ECONOMIC AND SOCIAL ASPECTS OF URBAN AGRICULTURE IN LATVIA – A CASE STUDY

Madara Dobele
MBA, lecturer, Latvia University of Life Sciences and Technologies, Jelgava, Latvia,
e-mail: Madara.Dobele@lbtu.lv

Abstract. *Urban agriculture is developing rapidly in the world, paying significant, often primary attention not only to the economic but also to the social and environmental functions of the practice. Urban agriculture in Latvia is relatively underdeveloped, most of the practice is carried out in small amounts by households for self-consumption. Besides, an analysis of the volumes produced and results in the context of commercial practice and community and public projects revealed that it was at a developmental stage. Urban agriculture in Latvia has also been little researched so far, and the practice does not have a specific legal status that would enable precise determination of the scope of the practice, as well as financial and trend analysis. However, the practice is developing, especially in the form of community gardens. The aim of this study is to determine and describe economic and social aspects of urban agriculture in Latvia. In order to achieve the aim, a systematic theoretical review was performed to determine the definition and boundaries of the practice of urban agriculture, the analysis and synthesis methods were used to identify and describe the trends, and a case study was used to summarize the economic and social aspects of the practice specific to Latvia. Results of the research confirm that social aspects dominate in urban agriculture in Latvia - in aims, motivation, functions and advantages of the practice. But in terms of risks, the most important are economic aspects, which are also the main hindering factors in the development of urban agriculture in Latvia.*

Keywords: *aspects, case study, Latvia, urban agriculture.*
JEL code: *A10, O13, Q01, Q10, R00.*

Received: *1 October 2022* ***Revised:*** *10 October 2022* ***Accepted:*** *15 October 2022*
Published: *19 December 2022*

Introduction

A set of several processes, such as urbanization, the negative consequences of climate change, economic stratification, social alienation, globalization risks and resource balance issues, has determined that development in both the economic, social and environmental dimensions is possible only by observing the principles of sustainable development. The dimensions of sustainable development were already identified in the 1987 United Nation's (UN) report "Our Common Future" (Report of the..., 1987), in which the definition of sustainable development emphasizes the ability to meet the needs of the present generation without compromising the needs of future generations. The Agenda 2030, adopted at the 2015 UN summit, defines 17 sustainable development goals; the 11th goal also identifies problems and topicality of urban sustainability (The 17 goals,

https://doi.org/10.17770/jresd2022vol14.6965
This is an open access article under the Creative Commons Attribution 4.0 International License

n.d.). Cities are essential in the development of the society - they contribute to the development of technology, innovation, social services and other aspects. But the development process also consumes a lot of resources, often those that are produced outside urban areas. An increasing share of the city's population increases the imbalance of resource consumption and production areas, and this is especially relevant in the context of food resources. Urban agriculture (UA) is the cultivation of food in an urban area and is able to provide at least a part of the food resources for the urban population. But the functionality of UA is not limited to economic functions, such as providing food resources, generating income, reducing expenses on food, etc. Practicing agriculture in cities is also able to perform a wide set of social functions, thus actualizing the role and possibilities of UA in urban sustainability.

In Latvia, UA is little studied, the practice is fragmentary and cannot be unambiguously identified, taking into account that it has no legal regulation and, therefore, no statistical data (Dobele et al., 2022). But taking into account the functionality of UA in sustainable development, it is necessary to determine and analyse its aspects in order to assess specifics and opportunities of the practice in Latvia. Therefore, the aim of this study is to determine and describe economic and social aspects of UA in Latvia. The research hypothesis is that UA in Latvia is positively influenced primarily by social rather than economic aspects. In order to achieve the aim, two tasks have been set by the study and methods have been chosen according to the way the tasks were performed:

- to define UA and determine its conceptual boundaries, using systematic theoretical review and the methods of analysis and synthesis;
- to determine the economic and social aspects of UA in Latvia, using a method of case study.

