Public urban agriculture equipment: A tool for fair and sustainable food policies? Potager du Roi and Cité Maraîchère, Two French sase studies

Véronique Saint-Ges, Bethsabee Warin, Antoine Jacobsohn

sustainability

MDPI

Article

Public Urban Agriculture Equipment: A Tool for Fair and Sustainable Food Policies? *Potager du Roi* and *Cité Maraîchère*, Two French Case Studies

Véronique Saint-Ges [1,*], Bethsabee Warin [2] and Antoine Jacobsohn [3]

[1] UMR SADAPT (Sciences Action Développement Activités Produits Territoires), INRAE, Université Paris-Saclay, 91120 Palaiseau, France
[2] UMR SADAPT (Sciences Action Développement Activités Produits Territoires), AgroPArisTech, Université Paris-Sacaly, 91120 Palaiseau, France; b.warin@hotmail.com
[3] LAREPS (Laboratoire de Recherche en Projet de Paysage), Ecole National Supérieure de Paysage, 13001 Marseille, France; a.jacobsohn@ecole-paysage.fr
* Correspondence: veronique.saint-ges@inrae.fr

Abstract: Over the past few decades, a large variety of urban farms and projects have developed in the Global North. Urban agriculture addresses numerous challenges such as producing sustainable fresh food, educating people, and creating new jobs and skills. Urban agriculture is diverse in terms of location (rooftop, basement, underground, parking), activities (food production and/or services), and techniques (from low-tech to high-tech). These projects are created by entrepreneurs because they live in the city, want to change their environment, and promote sustainable practices. Faced with economic and environmental crises, public authorities at different levels and with various orientations reorganize the food system towards local production and consumption; they encourage the development of urban agriculture through a diverse range of policies. These public projects must be economically viable but can be created as socially oriented services based on food production and not only as sites of food production. Our empirical research based on the case studies of two original public urban farms, the *Potager du Roi de Versailles* and the *Cité Maraichère de Romainville*, uses the concept of the triple layered business model and highlights their sustainable strategy. Our evaluation of their economic, social, and environmental impacts tends to demonstrate not only their dependence on multiple interlinked public policies but also the justification of significant and recurring public funds for the general interest.

Keywords: urban agriculture; triple layered business model; public policies; public equipment

Citation: Saint-Ges, V.; Warin, B.; Jacobsohn, A. Public Urban Agriculture Equipment: A Tool for Fair and Sustainable Food Policies? *Potager du Roi* and *Cité Maraîchère*, Two French Case Studies. *Sustainability* **2024**, *16*, 7399. https://doi.org/10.3390/su16177399

Academic Editor: Hossein Azadi

Received: 28 June 2024
Revised: 25 July 2024
Accepted: 7 August 2024
Published: 28 August 2024

1. Introduction

Since the 1980s in North America, and then in the 1990s in Europe, the social, environmental, economic, and health crises have prompted public authorities to (re)design food systems to make them fairer and more sustainable. The aim is to facilitate access to quality food for all, rich and poor, and to reduce the environmental impact of the entire food chain [1]. In this context, urban agriculture (UA), defined as the activity of growing plants and raising animals in cities (defined in France as a continuous built-up area with no gap of more than 200 m between two buildings and at least 2000 inhabitants) [2,3], is seen as a lever for more sustainable and fairer public policies [4]. UA projects implemented in spaces that are constrained from the agronomic point of view and sensitive in terms of social equity fulfill functions pertaining to education, leisure, health, social interaction, food security, economic development, urban planning, and environmental protection [5].

To achieve their environmental, food sovereignty, and social justice objectives, public authorities rely on incentive, regulatory, communication, and economic instruments [6–8]. Public food policies are implemented at various levels of the food system, from production

and distribution to consumption, and are organized at all scales, from local to international [9–11]. In Europe, the "Green Deal", the "Farm to Fork" Strategy, and the Common Agricultural Policy all aim to develop more sustainable food systems from a social, environmental, and economic point of view. In France, agricultural policies (the *Loi d'Orientation Agricole*) and national food policies (the *Programme National Nutrition Santé*, the *Plan National pour l'Alimentation*, etc.), initially focused on production and public health issues, have given local authorities a role to play in dealing with the "food fact" [10,12]. Nevertheless, the State has launched national calls for projects such as the "territorial demonstrators of agricultural and food transitions" under the *France 2030* plan [13]. Local authorities, particularly in conurbations, are taking action on agricultural and food issues. Local authorities are currently modifying their urban planning documents (ScoT—*Schéma de cohérence territoriale*, PLU—*Plan local d'urbanisme*), setting up municipal farms, and providing financial support for new agricultural projects. Some of them have joined the Milan Pact and are developing territorial food projects (*Projet alimentaire territorial*) [14]. Focused on the relocation of production and supply chains, this mobilization is gradually incorporating the social dimension of food [11].

UA, a feature of many recent urban food policies, is also supported by national authorities to address issues of training, transmission, and agricultural innovation, in addition to food production. The "Fertile Neighborhoods" (*Quartiers fertiles*) call for projects by the National Agency for Urban Renewal (*Agence Nationale pour la Rénovation Urbaine*) is an example of such an initiative. At the local level, the largest cities have launched several calls for projects ("*Les Parisculteurs*" in Paris is the best known) and events (the "*48 h de l'AU*") and have set up organizations to support the development of UA (*La Cité de l'Agriculture* in Marseille, the *Maison de l'AU Lyonnaise* in Lyon). To create real laboratories for agro-ecological transition in towns and cities, local authorities are also developing public organizations dedicated to sustainable food and/or UA (the Mouans Sartoux *Maison d'éducation à l'alimentation durable* in France; the *Saluspace* in Bologna, Italy). Another, older example of public authority initiative is the creation of agricultural demonstrators designed to pass on innovative agricultural knowledge and/or know-how. These include experimental units at agricultural colleges, universities, and research bodies in France and around the world. More recently, public authorities have been developing, encouraging, funding, and, in some cases, directly managing UA projects that are virtuous in terms of sustainability, harnessing the multi-functionality of UA [15].

In the very wide range of different UA projects supported or encouraged by public policies at all levels (local, regional, national), new forms of urban farms have appeared, which are financed and managed largely or entirely by public authorities. We focus our study on two very different and remarkable urban farms: the *Potager du Roi* (King's Kitchen Garden) in Versailles and the *Cité Maraîchère* (Market Garden Project) in Romainville. Via the Triple Layered Business Model (TLBM [16]), their sustainable strategy is characterized, and an assessment of their social, environmental, and economic impacts is realized. In addition, our empirical study proposes an original approach of the TLBM, to evaluate the dependence of the *Potager du Roi* and the *Cité Maraîchère* on numerous interlinked public policies. As a result, we characterize these new forms of farms as **Public Urban Agriculture Equipment**, an innovative concept in urban agriculture. Moreover, we evaluate the interrelations and efficiency of these numerous public policies as to their social, environmental, and economic impacts.

2. Materials and Methods

2.1. Conceptual Framework and Definitions

2.1.1. The Sustainable Business Models

The Business Model (BM) concept, which emerged in the 1970s, has evolved considerably but remains defined as the way in which "an organisation creates, distributes and captures value" [17–19]. The systemic BM approach is used to specify the strategy and resources implemented by an organization and to analyze its functions as a whole and

their interconnections [20]. Osterwalder and Pigneur (2010) [21] defined an organization's BM in the form of a 9-item canvas: activities, key resources, key partners, proposed values, description of customer segmentation, means of reaching and retaining customers, costs, and sources of revenue. This BM, based on competitiveness through innovation [22], does not address organizations' implementation of sustainability. The Triple Layered Business Model (TLBM) of Joyce and Paquin (2016) remedies this by adding two more layers to the economic canvas, one environmental and one social [16]. The environmental canvas, based on the principle of Life Cycle Assessment (LCA), highlights the strategy and environmental impact of the products and services provided, from their production to their end of life. The social canvas details the interactions between the organization and its stakeholders and identifies the social impacts.

The TLBM is used here to analyze the sustainability strategies of the *Potager du Roi* and the *Cité Maraîchère*. Multi-criteria evaluation methods [23] and LCAs [24] of the sustainability of existing UA organizations provide a snapshot at the time "t" of the impacts of these organizations. They do not however indicate how to achieve those impacts, or the means to correct them. The TLBM, a dynamic tool for analyzing an organization's economic, social, and environmental strategy, specifies the means and resources mobilized to define a strategy for change [16]. On the basis of our investigation of the scientific literature, this is the first time that this tool has been applied to UA projects to identify and evaluate public policies.

