
Role of Spatial Planning in the Restitution and Development of Urban Agriculture

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Abstract:

Purpose: The purpose of the paper was to identify the process of spatial planning and highlight its role in sustainable urban development and restitution of urban agriculture. By reviewing French solutions in this area, an attempt was made to indicate the importance of urban agriculture in shaping sustainable development (SD) of metropolitan areas.

Design/Methodology/Approach: In order to illuminate the phenomenon of urban strategic planning in the restitution and development of urban agriculture, a descriptive case study was adopted as the methodology of qualitative research, where the empirical basis consisted mainly of urban plans of two French cities, Paris and Lyon, as well as the subject literature and analysis of legislative acts.

Findings: The French model of building coherence at the local level showed that only planning and a new generation strategic plan of a metropolis (SDAU/SCoT Scheme) can balance long-term objectives of development and protect natural resources for future generations. This model is characterised by not only innovative methodology of planning, but also innovative operational instruments and new ways of implementation.

Practical Implications: Using own expertise and French experience in managing sustainable development of cities.

Originality/value: Presenting European standards in planning sustainable development of cities and emphasising the importance of urban agriculture as a zone of a metropolis's natural balance.

Keywords: Urban planning, city sustainable development, urban agriculture.

JEL classification: Q56.

Paper Type: Research study.

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1. Introduction

Recent decades have seen a rediscovery of gardens and food production in densely populated cities (Demailly and Darly, 2017), reviving a stream of research on urban and peri-urban agriculture (UPUA), defined as "the growing of plants and the raising of animals within and around cities" (FAO, 2019). UPUA is seen as having the potential to contribute to more sustainable and resilient cities (Ferreira *et al.*, 2018). The literature stresses that agriculture, through its economic, social, and ecological functions, presents potentials for meeting some of the targets of the 11th Sustainable Development Goal (Azunre *et al.*, 2019). Therefore, there is a clear agreement among urban decision makers and scholars in highly developed countries that UPUA could be a tenable way of enhancing urban sustainability (Sarker *et al.*, 2019; Ayambire *et al.*, 2019). Numerous authors pinpoint that urban agriculture has a wide array of functions, such as environmental, social, economic, and even cultural (Specht, 2016).

Given the huge urban pressure and dynamic development of cities, scholars agree that UPUA can only be sustained if city authorities consciously integrate agriculture into the city land use planning processes (Azunre *et al.*, 2019). A number of policies and tools are currently employed to protect arable land against urban expansion and encourage people to carry out agricultural activity in cities. The most important ones include, zoning policy, agricultural buffers, 'Right to farm' ordinances, acquisition of farmland through trusts, taxation, and national legal regulations, etc. (Spataru *et al.*, 2020).

The different tools of spatial planning policy are used in different countries to varying extents and with varying results (Ayambire *et al.*, 2019), constituting a "fair" of solutions that can be implemented in other places. This study contains analysis of planning policy and practices that can facilitate the integration of urban agriculture with urban spatial planning. The study concentrates on presenting the French system of spatial planning – often viewed as a model system – with a particular focus on the issue of the restitution of agriculture and agricultural land in the cities of Paris and Lyon.

The purpose of the paper was to identify the process of spatial planning and highlight its role in sustainable urban development and restitution of urban agriculture.

2. The Scope of Research

The study presents results of analyses reviewing the French system of urban strategic planning, which also include agricultural areas and urban agriculture. The use of the example of France was intentional. Urban strategic planning in France, its position and role, are regarded in Europe as a model – also with respect to the issue of farmland preservation (Perrin *et al.*, 2020). France – through its experts and

professionals in the field grouped e.g., in the Federation of Urban Planning Agencies, which is independent from municipal authorities – has made a significant contribution to the shaping of EU urban policy. Moreover, urban planning in France is constantly improved so that arrangements made at the EU level can be implemented both at the governmental and local levels (Geppert, 2015).

In order to illuminate the phenomenon of urban strategic planning in the restitution and development of urban agriculture, a descriptive case study was adopted as the methodology of qualitative research, where the empirical basis consisted mainly of urban plans of two French cities: Paris and Lyon. The materials and key data were derived from the literature on the subject, selected legislative acts and documents related to the field. A study visit to the Lyon Urban Planning Agency and urban documents received there also contributed to gaining a deeper understanding of the French planning system.

