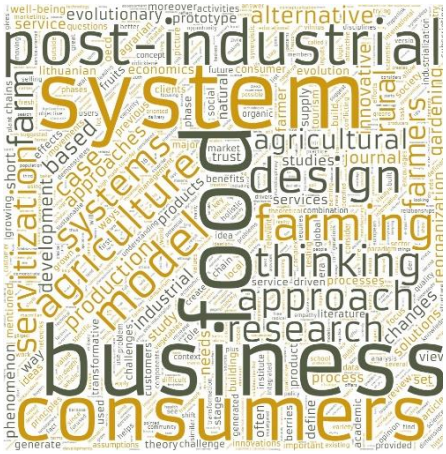
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SERVITIZATION OF FARMING: A NEW APPROACH TO LOCAL FOOD SYSTEMS BUILDING

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Abstract: The post-industrial service economy suggests new ways of thinking about food system design and building processes. This article discusses the need to explore best practices in the servitization of farming and theorize them as a new approach to food production, supply, and consumption. In contrast to prevailing theories that suggest reorganization of the global agri-food supply chain on the basis of the short supply chain concept or according to the community-supported agriculture model, servitization of farming puts forward a „made-to-order" food system. The purpose of this article is to develop theoretical and practical guidelines that suggest new ways of thinking about food system design and building processes. The article demonstrates the potential of a farming servitization to create new food system configurations through the combination of three approaches: holistic, design thinking, and evolutionary by providing a case study on a farm that uses a „service-driven" business model and makes-to-order organic vegetables, fruits, and greens. The case study approach allows in-depth, multi-faceted explorations and conceptualization of an innovative business model building process according to 5 phase design thinking model, which suggests gradual reorganization of the industrial food system as the result of farming servitization.

Keywords: community-supported agriculture, farming business model, food system, servitization, short supply chain, post-industrial

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Santrauka: Poindustrinė paslaugų ekonomika siūlo naujus mąstymo būdus apie maisto sistemos kūrimą ir jos įgyvendinimą. Šiame straipsnyje diskutuojama apie poreikį analizuoti gerąsias paslaugų teikimo ūkininkaujant praktikas ir jas teoriškai apibendrinti kaip naują požiūrį į maisto gamybą, tiekimą ir vartojimą. Skirtingai nuo vyraujančių teorijų, kurios siūlo pertvarkyti globalią maisto tiekimo grandinę remiantis trumpos maisto tiekimo grandinės koncepcija arba taikant bendruomenės remiamą žemės ūkio modelį, ūkininkavimo servitizacija leidžia kurti "pagaminto pagal užsakymą" maisto sistemą. Šio tyrimo tikslas – parengti teorines ir praktines gaires, siūlančias naujus mąstymo būdus, kaip gali būti projektuojamos ir kuriamos maisto sistemos. Straipsnis demonstruoja ūkininkavimo servitizacijos galimybes, leidžiančias sukurti naujas maisto sistemų konfigūracijas, derinant tris požiūrius: holistinį, dizaino mąstysenos ir evoliucinį, pristatant atvejo analizę ūkyje, kuriame naudojamas „paslaugomis grindžiamas" verslo modelis, auginant pagal užsakymą ekologiškas daržoves, vaisius ir žalumynus. Atvejo analizės metodas leidžia nuodugniai, įvairiapusiškai ištirti ir konceptualizuoti novatorišką servitizuoto ūkio verslo modelio kūrimo ir vystymo procesą, vykstantį pagal 5 etapų dizaino mąstysenos modelį, kuris pamažu keičia industrinę maisto sistemą.

Raktiniai žodžiai: bendruomenės remiamas žemės ūkis, maisto sistema, servitizacija, trumpa tiekimo grandinė, poindustrinis, ūkininkavimo verslo modelis

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Highlights:

- new ways of thinking about food system design and building processes are introduced
- the industrial food system reorganization is focused on a multidisciplinary view relevant to post-industrial reality
- three approaches (holistic, design thinking and evolutionary) are used
- the case study is provided on a „service-driven" business model building and development processes in farming
- the link between the servitization of farming and the "made-to-order" food system is discussed

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1. Introduction

The food systems transformation has been the subject of debate for several decades. However, recent years show a rise in concerns that reforms inside the industrial framework neglect new important business drivers arising as paradigm innovations of the post-industrial era (Lankauskienė et al., 2022). In comparison with the agrarian era, the industrialization of agriculture created a new international division of labour in food systems that was centred on transnational agri-food companies and retailers. Changes in the division of labour and deep specialization of farms and other participants of food systems created a long agri-food supply chain, therefore, theorists of food systems focus on production-centred, distribution-centred, and consumption-centred processes separately. In the post-industrial stage, oriented to service economy rules, the production/distribution/consumption disconnect is erased. However, most research on food system reorganization continues the research that seeks to contribute to the sustainability of each industrial linear food supply chain individually and does not take an integrated approach that requires collaboration between representatives of different disciplines, including agronomy and veterinary, health care, logistics, management, marketing, etc. The lack of an integrated multidisciplinary view leads to different and conflicting visions of what is desirable for our future food systems. Enhanced collaboration across different scientific disciplines has the potential to increase the impact of agricultural and food economics (Fresco et al. 2021; Schwarz et al., 2021). This research extends the food system reorganization-related literature by focusing on a multidisciplinary view relevant to post-industrial reality.

The purpose of the article is to develop theoretical and practical guidelines that suggest new ways of thinking about food system design and building processes and improves understanding of post-industrial paradigm innovations as drivers of food system transformations by the evolutionary path. The article is organized as follows: Firstly, drawing on cross-disciplinary literature, we identify the post-industrial principles and logic of alternative local food systems building in comparison with the global industrial food system. In the third section, we analized the potential of a farming servitization to create new food system configurations through the combination of three approaches: holistic, design thinking, and evolutionary by providing a case study on a farm that uses a „service-driven" business model and makes-to-order organic vegetables, fruits, and greens. In the research findings section, we demonstrated that by using a set of mentioned approaches to the alternative food system design, we get a chance to think "outside of the box" and do it in a fruitful and operative way. And finally, there are provided conclusions with insights for further research, based on the findings of this article.

2. Theoretical background

The term "food systems" refers to all the elements and activities related to producing and consuming food, and their effects, including economic, health, and environmental outcomes (OECD, 2021). The negative environmental impacts of intensive agriculture, new challenges to food security because of COVID-19 pandemic, and Russia's war on Ukraine have imposed unprecedented stresses on food systems and highlighted the need to strengthen their resilience. The reorganization of such a complex and multi-dimensional phenomenon as a food system requires innovative transdisciplinary thinking that considers the interconnection between biological, social, and psychological factors and is able to generate synergetic effects.

