



Agriproductive Rural - Urban Interaction, a Review of 15 Years of Research-Based Practice

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Abstract

(Agri)cultural landscapes and their contribution to food production can be understood from a systemic or individual perspective. Food, of course, is a basic need, but also an intense area of individualisation and identification in urbanized modern societies. From organic and Vegetarian, we have moved on to vegan, paleo, fair trade, regional and many other diets.

Over the last two decades, urban gardening and urban agriculture have established some links and contributed to sustainable and alternative urban lifestyles. In addition to their productive ideas, these initiatives promote democratic understanding, integration and social action, as well as creating biodiverse and ecologically beneficial spaces. These movements have led to greater reflection on responsible food consumption, taking into account production conditions, food quality, food- and biodiversity and transport.

A spatial link between food and the landscapes in which it is produced is in some ways obvious, especially when thinking about regional supply and closed cycles of energy and matter, but it has not yet been addressed much in landscape architecture.

However, the establishment of closer ties between cities and their agri-productive surroundings holds considerable potential for the enhancement of ecological and economic synergies. One of the resulting benefits may be the establishment of trust, transparency and experience, aspects that are vital to food and inherent in the landscape.

The author joined a series of projects at intersection of research and practice over the last 15 years which investigate and develop strategies at the threshold of urban life and agricultural production. The projects and findings of this transdisciplinary and research-based practice contribute to three key aspects to different extents.

Subsistence – the degree of agricultural productivity accounting to self-sufficiency.

Resilience – supporting local sustainable lifestyles and fostering identity based on regional cultures

Circularity – establishing regional cycles of harvest, energy and productive matter as well as workforce and knowledge across the border of rural and urban environments.

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Background

Since the beginning of urbanization, cities have been directly connected to the surrounding agricultural landscapes. The differentiation of a complex and divided urban society could only be achieved through the influx of food from outside the city walls. This connection between the rural world shaped by agriculture and the urban world remained from the first civilizations in Mesopotamia to the Middle Ages and continued until the time of industrialization and the availability of mass transportation, such as the railroad. With globalization, the spatial interconnection of food production and urban societies has largely dissolved. The idea of an Agropolis sets in at this point and tries to understand the connection between the city and its surroundings as an opportunity for city development, from which closed material cycles in the areas of agriculture and food can be achieved, and thus the CO₂ footprint of cities can be reduced through the lifestyle of its inhabitants.

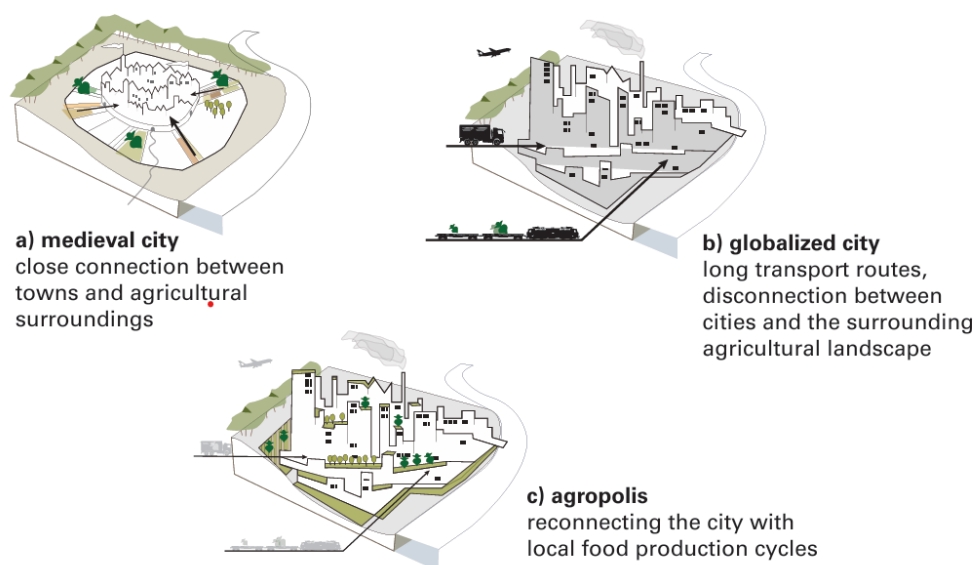


Figure 1: Historical agriproductive rural/urban interaction a) was largely lost during industrialization and globalization b). The Agropolis concept offers the chance to re-establish regional connection between urban and rural cycles of crops c) [8].