2.1.2. Urban Farms

Urban agriculture (UA) organizations have many dimensions and develop a wide variety of economic activities (the sale of food products, services, and/or agricultural equipment) [25]. Faced with the constraints of the city (available areas are small and non-agricultural), urban farms usually adopt hybrid models of diversification, differentiation, or specialization for their activities, combining goods and services [22,25,26]. The activities of these organizations go beyond the direct role of food production, since their functions bring other benefits to the territories and their inhabitants. The wide variety of urban farms can be categorized in different ways. The French Agency for Ecological Transition (ADEME) distinguishes between professional UA, non-professional UA (collective and individual), and service-oriented UA [27]. Lohrberg et al. (2016) [28] differentiate urban food gardening from urban farming, while the French Professional Urban Agriculture Association (AFAUP) distinguishes between collective vegetable gardens and other gardens, participatory urban farms, and specialized urban farms [29]. In our study, the notion of urban farm refers to any professional organization engaged in food production, whether involving animals or plants, that operates in an urban environment. This can include both commercial and mixed-use ventures, with or without associated service activities. All urban farms, irrespective of their specific profile, are multifunctional [5] and generate positive externalities or ecosystem services [30].

2.2. Case Studies of Two Different Urban Farms

2.2.1. The *Potager du Roi*

The *Potager du Roi* (PDR), created at the behest of Louis XIV in the 1670s by the gardener-savant Jean-Baptiste de La Quintinie, produces and sells a great variety of fruit and vegetables on a 9.4-hectare site. PDR has always been a state institution and is now a listed historical monument and part of a UNESCO World Heritage Site. As urban development progressed, PDR found itself at the heart of the city of Versailles, the capital of the *département*. Versailles has some 84,000 inhabitants, a poverty rate well below the national average (7% vs. 14.6%) [31], and a per capita surface area of green spaces well above the average (70 m^2 vs. 51 m^2) [32]. Since the end of the 18th century, PDR has been home to leading horticulture and landscape schools, including the current *École Nationale Supérieure de Paysage* (ENSP). Under the supervision of four ministries—Agriculture and Food Sovereignty, Higher Education and Research, Culture, and Ecological Transition—it

now incorporates not only the missions of food production, conservation, experimentation, and the transmission of agricultural and landscape practices [33] but also environmental protection. The farming practices used at PDR are based on the conservation of both traditional know-how and organic farming, which eliminates the use of synthetic inputs and limits tilling. The PDR site includes cultural and merchandising areas, such as a bookshop dedicated to history, landscape, and gardening and a weekly farmers' market.

2.2.2. The *Cité Maraîchère*

The *Cité Maraîchère* (CM) was opened in 2021 by the Romainville municipality, as a multifunctional urban farm in line with the "environmental, social and economic policies" pursued by the town council. Romainville has a population of 30,000, with a high poverty rate (25%) well above the national average (13.9%), and an unemployment rate of 17%, which is 8.4% higher than the national average. The 23 m^2 of green space per inhabitant in Romainville is among the lowest in France. CM, a vertical greenhouse (2 towers, 3- and 6-story high, representing 1000 m^2 of Utilized Agricultural Area or UAA: a vertical greenhouse is an indoor practice of growing plants in vertically stacked containers) is dedicated to growing vegetables and small fruits, as well as providing catering facilities and hosting public awareness and training workshops. Designed with a circular economy in mind, CM claims to be a UA laboratory combining low-tech agricultural technologies in containers on a solid substrate with an advanced rainwater recovery system, natural ventilation and heating, and composting of organic waste.

2.2.3. Data Collection and Analysis

The TLBM canvas for the *Potager du Roi* and the *Cité Maraîchère* was developed on the basis of 22 semi-directed interviews over the course of 2022. For PDR, 14 interviews lasting between 1.5 and 2 h were conducted with 3 top managers, 3 professors, 2 gardeners, 1 hospitality manager, 1 student councilor, 2 members of NGO stakeholders, 1 top manager of Versailles Grand-Parc, and 1 volunteer. For CM, 8 semi-directed interviews lasting 2 h each were conducted with its director. Economic, environmental, and social data of PDR and CM were obtained through regular visits to the two urban farms. Internal documents, order forms, and reports were used to gather quantitative data on human resources, the volumes of inputs consumed, the origins of suppliers and partners, and the costs and income of the two farms.

Based on a series of questions, the interviews enabled the respondents to answer freely and to express their points of view. The interview guidelines were structured in four main parts: (i) socio-economic data; (ii) economic strategy according to the 9 items of the economic canvas [21]; (iii) environmental strategy; and (iv) social strategy relating to the environmental and the social canvases of the TLBM canvas, respectively [16]. The interviews were transcribed in their entirety. The TLBM canvas of PDR and CM were completed on the basis of what the interviewees had said. First, an economic canvas was drawn up for each of the activities identified in PDR and CM. The economic canvas of an activity makes it possible to analyze in detail the strategies implemented and the elements to be improved. The local and/or national organizations involved in each of the urban farms were identified and then categorized: (i) an ecosystem of stakeholders grouping together those involved in food, social action, the social and solidarity economy, UA, health, social integration, and popular education; (ii) associations, including cultural, naturalist, and horticultural, gardens, other civil societies, and NGOs; (iii) educational establishments, including primary, secondary, and higher education; (iv) local public authorities such as municipalities, conurbations, counties or states (*départements*), and regions; (v) national public authorities; (vi) research institutions; (vii) suppliers, etc. All the categories identified were similar for PDR and CM, such that despite the reduction in detail, a single economic canvas was produced by compiling the data of the different activities. The environmental and social canvas of PDR and CM was drawn up without separating the activities. Although the literature [23,34,35] defines specific ways of quantifying environmental and social

impact indicators in UA, in our cases, it was not possible to obtain a precise quantification of these indicators.

3. Sustainability Strategy for the *Potager du Roi* and the *Cité Maraîchère*

The food production activities of the *Potager du Roi* and the *Cité Maraîchère* are part of a commitment to sustainability based on the currently most environmentally friendly agricultural practices. Through their service activities, particularly educational, the two urban farms are committed to anchoring and developing their territory.

3.1. Economic Strategy for the Two Urban Farms

PDR, initially created to supply King Louis XIV's table with fruit and vegetables and to encourage horticultural experimentation and innovation, still pursues these missions as part of the *École Nationale Supérieure de Paysage*, a higher agricultural education institution. CM, for its part, is a full-fledged service of the Romainville municipality, with the aim of encouraging the development of an urban agricultural sector and proposing a range of integration, training, and awareness-raising opportunities for local residents on the subject of sustainable food.

3.1.1. Key Activities of the TLBM Economic Canvas

The interviews showed that these two urban farms are developing a hybrid business model (BM) of fruit and vegetable production and sale, along with services organized around this agricultural activity (Figure 1). As regards ***this food production and sale activity***, CM's vegetable and mushroom production occupies over 800 m^2. PDR cultivates its vegetables on 1.9 ha and its fruit on 3.2 ha. The cultural, educational, and events areas occupy around 2 ha at PDR and around 100 m^2 at CM, plus a 60 m^2 catering area. PDR and CM combine the production and sale of fresh produce with service activities (Figure 2): (i) education and outreach; (ii) space rental and event organization; (iii) food processing and catering; (iv) experimentation and research. PDR's 12 gardeners are occasionally assisted by civic-service workers, agricultural trainees, and amateur volunteers (1.5 full-time equivalents). They grow around 100 species of vegetables (from an important series of Asteraceae, Cucurbitaceae, Lamiaceae, and Solanaceae to a more limited number of mushrooms) and 30 species of fruit (mostly from the Rosae family, with some from the Betulaceae and the Rutaceae), producing around 8 tonnes of fruit and 18 tonnes of vegetables per year. These volumes may seem low, but French averages for vegetable yields in diversified market gardening vary widely, depending on the species and production methods used. By way of illustration, the annual yield of tomatoes, which in France is the most consumed vegetable, is between 2 and 12 kg/m^2, and that of lettuces is between 2 and 3 kg/m^2. In organic farming, the production of apples, the main fruit in terms of consumption, is around 20 mt/ha. CM grows around 15 types of vegetable and aromatic plants, producing 16 tonnes of vegetables a year with 1 full-time equivalent technical supervisor and between 2.5 and 5 full-time equivalent employees working on integration schemes. Turnover from this activity is around €70 K for PDR and €170 K for CM. The low turnover for PDR is explained by the significant diversification of species, resulting in low production volumes for each species and making it difficult to market them. Moreover, some of PDR's produce is distributed to its staff, particularly in the summer when many people from Versailles go on holiday, whereas in Romainville many city dwellers do not go on holiday. Finally, PDR's old fruit trees produce relatively little due to their susceptibility to disease, pests, and climate vagaries.