In our opinion, a framework for future research and the building of food systems should be based on the set of three following approaches:

1. Holistic approach.
2. Design thinking approach.
3. Evolutionary approach.

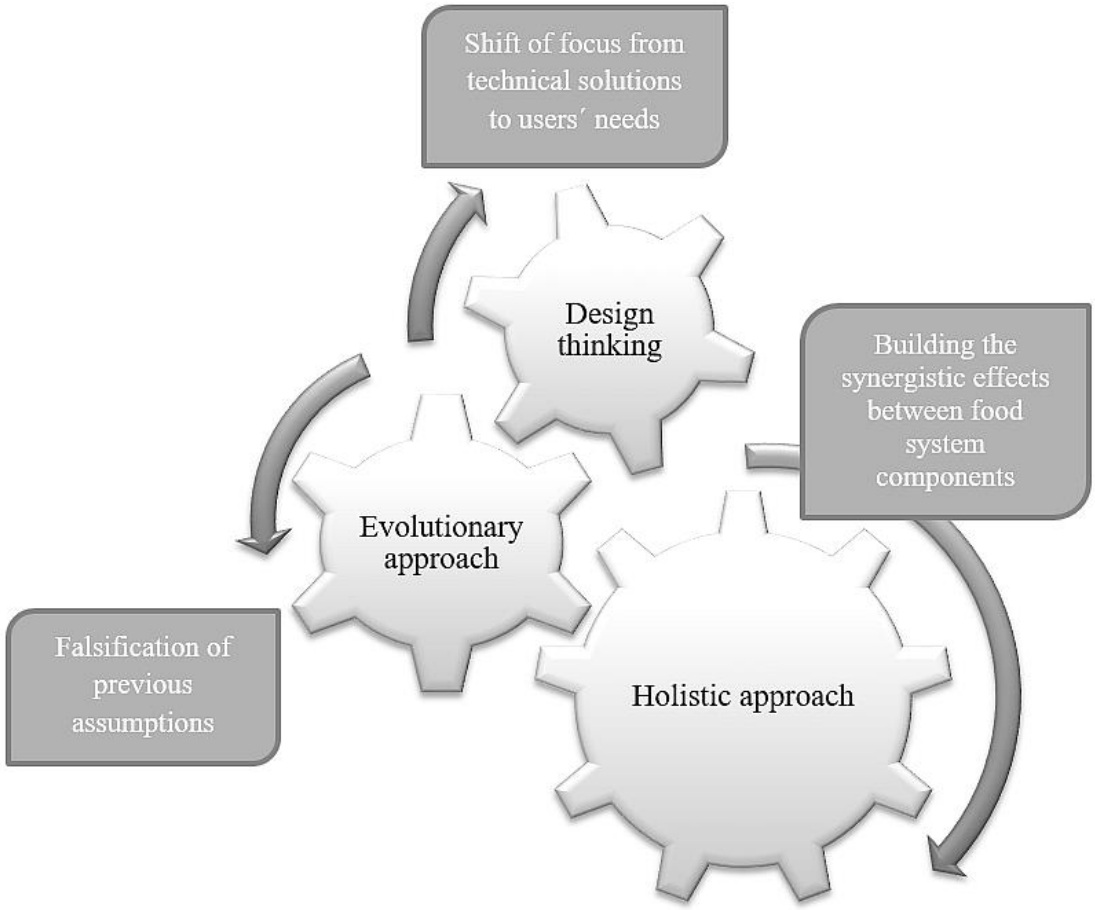


Fig 1. Key approaches to industrial food system reorganization. Source: created by authors

A common practice in the improvement of the global food system or alternative food systems building is suffering from reductionism (reductionism is essentially breaking down a large problem into smaller, easier problems). For instance, according to the last report of OECD, contemporary food systems are facing a triple challenge: 1) ensuring food security and nutrition for a growing population, 2) supporting the livelihoods of millions of farmers and others in the food chain, and 3) doing so in an environmentally sustainable way. The report points out that food systems are currently a long way off from meeting those challenges because "major shortcomings exist in all three dimensions" (OECD, 2021, p. 9). Many efforts to solve the existing problems fail because complex questions on food system reorganization are intuitively subdivided into sub-questions without analysis of the big picture. The existing research and practical actions in industrial food system reorganization ignore the fact that all the identified dimensions are closely interrelated and change in one of the dimensions generates changes in the other two dimensions. For example, the efforts to increase the productivity of agriculture leading to food security (dimension 1) cause a lot of economic problems for farmers, including rising costs of inputs and levels of capital intensiveness in farm production, and declining commodity prices (dimension 2), and a variety of negative environmental effects (dimension 3). Consequently, desired changes in food systems are possible only on the basis of *the holistic approach* to food that considers the relationships between the dimensions. "Contrary to reductionism, holism is defined broadly by the view that a phenomenon is an indivisible whole and that the sum of its parts is not sufficient to define it" (Fardet & Rock, 2015, p. 1056). It means that according to the holistic approach, food system reorganization should be focused on the phenomena as a whole, not on its separate parts, dimensions, or problems. However, how to realize this requirement in practice? In our opinion, the most potential to consider all major challenges and ways to generate positive synergetic effects between components of any food system has an integrated design thinking approach.

The design thinking approach is rather new in social sciences. At the beginning of the 1960s, a lot of problems was discovered in collaboration between representatives of different disciplines because of different educational backgrounds leading to conflicting approaches to solving problems. Design thinking emerged as a tool for managing the collaboration of multidisciplinary team members in creative processes. Instead of focusing on how the problem can be technically solved, the main focus is on addressing the user's needs and requirements (Schallmo et al., 2018). It means that design thinking is a customer-centred approach to innovation that requires a deep understanding of customers' needs. At the heart of the design thinking, the approach should be the intention to transform the industrial global food system by analyzing and understanding how food consumers interact with food and investigating the conditions in which they operate. The scholars aim to evolve the concept of consumer centricity in food design thinking by providing a well-established theoretical background rooted in consumer experience and happiness studies (Batat, 2021; Fernhaber et al., 2019; Zarantonello & Schmitt, 2021; Waqas et al., 2021). This knowledge emphasizes essential changes in the consumers' needs and encourages applying the evolutionary approach to our research question.

The evolutionary approach offers guidelines on how to transform the global industrial food system because it gives information on key characteristics of food systems in the previous stages of human social evolution and major general attributes of a new stage. For implementing holistic and evolutionary approaches to the innovative design of a food system, we need to identify the main drivers responsible for shifting the global food system from one stage of evolution to another. It relies on a deeper and more complex understanding of the drivers that lead to food system changes and provides us with information on how to navigate future solutions. The most productive way to do it is to make the evolutionary analysis of food systems in the context of a more general phenomenon – the evolution of economic systems. According to post-industrialism, the previous stages of the global economic evolution can be defined as 1) agrarian and 2) industrial. We live in the era of transition from an industrial to a post-industrial service economy with essential changes in human needs. In our opinion, our ability to meet new human needs for food depends on our knowledge of the evolution process of economic systems in general. Moving a food system to the next stage of evolution according to the post-industrialism theory, we should focus on the differences between agrarian, industrial and post-industrial economies.

