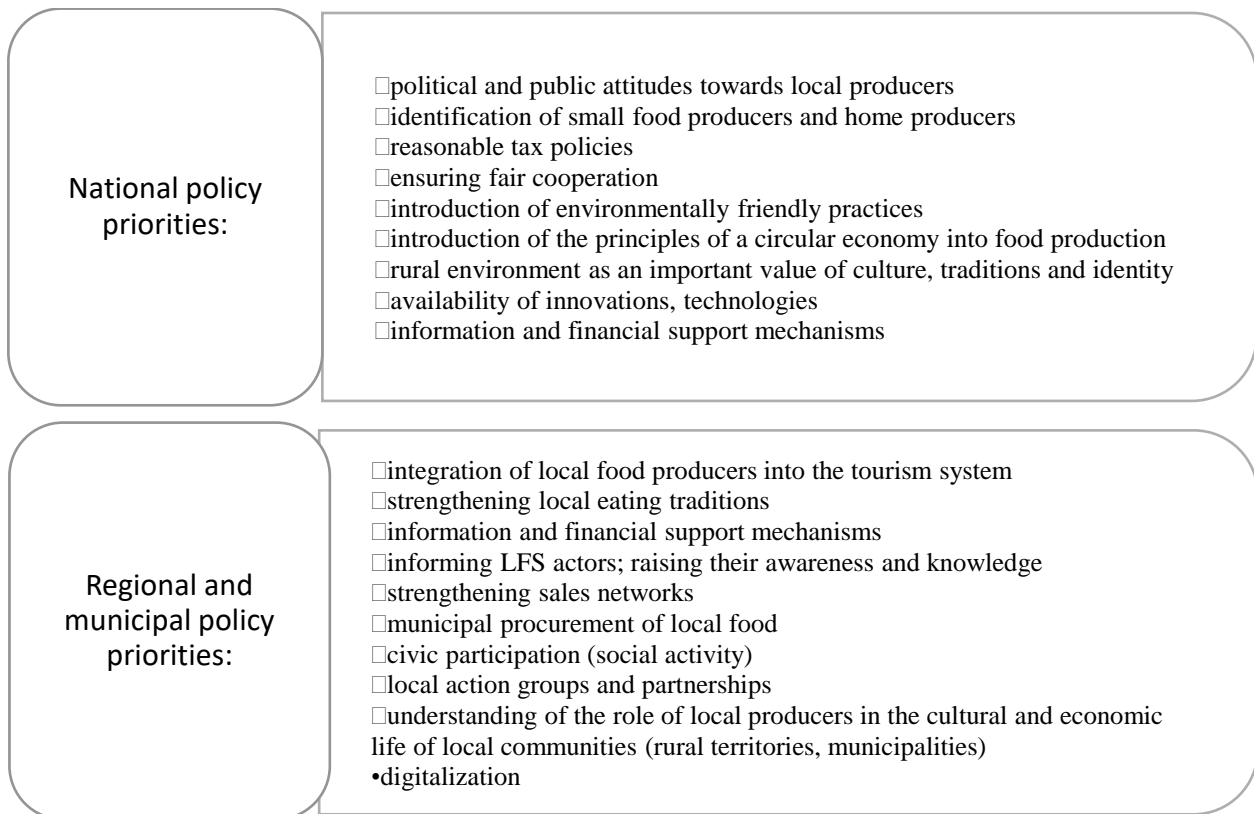


Fig. 3. **National, regional and local government policy priorities**

The main policies implemented, depending on their scale, shape the main trends in the LFS at international level; at national level, trend awareness needs to be built up; at regional level, the role of local food needs to be incorporated in strategic policy documents; at municipal level, cooperation needs to be promoted. The policy priorities were identified by analysing the strategic policy documents, and the analysis revealed that the focus on food production in municipal development programmes, i.e. at local level, was presented in more detailed. Overall, the analysis of support policies for the food production system, based on the documents and surveys, revealed that this element was perceived in two ways – both as support and as a factor hindering development.

The national policy priorities for the development of LFS potential and the transformation of current food systems towards sustainability need to focus on the socio-economic and ecological situation in relation to the LFS (Figure 3).

At national level, a significant role is played by a non-contradictory political and public position on local producers, incl. small farms, home producers and the whole LFS. Policy integration needs to be complemented by technological and social innovations in the patterns of investment, production, distribution and consumption, which need to be adapted to the relevant context and scale, considering the policy implementation capacity of stakeholders. The research results revealed that an important measure to be taken by policy makers at national level is the establishment of a system for systematically keeping records on the consumption of resources by and the output of the enterprises engaged in the LFS, which would allow researchers to conduct research studies on the impacts of the LFS on the socio-economic development of communities.