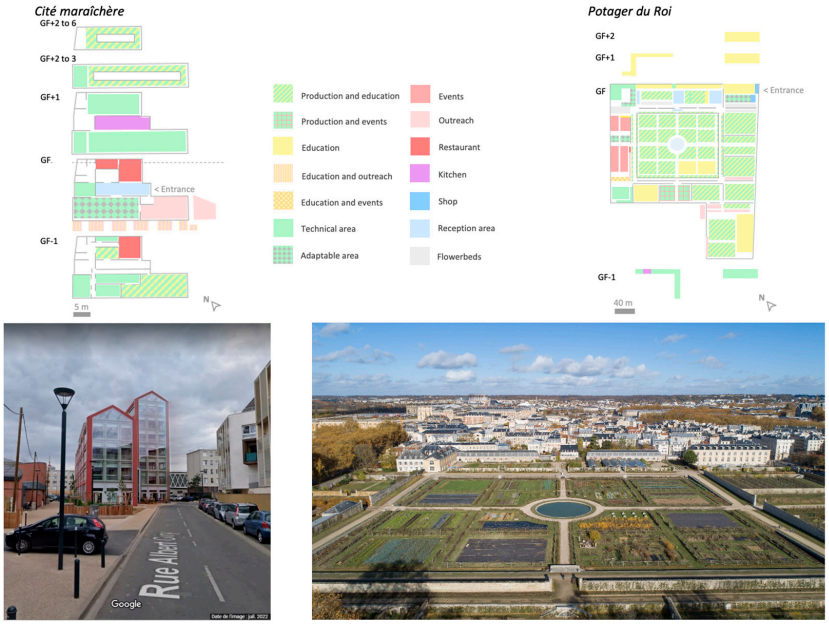

Figure 1. Spatial distribution of the food production and the economic activities of the *Cité Maraîchère* and the *Potager du Roi*, along with illustrative photographs (credits: Google Earth and Duboys-Fresney).

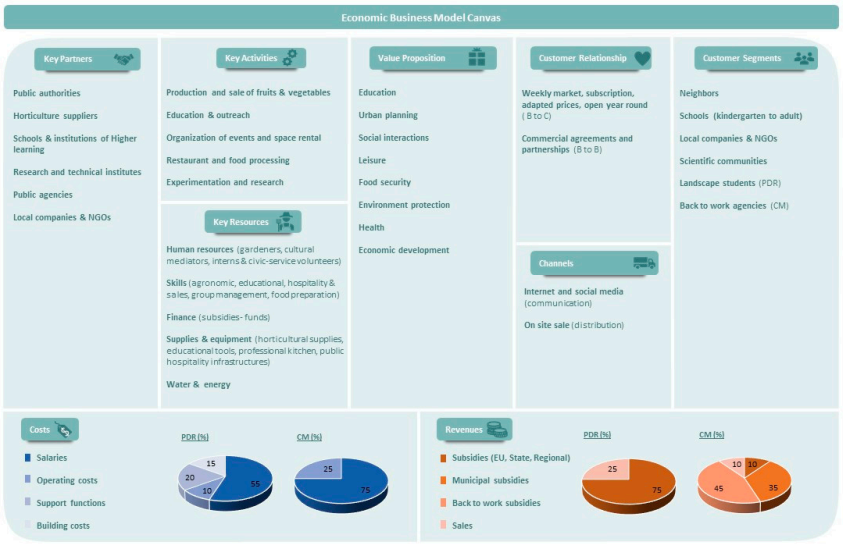

Figure 2. Economic canvas of the Triple Layered Business Model applied to the *Potager du Roi* and the *Cité Maraîchère*.

For ***education and outreach*** activities, CM has eight full-time facilitators, and PDR has six full-time equivalents. The training provided at CM takes the form of social and occupational integration projects or workshops. On the PDR site, around 10 permanent faculty members and 50 part-time adjuncts from the *Ecole Nationale Supérieure de Paysage* (ENSP) provide higher education training. The ENSP publishes and sells books for both the general public and specialists. The activities of PDR and CM for the general public revolve around agriculture, food, landscape, and environmental protection. Practical workshops are based on the observation of living organisms and gardening activities.

In both cases, the ***initial processing*** of the fruit and vegetables (jams, juices, syrups, condiments, herbal teas, etc.) is outsourced to local or social and solidarity economy companies, but the two urban farms are responsible for distribution and sales. Catering at

CM is entrusted to two young chefs, who pay rent for the use of a professional kitchen and a dining room that complies with industry standards.

Renting out space and organizing and hosting events are not the two farms' main activities. However, they do contribute to their influence, to the attractiveness of the area, and, indirectly, to the dissemination of sustainable urban agricultural practices. They bring in substantial income: up to 20% of PDR's revenue and almost 10% of CM's.

Experimentation and research activities on the two urban farms are carried out in partnership with national research institutions (for example, Paris-Saclay University, National Research Insitute for Agriculture, Food and the Environment) and teaching organizations or through international projects (for example, Wageningen University and Research, University of Bologna). CM welcomes European local authorities wishing to benefit from its experience as a public policy tool in UA. It also collaborates with international researchers wishing to carry out interdisciplinary research in sociology, agronomy, politics, economics, etc. CM is an original experimental site for low-tech vertical farming practices and participatory science. PDR cultivates several hundred fruit and vegetable varieties, conserving both varietal biodiversity and horticultural know-how, and participates in different programs of research with national institutions.

3.1.2. Key Resources of PDR and CM

In terms of human resources, the multiple activities of PDR and CM bring together skills as diverse as agronomy, marketing, and training young people and vulnerable populations. The farming system at CM, considered to be a pilot project, requires constant adjustment. The two urban farms principally recruit local labor and benefit from the help of volunteers. Nevertheless, recruitment difficulties are undermining the regularity of production and the maintenance of know-how at both sites. The raw materials (seeds, plants, other inputs) are organically grown. City water is used, and energy sources are currently non-renewable.

3.1.3. Key Partners in PDR and CM

The public authorities, essential to the two entities, participate in their governance and provide financial support either directly or through the purchase of services such as social integration or awareness-raising in schools. Relations with suppliers of agricultural equipment are commercial, informational, and based on a win-win attitude. Elementary schools are often the driving force behind awareness-raising workshops. Higher education, agricultural research, and technical institutes are invited to contribute ideas, develop innovation, and form partnerships. The conservation and enhancement of PDR's heritage benefits from the support of companies, non-profit associations, and foundations involved in horticulture and landscaping, the environment, and heritage. CM is developing a strong local network around the social and solidarity economy, social action, and popular education, ranging from companies to residents' groups, social organizations, and cultural and local health centers.

3.1.4. The Two Urban Farms Activities Propose Diverse Values to the Custumors

Their proposed value can be linked to the recognized functions of UA [25], listed here in order of priority (Figure 2). Although the existence of these two entities is based on the production and sale of food products, education (training and outreach) is the central value proposed. The main subjects, whether for students or the general public, concern know-how pertaining to food, ecology, waste management, landscape, gardening practices, market gardening, and tree growing. Both CM, a vertical tower in a contemporary or even futuristic building, and PDR, a classic baroque garden, are key elements in the development and aesthetics of their neighborhood (Figure 1). The two farms, which are both educational and recreational spaces, encourage intergenerational and social mixing. The production and marketing of fresh, affordable produce make a small contribution to the city's food security, but they are also a way of inciting people to take care of their health and the

environment. These two farms, which contribute to the attractiveness of the area, have increased the property value of the neighborhoods. The occupational outreach projects are helping people return to employment, and the students at the ENSP (>400/year) are essential for the local economy.

3.1.5. Commercializing the Products and Services of These Two Urban Farms

The farms, which are true "public" services, see the recipients of their activities as users and not simply as customers or clients. CM, a municipal facility, focuses its activities mainly on the residents of Romainville. The combined reputation of PDR and the *Ecole Nationale Supérieure de Paysage* in Versailles attracts students from all over France and beyond. Their weekly market—with prices based on income and by subscription in the case of CM—and their events relayed by word of mouth and ordinary communication channels, forge strong links with the local communities. The free access to certain educational services and possible employment in a pleasant "natural" environment encourages vulnerable populations to visit. The national and international scientific communities are attracted by the quality and diversity of the techniques used in these urban agriculture farms.

3.1.6. Financing Data of the Two Urban Farms

The budget of the two urban farms, while balanced, is heavily dependent on public support. The creation of CM (5 million €) was shared between the EU, the State, and all the local authorities, from the municipality to the region. As regards the two farms' recurrent operations, the largest part of which is devoted to salaries, the French Ministry of Agriculture and Food Sovereignty grants a subsidy to ENSP for public service teaching costs, part of which goes to PDR (constituting 75% of PDR's revenue), while CM receives 55% of its support from the State (national), particularly for social integration, and 35% from the municipality, for education and events. Sales of fresh produce, educational services, and events account for 25% of PDR's revenue and 10% of CM's revenue.

3.2. Environmental Strategy of the Two Urban Farms

The environmental component of the TLBM canvas, based on the life cycle concept [16], assesses how PDR and CM attempt to generate more environmental benefits than negative impacts in terms of natural resource use, biodiversity, GHG emissions, and organic and inorganic waste management (Figure 3).