The contemporary global food system was built according to the rules of the industrial stage. Although urban dwellers in the developed world have lived by the laws of industrial society for several centuries, the industrialization of the agricultural sector and rural life began not so long ago. The authors studying the economic history of agriculture claim that the mass industrialization (often referred to as "modernization") of agriculture began only after World War II (Federico, 2005; LaVerne, 2012; Martín-Retortillo & Pinilla, 2015). The farmers were encouraged to maximize yields using increased artificial inputs and improved plant and animal genetics. The industrialization of agriculture was based on four essential technical innovations:

- Agricultural machinery (until World War II, it was used on a vast scale only by grain growers in the Soviet Union and in the Great Plains and Pacific regions of North America).
- Electrification.
- Irrigation or melioration.
- Chemical fertilizers and pesticides.

All the mentioned innovations became an important means of changing the productivity of the agricultural sector through the adoption of labour-saving technology and other artificial inputs leading to the intensification of production processes (Vidickiene & Melnikiene, 2014). The industrialization of farming also generated specialization and scale enlargement, leading to large one-product farms.

In parallel with changes in farming practices, the past 70 years have witnessed remarkable changes throughout the entire food system (Busch, 2019). Beyond the farm-gate, radical changes have taken place in food processing and assembly line technologies designed to increase the volume of output and supply the population with cheap and convenient products. Moreover, almost all food is then purchased by

the public from an increasingly concentrated sector of corporate retailers. They have a huge influence backing up the food chain through standardization and their control of 'point-of-sale' data.

Although the industrialization of farming has undoubtedly improved food security in terms of increasing yields and the total number of calories grown globally, it has generated a lot of negative effects. There is a growing body of academic literature that argues that the industrial food system has experienced a crisis and needs to be improved (e.g., Weatherell et al., 2003; Marsden, 2003; Nemes, 2005; Van der Ploeg et al., 2010; Rosin et al., 2013; Vidickiene & Melnikiene, 2014; Bello, 2020). During the last decades, two major discourses on the future of food systems reorganization dominates. The discourses can be defined as a group of ideas and patterned ways of thinking based on the belief that the current global food system should be: (1) improved or (2) revised and radically changed.

The supporters of the first discourse believe that all negative effects caused by the industrial agro-technologies and corporate food processors and retailers can be eliminated by retaining the same basic structure of the global food system and ways of functioning through the creation and implementation of new technological innovations. In their opinion, scientific advances have the potential to bring forward new technologies in agriculture and the supply chain that could boost productivity and at the same time consider resource scarcities and environmental problems. According to the bibliometric analysis of academic literature on the agri-food supply chain research field over the period of 2008 to 2019, major new topics are blockchain and the Internet of things (Barbosa, 2021), i.e., new technologies of the 4th industrial revolution.

The supporters of the second discourse are looking for alternative solutions. Initiators of radical food system reorganization are calling for more transparency in the food system to reconnect consumers with their food by re-localization of the food system (e.g., Hinrichs, 2003; Baker, 2011; O'Neill, 2014; Papadopoulos, 2016; Alvarado et al., 2020;). However, most suggested reforms ignore the holistic approach and are oriented to the old way of thinking, i.e., to the transformation of the industrial linear food supply chain that consists of three major chains: 1) food production, 2) distribution and 3) consumption. The initiators evolve their ideas on how to transform food systems according to the needs of post-industrial society separately working in three different fields. The negative effects of intensive industrial food production try to solve the developers of agroecological farming methods. Many such methods can be called "retro-innovations' as they come from local traditional indigenous knowledge. The food distribution problems try to solve the developers of different types of short food supply chains (i.e., direct sales from the farmer to the end-consumer on-farm and on physical or virtual farmers' markets). The transformations mainly are designed according to the best practices used in agrarian society. The design of the food systems according to the needs of food consumers try to solve the initiators of the closed food consumer groups called "community-supported agriculture". This food system is based on the relationships of food producers and consumers inherent to the agrarian era combined with the investment model inherent to the industrial era. As a result, all three groups of reformers are innovating within the dominant industrial food system by incorporating into it some of the best components of the food system of the agrarian era.

According to the proponents of the post-industrial paradigm, further evolution of food systems requires innovating outside the dominant food system. It is possible only with the introduction of paradigm changes based on the theory of post-industrialism. The transition from industrial to post-industrial economy mainly occurs as servitization processes and the post-industrial society should suggest a new way of thinking about food systems based on the service economy rules. It means that the reforms should consider radical changes in the needs and power of key agents in the food system: consumers and producers. However, the evolutionary analysis demonstrates that many previous assumptions on the role and needs of food consumers and farmers identified by scholars in the last decades of the 20th century are not valid.

In contrast to the industrial system where food producers play the leading role, the post-industrial economy is based on the needs of consumers. Today, food consumers are not intended to only satisfy hunger and to provide necessary nutrients but also to improve their physical, emotional, and mental well-being. They demand to offer not only products that are certified as organic, fresh, and environmentally

friendly but also based on specific qualities tailored to meet individual consumers' needs (Miškolci, 2017). Moreover, the social movements of consumers are increasingly demanding greater traceability in the food systems (Bantham and Oldham, 2003; Bosona and Gebresenbet, 2011; Vidickiene, 2021). According to surveys of food consumers, the key challenge to the global food system reform is to find a way how to gain consumers' trust in the food supply chain (Robinson & Ruth, 2020). Numerous studies in the literature identified how consumer trust in food and the food system is established (Wu et al., 2021). However, the former research stream examines trust as an individual process of risk assessment (Conroy & Lang, 2021). Studies of individual trust in food, which is the most important in the industrial era, should be changed to an understanding of trust as a more complex social process. In our opinion, the post-industrial way to make the whole food system more trustworthy should be based on the servitization of farming. To discuss this emerging phenomenon, we use the term 'servitization', which is commonly understood as a transformational process shifting from a production-centered to a services-centered business model and overall activity organization process. Servitization has been broadly addressed in management literature since the early 1990s, especially in manufacturing research (e.g., Vandermerwe, 1990; Won, 1994; Magnusson & Stratton, 2000; Baines et al., 2009; Lightful et al., 2013; Baines et al., 2017). In recent years servitization research modestly expanded into the spheres of agriculture and farming research (Šumyle & Ribašauskienė, 2017; Vidickienė & Gedminaitė-Raudonė, 2018, 2019, 2020; Vidickienė et al., 2019; Lankauskiene et al., 2022). In contrast to the currently dominant anonymous food markets, farming servitization projects demonstrate the high potential to build long-lasting trust between the farmers and their clients. Moreover, the shift from industrialization to servitization in farming is currently recognized as consequences for sustainable development (Gallouj, 2021).

The discussions in the academic literature concerning the needs of farmers in the context of food systems reorganization are also focused on the solutions in the frame of the industrial lifestyle, mainly in terms of livelihoods and access to land. Only a few scholars consider one newly emerging problem which poses a major additional threat to future food security worldwide and requires innovative solutions. Their studies show that many farmers worldwide now have no obvious successors (Uchiyama et al., 2008; Chiswell, 2012; Burton, Fischer, 2015; Zagata & Sutherland, 2015; Baker et al., 2016; Giller, 2021). In the 21st century, despite all the increases in farm incomes, nobody wants to take over their work in the next generation. Neither the children of the farmers nor others view industrial farming as an attractive profession. This trend is common in highly developed and less developed countries and needs to be reversed. As pointed out Milone & Ventura (2019, p. 43), "attracting people to farming demands a profound understanding of generational renewal". We should identify what other factors aside from farm incomes are crucial for a voluntary decision to begin farming, stay in, or return to, demonstrates a new generation of farmers who are making a success of running farms (often very small) while contradicting the basic principles of the modernization scenario (Hamilton, 2010; Vidickiene, 2021; Coopmans et al., 2021). These farmers, often with non-agrarian degrees, want to make their mark on the evolution of rural areas by creating and developing land-based rural businesses. Empirical research shows that the variety of farming activities is very large, it is chosen primarily according to the interests and preferred lifestyles of the new generation of farmers and goes beyond the agricultural sector (Hamilton, 2011; Pinto-Correia et al., 2015; Vidickiene et al., 2018).