An in-depth insight into the issue was gained, and detailed analyses of urban documents were conducted with the help of an urban development expert operating in the Team Europe network established under the European Commission. Given the importance of the subject and its in-depth analysis, the results of the study were found satisfactory and worth presenting to a wider audience. The description of the French system of strategic planning should give the reader an idea of what a plan of the conditions and directions of a land use in a city, municipality or region should be and how it should function.

3. Sustainable Urban Development as a Foundation of Strategic Planning

The concept of sustainable development (SD) proposes a qualitatively new form of a conscious and responsible individual and social life where development is in line with the social and natural environment, considering ecological limitations and social expectations (Sinakou *et al.*, 2018). Sustainable development seeks to stretch what nature provides to the optimum and to maintain that improvement indefinitely without environmental breakdown to maximize human well-being, security, and adaptability (Barrow, 2018). The concept of SD requires the society to understand and shape desirable relationships between the environment, economy, and society (Dacko and Płonka, 2017). Thus, sustainable development means assuming responsibility towards future generations for efficient use and protection of natural resources (Kutty *et al.*, 2020). The pre-condition is adoption of a distant time horizon to assess the state in which we will leave the environment behind.

It is well known that sustainability has become a much-needed target, especially considering the recent rapid urban sprawl and the subsequent exacerbation of social, environmental, and economic problems (Hassan and Lee, 2015). Sustainable urban development means a professional and systemic (without omitting any of the important factors) setting of long-term goals and ability to achieve them (Kutty *et*

al., 2020). These goals are worked out in the process of strategic planning and written down in an integrated long-term plan that ensures organic balance and sustainability of interactions and feedbacks between the socio-economic and the ecological dimensions (Dou *at al.*, 2013). They are achievable when local authorities have in place an approved long-term, integrated strategic plan that constitutes the basis of an urban policy that is executed consistently and in various stages (Piro, 2016). Such an integrated long-term plan is inextricably linked with actions, i.e., constantly improved operational instruments. While the concept of sustainable development is now established, the tools, policies, and methods for practical implementation are evolving (Barrow, 2018).

The roots of the concept of sustainable development with regards to European cities and metropolises go back to the mid-1980s. Socio-economic processes in the countries have become the impetus for the emergence of new concepts of urban development, which are based on the principles of sustainable urban development, the main "mantra" of which was the improvement of the quality of life without harming the environment (Ermolaeva, 2017). All EU member countries, by cooperating with one another on numerous planes, strive to solve the most urgent problems of European cities together. Global and local policies promote the compact city model due to the positive outcomes of its design principles and strategies as to achieving sustainable cities in terms of their environmental, economic, and social goals (Bibri *at al.*, 2020). As part of the so-called intergovernmental arrangements, EU countries develop relevant documents (declarations, recommendations, etc.). By accepting them, the individual member states commit to implementing the common arrangements, both at the national level and at the local level, i.e., that of a city or region. The concept of sustainability has gained momentum due to the prime concern of cities about the socio-economic well-being of the citizens worldwide – sustainable city means a better quality of life to the citizens and increased economic opportunities (Kutty *at al.*, 2020).

Within the European Community, the members states agreed and implemented economic and social coherence policy as part of the so-called common policies. Before the Treaty of Lisbon introduced the concept of "territorial coherence" (Treaty of Lisbon, 2007), the European Union published the document European Spatial Development Perspective (ESDP, 1999) in 1999, which was the first and primary study of the perspectives of the development and management of the territory of the European Union. Addressed to the Community member states, designed for the whole continent and with the inclusion of candidate states into the EU in mind, this document presented spatial development objectives, among other things. The three main guidelines pertained to new city-countryside relationships, sustainable urban development, and sensitive management of the protection of nature and cultural heritage, both in urban and rural areas. ESDP has to this day remained the foundation that is referenced in all subsequent provisions and recommendations of the European Union in the area of "acquis urban", urban policy or sustainable urban development. The EU's recent (newest) documents, i.e. The Urban Agenda for the

EU (2016), The New Urban Agenda for the EU (2016) and Report from the Commission to the Council on the Urban Agenda for the EU (2017) show that cities and their sustainable development are becoming crucial to Europe.