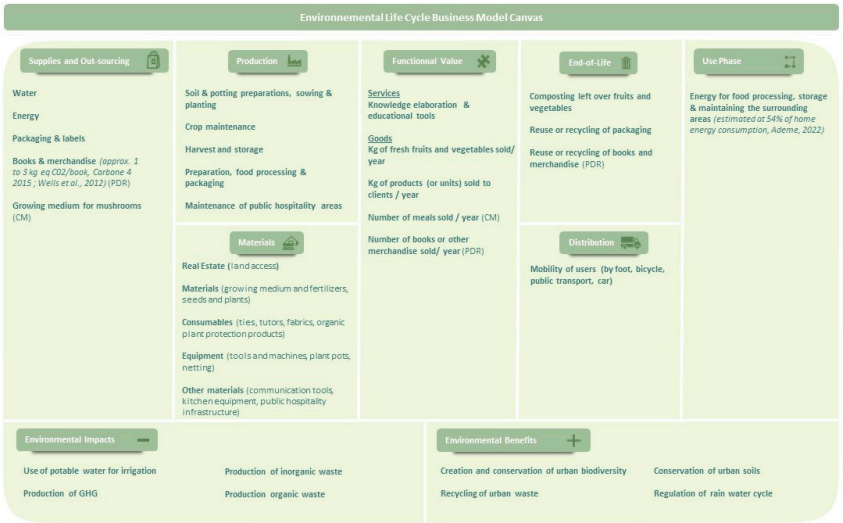

Figure 3. Environmental canvas of the Triple Layered Business Model applied to the *Potager du Roi* and the *Cité Maraîchère*.

3.2.1. Production and Functional Values of the TLBM Environmental Canvas

Food production needs both plant materials and agricultural equipment, as well as human and space resources to cultivate, process, and store. The functional values and externalities of the products and services [17] of PDR and CM can be understood in terms of the food needs of the inhabitants and the construction and transmission of new knowledge. The food value can be evaluated by the quantity of fruit and vegetables produced and sold per year (PDR) and/or the quantity of meals served per year (CM). The educational value can be measured at PDR by the number of books sold per year (~4000 per year, PDR inventory), and at both urban farms by the number of events and visitors. CM organizes around 50 awareness-raising events (healthy eating, cookery classes, zero waste, etc.) and more than 1000 educational workshops for schools, kindergartens, residential institutions for the elderly, and families. PDR hosts a dozen local, national, and international cultural events every year, attended by over 50,000 visitors.

3.2.2. Resources and Suppliers

Land is the primary resource used by these two farms, followed by the key materials used to construct the farm buildings (glass, concrete, metal, and stone). PDR's greenhouses, six glass-and-aluminium structures, cover 1200 m^2 and are used for growing crops and student training. Agro-ecological production practices for fruit and vegetables use substrates, fertilizers, seeds and plants, and plant protection products that are approved for organic farming. Irrigation uses the city's drinking water system (~6000 m^3/year for PDR). The processes involved in the activities of CM and PDR concern cultivation practices (soil preparation, sowing, planting, maintenance), harvesting, storage and preparation for sale, and primary transformation. The workforce, the principal resource for these activities, comes from the municipality and mainly uses public transport or soft or green forms of mobility. The two farms use ***subcontractors*** for processing, packaging, book publishing, and merchandizing, almost all of which are from regional or national companies.

3.2.3. Distribution, Use Phase, and End of Life

Transportation of the goods and services is the main **distribution** challenge. CM and PDR sell food products on site with a desire to sell in a short supply chain, and sometimes CM distributes them by electric car or cargo bike. Users or visitors arrive on foot, by car, or by plane. The***use phase*** consists of several elements: the presence of the public on the two sites and the home food processing, storage, and consumption. As far as the ***end-of-life of products and services*** is concerned, most of the fruit and vegetables from CM and PDR are consumed, with surpluses given to students and employees or to food banks, or recycled through composting. Food waste from consumer households cannot be assessed here. PDR and CM pay great attention to the use of consumables and to the purchase of recycled or recyclable containers. In particular, fruit and vegetables are sold without any packaging or in returnable glass or cardboard packaging. As for equipment (tractors, tools), considerable care is given to ensure that it lasts as long as possible.

3.2.4. Environemental Impacts and Benefits of the Two Urban Farms

The estimated environmental impacts and benefits of the two farms concern their buildings and equipment, their cultivation and processing practices, as well as their commercialization processes. In terms of natural resources, potable water consumption is not fully optimized. At PDR, although the gardeners use mulching, plant cover, or green manure, all of which limit water requirements, the absence of a rainwater recovery system and the regular leaks from a system dating back to the 19th century do not help to save water. However, the eight hectares of permeable PDR land do retain rainwater, which helps to regulate the local water cycle. CM has been designed with a mini-meteorological station and a rainwater recovery reservoir, which will eventually meet 40% of the site's needs.

In terms of greenhouse gas (GHG) emissions, the consumption of fossil fuels (heating, transport of raw materials and people, construction and maintenance of buildings and

equipment) has a significant negative impact on the environment, which is sometimes difficult to reduce. To limit these impacts, CM has opted for natural heating and lighting of the growing areas, as well as wood-fired heating for the public reception areas, while PDR uses natural gas. PDR consumes around 1500 liters of gasoline and 1000 liters of diesel fuel per year. The head gardener pointed out that fossil fuel consumption is decreasing, as the gardeners are committed to "*reducing the amount of energy used to run the garden*". Since 2010, internal combustion engines have gradually been replaced by electric motors. Transporting the 50 metric tonnes (mt) of initial substrates for CM, plus the regular 30 mt/year for the mushrooms and, for PDR, the 50 mt/year of soil improvers has a major impact in terms of GHG. To mitigate these negative effects, compost is produced on site, thereby reducing the need for external inputs and their potential to pollute the soil. For example, by composting nearly 95% of its green waste, PDR produces close to 25 tonnes of compost per year. The impact of farm equipment and buildings on GHG emissions is not at all neutral. ADEME shows that the manufacturing of agricultural vehicles produces 5.5 eqt CO_2 /mt, that of plastics 5.5 eqt CO_2 /mt, that of fertilizers 4.8 eqt CO_2 /mt, that of steel 2.2 eqt CO_2 /mt, and that of glass 0.9 eqt CO_2 /mt. For CM, the 1030 m^2 of greenhouses (around 13 mt of glass) alone represent 12 mt of CO_2, to be spread over the farm's lifetime. The transport of international visitors, who account for 5% of PDR visits, has a negative impact that needs to be relativized, as they are surely not only visiting PDR. On the other hand, the location of PDR and CM in an urban environment encourages their users to travel on foot, by bicycle, or by public transport. To limit transport GHG, the two farms use principally local suppliers for heavy materials and suppliers elsewhere within France for lighter materials (seeds and seedlings, plant protection products).

As far as biodiversity is concerned, the two urban farms are resources. At PDR, the number of fruit species has increased by 50% and the number of plant species by 20%, since 2000. The sheep used to maintain the areas bring with them a host of living organisms. Hedges, fallow land, and nesting boxes attract birds (~30 species), insects, and other animals. A senior lecturer in ecology explained: "...there is *a greater diversity of wild bees, bumblebees and insects than is generally found in urban areas*". The 530 m^2 of outdoor vegetation at CM reintegrates plant species into a highly urbanized area. Auxiliary insects and biocontrol products are used to protect the crops. Both farms have a dynamic approach concerning the different fruits and vegetables produced. They continually test in terms of agroecological objectives (soil regeneration, biodiversity, quantity and quality of produce) and change the plant palette in accordance.

Finally, PDR and CM continually produce organic and inorganic waste. Both farms have a strategy of redistributing unsold and surplus produce either to staff or to local food aid associations. To limit inorganic waste, the two urban farms opt for bulk sales in reusable or recyclable containers. Mindful of their impact, the two farms are constantly taking steps to improve their environmental performance, firstly by taking part in research programs such as FoodE and attempting to use LCA to assess the quantitative reality of their impact, and secondly by using the most environmentally friendly technologies known to date.

3.3. Social Strategy of the Two Urban Farms

The TLBM's social canvas highlights the influence of the two urban farms on both their staff and their ecosystem and territory (Figure 4). This influence is measured by the number and quality of relationships they maintain with numerous stakeholders, and by the territorial reach (from the neighborhood to the town, *département*, region, and country).

Figure 4. Social canvas of the Triple Layered Business Model applied to the *Potager du Roi* and the *Cité Maraîchère*.

3.3.1. The Social Value of the Two Urban Farms

Social value *of the TLBM social canvas* is an integral part of the missions of PDR and CM, as these two urban farms were created by public authorities. In the canvas, this value is broken down into five items ranked in descending order (Figure 4). PDR and CM aim to pass on horticultural knowledge and know-how, in the case of the former through State qualifications and professional certifications (70 students per year), in the case of the latter through workshops for the general public (1000 participants per year), and in trades through occupational integration. The local and healthy products sold by PDR (26 mt) and CM (16 mt) are limited, thus they can concern only a relatively small number of customers (600 subscribers to PDR and 400 regular customers at CM). However, through their policy of fair prices, the farms make these products accessible to local communities with low or medium incomes. The buildings of CM have been designed to blend into the urban landscape, while the design of PDR is based on the Hippodamian principles. Local residents feel the effect and refer to PDR as a landmark. For local residents, these spaces and their cultural events provide opportunities for leisure activities linked to nature. A final social value concerns the participation of these two urban farms in the creation of knowledge and innovations for sustainable urban and rural agriculture.