The new generation of farmers demonstrates how can farming become an attractive profession for people who have a choice. The success of these farmers is due to their innovativeness and ability to collaborate, especially with agents from outside the agricultural sector, together with their responsiveness to the new demands of post-industrial society. Many of them apply a service-driven business model (Vidickiene, 2018; Coopmans et al., 2021; Vidickiene, 2021). Although some authors think that „servitization is typically a manufacturer's strategy" (Gölgeci et al., 2021, p. 646), empirical studies show that there is an abundance of initiatives in the servitization of farming (Vidickiene et al., 2019). Hence, servitization in agriculture is still poorly investigated, especially the social aspect of sustainable development (Gallouj, 2021). However, while analyzing the innovations related to the phenomenon of servitization in the agricultural sector, the researchers are still trying to explain them using industrial-era terminology. Farmers' efforts to apply new business models are called "direct sales", "short supply chain" or "community-supported

agriculture". However, in fact, these farmers seek to apply a variety of "product plus service" or "resource plus service" business models inherent to the post-industrial economic system.

In contrast to prevailing theories that suggest reorganization of the global agri-food supply chain according to the Short Supply Chain concept or Community-supported Agriculture model, the concept of farming servitization provides a wider picture. An innovative service-driven business model in farming presents a "made-to-order" food system. In comparison to the Short Supply Chain concept, when a farm is producing for an anonymous market, a "made-to-order" food system emphasises the orientation to own clients of the farmer. This food system feature allows food consumers to get products that are customized to their specifications. In comparison to the Community-supported Agriculture model, when consumers become members of the closed community by paying an agreed amount for one farmer at the beginning of the growing season, a "made-to-order" food system is an open market system. Clients of the farm do not share the risk of production and the farm functions analogous to all service providers. Post-industrial vision expands the food system's goals by considering its contributions to the well-being of all stakeholders. Focusing on the task to reconcile the new needs of food consumers and producers/farmers offers great prospects for re-energizing the conventional food system. Servitization of farming helps to exploit synergies and manage trade-offs between the components of a food system according to the rules of the post-industrial economy.

3. Research methodology

The selection of research methodology for this article was done considering the research problem and raised questions, which are still empirically new and theoretically miserably defined in such a particular combination of approaches, provided in this article. Therefore, a qualitative research methodology had been selected, based on a case study.

Experts in scientific methods stress the suitability of the case study method, when the problem under analysis is still unexplored and original, as case studies allow to evaluate the real phenomenon and evaluate the theoretical assumptions of the evaluated phenomenon (Eisenhardt, 1989). According to Yin (2011), the case study method is appropriate when certain criteria are met: a) the main purpose of the study is to clarify the object under study by seeking answers to the "how" and "why" questions; (b) there is no possibility of manipulating the behaviour of the actors under investigation; (c) contextuality relevant to the study; (d) unclear links between the phenomenon under study and the context.

This research provides an explanatory case study which was chosen using purposive sampling. This type of sampling is used when cases are selected according to a defined specific goal, and not at random, simply because the case has certain elements of the characteristic of the phenomenon under assessment (Miles, Huberman, 1994; Curtis et al., 2000). The chosen farm start-up "Alternative Gardening", represents all major features of post-industrial farming and the local food supply system:

- Is owned and managed by the farmer of the new generation oriented to lifestyle farming.
- Produce food of the highest quality according to a special innovative agroecology approach.
- Uses a „service-driven" business model which suggests reorganization of the industrial food system.

The case study demonstrates the post-industrial local food system-building process based on a combination of holistic, evolutionary, and design thinking approaches. There is necessarily a tight interplay among all three used approaches. The set of mentioned approaches helped to uncover new ways of building innovative food systems relevant to post-industrial reality as it lies in the interest and ability to ask significant questions and challenge dominant assumptions. The case study structure was compiled according to 5 phase design thinking framework (d. school bootleg, 2018; Luchs, 2015):

- *Empathization phase.* Since empathy is a centrepiece of a human-centred design process, during this initial phase, users and their behaviour are observed. Furthermore, questioning is done regarding the recipient's gained experiences with existing products and services. The objective of

this phase in local food system building is to build an understanding of the local food consumers and their problems in the context of an emerging post-industrial society. To empathize, normally 3 core activities are done (Luchs, 2015): (1) observe; (2) engage; (3) watch and listen. Moving from Empathy work results in conclusions of built empathy for users by learning their values; and afterward, all the things which were heard and seen are processed, aiming to understand the big picture and grasp the takeaways of it.

- *Definition phase.* This phase is devoted to bringing clarity and focus to the design space. The insights that were gained in the previous phase are summarized into concrete needs to formulate a relevant challenge on this basis. The objective of this phase is to develop a more definite understanding of the local food consumers' behaviour than in the previous phase and, building on this, to define a common position on the challenge. To define, it is important to consider what stood out when talking and observing the people, what patterns emerged, why something interesting was pointed out and how? In the Define mode, the specific meaningful challenge is determined to take on, and further move into the Ideate mode is done to focus on generating solutions to address that challenge.

- *Ideation phase.* In this phase, the ideas for the formulated challenge are generated. The objective is to derive many different ideas for the next phase. Ideation is normally done by combining the conscious and unconscious mind, and rational thoughts with imagination. In trying to maintain the innovation potential, generated through ideation, the considered selection should help bring multiple ideas into Prototypes.

- *Prototyping phase.* The Prototyping mode is devoted to iteratively generating the artifacts intending to answer questions that guide the designer closer to the final solution. So, the creation of prototypes makes it possible to turn ideas into tangible solutions. Prototypes can be represented as exemplary role plays or as models. In our case, we are looking for innovative farming business model prototypes able to shift the local food system to a post-industrial reality based on the service economy. Prototypes are helpful because a farmer can try them out and gain experience. Prototype and Test are modes that are recommended to consider in tandem more than the transition between (d. school bootleg, 2018).

- *Testing phase.* This phase is devoted to testing the created prototypes and making improvements. Testing is usually done in the context of the users. The tests also provide an opportunity to gain further information about the user and to change the formulation of the challenge if necessary by going back to different phases: most often – to Ideation, sometimes – to Definition, and sometimes to Emphatization.

Finally, the design thinking framework (d. school bootleg, 2018; Luchs, 2015) stresses, that Iteration is fundamental to good design. Therefore, it is recommended to Iterate both by cycling through the process multiple times, and by iterating within a step.