4. Strategic Planning Process

The general principle of the EU, which also applies to the European town planning standards and is observed by France, is knowledge-based development. The foundation of development is a strong and stable system of planning that focuses on accumulation of knowledge and is independent of changes in municipal authorities as a result of elections (Luukkonen, 2015).

The French system of strategic planning is based on five pillars, with Urban Planning Agencies constituting the first pillar. In France, professional planning is characterised by separation of institutional and competence aspects between the local government and experts in the field (Heczko-Hyłowa and de Cointet, 1999). Operational urban planning, i.e., execution of short-term projects (tasks), rests with the municipal office. Long-term strategic planning, in turn, is the responsibility of independent agencies. These are innovative analytical and planning institutions that fulfil a multi-level coordination and communication role. They draw up formal documents (city development plans and strategies) and organise cooperation – in the form of networking – between all the relevant bodies, services and entities from various sectors as well as holding dialogue with society. The most important "hard" final effect of the work of these agencies was the strategic urban development document called *Schéma Directeur d'Aménagement et d'Urbanisme* (SDAU⁴ 1992-1995), which is the second pillar of the French system of strategic planning (Guet, 2005).

The fundamental element of the system of strategic planning is also human capital. The emphasis is placed on staff (pillar 3), i.e., a new generation of urban planners who exercise a profession of public trust and improve their knowledge through a constant dialogue with European and world professionals. A key role is also played by society (pillar 4) which is fully engaged in the process of planning. In France, social dialogue is professionally held by Urban Planning Agencies already at the stage of developing a long-term plan for the city as a whole, and it also encompasses all the subsequent, more specific scales and areas of planning. Such a participatory planning is based on the principle of partnership of cooperating entities and on the so-called "mutual learning", which means education and mobilisation of society. The purpose is not only to allow for social needs, define and accept the concept of "common good", but also understand mutual benefits that can be achieved through compromise (Guet, 2005).

⁴SDAU - *Schéma Directeur d'Aménagement et d'Urbanisme*.

The planning process leads from diagnosis to defining strategic social, economic, ecological, and spatial goals to be achieved within 20 years for the functional area of a metropolis. The aim of the process and SDAU itself was to create coherence in the above-mentioned areas and to fulfil the integration and communication functions. This required negotiating a commonly accepted vision of the city development with the local community. The concept of development directions, i.e., the outline of urban public policy, is worked out and adopted by consensus considering execution capabilities (Prevost *et al.*, 2012).

5. Long-term Development Plan for a Metropolis - Directional Scheme

The general aim of the SDAU was to maintain the essential balance between built-up areas (including those designed for development) on the one hand and natural, agricultural and forest areas on the other hand. The role of this document was already defined in the French Urban Planning Code dating back to 1987, which stated that "Directional Schemes establish the main directions of land use (...) taking into account the balance to be kept between urban development, agricultural activity, other economic activity and protection of natural areas" (Lyon, 2010; 1991). The SDAU promotes compact development, strengthening of the polycentric layout, valorisation of public spaces in district centres, inhibition of urban sprawl in peri-urban municipalities as well as protection of environmental infrastructure, including urban and peri-urban agriculture.

Upon approval by local authorities (i.e., city/metropolis authorities), the Scheme becomes a binding formal planning document, constituting a basis for managing long-term development of the whole area of a metropolis. This helps to maintain coherence between "the whole and the detail", i.e., between the strategic direction of the development of agglomeration as a whole and specific Land Use Plans (POS⁵) for individual districts, municipalities, or their parts. The aim of SDAU is also to coordinate operational activities across the whole area, i.e., with respect to all the municipalities making up an agglomeration, and to make sure that all sectoral activities within the metropolis's area form a coherent whole. The Scheme, in its inter- and supra-municipal character, was considered as the fundamental condition of harmonisation of the spatial layout of a metropolis (Desponds and Auclair, 2017).

The SDAU consisted, in its final form, of two separate publications. The first is the so-called Agglomeration Project presenting the fundamental provisions of SDAU, i.e., the main directions of development along with cartographic diagrams as well as an outline of public policy at the level of agglomeration. This publication is treated as a "political document", i.e., a declaration of political will by local authorities. Its accessible form makes it easy to understand the sense of planning.