Methodology

For the analysis of aspects of UA in Latvia, case study analysis was chosen, which is a qualitative research method, the purpose of which is to describe and examine the objects and processes of the study, using both qualitative and quantitative data (Woodside, 2017). Case study is used as a research method for little-studied phenomena (Gagnon, 2010) because it conducts an empirical study of a phenomenon observed at the time of the study and, using several, different types of data collection methods, creates an observation of the phenomenon directly during the study (Wohlin & Rainer, 2022), providing researching the phenomenon in its natural context, in the conditions of real life (Martinsuo & Huemann, 2021), which is a suitable approach to the analysis of UA in Latvia. A case study was

carried out in June - September 2022. Three methods are used in case study: interviews with case representatives, financial reports and information about cases in the mass media. An interview is conducted, as it provides the unmediated opinion of representatives, ensuring the direct expression of the opinion of those involved in the practice (Thelwall & Nevill, 2021). The economic and social aspects of UA are summarized in the SWOT matrix, classifying aspects into strengths and weaknesses of the internal environment and opportunities and threats of the external environment.

Research results and discussion

The concept and specifics of urban agriculture – a theoretical review

In its broadest sense, UA is the practice of agriculture in cities. However, such a broad explanation of the concept does not allow us to identify the specifics of the practice. In a narrower, more precise sense, in research and case studies done in various countries, the concept of UA is mostly varied in two aspects: 1) demarcation of the agricultural process - including only food growing or agricultural processes in a broader sense, including distribution, marketing, etc.; 2) specifying the practice only within city limits or including peri-urban areas as well.

In 1996, the Food and Agriculture Organization (FAO) of the UN published the report "The state of food and agriculture", in which a chapter was devoted not only to the analysis of the possibilities of UA but also to its definition. In it, FAO offers two kinds of definition: 1) in the broadest sense, it is food production within city limits; 2) in a narrower sense, it excludes forestry, fisheries and border or peri-urban agriculture (PUA) (World review. Urban..., 1996). In 2015, the UN's article related to the implementation of sustainable development goals defined UA as the cultivation, processing and distribution of food and other products, cultivating plants, less often raising livestock, in and around cities with the aim of feeding the local population (Game & Primus, 2015). Now the FAO views UA together with PUA, defining it as the production of food and other agricultural products and related processes in cities and their surrounding area, including the specificity that agriculture can be practiced both on land and in another areas (Urban and peri..., n.d.).

The focus of the concept on the practice of food cultivation ensures the specifics of UA - in the urban environment, agriculture is a multifunctional practice and provides not only the primary economic functions, such as providing food resources and generating income, but also promoting and supporting the development of social and environmental sustainability. The functionality of UA is influenced by the scale and approach of the practice -

whether it is practiced within a household, as a commercial practice or in the form of community gardens. In particular, community gardens ensure the performance of the widest functions, becoming not only a place for food production but also promoting socialization and social inclusion, public health, emancipation from the city life, creating connection with nature, developing leisure, recreation and educational opportunities, diversifying the urban landscape, reducing the impact of extreme (negative) sustainability scenarios in preserving and developing biological diversity (Ferreira et al., 2018; Pourias et al., 2016).

The territorial aspect of the concept of UA affects the research results and the principles of practice specificity. Mostly both in studies and in the definitions by organizations, including the UN, UA is analysed together with peri-urban agriculture. Often in studies, UA is defined as both agriculture within the city limits (intra-urban) and near the city borders (peri-urban) (Trendov, 2018), where, depending on the specifics of the city, the peri-urban area can be even 10-20 km from territorial boundaries of the city (Azunre et al., 2019). Peri-urban areas are transitional areas between urban and rural areas with a lower population density than in cities, relatively less developed infrastructure and larger available land resources (Ayambire et al., 2019) – these are the main factors that determine differences between UA and PUA. Although their boundaries in metropolitan cities are blurred and the specificities of peri-urban territories are often more similar to cities than rural areas in terms of various factors, there are several significant differences in intra-urban and peri-urban agricultural practices. Especially they can be identified in the context of the dimensions of sustainable development, where economic sustainability is more able to be promoted by rural and peri-urban agriculture, while UA has wider opportunities in ensuring environmental sustainability, especially biodiversity and regeneration of the urban environment (Dobele et al., 2021a). In addition, the conceptual division of intra-urban and peri-urban agriculture provides an opportunity to conduct comparative studies of UA not only in metropolitan cities but in any city with a relatively high population density.