A case study helps to generate an in-depth understanding of such complex multi-faceted phenomena as a business model and a food system in a real-life context. The set of three approaches allows detailed and comprehensive exploration of innovative business model building logic and development phases with the aim to conceptualize the design processes as the result of farming servitization.

Data collection. The case study was conducted in 2 phases (2019 September, and 2022 May), aiming to elucidate and explore the holistic evolutionary shift from the "agricultural production" business model to the "product plus service" business model in the studied farm "Alternative Gardening". The main data required for this explanatory case study were collected through qualitative in-depth interviews, which allow to build a thorough insight into the researched phenomenon and help answer the research questions. Collected in-depth interview data was interpreted in line with all gathered and systematized information from other public sources: the website of a farm, related social networks, newspapers and news sites, and relevant video casts.

Summarizing the key characteristics of the applied research method, this research is an explanatory case study, providing a detailed description of the data and conceptualization of the researched phenomenon.

4. Research Results

The idea to start a farming business came to the founder of "Alternative Gardening" in 2010 when the family inherited a small piece of agricultural land. It took 4 years from the idea of the natural agricultural farm to its realization and since 2014, the family-owned farm began to supply products to consumers. The farmer began to grow vegetables, fruits, berries, and herbs of a particularly high ecological value for sale, applying the principles of natural agriculture. The farmer grows those products that are most often on the table of every city dweller, e.g., potatoes, tomatoes, cucumbers, cabbage, carrots, herbs, various berries and fruits and many more.

The business model design process has been implemented in a very similar way as suggested by the design thinking approach step by step going through all five phases of the design thinking model.

During the first phase according to the design thinking approach – ***empathization*** – the objective of the landowners was to build empathy for potential consumers by learning and understanding their values and aligning users' needs with their own values and opportunities to develop business (see Tab. 1). The land is in isolation and is suitable for organic agriculture because it avoids the problems of other organic farms when the wind blows away chemicals or fertilizers from neighbouring crops. Moreover, it is situated in a hilly area where it is difficult to use agricultural machinery. The source of inspiration to start an organic farming business also has been the activities of two social movements: the ecovillage movement and its branch – the natural agriculture movement. Both the movements were the right place to empathize with the needs of local food consumers by (1) observing; (2) engaging; (3) watching and listening. The enthusiasts of natural agriculture approach by experimenting, gathering knowledge and adapting it to practice, created the new unique theory of natural agriculture as the techniques most suitable for the Lithuanian climate, which helps to live in a sustainable manner and to apply nature-friendly principles (Gedminaitė-Raudonė, Simonaitytė, 2021). The natural agriculture approach differs from the commonly known agriculture approach called "organic". Farmers according to the principles of natural agriculture do not tear, dig and loosen the soil. Contrarily, it allows the formation of a natural soil structure, which in turn provides good conditions for air to reach the roots of plants, maintains moisture, and creates a suitable environment for soil living organisms. The soil is always considered to be covered with dead plant waste (dry grass, leaves, sawdust) and thus artificially mulched does not dry out. The products of natural agriculture are always chemically clean and rich in biologically active substances, and vegetables and fruits are incomparably more valuable and of better nutritional value than those grown in arable land (Kurlavičius, 2010).

The founder of the "Alternative Gardening" business actively participated in the seminars and learning activities organized by natural agriculture and ecovillages movements, and first of all transformed her own values towards a clean and healthy way of living. Such transformation resulted in a wish to stop her career at school as a biology teacher and became a farmer. The communication and discussions with the members of the ecovillage movement revealed that access to ecologically produced food in Lithuania is complicated. The empathy for the problems of local food consumers to buy clean, rich, and good quality food inspired the idea to plant for sale vegetables, fruits, and berries with a particularly high degree of ecology, applying the principles of natural farming. The idea was also attractive because it empowered to match the consumers' needs with the values and preferred lifestyle of the landowners.

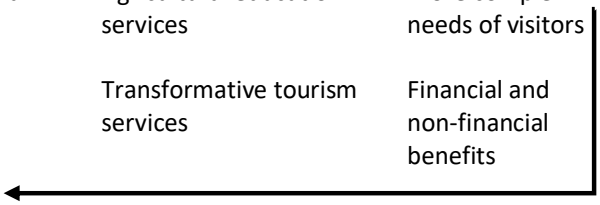
The desire to build a business based on agroecology and close social relationships with the customers became of essential importance to the founder of the "Alternative Gardening" farm. To realise it to a full extent, the design of the business model entered the second phase of the design thinking model – ***definition*** of specific meaningful challenges to the business model**.** The observations of the "Alternative Gardening" owner suggested that the desirable business profile determines four meaningful challenges (see Tab. 1). First, it would be difficult to find enough buyers by marketing in traditional ways because the farm is offering a completely new product to the Lithuanian food market – vegetables, fruits, and

greens that are grown according to the principles of natural agriculture. Selling at the farmers' market would not have paid off for two reasons. First, it is extremely difficult to convince a person that the food is grown differently, according to a special farming approach. Many farmers are employing a widespread approach around the world which in the research of Si et al. (2019), was called "one family, two systems". It is defined as the approach when the farming households are adopting two distinctive farming systems: industrial production with intensive usage of agrochemicals for selling to the market and ecological production with limited or no usage of agrochemicals for self-consumption, relatives, and people with close social ties. As a result, consumers are not sure about the quality of the food at the farmers' market. Second, in comparison with organic agriculture, production costs for natural farming foods are higher. However, the benefits of natural agriculture products are not well known to the public and there are very few buyers who are willing to pay a high price for vegetables grown according to the expensive agroecology technique. The farmer also considered the small scale of the farm and did not find convenient forms of e-commerce or direct production selling to grocery stores as the amount of the production is very small, and it is difficult to predict exactly when a vegetable or fruit will be ripened. Finally, the sale of natural agricultural products is also hampered by the fact that they must be as fresh as possible on the consumer's table – certified natural agricultural products must be delivered to the consumer within 24 hours from harvest. All mentioned specific characteristics of the farm have been considered by the farmer from the very beginning and influenced the marketing strategies and business model design.

The next step in the "Alternative Gardening" business model design process was identic with the third phase – ***ideate*** – suggested by the design thinking model. The objective of the farmer was to create several ideas on how to overcome the identified challenges. She was looking for unconventional ways to market innovative agricultural products and focused on the task to build relationships with customers based on the concept "I am your own supplier of fresh produce". The farmer decided that the best way to realise this idea is to grow and sell the products according to the "product plus services" business model, i.e., supplement agricultural activities with service elements. In the opinion of the farmer, servitization of farming creates an opportunity for businesses to build more intimate and loyal relationships with customers and gain trust in the quality of farm products and their health benefits. At the same time, the "product plus services" business model adds benefits for customers of natural agriculture products because it saves their time and effort in shopping.

Tab 1. "Alternative Gardening" farm business model design process according to the design thinking approach (created by authors).