The concept of Agropolis is based on the research and teaching work of the Chair “LandRaum”, Planning and Building in the Rural Area, Prof. Matthias Reichenbach-Klinke at the Technical University of Munich, Germany. Between 1993 and 2008, interdisciplinary projects were conducted to explore the design potential of the rural area and to investigate the settlement margins, for example, at the city border of Munich, Germany [1].

From the team of employees at the Chair “LandRaum”, a working group formed in 2009, consisting of architects, urban planners, landscape architects, agricultural scientists, and sociologists, who formulated the contribution “Agropolis - the rediscovery of harvesting in urban everyday life” for the competition OPEN SCALE |

young & local ideas | Munich 2009, Interdisciplinary Ideas Competition, a pilot project within the framework of the “National Urban Development Policy” of the Federal Ministry of Transport, Building and Urban Development (BMVBS) / Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR), Landeshauptstadt Munich, Department of Urban Planning and Building Regulation. The contribution was awarded first prize in the two-phase competition and, in retrospect, its impact was not in the direct implementation of its vision but found its way into a variety of projects and initiatives, which were implemented by parts of the team at different locations [2]. All projects are located in a field of tension between:

1. Circularity: The connection and interaction between urban and rural areas
2. Resilience: Identity and the development of sustainable lifestyles
3. Subsistence: The possibility and share of self-sufficiency

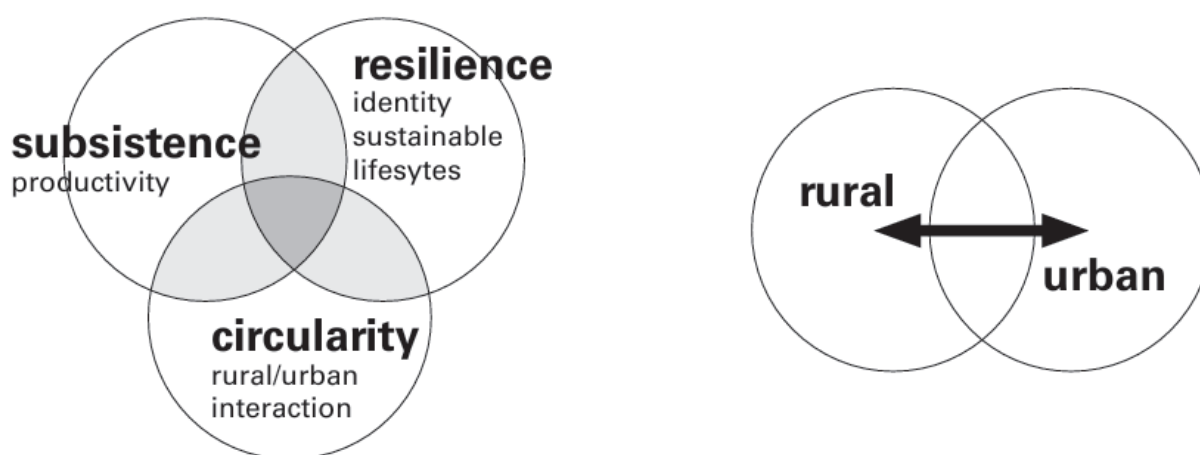


Figure 2: The projects and findings of this transdisciplinary and research-based practice contribute to three key aspects of rural, urban interactions to different extents.

Subsistence - the degree of agricultural productivity accounting to self-sufficiency.

Resilience - supporting local sustainable lifestyles and fostering identity based on regional cultures

Circularity-establishing regional cycles of harvest, energy and productive matter as well as workforce and knowledge across the border of rural and urban environments.

The field of agriculture or nutrition is characterized by a strong bipolarity. On the one hand, there is the technically rational world of highly industrialized food production, which is economically optimized, standardized, and focused on efficiency and quantity. This shapes large parts of our agricultural landscapes in Europe. On the other hand, there is the highly differentiated field of nutrition, which has been maximally differentiated in urban societies and, in parts, has taken the place of a substitute religion. Current trends in nutrition oscillate between vegetarian, vegan, paleo, organic, regional, fair trade, but in any case, with a strong focus on objective or subjectively perceived qualities [3].