One of the factors in UA is that it is mostly practiced in small areas of land, which is determined by the limited availability of land resources in cities - often the managed areas are so small that they cannot fully provide the food resources for even one household, not to mention the possibility of growing the in sufficient quantity for selling (Hammelman, 2017). However, despite the limitation of the basic resource – land -, UA in the 21st century is able to develop as a social trend by adapting different practices and territories (Dobele & Zvirbule, 2020).

A case study of urban agriculture in Latvia

In Latvia, UA as a practice for *household* self-consumption is developed - according to the data of a study conducted in 2021, 63.30% of the inhabitants of 9 Latvia's largest cities grow at least one of the food products in the urban area, but mostly (78.00% of them) it is grown only for household self-consumption (Dobele et al., 2021b). However, the grown volumes show that households mostly practice micro-agriculture, as food cultivation is carried out in small volumes.

In Latvia, the *commercial practice* of UA applies two approaches: 1) traditional implementation of the practice – in the case of available land resources, growing produce for sale in the local market; 2) practice oriented towards environmental education and promotion of public awareness - combining the commercial practice of food cultivation with the functions of education, communication and research.

As a complementary *educational practice*, UA is implemented by educational institutions that specialize in food supply systems. In addition to that, since 2002, the Eco-school programme of the international organization Foundation for Environmental Education has been adapted in Latvia, the activities and topics of which also include the development of understanding the value of food and its systems, understanding the value of biological diversity, including the understanding, cultivation and protection of plants natural to the environment (Ekoskola – nāktones skola, n.d.). Although the Eco-school programme does not directly relate to UA, food growing practices of various sizes are often used to achieve the programme's goals, from growing on windowsills to allotment gardens created on school grounds.

In 2019, the first *community garden* was created in Latvia, which implements trends of UA specific to the 21st century. Since then, other community initiatives both in the capital and in other cities of Latvia have been developed. However, the development of practice is still fragmentary, based on individual and association activities, without a systematic approach and support from municipalities or the state.

Cities are the main driving force of the economy, but their resource consumption trends create problems and the need to change daily habits and the way of thinking, and one of the impact aspects can be UA. Therefore, in determining the selection criteria for the case study, the primary aspect was the impact of the case on urban sustainability and the connection of practice with the principles of "green thinking" and "green lifestyle". Two cases were selected according to the criteria set:

- "Hotel Janne" Ltd. - experience in urban horticulture and beekeeping since 2017, located in Riga, the approach of commercial practice and educational promotion;

- association "Kopienas Augnīca" - experience in creating a community garden since 2019, using the practice of urban horticulture, located in Riga, the approach of the open environment-type community garden.

Practices are different both in principles and approaches of the practice, therefore they were chosen for the identification and comparison of the economic and social aspects of UA in Latvia.

The type of activity by "***Hotel Janne***" Ltd. is accommodation in guest houses and other types of short-term accommodation (NACE: 55.20) (Hotel Janne.., n.d.). Although the main activity of the company is accommodation, since 2017 it has been supplemented with vegetable growing and urban beekeeping, selling the products under the brand "Rīgas Jumtu medus" (Urbānā biškopība..., n.d.). As part of the case study, a semi-structured interview was conducted with *Valdis Janovs*, the founder of the company and the manager of beehives.

The association "***Kopienas augnīca***" creates and maintains the community garden "Augnīca". Aims of the association are: to promote environmental education, environmental communication and environmental improvement (Kopienas augnīca, n.d.). Its activity is registered as activities of organizations not elsewhere classified (NACE 94.99) (Kopienas augnīca, n.d.). Initially, a limited liability company was established, but in 2021 the commercial activity was liquidated and the community garden was registered as an association. As part of the case study, a semi-structured interview was conducted with *Elīna Logina*, a member of the association's board, Master of Environmental Sciences.