EMPATHIZE	DEFINE KEY CHALLENGES	IDEATE	PROTOTYPE	TEST
Alignment with values and needs of high-quality food customers	Innovative product High price Small-scale farming 24 hours delivery time	Home delivery service	Made-to-order system with a free choice of products	Very labour-intensive and difficult to manage
			Made-to-order system with the subscription of baskets from a standardized list of products	Doubts about the benefits of an innovative product
	Lack of knowledge	Educational services	Agricultural education services	More complex needs of visitors
		Tourism services	Transformative tourism services	Financial and non-financial benefits



In 2014, “Alternative Gardening” farm started to supply products to customers. The solutions on what kind of services will be provided have been chosen by trial-and-error experiments. The first ***prototype*** of the “Alternative Gardening” business model was designed as an online pre-ordering system. The farmer came up with the vegetables subscription idea when in early spring consumers declare what kind of products, how many, and how often they will buy. However, in contrast to the well-known prototype of community-supported agriculture, the economics within the “Alternative Gardening” business model was not built on the idea of pre-payments from consumers, i.e., the farmer did not seek to create a closed community where the producer and consumers share the risks of farming. The online ordering system was the easiest way of reaching out to a specific food market customer segment. Moreover, it gives an opportunity to plan farming activities and prevents food wastage at the farm and in the households of customers.

The farmer was very flexible, and consumers had many options to create and adapt their vegetable, fruit, and greens baskets according to their needs and eating habits. Her intention was to apply an open system approach oriented to a maximum of individualized services. The clients have the possibility to pre-order any vegetables, fruits, berries, and herbs that can be grown in the Lithuanian climate. The farm also offered a home delivery service. The founder of “Alternative Gardening” and the family members were creating direct contact with their clients by delivering baskets of vegetables by themselves. According to the farmer, a very important aspect of delivering products by themselves was the emotional satisfaction that comes from interacting with customers and it is one of the most important factors that has encouraged a farmer to engage in natural gardening.

However, ***the testing*** showed the weaknesses of the chosen business model prototype. First, the farmer noticed that the free choice of products was very labour-intensive and difficult to manage. Redesigning the business model, the farmer decided to offer a standardized list of products. According to this business model prototype, the clients have an opportunity to pre-order the products only as a subscription for the delivery of suggested vegetables, fruits, and greens. Redesign the business model helped to reduce the labour costs significantly.

The next improvement of the used business model prototype happened due to the need to promote the benefits of an innovative product produced on the farm according to the natural agriculture approach. Communication with clients has given information that their friends and relatives have expressed doubts about the benefits of an innovative product. Many similar questions have been asked concerning eco-innovations in agroecology and the farmer decided to extend the range of services provided on the farm “Alternative Gardening” by adding to farming activities educational services. The previous business model prototype was supplemented by a new component based on the prototype of agricultural education and consisting of educational services in the form of seminars, and training. This improvement helped to build mutual trust between the farmer and her clients and to increase the demand for natural agriculture products because of growing consumers’ confidence that the products offered are really grown in an exclusive way. At the time, it led to increased adoption of natural agriculture products in society.

During the testing phase of this new business model prototype, the farmer understood that adding to their main activities the provision of educational services brings new business development opportunities through tourism services. A new idea on how to use the full potential of implemented eco-innovation in food production was tested by introducing accommodation services. The expansion of the services provided on the farm was based on the prototype of a transformative tourism business model. The traditional educational services on the farm “Alternative Gardening” now are supplemented by more modern learning methods integrating such transformative teaching forms as coaching, mentoring, and learning by doing. Anyone who wants to learn how vegetables, fruits, and berries are grown according to the natural agriculture approach can rent a holiday cottage at the farm. If tourists express a desire to contribute to natural farming through their work, they can stay in the cottage for free. The transformative tourism business model prototype helps to involve new members in the natural agriculture movement because “getting involved in transformative travels is based on the same reasons as transformative learning – frustration with the current situation and the search for something new” (Vidickiene et al., 2020: 279). The testing showed that adding transformative tourism services to the main business brings

financial and many non-financial benefits including an opportunity to maintain a desirable lifestyle and promote it in society with an impact on the local food system.

In summary, the owners of the "Alternative Gardening" farm tested four prototypes of the service-driven farming business model: (1) a made-to-order system with a free choice of products, (2) a made-to-order system with the subscription of baskets from a standardized list of products, (3) agricultural education services, and (4) transformative tourism services (see Tab. 1). However, it must be mentioned that changes in the design of service-oriented farming are not finished, and the phases are in slow *perpetuum mobile* because there is no end to knowing your customer, stopping defining new challenges, looking for new ideas, or trying new solutions. In the opinion of the farm owners, the future of the farm business mainly depends on the scope, quality, and benefits of the services provided. They are proud to participate in the processes of the food system relocalization and ecologization and plan to expand the range of transformative tourism services because this new form of tourism allows the farmer to spread the ideas of natural agriculture more actively and thus create and expand high-quality food customers community as an important driver of positive changes in the local food system.

5. Conclusions

The creation of new food system configurations that are based on a combination of three approaches – holistic, design thinking, and evolutionary – opens up new perspectives. The set of three approaches allows in-depth, multi-faceted explorations of innovative farming business-building logic and development phases. The key task according to *the evolutionary approach* is to falsify previous assumptions – i.e., to make it possible to prove whether they are valid or not. Once we have questioned and investigated the conditions of a problem, it leads to "outside-the-box" thinking that is necessary for creating a solution relevant to the post-industrial era. The evolutionary approach based on the theory of post-industrialism shows a path to the progressive reorganization of the global food system according to the rules of the post-industrial service economy. The shift from the product-driven business model to the service-driven business model transforms the industrial food system into a new quality. The new ideas should be checked according to *the holistic approach* that requires:

- Considering three major chains of food supply – food production, distribution, and consumption – as an integrated phenomenon.
- Balancing competing and sometimes conflicting interests of farmers and consumers.

The holistic approach gives a big picture and encourages the building of synergistic effects between food system components. *The design thinking approach* encourages a shift of focus from technical solutions to food users' needs and helps create innovative configurations of the food system focused on local food consumers' needs and requirements. The set of three approaches helps to generate solutions that reflect the genuine constraints and facets of a reorganized food system.

New post-industrial features represented by case evidence show that in the context of post-industrial society, the challenges to food system transformation should be human-centred and focused on the radical changes in the role and needs of food consumers and farmers as many previous assumptions on the role and needs of food consumers and farmers identified by scholars in the last decades of the 20th century are not valid. Servitization of farming oriented to a "made-to-order" food system can be an important tool for step-by-step changes in food systems as the service-driven business models consider how value may be fashioned and realized via more dynamic and interactive arrangements between food consumers and farmers. The service-driven farming business model helps local food producers, and their clients align in mindset and the value proposition that underpins their involvement. A growing number of similar initiatives generate the gradual relocalization and ecologization of the global industrial food system.

The case study on the farm "Alternative Gardening" also demonstrates how many versions can have a service-oriented farming business model. The path to an ideal farming business model goes by iterating both by cycling through the design phases multiple times, and by iterating within a step. Farming business

model design is an endless step-by-step process as testing each prototype created by the farmer opens new opportunities to identify what new services need to be provided for consumers to reflect their needs on food, trust, and co-creation.