⁵POS – *Plan d' Occupation des Sols*.

The other element of the SDAU is SDAU Report, which is usually an elaboration on the provisions contained in the Agglomeration Project in the form of an urban planning document. In regulatory terms, this means that the provisions of the SDAU are imposed on Land Use Plans (POS) and other development plans. Thus, the SDAU overrides specific plans, by defining aims for the individual municipalities, among other things, and imposing legal conditions and a range of disciplines.

In 2000, a law was adopted establishing the Territorial Coherence Scheme (SCoT⁶) to make urban planning policy clearer and more democratic, and to improve the coherence of sectoral policies, including the protection and revalorisation of the environment (Schéma, 2003). The SCoT is a new planning instrument that focuses on employing more effective methods of implementation. The Scheme should be regarded as a conceptual instrument to ensure supra-municipal planning for a given territory in the perspective of sustainable development. It is intended to be a “reference framework” for sectoral policies and all the municipalities covered by the Scheme⁷. In the face of current challenges, it is agreed that expansion of cities should not be hindered if it is necessary. Nevertheless, areas intended for agricultural and forest use should still be preserved. The idea is to better organise urban expansion in connection with environmental protection in the perspective of sustainable development (Prevost *et al.*, 2012).

The development of a new Territorial Coherence Scheme (SCoT) provided an opportunity to reinterpret a given territory's development model and its most important sectoral policies, including redefinition of agriculture (Geppert, 2017). The Scheme of an individual metropolis has a final form of separate main parts. The Report presents successively: a diagnosis, report on the initial condition of the environment, and a land use and sustainable development project. Of note is the highlighting of a diagnosis, which is a significant element of the process of planning and must be adapted to the strategic and prospective character of other planning instruments. Currently, both the diagnosis and conclusions of the analyses are made public. The aim is to make the knowledge about the area and its issues available to public opinion. This is because achieving a consensus around the vision of a metropolis's development depends on the extent to which the problems are understood (Geppert, 2015).

6. Urban Agriculture in Long-Term Strategic Plan - Paris

In France, the problem of urban and peri-urban agriculture in its direct connection with a city was recognised in the 1970s, already at the regional scale. The Parisian region (Île-de-France) was the first to be forced to reflect on the metropolis's nature,

⁶SCoT (*Le Schéma de Cohérence Territoriale*)

⁷Various types of municipality groupings, most often Urban Communities, formed by regional capitals along with peri-urban municipalities.

and the approach to open and agricultural areas in planning evolved along with the concepts of the development of Paris (Vidal and Fleury, 2009). Urban nature fulfils many social functions and psychological needs of citizens, which make urban nature a valuable municipal resource, and a key ingredient for city sustainability (Chiesura, 2004).

A novelty in the Directional Scheme of the Île-de-France Region (SDU 1976) was inclusion and introduction into the "Project of the metropolis" of open areas around Paris as a perimeter of a green territory which included agricultural areas. Thus, agriculture fell within the sphere of responsibility of urban policy due to its unprecedented function of balancing urban built-up area. This Scheme defined the border of high-density urban areas to block development beyond it, and agricultural areas were treated as zones of natural balance.

The next important stage for the agriculture of Parisian metropolis (SDU 1994) was recognition of its significance owing to its multi-functionality and landscape values. The concept of a green and landscaped ring of a recreational character around the city was defined. Peri-urban municipalities were obliged to strengthen the system of protection of such open areas.

In 2008, the Île-de-France Region approved a project that considered the lessons learned: urban (built-in) and rural (open) areas should come under one local public administration that would establish a territory relatively autonomous from the metropolitan centre. It would also establish a type of new management, integrating farmers and all actors of rural areas as well as facilitating the creation of various types of protected areas such as parks, Lands (protection of the countryside) or "Pays" (protection of agriculture). In its rural municipalities, the region provided itself with a real green zone. Moreover, a new principle of planning was introduced, i.e., protection of agricultural functions in protected open areas, implemented by sustaining, restoring and equipping local agriculture (e.g., by preserving the network of agricultural accesses and ensuring long-term protection of land). The aim of the project was to create a city-archipelago surrounded by greenery, i.e., a metropolitan centre with a polycentric layout of towns, small towns, or new towns on the periphery. Thus, a political concept of public authorities related to the development of "Great Paris of five Parises" according to the principle of sustainable development was written down in the spatial development plan (Heczko-Hyłowa, 1992).