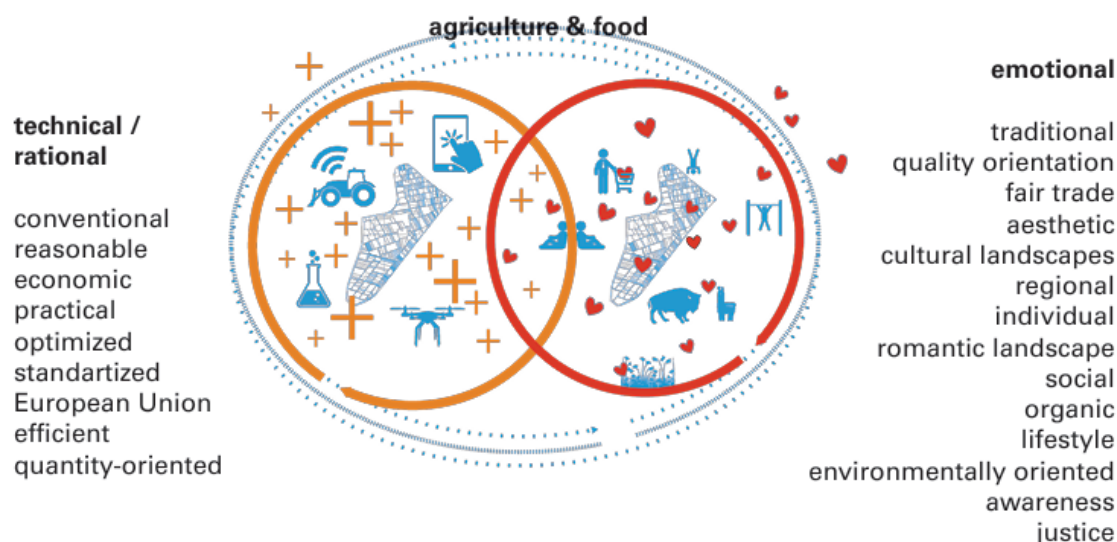


Figure 3: Ambiguity between technical and emotional aspects regarding agriculture and food bauchplan, 2022

Agropolis Concept

Against this background, the vision “Agropolis, Rediscovering Harvesting in Urban Daily Life” unfolds as an alternative development option for the city of Munich, known as a place with high quality of life, where enjoyment and good food are part of the urban culture [4]. Phenomena of this culture include not only star-rated cuisine and the Viktualienmarkt but also the culture of genuine Munich beer gardens as places of communal enjoyment and social exchange. The Agropolis idea outlines a metropolitan food strategy with a nutrition map that brings together places of local supply. It proposes the use of urban infrastructures for regional food supply by utilizing trams, which are largely empty in the mornings, as “Viktualien-tramways” to transport regional products into the city with low CO₂ emissions. Parts of public green spaces are to be designated as communally used urban gardens, as prototypes of future food hubs, where fruits and vegetables can be grown, processed, and consumed together; but also, as places of exchange and knowledge flow about how to produce food in the city or to directly exchange products or seeds. The prevailing idea of a solar roof landscape is countered with the idea of a green horizon above the roofs of the city. At the western city limits, the last large urban expansion area of Munich, the emerging district of Freiham, is identified as an opportunity to establish an agricultural park. Another city farm, which establishes agricultural interim use for the development period between the new parceling for marketing and the actual construction activity on the building sites, is managed by the City of Munich. A farm with (building) fields that gradually shrinks from an initial size of 170 hectares until only the buildings of the farm itself remain as a social neighborhood center.