Academic references

[1] Alvarado, M. A., Denis, P., Azzimonti, M., Vysokolan, L. C. & Tcheton, S. (2020). Alternative Agri-Food Networks and Their Role in Re-Localization of Food and Creation of Shared Value: The Case of the Leuven Food Hub. *Transdisciplinary Insights*, 4(1), 182–208. DOI: 10.1051/shsconf/202112902013.

[2] Baines, T. S., Lightfoot, H. W., Benedettini, O. & Kay, J. M. (2009). The servitization of manufacturing: A review of literature and reflection on future challenges. *Journal of Manufacturing Technology Management*, 20(5), 547–567. DOI: 10.1108/17410380910960984.

[3] Baines, T., Bigdeli, A. Z., Bustinza, O. F., Shi, V. G., Baldwin, J. & Ridgway, K. (2017). Servitization: revisiting the state-of-the-art and research priorities. *International Journal of Operations & Production Management*, *37*(2), 256–278. DOI: 10.1108/IJOPM-06-2015-0312.

[4] Baker, K. E. (2011). Understanding the local food phenomenon: Academic discourse, analytical concepts, and an investigation of local food initiatives. *Vis-à-vis: Explorations in Anthropology*, 11(1), 3–24.

[5] Barbosa, M. W. (2021). Uncovering research streams on agri-food supply chain management: A bibliometric study. *Global Food Security*, *28*, e100517. DOI: 10.1016/j.gfs.2021.100517.

[6] Batat, W. (2021). *Design Thinking for Food Well-Being*. Cham: Springer. DOI: 10.1007/978-3-030-54296-2.

[7] Bello, W. (2020). The Corporate Food System Is Making the Coronavirus Crisis Worse. *Indigenous Policy Journal*, 31(1), 379–384.

[8] Busch, L. (2019). The New Autocracy in Food and Agriculture. In Allaire, G. & Daviron, B., eds., *Ecology, Capitalism and the New Agricultural Economy: The Second Great Transformation* (95–109). Abingdon-on-Thames: Routledge.

[9] Conroy, D. M. & Lang, B. (2021). The trust paradox in food labelling: an exploration of consumers' perceptions of certified vegetables. *Food Quality and Preference*, 93, e104280. DOI: 10.1016/j.foodqual.2021.104280.

[10] Coopmans, I., Dessein, J., Accatino, F., Antonioli, F., Bertolozzi-Caredio, D., Gavrilescu, C., Gradziuk, P., Manevska-Tasevska, G., Meuwissen, M., Peneva, M., Petitt, A., Urquhart, J. & Wauters, E. (2021). Understanding farm generational renewal and its influencing factors in Europe. *Journal of Rural Studies*, 86, 398–409. DOI: 10.1016/j.jrurstud.2021.06.023.

[11] Curtis, S., Gesler, W., Smith, G. & Washburn, S. (2000). Approaches to sampling and case selection in qualitative research: examples in the geography of health. *Social Science & Medicine*, 50(7–8), 1001–1014. DOI: 10.1016/s0277-9536(99)00350-0.

[12] Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *Academy of Management Review*, 14(4), 532–550. DOI: 10.2307/258557.

[13] Fardet, A. & Rock, E. (2015). From a Reductionist to a Holistic Approach in Preventive Nutrition to Define New and More Ethical Paradigms. *Healthcare*, 3(4), 1054–1063. DOI: 10.3390/healthcare3041054.

[14] Federico, G. (2005). *Feeding the world: an economic history of agriculture, 1800–2000.* Princeton, NJ: Princeton University Press.

[15] Fernhaber, S. A., Wada, T., Napier, P. & Suttles, S. (2019). Engaging diverse community stakeholders to co-create solutions in food deserts: A design-thinking approach. *Journal of Public Affairs*, *19*(3), e1874. DOI: 10.1002/pa.1874.

[16] Fresco, L. O., Geerling-Eiff, F., Hoes, A. C., van Wassenaer, L., Poppe, K. J. & van der Vorst, J. G. (2021). Sustainable food systems: do agricultural economists have a role? *European Review of Agricultural Economics* 48(4), 694–718. DOI: 10.1093/erae/jbab026.

[17] Gallouj, C. (2021). From industrialization to servitization in agriculture – Consequences for sustainable development. *Revue Européenne d'Économie et Management des Services*, *2021*(11), 87–112. DOI: 10.48611/isbn.978-2-406-12052-0.

[18] Gedminaitė-Raudonė, Ž., Simonaitytė, V. (2021). Industrial Rural Development Paradigm Shift-Focused Social Movements. In: Vilkė, R., Vidickienė, D., Gedminaitė-Raudonė, Ž., Simonaitytė, V. & Ribašauskienė, E., eds., *Rural Economic Developments and Social Movements* (pp. 211–247). Cham: Palgrave Macmillan. DOI: 10.1007/978-3-030-71983-8_7.

[19] Gölgeci, I., Gligor, D. M., Lacka, E. & Raja, J. Z. (2021). Understanding the influence of servitization on global value chains: a conceptual framework. *International Journal of Operations & Production Management*. 41(5), 645–667. DOI: 10.1108/IJOPM-08-2020-0515.

[20] Hamilton, N. D. (2010). America's new agrarians: Policy opportunities and legal innovations to support new farmers. *Fordham Environmental Law Review,* 22(3), 523–562.

[21] Hamilton, N. D. (2011). Moving toward food democracy: Better food, new farmers, and the myth of feeding the world, *Drake Journal of Agricultural Law,* 16(1), 118–135.

[22] Hinrichs, C. C. (2003). The practice and politics of food system localization. *Journal of Rural Studies*, *19*(1), 33–45. DOI: 10.1016/S0743-0167(02)00040-2.

[23] Kurlavičius, P. (2010). *Agrarinė aplinkosauga*. Vilnius: Lietuvos ornitologų draugija. Baltijos aplinkos forumas.

[24] Lankauskienė, R., Vidickienė, D. & Gedminaitė-Raudonė, Ž. (2022). Evolution of Short Food Supply Chain Theory and Practice: Two-Sided Networks and Platforms. *Energies*, 15(3), e1137. DOI: 10.3390/en15031137.

[25] LaVerne, E. S. (2012). *History of Rural Electrification and Farm Wiring Issues*. Washington, DC.: USDA, Agricultural Research Service.

[26] Lightfoot, H., Baines, T. & Smart, P. (2013). The servitization of manufacturing: A systematic literature review of interdependent trends. *International Journal of Operations & Production Management,* 33(11/12), 1408–1434. DOI: 10.1108/IJOPM-07-2010-0196.

[27] Luchs, M. G. (2015). A brief introduction to design thinking. In: Luchs, M. G., Swan, S. & Griffin, A., eds., *Design Thinking: New Product Development Essentials from the PDMA* (pp. 1–12). Hoboken, NJ: Wiley-Blackwell.

[28] Magnusson, J. & Stratton, S. T. (2000). *How do companies servitize?* Göteborg University.

[29] Marsden, T. (2003). *The Condition of Rural Sustainability. Assen*: Uitgeverij Van Gorcum.

[30] Martín-Retortillo, M. & Pinilla, V. (2015). Patterns and causes of the growth of European agricultural production, 1950 to 2005. *The Agricultural History 63*(1), 132–159.