7. Innovative Agri-Urban Activities - Lyon

Innovative agri-urban activities have been undertaken since the late 1970s by the Rhône-Alpes region and its capital - Lyon. Agriculture found its position in the process of planning, whose objective was twofold. First, to prevent the fragmentation of agricultural areas, and second - to inhibit the pressure of urbanisation by regulating possible transfers of agricultural land to construction purposes. At the same time, the Scheme was regarded as a guide to action in such

areas as land policy, general financial options, and institutional organisation. Already the 1978 Scheme of Lyon declared the necessity of restraining urban expansion and maintaining balance between urban areas and natural and agricultural ones (Krzyk *et al.*, 2013).

The SDAU Directional Scheme of Lyon until 2010 (Lyon, 2010; 1991) placed emphasis on the necessity of changes within the city itself, on development dynamics and qualitative requirements in terms of the framework of living, the image of the city, culture, and ecology. It emphasised strategies for action and management more than before, and its territorial coverage included 71 municipalities, including 51 municipalities making up the Urban Community of Lyon. In both the publications of the Scheme (Project and Report), the issues of agriculture and agricultural areas were mentioned among the priorities and principles of public policy. Over several years of the work on the Scheme, all the public policies were a subject of public debate. It was a time of a positive attitude to agriculture declared by municipal authorities along with incentives for numerous circles related to agriculture to engage them in the development of agriculture.

In the Agglomeration Project (Lyon 2010, 1991), agricultural areas were recognised as an economic area, which, additionally, due to its specificity, requires stability in terms of its borders, area and time. The 1991 Scheme retained the same area for agricultural purposes as the 1978 SDAU and defined rigid borders, excluding urban development in agricultural areas. The text of the Project contained a statement: "The ambition of urban development cannot eclipse the special place that agricultural activity holds in the agglomeration" (Lyon, 2010; 1991). Agriculture was found to be significant for the agglomeration for environmental and landscape reasons. At the same time, it involved maintaining agricultural landscape, which, however, required support. With a good management of the environment, agriculture on the periphery of urbanised zones can help to stop the chaotic "peppering" of the outskirts of cities with scattered buildings.

Within the agglomeration, agriculture required managing almost half a territory, therefore it is regarded as a factor enabling the structuring of the agglomeration area. Of the 73 000 hectares of the area covered by the Scheme, agriculture used around 28 000 hectares, i.e., almost 40% of the area. The most represented were such areas of agricultural production as fruits and vegetables (30% of the agglomeration's market of fresh products), flowers, ornamental nurseries, and grain. The social issues are illustrated by the fact that almost 70% of agricultural activity is based on family succession of farms.

The SDAU Report on agriculture defined four more specific directions of long-term activities (Lyon, 2010; 1991):

1. It is important to continue diagnosing the actual condition of peri-urban

agriculture in its two aspects: economic and environmental. It is necessary to consider the landscape aspect, especially on the periphery of the urban zone (high quality of residential buildings and outbuilding is essential). It is recommended to grow trees wherever it does not interfere with agricultural activity. It is necessary to define areas to be covered by land development and hydrotechnical work programmes (land consolidation-combination, reparsing, irrigation, land interventions, etc.), especially in the northern and eastern parts of the agglomeration.

2. It is necessary to set up a special programme addressing the issue of agricultural production decline due to urban pressure. Of importance are land reorganisation instruments, especially procedures of pre-emption rights for local communities. It is also important to agree with all the interested parties and take necessary measures to restore agricultural potential in areas affected by urban operations.
3. Agriculture requires integration with the process of the agglomeration's economic development. It is recommended to organise and modernise direct links into a "production-processing-commercialisation" chain of agricultural products intended for the local market. To improve economic effects, it is important to create and dynamize the agricultural and food industry as part of domestic and international markets. It would be desirable to differentiate and diversify farms in terms of the products they offer and to seek high quality products. It is also recommended to link agricultural production with research and education.