At regional and local government level, the main policy priorities involve identifying the role of local food to be specified in the strategic policy documents, as well as taking appropriate measures to contribute to the development of the LFS (Figure 3), which would facilitate the transition to more sustainable food

systems. Accordingly, at local level, problems such as the incorporation of local food procurement into food programmes implemented by local institutions, the creation and development of local business networks, the contribution to local social actions and the use of the latest technologies become important.

Conclusions, proposals, recommendations

- 1) The public need to be given an opportunity to choose between local and global food. The development of local food systems is possible, and this involves public education, producer education, the interest of local authorities and the use of diverse short supply chains. The key driver of local food systems is political interest, followed by investment in infrastructure and consumer interest in purchasing the products.
- 2) The social agents of the core food production system (food producers and consumers) usually focus on and understand the opportunities created by support policies (priorities, funding opportunities, strategies and the legal framework), as well as emphasize the barriers to food production (bureaucracy, competition with global producers and insufficient information).
- 3) In Latvia, the implementation of the European Green Deal is in progress; however, to avoid suspicions about the fairness of Green Deal policies, detailed information on packaging, energy resources, waste management and other related issues for food producers and consumers, involving both the private and the public sectors, is needed.
- 4) In Latvia, it is necessary to maintain different food trade patterns, especially through developing the local food trade pattern, which is especially suitable for the involvement of small farms and home producers of food in the market and for better use of their potential. An important element of the system is home production. In Latvia, there are no national legal acts that would define and govern home production; therefore, the general legislation is applied to home production and the actors. Home producers are governed by the same legal framework as large manufacturing companies.

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Bibliography

1. *Commission communication* (2019). European Green Deal. European Commission. Brussels, COM (2019) 640 final. Retrieved: <https://eurlex.europa.eu/legalcontent/LV/TXT/HTML/?uri=CELEX:52019DC0640&from=ES> Access: 08.01.2021.
2. Cvijanovic, D., Ignjatijevic, S., Tankosic, J. V., Cvijanovic, V. (2020). Do Local Food Products Contribute to Sustainable Economic Development? *Sustainability* (Switzerland), Volume 12, Issue 7, p. 2847. Retrieved: <https://doi.org/10.3390/su12072847>. Access: 07.03.2022.
3. Doernberg, A., Ingo Zasada, I., Bruszezwska, K., Skoczowski, B., Piorr, A. (2016). Potentials and Limitations of Regional Organic Food Supply: A Qualitative Analysis of Two Food Chain Types in the Berlin Metropolitan Region. Retrieved: http://apps.webofknowledge.com.ezproxy.llu.lv/full_record.do?product=WOS&se_arch_mode=GeneralSearch&qid=32&SID=F3fZea8h1FiOHpIxuY4&page=1&doc=1. Access: 07.03.2021.
4. Enthoven, L., Van den Broeck, G. (2021). Local Food Systems: Reviewing Two Decades of Research. *Agricultural Systems*, Volume 193, p. 103226. Retrieved: <https://doi.org/10.1016/j.agsy.2021.103226>. Access: 17.02.2022.
5. Ericksen, P.J. (2007). Conceptualizing Food Systems for Global Environmental Change Research. *Global Environmental Change*, Volume 18, Issue 1, pp. 234-245. Retrieved: doi:10.1016/j.gloenvcha.2007.09.002. Access: 17.02.2022.
6. *European Commission* (2018). The Common Agricultural Policy at a glance. Brussels. Retrieved: https://ec.europa.eu/info/foodfarming-fisheries/key-policies/common-agricultural-policy/cap-glance_en. Access: 15.10.2018.