[31] Miles, M. B. & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*. Thousand Oaks: Sage Publications.

[32] Milone, P. & Ventura, F. (2019). New Generation Farmers: Rediscovering the Peasantry. *Journal of Rural Studies*, *65*, 43–52. DOI: 10.1016/j.jrurstud.2021.06.023.

[33] Miškolci, S. (2017). Consumer Preferences Expressed via Shopping in Alternative Food Chains. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, *65*(1), 311–318. DOI: 10.11118/actaun201765010311.

[34] Nemes, G. (2005). *Integrated rural development the concept and its operation: discussion papers.* Budapest: Institute of Economics Hungarian Academy of Sciences.

[35] O'Neill, K. (2014). Localized food systems – what role does place play? *Regional Studies, Regional Science*, 1(1), 82–87. DOI: 10.1080/21681376.2014.904596.

[36] Papadopoulos, A. G. & Fonte, M. (2016). *Naming Food After Places: Food Relocalisation and Knowledge Dynamics in Rural Development*. Abingdon-on-Thames: Routledge.

[37] Pinto-Correia, T., Almeida, M. & Gonzalez, C. (2017). Transition from Production to Lifestyle Farming: New Management Arrangements in Portuguese Small Farms. *International Journal of Biodiversity Science, Ecosystem Services & Management*, *13*(2), 136–146. DOI: 10.1080/21513732.2017.1329753.

[38] Robinson, C., Ruth, T. K., "Tre" Easterly III, Franzoy, F. & Lillywhite, J. (2020). Examining Consumers' Trust in the Food Supply Chain. *Journal of Applied Communications*: 104(2). DOI: 10.4148/1051-0834.2298.

[39] Rosin, C., Stock, P. & Campbell, H. (Eds.). (2013). *Food Systems Failure: The Global Food Crisis and The Future of Agriculture.* Abingdon-on-Thames: Routledge.

[40] Schallmo, D., Williams, C. A. & Lang, K. (2018). An Integrated Design Thinking Approach-Literature Review, Basic Principles and Roadmap for Design Thinking In Bitran, I., Conn, S., Huizingh, E., Kokshagina, O., Torkkeli, M. & Tynnhammar, M., eds., *XXIX ISPIM Innovation Conference "Innovation, The Name of The Game"* (unpaged). Trondheim: ISPIM.

[41] Schwarz, G., Vanni, F. & Miller, D. (2021). The role of transdisciplinary research in the transformation of food systems. *Agricultural and Food Economics*, *9*, e35. DOI: 10.1186/s40100-021-00207-2.

[42] Si, Z., Li, Y., Fang, P. & Zhou, L. (2019). "One Family, Two Systems": Food Safety Crisis as a Catalyst for Agrarian Changes in Rural China. *Journal of Rural Studies*, *69*, 87–96. DOI: 10.1016/j.jrurstud.2019.04.011.

[43] Šumylė, D. & Ribašauskienė, E. (2017). Servitization of Lithuanian agricultural cooperatives. *Vadybos mokslas ir studijos-kaimo verslų ir jų infrastruktūros plėtrai*, *39*(4), 510–523. DOI: 10.15544/mts.2017.35.

[44] Vandermerwe, S. (1990). The market power is in the services: Because the value is in the results. *European Management Journal*, *8*(4), 464–473.

[45] Van der Ploeg, J., Jingzhong, Y. & Schneider, S. (2010). Rural development reconsidered: building on comparative perspectives from China, Brazil and the European Union. *Rivista di Economia Agrarian*. 65(2), 163–190.

[46] Vidickiene, D. (2018). Adapting to the Needs of New Farmers' Generation: Theoretical Foundations for Rural Policy. *Public Policy and Administration*. 17(1), 54–67. DOI: 10.5755/j01.ppaa.17.1.20607.

[47] Vidickiene, D. & Gedminaite-Raudone, Z. (2019). Servitization as a tool to increase vitality of ageing rural community. *European countryside*, *11*(1), 85–97. DOI: 10.2478/euco-2019-0006.

[48] Vidickiene, D. (2021). Social Movements as Drivers of Paradigm Innovations in Rural Development. In Vilkė, R., Vidickienė, D., Gedminaitė-Raudonė, Ž., Simonaitytė, V. & Ribašauskienė, E., eds., *Rural Economic Developments and Social Movements* (pp. 45–89). Cham: Palgrave Macmillan. DOI: 10.1007/978-3-030-71983-8_3.

[49] Vidickiene, D. & Melnikiene, R. (2014). *Evolution of Rural Policy*. Vilnius: Lithuanian Institute of Agrarian Economics.

[50] Vidickiene, D., Gedminaitė-Raudone, Z. & Simonaityte, V. (2019). *Ūkininkavimo servitizacija: verslo modelio „produktų gamyba plius paslaugų teikimas“ apraiškos Lietuvoje*. Vilnius: Lithuanian Institute of Agrarian Economics.

[51] Vidickiene, D., Vilke, R. & Gedminaite-Raudone, Z. (2020). Transformative Tourism as an Innovative Tool for Rural Development. *European Countryside*, 12(3), 277–291. DOI: 10.2478/euco-2020-0016.

[52] Waqas, M., Hamzah, Z. L. B. & Salleh, N. A. M. (2021). Customer experience: a systematic literature review and consumer culture theory-based conceptualisation. *Management Review Quarterly*, 71(1), 135–176. DOI: 10.1007/s11301-020-00182-w.

[53] Weatherell, C., Tregear, A. & Allinson, J. (2003). In search of the concerned consumer: UK public perceptions of food, farming and buying local. *Journal of Rural Studies,* 19(2), 233–244. DOI: 10.1016/S0743-0167(02)00083-9.

[54] Won, S. H. (1994). Evolution of Production System according to the Servitization of Manufactures. *Production Management Studies*, *5*(2), 109–129.

[55] Wu, W., Zhang, A., van Klinken, R. D., Schrobback, P. & Muller, J. M. (2021). Consumer trust in food and the food system: a critical review. *Foods*, *10*(10), e2490. DOI: 10.3390/foods10102490.

[56] Yin, R. K. (2011). *Applications of Case Study Research*. Thousand Oaks: Sage Publications.

[57] Zagata, L. & Sutherland, L. A. (2015). Deconstructing the ‘young farmer problem in Europe’: Towards a research agenda. *Journal of Rural Studies*, *38*, 39–51. DOI: 10.1016/j.jrurstud.2015.01.003.

[58] Zarantonello, L. & Schmitt, B. (2021). An Experiential View of Food Design Thinking: Expanding Consumer Centricity for Food Well-Being. In: Batat, W., ed., *Design Thinking for Food Well-Being* (pp. 211–225). Cham: Springer. DOI: 10.1007/978-3-030-54296-2_13.

Other sources

[59] *Design Thinking Bootleg* (2018). Hasso Plattner Institute of Design at Stanford. Retrieved from https://dschool.stanford.edu/resources/design-thinking-bootleg > [31 May 2022].

[60] *Making Better Policies for Food Systems* (2021). Paris: OECD Publishing. DOI: 10.1787/ddfba4de-en.