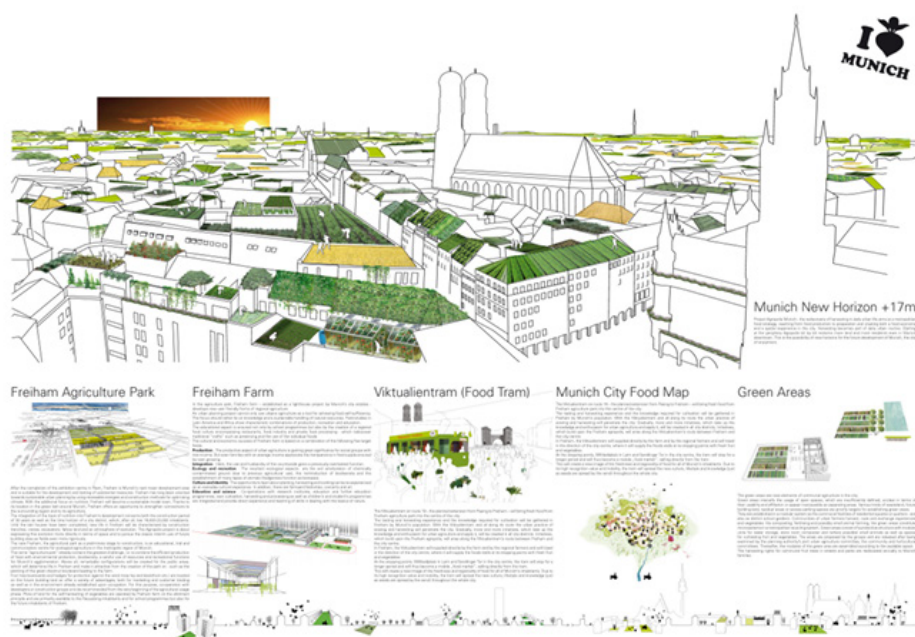


Figure 4: AGROPOLIS - the rediscovery of harvesting in everyday urban life, 1st prize, openscale competition, pilot project within the framework of the German BMVBS/BBSR's National Urban Development Policy', City of Munich, Germany [5].

The comprehensive urban vision of Agropolis did not find direct implementation, it provided an impetus for the discourse on urban development at local and national level, though [6]. The individual elements of the concept were developed as building blocks on behalf of the City of Munich, Department of Urban Planning and Building Regulations, and gained dissemination in the urban society through numerous lectures, exhibitions, and reports in public media, as well as in the trade press. For the growing district of Freiham, numerous direct actions and interventions emerged that qualified the urban development agriculturally.

In 2010, a self-harvest garden was created on the future city park areas in Freiham, planted by the municipal owned agricultural estates "Stadtgüter München", which could be harvested by the neighborhood of the future district, Neuaußing, and was integrated into the Architecture Week A2 during a harvest picnic. In 2013, a city development conference took place on the fields in Freiham in cooperation between Team Agropolis and RaumlaborBerlin [7,8].

In 2015, the Freiluft Supermarkt was created on one of the future residential building sites of the district [9]. Within a ring of large straw bales, a neighborhood garden was created for the duration of three years, where communal cultivation and harvesting could take place. The new urban district with its agricultural past was presented to the citizens of Munich, and the future urban development was positively experienced by the neighbors. In four agricultural festivals that staged sowing, growing, and harvesting, the different groups were brought together at the active edge of the garden, among other things, with a straw stage or a hay pool.



Figure 5: Freiluftsupermarkt (open air supermarket) as a city-development tool, connecting urban expansion on the fringe of the city of Munich with the agricultural history of the premises in Freiham, Munich, Germany [8].

On the building sites of the Freiluft Supermarkt, cooperative housing projects were established starting in 2018. *bauchplan*, as part of Team Agropolis, took over the design of the outdoor facilities for two of these building sites. Together with the building group of the cooperative, participatory dialogue strategies were developed that integrate local material cycles into the emerging construction and residents. Thus, the housing cooperatives *wagnis eG* and *München West eG* formulated approaches to manage material cycles within the property, between the residents, in the interplay of roof areas, open spaces, and communal rooms through self-cultivation, exchange, repair, etc. Furthermore, the building group wanted to contribute to the emerging district, establish initial social anchor points, exchange platforms, or even a small cooperative gastronomy. From the building group, the initiative for another cooperative was formed, which operates a guesthouse, a shop as a food club, a public kitchen, and a solidarity agriculture under the name “Wertschöpferei.” The ideas and seeds of Agropolis thus bear fruit in Munich’s urban society.