The economic and social aspects of the analysis of both cases are summarized in a SWOT matrix (Table 1), grouping the economic and social aspects of UA in Latvia into strengths and weaknesses, formed by internal aspects of the industry, and opportunities and threats, formed by external environmental aspects of the practice.

Table 1 SWOT matrix of economic and social aspects of urban agriculture in Latvia (compiled by the author)

Aspect	Cate-gory[1]	Description	Type of aspect[2]
Owners' personal interest in UA	S	practitioners are motivated in creating the interaction between nature and urban environment, in informing the public about the possibilities and importance of a green lifestyle	S
Capacity to provide educational and recreational functions	S	UA has wide opportunities for educating and informing the public about the value and topicality of the environment, food systems, biodiversity, as well as UA practice provides recreation by creating contact with nature in the urban environment	S

Continuation of the Table 1

Location close to educational institutions	S	urban locations ensure that educational institutions incur lower transportation costs by being close to UA practice sites, and are therefore easily accessible	E
Experience in the obtaining of project funding	S	experience in obtaining project funding provides opportunities for existence and development of UA practices	E
Resource-intensive practice, high costs	W	the practice of UA is time-consuming and resource-intensive, which reduces the ability to identify and achieve economic benefits	E
Lack of financial stability	W	difficulties for the community garden to ensure a stable and independent financial flow, mostly financing UA by means term projects and member donations	E
Lack of owned land resources	W	a community garden uses leased land resources that are dependent on the landowners' land use plans	E
Topicality of social cohesion	O	community gardens create and develop community and social interaction, and the issue of social cohesion contributes to the relevance of community gardens	S
Project funding attraction	O	the practice of UA provides an opportunity to attract funding from national and international environmental and educational projects	E
Landowners' interest in UA	O	landowners' support and interest in community garden practices encourages the development of UA by providing support through reduced rents	E
Development of the tourism	O	society's interest in UA provides an opportunity to develop activities of tourism	E
Theft and vandalism	T	a high population density in cities increases risks of theft and vandalism	S
Volatility of society's interest	T	the management of the community garden is based on public interest - if it changes, the existence of the community garden is threatened	S
Absence of support from local governments	T	municipal support for UA is ideological, but not economically practical - there is no financial or other type of support promoting the development of the practice	E

1 – S - strength, W - weakness, O - opportunities, T - threats
2 – S - social, E - economic

In both cases, the motivation for starting UA activity is different; however, it is shaped by social rather than economic aspects. The UA activity started by "Hotel Janne" related to the *owner's interests and hobbies*, as well as the desire to create an *interaction between nature and the urban environment* in the capital. T*he restoration and creation of the connection between humans and nature* was also the main motivation for starting the activity by "Kopienas Augnīcas". The *interest of owners* in both cases is a significant **strength** of UA, ensuring stable development of the practice. The

absence of economic aspects in the motivation for creating the practice cannot be viewed as a deficiency because economic aspects are not primary in the organizations' aims of practising UA either. Regarding their aims in urban beekeeping and horticulture, the organizations highlight the creation of environmental and nature education and human-nature contact, with the representatives of both cases emphasizing the need to renew the interaction and value understanding of the city dwellers about nature and its role in the context of both the environment and food provision. Both the *functionality in the field of education and recreation* and the current *experience in cooperation with educational institutions* is a significant strength of UA in Latvia, while the practice of UA in community gardens is not yet widely developed, it also provides current gardens with higher financial attraction opportunities by engaging in environmental education programmes. Cooperation with schools is also increased by another strength of the practice - *territorial proximity to educational institutions*. The owner of "Hotel Janne" emphasizes that in terms of product delivery, the length of logistics chains is not a significant advantage in the context of Latvia, as rural areas are relatively close to cities. However, in the context of education when fuel prices are rising, it is easier for schools to use the city's public transport and see, get to know the practice without incurring the cost of rented transport and fuel.