3.3.2. Human Resources and Management

As regards the key role of *employees and volunteers* and the attention paid to them, PDR and CM are committed to gender parity. According to the gardeners, the farms offer a "*motivating working environment where the know-how and skills required are varied*". At PDR, the autonomy and skills developed enable gardeners to directly participate in the horticultural and conservation management practices. At CM, employees benefit from personalized support and ongoing training. Two committees are involved in *the governance* of the two urban farms. PDR reports to the ENSP board of directors, which is made up of State, regional, and local representatives, experts, student representatives, and various categories of staff. The governance of CM is based on the political framework of the Romainville town council. The two farms are each accompanied by a scientific advisory board responsible for proposing and assessing research topics.

3.3.3. Territorial Anchoring

By forming both economic and relational partnerships, PDR and CM involve various *communities*, mainly locally. The municipality sees CM as "*a cooperation project with the inhabitants*". At PDR, 12 nature and cultural associations are stakeholders involved in the programming of events or ecological diagnostics, for example. CM, for its part, works with about 22 local or national popular education organizations, such as *Emmaüs* and the *Petits Débrouillards*. Users such as social and culture centers and resident and student groups are also welcomed. With a view to maintaining local employment, the two urban farms use the same regional companies for their supplies and the recycling of their waste. In order to teach children from an early age about growing fruit and vegetables and the seasons, elementary schools and organizations offering extra-curricular activities in the two towns and the surrounding areas are invited to visit free of charge. Volunteers and civic services are also stakeholders, benefiting from the ecosystem services provided by these two farms [30]. As the managers and staff of the two farms put it, in terms of societal influence, the farms are intent on "*passing on the culture of healthy and sustainable food production and consumption*". CM is working with researchers from all disciplines, from biotechnical sciences to humanities and social sciences, involving local residents with a strong desire to carry out participatory science. PDR transmits landscape culture as a link between agricultural and urban planning.

The scale of influence of the two urban farms depends on the intensity and quality of the relationships with their stakeholders. Multi-year research programs are conducted with European universities and research institutes. Their high profile as pilot urban farms has attracted visitors from many local authorities outside of France. The neighborhood and its residents benefit greatly from the food, leisure, and lifestyle functions of the two farms. The educational function has a local dimension in the case of CM and ad minima a national dimension in that of PDR, due to the origin of the students and the geographical location of their future jobs. Their local and international funding is based on the economic, environmental, and social services they provide to the general public, in line with various public policies (*Projet alimentaire territorial*, *Green Deal*, *Projet national pour l'alimentation*, *France 2030*), and the technical and organizational innovations they have developed.

3.3.4. Evaluation of the Social Impacts and Bénéfits of the Two Urban Farms

Social impacts and benefits can be organized into four categories: communities, health, education, and the economy [36]. In every category, the influence of these two urban farms is first local. As far as communities are concerned, although their missions and projects are geared towards as many people as possible, with a particular focus on vulnerable populations, these aesthetic and multifunctional urban farms often lead to the gentrification of surrounding neighborhoods, which can drive certain groups away [37]. The weekly gardening sessions organized by volunteers and the daily opening of CM *café-cantine* help to build social links, particularly by offering free or low-cost activities. CM, which works more specifically with social action organizations, encourages social and intergenerational mixing. Access to fruit and vegetables of high nutritional quality, physical activity in the garden, and a green living and working environment are all factors that contribute to better physical and mental health. However, gardeners' work can also be arduous and may sometimes entail organizational difficulties linked to the seasons. In terms of acquiring new knowledge, PDR "*still receives 60,000 visitors a year who are made aware of the landscape project [...], urban agroecology, and food issues, and discover [...] how to grow what they have on their plates*", explained the director of the ENSP. At the time of writing, it was expected that almost 5000 children would have taken part in educational workshops at CM in 2021. The economic impact, in terms of production volume, customers involved, and the number of job opportunities (17 at PDR in 2023; 18 at CM in 2022, 14 of which were in the form of occupational insertion contracts), extends mainly to the neighborhood and the city. The free weekly reception at PDR of a network of local producers enables the creation of short supply chains and a better distribution of value.

The financial investment made in these two urban farms by both local and national public authorities could be evaluated simply by carrying out a cost–benefit analysis. However, as that would be a difficult undertaking due to the lack of weighted indicators, we propose to analyze the existence of the two farms through their response to current public policies and societal issues.

4. Discussion: Public Policy Implications in Urban Agriculture

The issue of healthy, sustainable, and fair food production has become a major challenge for current food and environmental policies, particularly in cities. For public authorities, urban farms designed and maintained according to the best agricultural practices in terms of sustainability appear to be one of the relevant levers for meeting these challenges [4]. PDR and CM are financed and managed by public institutions, which provide services to as many citizens as possible. These two fundamental characteristics (public financing and service for the general public) bring us to discuss and analyze these two urban farms in terms of public equipment.

In France, the concept of public equipment (*équipement public*) is not widely discussed in the literature [38]. Public equipment can be infrastructures (transport networks, sewage system, water supply, etc.) and superstructures (gymnasiums, libraries, schools, etc.) that are real estate in nature, fall within the remit of public authorities (education, justice, health, etc.), and are intended for the use and benefit of the public [39,40]. In the general interest and owned by a public organization, they represent fundamental elements in the history of our societies by reflecting the public policies of a given period [41]. For example, stadiums and sports facilities were built at the end of the 19th century to combat fatigue at school from overwork and urban insalubrity [42]. Youth and cultural centers appeared in the 1950s/1960s, giving everyone access to cultural leisure activities [43]. The compilation of each of the TLBMs for PDR and CM highlighted the remarkably strong similarities between the two pieces of Public Urban Agriculture Equipment, making it possible to produce Figures 2–4 as well as this new "public equipment" category.

Funding for the two pieces of Public Urban Agriculture Equipment, the *Potager du Roi* and the *Cité Maraîchère*, comes under a variety of local, departmental, regional, national, and European public policies, ranging from environmental protection and food to economic development and education. The TLBM canvases highlight the overlap and implications of public policies in this area. The question of the relevance of the creation of these new pieces of Public Equipment and their sustainability arises in the context of declining public finances and the prioritization of responses to the major issues facing society (Figure 5). Funding for these pieces of Public Urban Agriculture Equipment with non-agricultural policies is justified because urban agriculture provides multiple ecosystem services [35]. In addition, some territorial organizations, such as municipalities, do not have agricultural expertise and nonetheless wish to implement actions aimed at achieving greater food justice [44]. Within the framework of a systemic approach to public, citizen, and entrepreneurial actions in response to global issues concerning climate, health, and the limits of non-renewable resources, Figure 5 illustrates the complexity of the interdependencies between public policies, societal issues, and the activities of Public Urban Agriculture Equipment.

Firstly, it highlights the fact that the two pieces of urban agriculture equipment, which develop agricultural production as part of an urban planning project, contribute to improving the living environment through the landscape [30]. The administration of the Versailles Grand Parc agglomeration states that PDR is a "*centrepiece of the Saint-Louis district as a natural space*". The director of CM explained that her farm "*contributes to improving the image of the district and opening it up to the rest of the city*". Their circular management of waste and materials and their preservation of biodiversity explain the mobilization of budgets for environmental policies. However, the conservation of fruit varieties and forms from the 17th, 18th, and 19th centuries, which help to maintain biodiversity, is not given major emphasis at PDR.