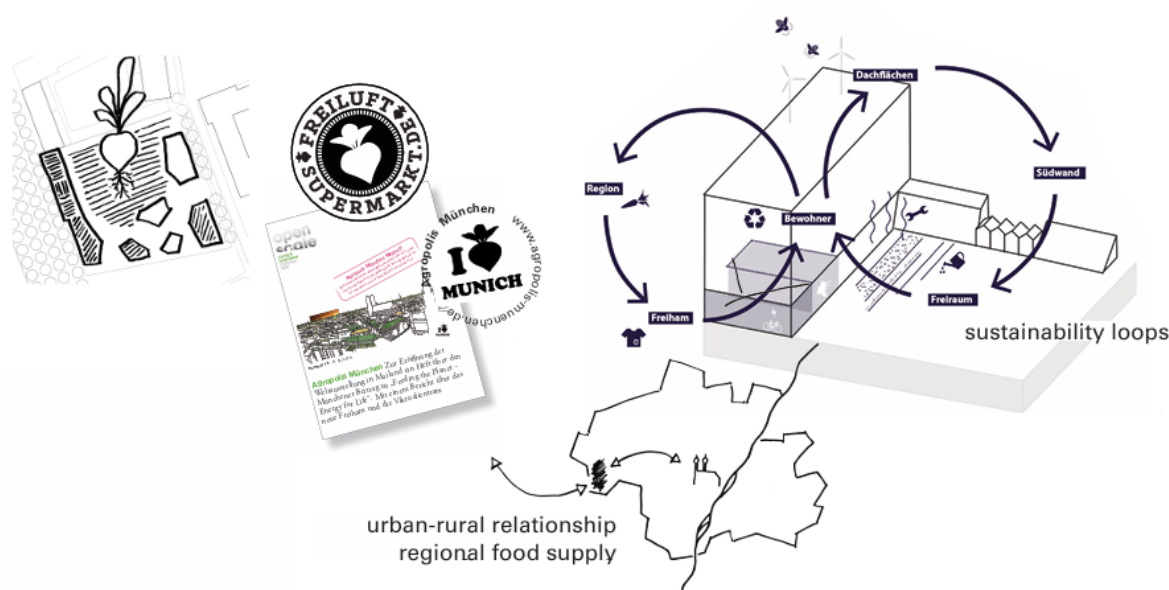


Figure 6: Regional food circularity crossing city boundaries in the project wagnis WEST housing cooperative in Munich-Freiham, Munich, Germany, 2018 architecture: Alles WirdGut, Titus Bernhard, Hable, Köhler, landscapearchitecture: bauchplan) (bauchplan 2018).

In the context of the development of Agropolis, studies were also conducted on the possible contribution of urban farming and urban gardening. Based on the data available at that time, it became evident that the supply of the urban population within its own boundaries, at least under the current dietary habits, seems hardly conceivable. Even with conventional agricultural production, only the population of the newly emerging district of Freiham, with 20,000 inhabitants, could be supplied if an area equivalent to the area within the middle ring of Munich were available. It also becomes clear at this point that a metropolitan food strategy can only be thought of regionally. In this respect, the approaches of Agropolis are not a significant contribution in the area of subsistence. However, the proposed suggestions can significantly contribute to raising awareness of sustainable and circular lifestyles, including in the areas of food and food production. Therefore, the contribution focuses on the areas of circularity in a regional material cycle linkage of Munich with its hinterland and a contribution to social resilience through meaningful and identity-forming offers in public open spaces and, through the educational aspect, support for sustainable lifestyles in the city.

Landwirtschaftspark Heidelberg

The idea of a „Landwirtschaftspark“ (agricultural park) found its further development in a commission in 2020 by the International Building Exhibition IBA Heidelberg, „Wissen schafft Stadt“ (a play on words oscillating between “knowledge creating the city“ / „science city“) [9]. The Landwirtschaftspark Heidelberg is a citizen-initiated idea that aims to qualify the remaining urban area between the city districts Pfaffengrund and Kirchheim, as well as the new quarter Bahnstadt and the future urban development “Partick-Henry-Village”, which is currently used for agriculture, to protect it from infiltrating building development. The commission includes a spatial development strategy that coordinates the different requirements for the space, involves farmers, and formulates a spatial implementation. For a basic study, which formed the basis of the commission, the farmers who directly cultivate 230 ha of land in the city’s surroundings were involved in the planning process [10]. In times of Corona, open-air field excursions were offered.

The spatial organisation attempts to organize agricultural and recreational requirements so that cultivation is possible and complementary recreational uses can take place on the agricultural land. To this end, selective attractions are set, movement sequences are organized and spatial structures are proposed. Farmers are recommended to focus their cultivation on crops that can be directly integrated into the urban recycling cycle and that can generate additional profit for the farmers through direct marketing. The value added, which according to Karl Marx is created from the production factors of labour, capital and land, is supplemented by the factor of knowledge, the theme of the international building exhibition. Additional added value is created for both urban and rural areas [11]. The project will be continued in the wake of the IBA and will unfold its impact in all three areas: circularity, resilience and subsistence.