Both organizations included in the case study have experience in *obtaining project and state programme funding*, which provides financial support in achieving their aims of practising UA. "Hotel Janne" is currently participating in two programmes: 1) the programme "Bišu draugs", with the aim of educating the society about the importance of bees and other pollinators in nature, (Par projektu, n.d.); 2) the programme "Latvijas skolas soma", with the aim of giving pupils the opportunity to get to know Latvian art and cultural developments, connecting them with teaching and education work, thus reducing social inequality and strengthening the new generation's sense of citizenship and national belonging (Par programmu Latvijas..., 2022), and as part of the programme, "Hotel Janne" provides a narration and a review of various historical stages and regions of Latvia. "Kopienas augnīca" has also been involved in several projects, including at the Riga International Biennale RIBOCA 2 in 2020, implementing the "Seed Bombing" workshop (Seed Bombing darbnīca, n.d.), which provided funding for the purchase of soil. Currently, the association has attracted funding from the European Solidarity Corps' projects, which are intended for young people up to the age of 30 involved in organizations promoting community development (European Solidarity Corps, n.d.).

Despite the experience and possibilities of project funding, the *resource intensity* of practice is one of the main **weaknesses** of UA in Latvia. For the

community garden, soil was purchased, which made up the largest proportion of costs in establishing the UA practice. Also, the representatives of both cases emphasized the time-consuming nature of practice. Moreover, UA is not the primary occupation of any of the case study representatives. As V.Janovs admits: "If there was no hotel, then the beehive or "Bišu draugs" project would not be economically viable. The hotel is the main occupation, and then, in addition, there is this unique thing that you do. This is a hobby that adds value in terms of public image of the hotel, but not in economic terms. It is difficult to calculate the economic effects."

Financial instability and *lack of ownership of land resources* are also a weakness of community gardens. The community garden is maintained based on the principle of donations, without membership fees. Although the experience of other community gardens in Latvia points to the possibility of ensuring financial stability, renting out parts of the community garden, *dependence on fixed-term territory lease agreements* is a characteristic weakness.

The pressures of the information age, the global economic and competition-oriented social policies have led to a crisis of social cohesion (Veen et al., 2016). The *topicality of social cohesion* is an **opportunity** for UA, especially in the development of community gardens. Building community and social interaction is one of the aims and principles of a community garden; therefore, as the relevance of social cohesion increases, community gardens gain development opportunities as one of the solutions to the issue.

Environmental education and awareness and recognition of environmental sustainability is the goal of both national and international sustainable development strategies, which are also provided with development-oriented funding. The experience of the analysed cases confirms that *attracting funding for environmental projects and educational programmes* is an opportunity for UA in Latvia.

The experience of community gardens indicates that currently the opportunities are also created by the *interest of landowners in the development of UA*, offering a fixed-term lease at a zero or relatively low rent. Although fixed-term contracts are the weakness of UA in Latvia, the cooperation experience of existing community gardens allows us to assume that, as the practice develops, other landowners could also be interested in leasing their unmanaged territories for the improvement and diversification of the environment and landscape.

UA in Latvia is still at the development stage, which provides opportunities for the development of this practice not only in the fields of education and social cohesion but also in *tourism*, which is currently being

implemented by "Hotel Janne", providing excursions to urban beehives and honey degustation.

Assessing the **threats** of UA in Latvia, three the most important have been identified by the case study. A higher population density increases the risk of *theft and vandalism*, which was indicated by the representatives of both cases. In the practice of community gardens, the volatility of the society's interest is also a threat – E.Logina pointed out the problem that, at the beginning of the gardening season, the participation of members is always very high, but in the autumn season it decreases rapidly, increasing the amount of work for the association's managers.

The *lack of local government support* for the development of community gardens is also an economic threat. The representative of the association stated that there have been discussions with the Riga municipality, but currently without an exact result - at the idea level, municipalities support the development of UA and community gardens in Latvia, but currently do not offer any supporting models of cooperation.