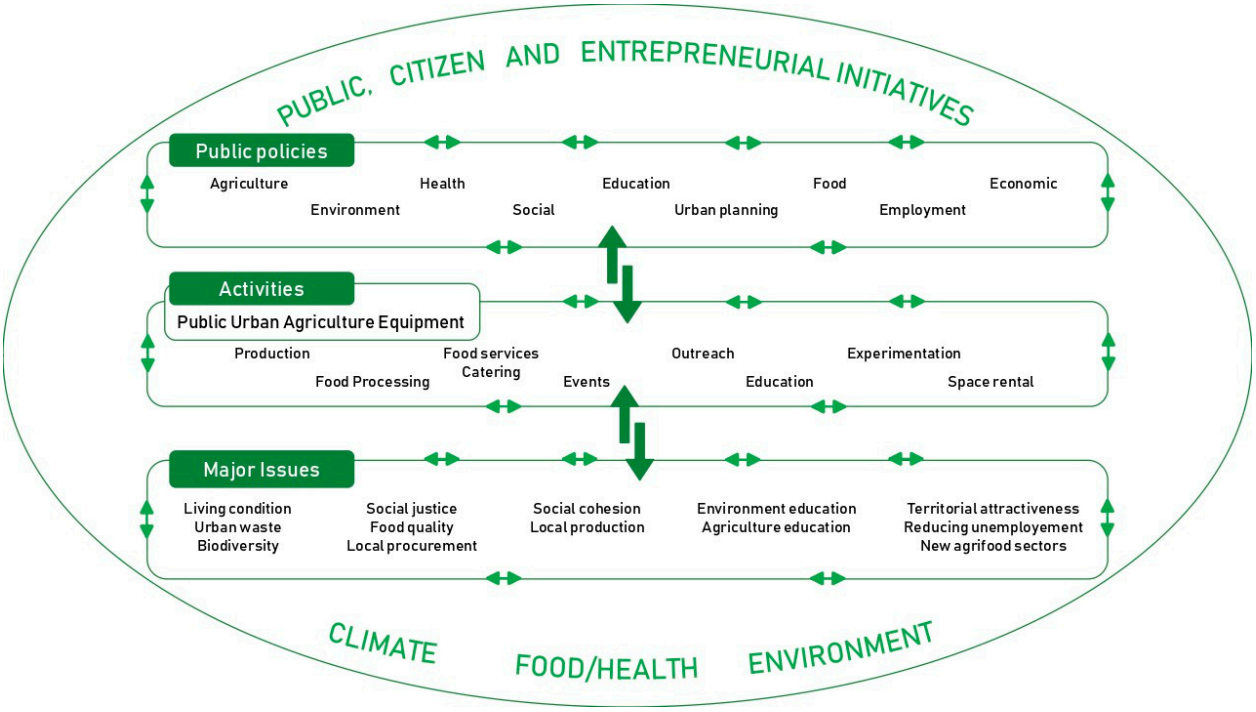

Figure 5. Public policies and the implications of Public Urban Agriculture Equipment.

Secondly, PDR and CM train a wide range of people in very different horticultural professions, thereby meeting the challenges of economic development through education and innovation. For students and people undergoing professional retraining, PDR transmits sustainable horticultural know-how, combining contemporary challenges with traditional approaches. In particular, it co-constructs "artistic and cultural projects in educational areas", with financial support from the *Académie de Versailles*, Ile-de-France region, and Yvelines *département*. CM is particularly dedicated to reintegrating people who have not been employed for a long time or have never had a job, thus benefiting from funding under public economic and educational policies. Developing a skilled workforce that is aware of current agricultural and food issues helps to combat unemployment and labor shortages in the market garden and horticultural sectors [45]. In the Versailles area, the urban authorities point out that "*often* [farmers] *go looking for people in the provinces, or even abroad* [...], *even if they offer accommodation they can't manage to recruit*". These two pieces of Public Urban Agriculture Equipment are a gateway to agricultural professions, helping to make them attractive to urban dwellers. They are experimental showcases for entrepreneurial urban farmers [46] and for learning agroecological practices.

Thirdly, the two pieces of Public Urban Agriculture Equipment studied here are fully in line with health policies. PDR and CM are reconnecting vulnerable populations with their food, in order to make them more involved in food choices as a form of disease prevention. For example, the PDR hospitality manager says that "*raising children's awareness amounts to raising parents' awareness*" because "*children who know about the [PDR] tend to bring their families*". Furthermore, gardening workshops encourage physical activity in both children and the elderly, in an urban environment where sedentary lifestyles are widespread [47]. For pupils, these activities encourage teamwork and improve their well-being [48]. At PDR, during these gardening sessions, "*the elderly people are happy [...], they get some physical activity, they meet each other, they chat*", says the head vegetable gardener. Combating sedentary lifestyles and isolation has positive effects on the physical and mental health of people of all ages.

Fourthly, PDR and CM, as meeting places for a variety of publics, fall within the scope of social policies. These two pieces of Public Urban Agriculture Equipment take specific actions in favor of vulnerable groups, contributing to social justice and cohesion. PDR

receives people for gardening workshops and other cultural events (which are sometimes free as they are funded by the local authorities) as well as convicts eligible for court-ordered community service. Public institutions such as the *Agence Nationale de Cohésion des Territoires* (national agency for territorial cohesion) and the *Direction Régionale des Affaires Culturelles* (regional directorate for cultural affairs) support artistic and cultural projects at PDR through programs such as "Culture and Health" and "It's My Heritage", which focus on agricultural production for schools in priority neighborhoods. The success of the many intergenerational meetings at CM has encouraged the municipality to create a new educational garden on a vacant urban plot nearby: the *jardin CasseDalle* (800 m^2). The director of CM explained that the creation and management of CM and the educational garden by the municipality allow it "*to experiment with both consultation and citizen involvement*", thus justifying the use of funds from social and urban planning policies. A manager of the local beekeepers, a partner of PDR, says: "*If we hadn't taken part in this event, we wouldn't have met someone so different from ourselves*".

Fifthly and lastly, the food production of the two urban farms is renewing the local agricultural identity and contributing to an ecosystem dedicated to agriculture. Among the horticultural companies created in Versailles are the *Fermes de Gally* and the *Truffaut* garden center (today, with more than 60 locations in France, 2800 employees, and a turnover of over 490 million €). As for Romainville, CM's agricultural activity is in the process of creating a new network around UA in its area and beyond, through the partnerships it has been developing with players in the social economy. Both PDR and CM grow crops, in the open ground and in containers, respectively, and both are developing sustainable farming practices while reducing access inequalities to produce. Their fruit and vegetable production justifies the public authorities' local food policy support. By combining the production, processing, and commercialization of fresh, seasonal fruit and vegetables in a short supply chain, PDR and CM reduce the distance between producers and consumers. Romainville offers prices tailored to household incomes. At PDR, the socio-economic characteristics of the neighborhood are more favorable, but the ENSP director explained: "*we're not into the idea of exclusive products reserved for an elite. On the contrary, we really want to share our production so as to maintain links with the neighbourhood*". Through their pricing policy, the two pieces of Public Urban Agriculture Equipment are broadening the range of sustainable food products available in their neighborhood. In so doing, they are responding to the challenges of preserving agricultural practices and ensuring social justice for quality food, in line with social demand and local as well as European-wide public policies.

The creation and management of Public Urban Agriculture Equipment can be the subject of controversy for several reasons. Public equipment created for social justice purposes is controversial because of its cost in relation to its benefits in terms of contributing to resolving societal problems. Vigneau (2015) [49] explains that public equipment, particularly sports facilities built to increase social cohesion, can accentuate social segmentation and even exclusion due to its limited access capacity. The same criticism could be leveled at the *Potager du Roi* and the *Cité Maraîchère*, in particular. Although they give a large number of local people access to their workshops and the opportunity to buy their quality organic produce at affordable prices, their actions are essentially local or departmental in scope.

The creation of a piece of Public Urban Agriculture Equipment requires land, but in cities, land is not readily accessible. Today, this difficulty of access to land of all kinds (wasteland, car parks, roofs, farmland), which is essential for agricultural activity, is leading French municipalities and conurbation communities to acquire agricultural land or to transform non-agricultural land into agricultural. A recent report by the National Federation of Agricultural Land Management Companies indicates that the purchase of farmland by local authorities increased by 61% in 2022 [50], in a wider context where the succession of existing traditional farms is not assured. Yet these pieces of Public Urban Agriculture Equipment within towns and cities provide a connection between urban dwellers and agricultural activity and enable continuity between rural and urban farming

activities. It should nevertheless be noted that in many cases, their initial location in working-class neighborhoods leads to gentrification [37].

Public policymakers have many tools at their disposal to support populations and citizen or entrepreneurial initiatives. In the constantly changing geopolitical context, the issue of food sovereignty is back at the top of the political agenda. In the case of urban agriculture, which has many advantages in terms of solving a range of urban problems [5], public authorities are providing access to specific subsidies for UA projects, buying services from urban farmers, providing advisory services, launching calls for UA projects, introducing favorable regulations, or creating and managing agricultural boards, and ultimately, creating Public Urban Agriculture Equipment.

The Triple Layered Business Model [16] used here is a dynamic tool for identifying not only the economic, social, and environmental impacts and benefits of these pieces of Public Equipment but also the strategies implemented to achieve them. Regular monitoring enables improvements to be made. The TLBM, which is generally used as a tool for the strategic management of organizations and their sustainability [51], has enabled us, in the case of PDR and CM, not only to identify and estimate their sustainability, but also, in an original and fundamental way, to characterize the public policies involved, their overlap, and their evaluation.

