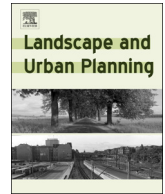




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## Landscape and Urban Planning

journal homepage: [www.elsevier.com/locate/landurbplan](http://www.elsevier.com/locate/landurbplan)

## Research Paper

## Small but powerful: The importance of French community gardens for residents

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## ARTICLE INFO

## Keywords:

City dwellers  
 Environmental stewardship  
 Knowledge  
 Participation  
 Perception  
 Urban planning

## ABSTRACT

Community gardens are increasingly implemented in cities and considered in public policies regarding the range of expected benefits they can provide. Much research has indeed emphasized their roles for community gardens members, but little research still concerns residents' perspectives. In this paper, we explored the importance of these gardens for residents. More specifically, we assessed the knowledge, the perception and the participation of residents in the gardens. We conducted a questionnaire survey in the neighborhood of nine community gardens in Paris, France. We found that less than forty percent out of the 431 respondents know the activities going on in the nearby garden, and that these people were more often already engaged in civic initiatives. However, nearly hundred percent of interviewed people had a good perception of the gardens, based on their role in providing urban green spaces, in promoting contact with people and education. Finally, twenty percent declared frequent participation. Residents' perceptions and participation in community gardens depended on individuals' life experiences and involvement in biodiversity and civic initiatives.

Our results highlight that city dwellers are aware of the benefits that community gardens can provide to them, to their neighborhood and to the city as a whole. These results confirm that community gardens are extremely important places to consider in urban planning and policy making, as well as in conservation research.

## 1. Introduction

Around the world, cities have been constructed predominantly in ways that have put natural elements aside to maintain inhabitants away from nature and its hazards (Larrère & Larrère, 2015:76). This has resulted in a very low proportion of green spaces in most large metropolises all around the world compared to the minimum of 9 square meters of green space per person recommended by the World Health Organization: 1.9 square meters/inhabitant in Buenos Aires (Argentina), 3 in Tokyo (Japan) or 6.4 in Istanbul (Turkey) for instance. Yet, urbanization and soil artificialization have been shown by some authors to function as processes that reinforce the desire of nature of citizens (Boudeau-Lepage, 2017; Larrère & Larrère, 2015). For example, a survey conducted in England, France, Germany and Spain from a representative sample of 1000 people aged 16 and over in each country (considering age, sex, occupancy) showed that 70% of Europeans integrate the proximity to a green space among their criteria to choose their living space (UNEP-IPSOS, 2013). Another survey in France, from

a representative sample of 1013 people aged 18 and over, showed that 80% of people frequent regularly (i.e., more than once a week) a green space and that 60% of people consider the creation of green spaces in their city as the priority (UNEP, 2016). This willingness is consistent with the increasing number of results that assess the importance of urban nature in the quality of life in cities (Byrne, Sipe, & Searle, 2010; Chiesura, 2004; Fuller, Irvine, Devine-Wright, Warren, & Gaston, 2007; Riechers, Barkmann, & Tschamtko, 2018). Green spaces provide opportunities for passive and active recreation (Jennings, Larson, & Yun, 2016; Soga, Gaston, & Yamaura, 2017) but they also provide habitats and resources for biodiversity (Goddard, Dougill, & Benton, 2010; Schwartz, Muratet, Simon, & Julliard, 2013); they can also filtrate the air, reduce noise, drain rainwater (Bolund & Hunhammar, 1999) and can regulate the urban microclimate (Bolund & Hunhammar, 1999; Bowler, Buyung-Ali, Knight, & Pullin, 2010).