The current Territorial Coherence Scheme of the agglomeration of Lyon, which is binding until 2030 (SCoT 2030, 2010), covers 73 municipalities with a total surface area of 730 km² and 1.32 million inhabitants. As far as the issue of agriculture is concerned, it maintains and elaborates the main principles contained in the previous SDAU. The document defines the agglomeration of Lyon as the heart of the metropolis. The aim of the project is to choose development that is intensive and balanced, i.e., to maintain economic development and jobs, take advantage of attractiveness at the international scale and construct the metropolis without damage to nature, among other things. That is why the Coherence Scheme places environmental protection at the centre of the project. The idea is to save resources and energy, reduce pollution, eliminate the risk of disasters, and take a range of other actions to improve the health and well-being of inhabitants.

The SCoT 2030 proposes a land use model based on a multi-polar system, i.e. with strong polars of the concentration of buildings and three networks to complement them: green, blue (water system) and the rail and road network of public transport. The green network of natural and agricultural areas is regarded as infrastructure in its own right in accordance with the provisions of the EU (European Commission, 2013). As a factor determining the quality of life, the social and economic balance of a given area, the network is protected, and its elements must be better interconnected (ecological coherence). Thus, SCoT confirms the role of agriculture as a source of wealth and jobs (economic aspect) and as an element of landscape structure and

maintenance (ecological aspect and spatial coherence). A novelty is the emphasising of the role of feeding the inhabitants of the Lyon region (social aspect). For all these reasons, SCoT provides for preservation and further development of peri-urban agriculture. The pre-condition is not only protection of agricultural land, which needs to be ensured in specific plans, but also taking account of all the circumstances. Full support of the variety of agricultural activity must consider e.g., the need for coherence of land units, circulation of agricultural machines, organisation of the market, etc. The SCoT of Lyon also provides for the undertaking of agricultural analyses in each case of a potential project of agricultural land development.

The care about peri-urban agriculture goes hand in hand with active promotion of agriculture within the city, which can improve the feeding of urban inhabitants. In the agglomeration of Lyon, this direction is equally strongly highlighted, and can take the form of "community gardens", which are created by groups of citizens and supported by local authorities. Apart from the benefits of food provision, they contribute to the "greening" of cities and creation of social ties.

8. Summary and Concluding Comments

The concept of sustainable development still presents itself better in theory than in practice. There is a range of awareness, political and economic barriers that hinder actual efforts to implement this idea.

In summary, the first step in the evolution of the agricultural policy in France was the mere recognition of urban and peri-urban agriculture as a problem directly connected with a city, and its inclusion in urban planning. The category of open areas, i.e., a perimeter of a green territory that included agricultural areas, was added to "project of metropolis." Thus, agriculture came under the sphere of responsibility of urban policy. All the documents as part of the Schemes place a strong emphasis on preserving agricultural areas without their depletion.

Further redefinition of urban and peri-urban agriculture involved extending and strengthening its role in the aspect of an agglomeration's economic, ecological, and social development. In Agglomeration Project, agricultural activity was recognised as an economic sector that creates jobs, generates different economic links, and dynamizes agricultural and food industry. The SCoT Scheme, while upholding the above-mentioned aspects, extended the problem of agriculture to include food issues, i.e., the function of food provision to a city. It also stressed the importance of combining three elements: urban planning, agriculture, and food for a city. Agriculture was recognised as a significant element of the structure of landscape, and a new emphasis was placed not only on protecting agricultural areas, but also on maintaining agricultural production activity.

The French model of building coherence at a local level showed that only planning and a new generation strategic plan of a metropolis (SDAU/SCoT Scheme) can balance long-term objectives of development and protect natural resources for future generations. This model is characterised by not only innovative methodology of planning, but also innovative operational instruments and new ways of implementation. The Scheme is not only a binding urban planning document, but also a project of a city-agglomeration, i.e., a declaration of public policy leading to the accomplishment of the established objectives of sustainable management.

The examples of spatial planning in Lyon and Paris show that agricultural areas are treated in the same ways as other forms of land use. They stress their significant importance due to their multifunctionality and landscape values. The French model contributes to the maintenance and development of agriculture, constituting a model for many countries, including Central and Eastern European ones, where agricultural areas are still treated primarily as reserves for urban development.

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