5. Conclusions

The *Potager du Roi* and the *Cité Maraîchère* are considered here as public equipment with multiple activities based on their food production. This article, therefore, introduces a new concept, that of Public Urban Agriculture Equipment, alongside recognized public equipment devoted to education (schools, universities [52]), culture (theatre, museum, cultural center, media library), sports (stadium, swimming pool), health (hospital), housing (public housing office), and social services (social center, family planning). Funded by public money, the trade-offs between objectives and public policies are ongoing. This often raises the question of policy cost-effectiveness in terms of general interest and access for all [53]. Public equipment needs to be assessed in terms of the services they provide to the population, and not just in financial terms. In light of today's challenges, the evaluation of public policies must be conducted conjointly in terms of economic, environmental, and social cost–benefits, so that the decision-making processes are consistent between the various public policies.

By highlighting the involvement of public authorities in the management and governance of these two urban farms, this study points out the implication of these authorities in agriculture and food as a consequence of different public policies. In France, the powers of local authorities to regulate the agricultural sector are still limited, as responsibility for food lies mainly at national and European levels [8,10]; national plans and programs still have a strong influence on the development of urban agriculture. Although there are legal and technical levers available (urban planning documents, land monitoring, pre-emption, etc.), French cities do not have the same political clout as their European and American counterparts [54]. Nevertheless, they have found ways of making a positive impact on the creation of sustainable agri-food systems [55].

Despite the value of these two urban farms as Public Urban Agriculture Equipment, their existence may be undermined by changes in political priorities. In particular, a constant funding is required to maintain their current exemplary sustainability and existence. These two Public Urban Agriculture Equipment sites have a hybrid business model based on paid and unpaid activities and are developing sustainable environmental and social strategies that have certain limitations. A quantitative, multi-criteria assessment of their impact will need to be carried out in order to compare them with other types of public equipment (sports or cultural) on the one hand, and with private agricultural sites that are entrepreneurial or run by foundations or non-profit associations, on the other. In addition, the creation of Public Urban Agriculture Equipment as an objective of public policy could

be considered from the angle of innovation, whether technological, organizational, or territorial [56], in order to highlight the role of local public authorities.

Author Contributions: Conceptualization, V.S.-G.; methodology, V.S.-G.; validation, V.S.-G. and A.J.; formal analysis, V.S.-G. and B.W. and A.J.; investigation, V.S.-G. and B.W; resources, V.S.-G. and A.J. and B.W.; data curation, V.S.-G.; writing—original draft preparation, B.W.; writing—review and editing, V.S.-G. and A.J.; visualization, V.S.-G.; supervision, V.S.-G. and A.J.; project administration, V.S.-G.; funding acquisition, V.S.-G. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by funding from the European Union's Horizon 2020 research and innovation program [grant agreement No 862663]. The publication reflects the author's views. The Research Executive Agency (REA) is not liable for any use that may be made of the information contained therein.

Informed Consent Statement: Informed consent was obtained from all subjects involved in this study.

Data Availability Statement: The data are available at INRAE (Institut National de Recherche pour l'Agriculture, l'Alimentation et l'Environnementand) and respect the GDRP (General Data Protection Regumation).

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Brand, C.; Bricas, N.; Conaré, D.; Daviron, B.; Debru, J.; Michel, L.; Soulard, C.-T. *Construire des Politiques Alimentaires Urbaines*; Editions Quae: Versailles, France, 2017. [CrossRef]
2. Institut National de la Statistique et des Études Économiques (INSEE). Unité Urbaine/Agglomération/Agglomération Multicommunale/Agglomération Urbaine. 2020. Available online: https://www.insee.fr/fr/metadonnees/definition/c1501 (accessed on 28 April 2023).
3. Food and Agriculture Organization of the United Nations (FAO); Rikolto; RUAF Global Partnership on Sustainable Urban Agriculture and Food Systems. *Urban and Peri-Urban Agriculture Sourcebook. From Production to Food Systems*; FAO: Rome, Italy; Rikolto: Rome, Italy, 2022. [CrossRef]
4. Aubry, C.; Giacchè, G.; Maxime, F.; Soulard, C.-T. *Les Agriculture Urbaines en France. Comprendre les Dynamiques, Accompagner les Acteurs*; Editions Quae: Versailles, France, 2022.
5. Duchemin, E.; Wegmuller, F.; Legault, A.-M. Urban agriculture: A multidimensional tool for neighbourhood development. *Vertigo* **2010**, *10*, 4–19. [CrossRef]
6. Reisch, L.; Eberle, U.; Lorek, S. Sustainable food consumption: An overview of contemporary issues and policies. *Sustainability* **2013**, *9*, 7–25. [CrossRef]
7. Baker, L.; de Zeeuw, H. Urban food policies and programmes: An overview. In *Cities and Agriculture: Developing Resilient Urban Food Systems*; de Zeeuw, H., Drechsel, P., Eds.; Routledge: London, UK, 2015; pp. 26–55.
8. Halliday, J. Objectifs et leviers des villes pour une alimentation durable. In *Construire des Politiques Alimentaires Urbaines*; Brand, C., Bricas, N., Conaré, D., Daviron, B., Debru, J., Michel, L., Soulard, C.-T., Eds.; Editions Quae: Versailles, France, 2017; pp. 67–87.
9. FOODE (Food Systems in European Cities). Factsheets with Overview on EU and National Regulatory Framework Conditions and Policies and the Related Constraints and Challenges. 2022. Available online: https://foode.eu/wp-content/uploads/2022/09/FoodE_WP6_D6.1_Report_and_Annex_ILS.pdf (accessed on 1 July 2020).
10. Pahun, J. Gouverner l'agriculture localement ? La capacité politique des collectivités territoriales sur la régulation du secteur agricole. *Géocarrefour* **2022**, *96*, 1–19. [CrossRef]
11. Michel, L.; Soulard, C.-T. Constructing local food policies in France: Responding to crisis or making use of crisis. *Pôle Sud* **2021**, *55*, 7–18. [CrossRef]
12. Bonnefoy, S.; Brand, C. Régulation politique et territorialisation du fait alimentaire de l'agriculture à l'agri-alimentaire. *Geocarrefour* **2014**, *89*, 95–103. [CrossRef]
13. Banque des Territoires. Démonstrateurs Territoriaux des Transitions Agricoles et Alimentaires Sept Projets Lauréats et un AMI Ouvert Jusqu'à Mi-2023. Available online: https://www.banquedesterritoires.fr/demonstrateurs-territoriaux-des-transitions-agricoles-et-alimentaires-sept-projets-laureats-et-un (accessed on 28 April 2023).
14. Ministry of Agriculture and Food Sovereignty. Qu'est-ce qu'un Projet Alimentaire Territorial. Available online: https://agriculture.gouv.fr/quest-ce-quun-projet-alimentaire-territorial (accessed on 9 May 2023).
15. Sanyé-Mengual, E.; Specht, K.; Vávra, J.; Artmann, M.; Orsini, F.; Gianquinto, G. Ecosystem Services of Urban Agriculture: Perceptions of Project Leaders, Stakeholders and the General Public. *Sustainability* **2020**, *12*, 10446. [CrossRef]
16. Joyce, A.; Paquin, R.L. The triple layered business model canvas: A tool to design more sustainable business models. *J. Clean. Prod.* **2016**, *135*, 1474–1486. [CrossRef]