Figure 7: Spatial development concept for the Landwirtschaftspark (agricultural park) Heidelberg, International Building Exhibition IBA Heidelberg, Germany, 2012-2022 Development strategy [12].

Recent Academic Studies

The author has been teaching and researching at the University of Kassel at the Faculty of ASL Architecture, Urban Planning, Landscape Planning, the Department of Landscape Architecture and Technology since 2023. In cooperation with the Department of Open Space Planning, research is currently being conducted on topics that again examine the connection between the city and its surroundings in the agricultural context.

PhD student Msc. Arch. Laura Ciarniello is working on her dissertation: Hidden Landscapes & Urban Agriculture: The Experience of the Garden Parks in the Territorial Borders of Rosario (2004-2016). In addition to the studies in Rosario, Argentina, which depict the garden projects in the city, an alignment with the European discourse and European projects in the field of urban agriculture and urban gardening is currently being carried out. It shows that the South American example, which has been very successful and intensively received, can demonstrate a notable contribution to subsistence and self-sufficiency for the inhabitants of Rosario. An aspect that is less intensively addressed in most European examples [12].

Dipl. Ing. Robert Zollinger is currently conducting research on urban seed systems as part of his dissertation [13]. Zollinger has been active in the seed industry for many years with his own business. His work is based on the observation that through international seed conglomerates and the support of national governments, local or regional varieties of fruits and vegetables are lost. While in small-scale agriculture, which still prevailed until the beginning of the 20th century, seed production was an incremental part of agricultural activities, this aspect of agriculture has been lost with the increasing industrialization of agriculture. The specific properties of the varieties are not only acquired through the yield at the time of harvest of a selection but also through the plant qualities during the cultivation in local climates, during the harvest, as well as during the preparation in the kitchen and during consumption at the table. Not least, local cultural aspects have been incorporated into the selection process of varieties and their continuous development. The loss of this biodiversity in the field of cultivated plants also means a loss of adaptability and regional specificity [14].

Conclusion

The city and its surroundings were historically connected in material cycles, primarily through agricultural

food supply of the urban cosmos. A connection that has been increasingly lost with industrialization and globalization. While agriculture has become increasingly rationalized and focused on quantity, the nutritional behavior, especially of urban societies, has become increasingly differentiated on the qualitative level. The sensory level of agriculture and nutrition forms an ideal starting point for a more intensive connection of the field of nutrition with the agricultural landscapes in which the food is produced.

(Agri)cultural landscapes play a multifaceted role in supporting biodiversity and climate resilience. Beyond their natural biodiversity, these landscapes contribute to regional resources of rare and indigenous cultivated plants, which are adapted and developed in tandem with local climate conditions. This not only enhances climate change resilience but also promotes the cultivation of locally grown species and varieties of fruits and vegetables. This variety allows for the development of unique and region-specific agricultural practices that are tailored to the local climate and soil conditions. In turn this enables farmers to produce high-quality crops that are well-suited to the local market, thereby supporting local economies and promoting food security. A closer connection of versatile and highly differentiated local crops offers an interface to regional markets and sustainable urban feeding lifestyles. This might help reduce urban carbon footprints in efforts to foster circularity and resilience in metropolitan food strategies.

For urban communities (agri)cultural landscapes might have an additional impact on community well-being and health. Entities engaged in agriculture, whether rural, peri-urban or urban, which prioritize the provision of food supplies at the local and regional level, contribute to the principles of a circular economy. Such entities also engender heightened awareness of carbon sensitivity and the importance of quality nutrition, thereby addressing aspects of health, well-being, local experiences, and sustainable lifestyles. For instance, community-supported agriculture (CSA) programs, which allow consumers to purchase fresh produce directly from local farmers, not only provide a source of fresh, healthy food but also promote a sense of community and social connection among participants. Similarly, urban agriculture initiatives, which involve the cultivation of crops and livestock in urban areas, can help to reduce food transportation costs, increase access to fresh produce, and promote environmental sustainability.

The projects in the field of urban agriculture and urban gardening described above show that through open space planning and landscape architecture in the development of cities, a mutually enriching reconnection of urban and rural areas is possible. The reciprocal added value affects both local and regional material cycles, circularity, subsistence, the possibility and share of self-sufficiency in the field of nutrition, and the resilience of urban and rural societies in the face of climate change and the loss of biodiversity, for the formation of local identities and the development of sustainable lifestyles.

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