Evaluating the role of UA in Latvia, V.Janovs said: "Agriculture in cities is necessary to be happy. It is important for a person - not to be separated from nature. The sterile urban environment is not a solution for sustainable development. The second aspect is education. Let the child know that milk does not come from a pack, but a cow, what is the difference between a bee and a wasp, what is pollination and why is it important." E.Logina, evaluating the development possibilities and trends of UA in Latvia, emphasized: "The environmental and social aspects are primarily beneficial for agriculture in the urban environment. Children from kindergartens come to us - they enjoy plants, they study. Contact with nature when living in the city simply disappears. And if the contact in childhood has not been developed, then it will not be. Humans begin to consider nature as something distant from themselves. There are no economic benefits for urban agriculture in Latvia, but growing your own food can change the course of economic thought - I grow, I take more care, I don't throw it out. The benefit is formed in a long-term economic prism - you learn to save and appreciate what is around you."

Conclusions

UA in Latvia is primarily driven by social aspects - they form the strengths of the practice, such as the high motivation of those implementing the practice, the potential and capacity of educational and recreational functions, and opportunities such as the relevance of social cohesion and public interest in urban agriculture. However, public interest as a social aspect is also a threat to the practice, considering that results of the case

study show the volatility of the interest and activity of community participants.

Weaknesses of UA in Latvia mostly relate to economic aspects – the amount of practice costs and the complex calculation and achievement of economic profitability. In the context of resources, UA has both strengths of economic aspects, such as territorial proximity to educational institutions, which are important cooperation partners in the performance of educational and informational functions, and weaknesses, such as the cost of resources, high total costs of the practice.

Funding from projects and state programmes is available for the implementation of UA educational and environmental improvement functions, and the cases analysed have long-term experience in obtaining the funding. However, financial stability and permanence is a challenge for community gardens and a weakness of the practice.

UA in Latvia is threatened by both social and economic aspects. They mostly relate to specifics of the urban environment, such as relatively higher risks of theft and vandalism due to urban population density; and the lack of functional support from the municipality also creates a threat to the practice.

References

1. Ayambire R.A., Amponsah O., Peprah C., & Takyi S.A. (2019). A review of practices for sustaining urban and peri-urban agriculture: Implications for and use planning in rapidly urbanising Ghanaian cities. *Land Use Policy*, 84, 260-277. DOI: 10.1016/j.landusepol.2019.03.004.
2. Azunre G.A., Amponsah O., Peprah C., Takyi S.A. & Braimh I. (2019). A review of the role of urban agriculture in the sustainable city discourse. *Cities*, 93, 104-119. DOI: 10.1016/j.cities.2019.04.006.
3. Dobele M. & Zvirbule A. (2020). The concept of urban agriculture – historical development and tendencies, *Rural Sustainability Research*, 43 (338), 20-26. DOI:10.2478/plua-2020-0003.
4. Dobele M., Zvirbule A., & Dobele A. (2021a). A review of urban, peri-urban and rural agriculture concepts and role in sustainable development. *Proceedings of the international scientific conference "Social Sciences for Regional Development 2020",* part III, Issues of economics, 59-66.
5. Dobele M., Zvirbule A., & Dobele A. (2021b). The motivation of urban agriculture practice – the case of Latvia. *21st International multidisciplinary scientific GeoConference SGEM 2021: conference proceedings of selected papers 2021*, Issue 6.2: Green Design and Sustainable Architecture, 213-222. DOI: 10.5593/sgem2021V/6.2/s27.32.
6. Dobele M., Zvirbule A., & Dobele A. (2022). Legal aspects and institutional framework of urban agriculture in Latvia. *Economic Science for Rural Development 2022*, proceedings of the 23rd International scientific conference, 11-13 May 2002, 143-154, DOI: 10.22616/ESRD.2022.56.015.
7. Ekoskola – nākotnes skola. (n.d.). Retrieved Marc 4, 2022 from https://ekoskolas.lv/