17. Pieroni, M.P.P.; McAloone, T.C.; Pigosso, D.C.A. Business model innovation for circular economy and sustainability: A review of approaches. *J. Clean. Prod.* **2019**, *215*, 198–216. [CrossRef]
18. Arlotto, J.; Sahut, J.-M.; Teulon, F. Le concept de Business Model au travers de la littérature. *Manag. Prospect.* **2011**, *28*, 33–47. [CrossRef]
19. Zott, C.; Amit, R.; Massa, L. The Business Model: Recent Developments and Future Research. *J. Manag.* **2011**, *37*, 1019–1042. [CrossRef]
20. Verstraete, T.; Kremer, F.; Jouison-Laffitte, E. The Business Model: A Practice-Oriented theory. *Entrep. Innover* **2012**, *13*, 7–26. [CrossRef]
21. Osterwalder, A.; Pigneur, Y. *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*; John Wiley & Sons: Hoboken, NJ, USA, 2010.
22. Pölling, B.; Mergenthaler, M.; Lorleberg, W. Professional urban agriculture and its characteristic business models in Metropolis Ruhr, Germany. *Land Use Policy* **2016**, *58*, 366–379. [CrossRef]
23. Clerino, P.; Fargue-Lelièvre, A. Formalizing Objectives and Criteria for Urban Agriculture Sustainability with a Participatory Approach. *Sustainability* **2020**, *12*, 7503. [CrossRef]
24. Dorr, E.; Goldstein, B.; Aubry, C.; Gabrielle, B.; Horvath, A. Life cycle assessment of eight urban farms and community gardens in France and California. *Resour. Conserv. Recycl.* **2023**, *192*, 106921. [CrossRef]
25. Saint-Ges, V. Business models for market and production organisations in urban agriculture. *Innovations* **2021**, *64*, 91–118. [CrossRef]
26. Morel-Chevillet, G. *Agriculteurs Urbains. Du Balcon à la Profession, Découverte des Pionniers de la Production Agricole en Ville*; Editions France Agricole: Paris, France, 2017.
27. ADEME; Villatte, M. L'Agriculture Urbaine, Quels Enjeux de Durabilité? 2017. Available online: https://www.nature-en-ville.com/sites/nature-en-ville/files/document/2020-02/agriculture_urbaine%255B1%255D.pdf (accessed on 15 March 2024).
28. Lohrberg, F.; Licka, L.; Scazzosi, L.; Timpe, A. *Urban agriculture Europe*; Jovis Verlag: Berlin, Germany, 2017; ISBN 978-3-86859-371-6.
29. Association Française d'Agriculture Urbaine Professionnelle (AFAUP). Agriculture Urbaine C'est Quoi. 2023. Available online: https://www.afaup.org/lagriculture-urbaine-cest-quoi/ (accessed on 23 October 2023).
30. Giacchè, G.; Consalès, J.-N.; Grard, B.J.-P.; Daniel, A.-C.; Chenu, C. Toward an Evaluation of Cultural Ecosystem Services Delivered by Urban Micro-Farms. *Sustainability* **2021**, *13*, 1716. [CrossRef]
31. Institut National de la Statistique et des Études Économiques (INSEE). Dossier Complet, Commune de Versailles. Available online: https://www.insee.fr/fr/statistiques/2011101?geo=COM-78646 (accessed on 26 May 2023).
32. Observatoire des Villes Vertes. Les Villes les plus Vertes de France, Palmarès 2020. Available online: https://www.observatoirevillesvertes.fr/le-palmares-des-villes-vertes-en-2020/ (accessed on 26 May 2023).
33. Jacobsohn, A. La Quintinie today. In *Instruction pour les Jardins Fruitiers et Potagers*; La Quintinie, J.-B.d., Ed.; Actes Sud: Arles, France, 2016; pp. i–vii.
34. Cirone, F.; Petruzzelli, M.; De Menna, F.; Samoggia, A.; Buscaroli, E.; Durante, E.; Orsini, F.; Rufí-Salís, M.; Tonini, P.; Durany, X.G.; et al. A sustainability scoring system to assess food initiatives in city regions. *Sustain. Prod. Consum.* **2023**, *36*, 88–99. [CrossRef]
35. Grard, B.; Chenu, C.; Boulanger-Joimel, S.; Vieublé Gonod, L.; Haudin, C.S. Evaluation des Services Écosystémiques Rendus par les Micro-Fermes Urbaines et leurs sols—Bilan du Projet de Recherche SEMOIRS 2018–2021. Research Report INRAE; AgroParisTech; Université de Lorraine; Aix-Marseille Université; Institut d'Aménagement et d'Urbanisme de la Région d'Ile-de-France. 2022; 22p. Available online: https://hal.science/hal-03624235/document (accessed on 15 October 2023).
36. Ilieva, R.T.; Cohen, N.; Israel, M.; Specht, K.; Fox-Kämper, R.; Fargue-Lelièvre, A.; Ponizy, L.; Schoen, V.; Caputo, S.; Kirby, C.; et al. The Socio-Cultural Benefits of Urban Agriculture: A Review of the Literature. *Land* **2022**, *11*, 622. [CrossRef]
37. Lindemann, J. Black Urban Growers and the Land Question in Cleveland: Externalities of Gentrification. In *A Recipe for Gentrification: Food, Power, and Resistance in the City*; Alkon, A.H., Kato, Y., Sbicca, J., Eds.; NYU Press: New York, NY, USA, 2020; pp. 284–304. Available online: http://www.jstor.org/stable/j.ctv1sjwp6b.16 (accessed on 14 June 2024).
38. Lherminier, C. Équipements Publics et Participations d'Urbanisme. Les Cahiers Juridiques de La Gazette 2015. Available online: https://www.seban-associes.avocat.fr/wp-content/uploads/2015/09/Equipements-publics-et-participations-d%E2%80%99urbanisme-CL-Les-Cahiers-Juridiques-de-La-Gazette-aout-septembre-2015.pdf (accessed on 22 April 2024).
39. Cocquière, A.; O'hanna, J. Financement des Équipements Publics. Quels Outils pour Accompagner l'Effort de Construction. Institut Paris Région. 2018. Available online: https://www.institutparisregion.fr/fileadmin/NewEtudes/Etude_1467/Etude_Financement_EqP_VFin2.pdf (accessed on 14 May 2024).
40. Institut National de la Statistique et des Études Économiques (INSEE). Définition Équipement 2022. Available online: https://www.insee.fr/fr/metadonnees/definition/c2187#:~:text=Un%20%C3%A9quipement%20est%20un%20service,,%20tribunal,%20etc.) (accessed on 29 August 2023).
41. Fiole, B. Les Équipements Publics et la Ville: Problématique du Dialogue Entre le Projet de l'Équipement et le Projet Urbain. Centre d'Études sur les Réseaux, les Transports, l'Urbanisme et les Constructions Publiques, CERTU. 2002; 135p. Available online: https://hal-lara.archives-ouvertes.fr/hal-02150556 (accessed on 21 February 2024).
42. Callède, J.-P. Sports facilities networks, cultural innovation and urban functionality. *Hist. Écon. Soc.* **2007**, *26*, 75–85. [CrossRef]
43. Besse, L. The action of youth and cultural centers. *Inf. Soc.* **2015**, *4*, 26–35. [CrossRef]

44. Bodiguel, L.; Bréger, T.; Maréchal, G.; Rochard, C. L'action Publique en Matière d'Alimentation Locale. Les Compétences Accordées par la loi et les Règlements aux Collectivités Locales (Régions, Départements, Communes) dans le Domaine de la Production, la Transformation et la Consommation d'Aliments Locaux. CNRS UMR 6297. 2021. Available online: https://hal.science/hal-01842263v3 (accessed on 6 March 2024).
45. Agreste FRANCE. MEMENTO 2022, Mai 2023. Available online: https://agreste.agriculture.gouv.fr/agreste-web/download/publication/publie/MemSta2022/MementoFrance2022.pdf (accessed on 27 June 2024).
46. Opitz, I.; Specht, K.; Berges, R.; Siebert, R.; Piorr, A. Toward Sustainability: Novelties, Areas of Learning and Innovation in Urban Agriculture. *Sustainability* **2016**, *8*, 356. [CrossRef]
47. Morgan, K.; Sonnino, R. The urban foodscape: World cities and the new food equation. *Camb. J. Reg. Econ. Soc.* **2010**, *3*, 209–224. [CrossRef]
48. Ohly, H.; Gentry, S.; Wigglesworth, R.; Bethel, A.; Lovell, R.; Garside, R. A systematic review of the health and well-being impacts of school gardening: Synthesis of quantitative and qualitative evidence. *BMC Public Health* **2016**, *16*, 286. [CrossRef]
49. Vigneau, F.E. Les équipements sportifs: Enjeux et impensés d'une politique publique. *Inf. Soc.* **2015**, *187*, 35–45. [CrossRef]
50. Fédération Nationale des SAFER. Les Prix des Terres 2022. Analyses des Marchés Fonciers Ruraux. Paris, France. 2023. Available online: https://www.safer.fr/app/uploads/2023/06/2023-PDT2022-72p-BD.pdf (accessed on 27 June 2024).
51. García-Muiña, F.E.; Medina-Salgado, M.S.; Ferrari, A.M.; Cucchi, M. Sustainability Transition in Industry 4.0 and Smart Manufacturing with the Triple-Layered Business Model Canvas. *Sustainability* **2020**, *12*, 2364. [CrossRef]
52. Pennisi, G.; Magrefi, F.; Michelon, N.; Bazzocchi, G.; Maia, L.; Orsini, F.; Sanyé-Mengual, E.; Gianquinto, G. Promoting education and training in urban agriculture building on international projects at the Research Centre on Urban Environment for Agriculture and Biodiversity. *Acta Hortic.* **2020**, 45–52. [CrossRef]
53. Raze, J.-F. La localisation des équipements publiques: Renouveau des coûts de la croissance urbaine et élément de réponse au problème des quartiers sensibles? *Rev. d'Écon. Reg. Urbaine* **2004**, *2*, 195–221. [CrossRef]
54. Perrin, C.; Soulard, C.T. Towards a local food governance linking city and agriculture. Le cas de Perpignan. *Géocarrefour* **2014**, *89*, 125–134. [CrossRef]
55. Davidson, D.J. Is Urban Agriculture a Game Changer or Window Dressing? A Critical Analysis of Its Potential to Disrupt Conventional Agri-food Systems. *Int. J. Sociol. Agric. Food* **2017**, *23*, 63–76. [CrossRef]
56. Jarrige, F.; Perrin, C. L'agriparc: Une innovation pour l'agriculture des territoires urbains? *Rev. d'Écon. Reg. Urbaine* **2017**, *3*, 537–562. [CrossRef]