7. *European Commission, Commission Communication* (2020). Brussels. From Farm to Fork Strategy. Retrieved: <https://eurlex.europa.eu/legalcontent/LV/TXT/?qid=1590404602495&uri=CELEX%3A52020DC0381>. Access: 09.01.2021.
8. *FAO* (2016). Summary Building a Common Vision for Sustainable Food and Agriculture. Principles and Approaches Rome. Retrieved: <http://www.fao.org/3/a-i3941e.pdf>. Access: 05.02.2022.
9. Fonte, M. (2008). Knowledge, Food and Place. A Way of Producing, a Way of Knowing. *Sociologia Ruralis*, Volume 48, Issue 3, pp. 200-222.
10. Food 2030. Research and Innovation Policy to Make our Food Systems Ready for the Future. European Commission. Retrieved: https://ec.europa.eu/info/research-and-innovation/research-area/environment/bioeconomy/food-systems/food-2030_en. Access: ?
11. *From Farm to Fork Strategy, European Commission communication* (2020). Brussels, Retrieved: <https://eurlex.europa.eu/legalcontent/LV/TXT/?qid=1590404602495&uri=CELEX%3A52020DC0381>. Access: 07.03.2021.
12. Galli, F., Bartolini, F., Brunori, G., Colombo, L., Gava, O., Grando, S., Maescotti, A. (2015). Sustainability Assessment of Food Supply Chains: an Application to Local and Global Bread in Italy. *Agricultural and Food Economics*, Volume 3, Issue 21, pp. 1-17. Retrieved: https://www.researchgate.net/publication/281240141_Sustainability_assessment_of_food_supply_chains_an_application_to_local_and_global_bread_in_Italy. Access: 04.03.2021.
13. Granvik, M., Joosse, S., Hunt, A., Hallberg, I. (2017). Confusion and Misunderstanding-Interpretations and Definitions of Local Food. *Sustainability* (Switzerland) Volume 9, Issue 11, p. 1981. Retrieved: <https://doi.org/10.3390/su9111981>. Access: 07.03.2022.
14. Le Velly, R., (2017). *Dynamiques des systemes alimentaires alternatifs*. Systemes agroalimentaires en transition, Edition Quae, pp. 149-158.
15. Marsden, T., Banks, J., Bristow, G. (2000). Food Supply Chain Approaches: Exploring their Role in Rural Development. *Sociologia ruralis*, Volume 40, Issue 4, pp. 424-438. Retrieved: http://apps.webofknowledge.com.ezproxy.llu.lv/full_record.do?product=WOS&se_arch_mode=GeneralSearch&qid=42&SID=F3fZea8h1FiOHpIxuY4&page=1&doc=2. Access: 04.03.2021.
16. Peters, C.J., Bills, N.L., Wilkins, J.L., Fick, G.W. (2009). Food Analysis and its Role in Sustainability. *Agriculture and Food Systems*, Volume 24, pp. 1-7. Retrieved: http://apps.webofknowledge.com.ezproxy.llu.lv/full_record.do?product=WOS&se_arch_mode=GeneralSearch&qid=7&SID=C27EBumCQeIEmITJrI3&page=1&doc=1. Access: 04.03.2021.
17. Rossi, J.D., Johnson, T.G., Hendrickson, M. (2017). The Economic Impacts of Local and Conventional Food Sales. *Journal of Agricultural and Applied Economics*, Volume 49, Issue 4, pp. 555-570.
18. Schoolman, E.D. (2020). Local Food and Civic Engagement: Do Farmers Who Market Local Food Feel More Responsible for Their Communities? *Rural Sociology*, Volume 85, Issue 3 pp. 806-839. Retrieved: <https://doi.org/10.1111/ruso.12326>. Access: 04.03.2022.
19. Shepon, A, Henriksson, P.J.G., Wu, T. (2018). Conceptualizing a Sustainable Food System in an Automated World: Toward a "Eudaimonian" Future. *Frontiers in Nutrition*, Volume 5, Article 104. Retrieved: doi: 10.3389/fnut.2018.00104. Access: 04.03.2022.
20. Shideler, D., Watson, P. (2019). Making Change Through Local Food Production: Calculating the Economic Impact of Your Local Food Project. *Journal of Agriculture, Food Systems, and Community Development*, Volume 8, pp. 165-177.
21. Jibb, S.B.A. (2019). The Rise of the Local Food Movement and Its Impact on Rural Economies: With Examples from the Region of Durham. *Papers in Canadian Economic Development*, Volume 18 p. 98. Retrieved: <https://doi.org/10.15353/pced.v18i0.96>. Access: 04.12.2021.
22. Tendall, D.M., Joerin, J., Kopainsky, B., Edwards, P., Shreck, A., Le, Q.B., Kruetli, P., Grant, M., Six, J. (2015). Food System Resilience: Defining the Concept. *Global Food Security*, Volume 6, pp. 17-23. Retrieved: <https://doi.org/10.1016/j.gfs.2015.08.001>. Access: 04.12.2021.
23. *United Nations 2030 Agenda for Sustainable Development* (2015). Sustainable Development Goals. Retrieved: <https://www.undp.org/content/undp/en/home/sustainable-development-goals.html>. Access: 04.03.2021.
24. *WEF (World Economic Forum)* (2018). The Report. Innovation with a Purpose: The Role of Technology Innovation in Accelerating Food Systems Transformation. Cologny/Geneva Switzerland, p. 42. Retrieved: <https://www.weforum.org/reports/innovation-with-a-purpose-the-role-of-technology-innovation-in-accelerating-food-systems-transformation>. Access: 04.03.2021.