8. *European Solidarity Corps. The power of together.* (n.d.). Retrieved July 4, 2022, from https://youth.europa.eu/solidarity_en
9. Ferreira A.J.D., Gulherme R.I.M.M., Ferreira C.S.S. & Oliveira M.F.M.L. (2018). Urban agriculture, a tool towards more resilient urban communities? *Current Opinion in Environmental Science & Health*, 5, 93-97. DOI: 10.1016/j.coesh.2018.06.004.
10. Gagnon Y.-C. (2010). *The Case Study As Research Method: A Practical Handbook*. Quebec: Les Presses de l'Universitate du Quebec, p. 119.
11. Game I., & Primus R. (2015). *Urban agriculture.* Retrieved April 3, 2022, from https://sustainabledevelopment.un.org/content/documents/5764Urban%20Agriculture.pdf
12. Hammelman C. (2017). Relying on Urban Gardens for Survival within the Building of a Modern City in Colombia. *Global urban agriculture: convergence of theory and practice between North and South*; ed. A.M.G.A. WinklerPrins. UK: CPI Group Ltd., CABI, 159-170.
13. *Hotel Janne, SIA* (n.d.). Retrieved April 4, 2022, from https://company.lursoft.lv/lv/hotel-janne/40203016720
14. *Kopienas augnīca* (n.d.). Retrieved June 7, 2022, from https://company.lursoft.lv/lv/kopienas-augnica/40008304022.
15. Martinsuo M., & Huemann M. (2021). Designing case study research. *International Journal of Project Management,* 39, 417-421. DOI: 10.1016/j.ijproman.2021.06.007.
16. *Par programmu "Latvijas skolas soma".* (2022). Retrieved June 7, 2022, from https://www.lnkc.gov.lv/lv/par-programmu-latvijas-skolas-soma
17. *Par projektu.* (n.d.). Retrieved June 7, 2022, from https://www.bisudraugs.eu/par-mums
18. Pourias J., Aubry C., & Duchemin E. (2016). Is food a motivation for urban gardeners? Multifuncionality and the relative importance of the food function in urban collective gardens of Paris and Montreal. *Agriculture and Human Value,* .33, 257-273.
19. *Report of the World Commission on Environment and Development: Our Common Future*. (1987). Retrieved March 20, 2022, from https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf
20. *Seed Bombing darbnīca.* (n.d.). Retrieved July 4, 2022, from https://www.rigabiennial.com/lv/education/riboca-talks/seed-bombing-workshop
21. *The 17 goals*. (n.d.). Retrieved April 21, 2022, from https://sdgs.un.org/goals.
22. Thelwall M.,& Nevill T. (2021). Is research with qualitative data more prevalent and impactful now? Interviews, case studies, focus groups and ethnographies. *Library and Information Science Research,* 43, art. 101094. DOI: 10.1016/j.lisr.2021.101094.
23. Trendov N.M. (2018). Comparative study on the motivations that drive urban community gardens in Central Eastern Europe. *Annals of Agrarian science*, Vol.16, 85-89. DOI: 10.1016/j.aasci.2017.10.003.
24. Urban and peri-urban agriculture (n.d.). Retrieved March 22, 2022, from https://www.fao.org/urban-peri-urban-agriculture/en
25. *Urbānā biškopība – Rīgas Jumtu medus.* (n.d.). Retrieved June 4, 2022, from http://hoteljanne.lv/bites/.
26. Veen E.J., Bock B.B., Van den Berg W., Visser A.J., & Wiskerke J.S.C. (2016). Community gardening and social cohesion: different designs, different motivations. *Local Environment*, 21(10), 1271-1287. DOI: 10.1080/13549839.2015.1101433.

27. Wohlin C., & Rainer A. (2022). Is it a case study? – A critical analysis and guidance. *The Journal of Systems & Software*, 192, art. 111395. DOI: 10.1016/j.jss.2022.111395.
28. Woodside A.G. (2017). *Case Study Research: Core Skills in Using 15 Genres. Second edition.* Bingley, England: Emerald Group Publishing Limited, p. 538.
29. *World review. Urban agriculture: an oxymorone?* (1996). The State of Food and Agriculture. Rome: FAO, 43-94.