The city of Paris (France) illustrates the prioritization of urban green spaces. Paris is one of the densest cities in the world (more than 21,000 inhabitants/km<sup>2</sup>, INSEE, 2014), and has a low proportion of green

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<https://doi.org/10.1016/j.landurbplan.2018.08.005>

Received 10 October 2017; Received in revised form 24 July 2018; Accepted 5 August 2018

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spaces (14.5 m<sup>2</sup> of green space per inhabitant, APUR, 2004) compared to other European cities (120 m<sup>2</sup> in Vienna-Austria, 47 m<sup>2</sup> in Amsterdam-Netherlands or 27 m<sup>2</sup> in London-England for example), but it shows a growing number of greening initiatives at different levels. Following French national orientations, such as the Grenelle laws, the current Paris local city plan (Plan local d'urbanisme, PLU) aims to “implement more green spaces” (Mairie de Paris, 2017). The latest version of this management plan explicitly encourages the development of urban agriculture on roofs and terraces, as well as the greening of public spaces, walls and vacant lands (Mairie de Paris, 2016), beyond promoting the traditional public squares, gardens or parks.

In accordance with these current political orientations, Paris local authorities devoted 5% of the city investment budget (representing nearly half a billion euros) to the funding of selected citizen projects, through a participatory budget over the years 2014–2020. From 2014 to 2017, several of the funded projects have proposed community gardens (CG) as greening initiatives of public spaces. This is part of a general trend in Paris, where the number of CG has dramatically increased from less than five in 2002 up to 119 in 2018 (Mairie de Paris, 2018).

### 1.1. Community gardens

CG are present in cities all over the world, and have been the subject of numerous scientific studies. In New York City (United States), CG have been shown to foster biodiversity (Matteson, Ascher, & Langellotto, 2008), and are important in the post-hurricane resilience and recovery of local residents (Chan, DuBois, & Tidball, 2015; McMillen, Campbell, Svendsen, & Reynolds, 2016, see also Okvat & Zautra, 2014; Tidball & Krasny, 2007). Some authors consider that CG have an economic function because they provide food (for instance in the US: Smith & Kurtz, 2003; in Berlin: Rosol, 2010). In Stockholm (Sweden), Bonow and Normark (2018) consider CG as growing forms of urban food projects. In addition, Firth, Maye, and Pearson (2011) showed in Nottingham (United Kingdom) that CG can increase social capital (see also Glover, Parry, & Shinew, 2005). As Krasny and Tidball (2012) showed with different examples of civic ecology practices in the United States, CG can increase the environmental and social stewardship of the gardeners, with environmental, community and individual outcomes (see also in Paris: Torres, Nadot, & Prévot, 2017). In Berlin (Germany), Bendt, Barthel, and Colding (2013) showed that CG provide environmental education (confirmed by Krasny, Lundholm, Shava, Lee, & Kobori, 2013); d'Abundo and Carden (2008) showed in a North-Carolina community (United States) that CG provide nutritional education; the same results were obtained in Queensland (Australia) by Somerset, Ball, Flett, and Geissman (2005). More generally, Krasny and Tidball (2009) showed that CG foster multiple types of learning. Regarding their neighborhood, Kondo, South, and Branas (2015), Kondo, Hohl, Han, and Branas (2016) showed that CG can reduce crime prevalence in cities in the US. However, the implementation of CG has also been shown to trigger gentrification in some neighborhoods, as in New York City for example (Voicu & Been, 2008), or in San Francisco (Marche, 2015). More generally, Wolch, Byrne, and Newell (2014) showed how greening strategies in China and in the United States increase housing costs and property values. Rosol (2012) stressed that recognizing CG as formal public spaces in Berlin may be a way for the municipality to increase the number of public spaces, while outsourcing their maintenance by delegating it to volunteering citizens. Finally, several studies underlined the risks for human health of producing and consuming food grown in degraded or polluted environments, such as in Nairobi (Kenya) (Gallaher, Kerr, Njenga, Karanja, & WinklerPrins, 2013) or in the US (Brown & Jameton, 2000).

### 1.2. Parisian community gardens

CG forms and organization depend on city-specific contexts. In New

York City for example, contemporary CG were developed in the late 1960s and early 1970s in a context of fiscal crisis and urban deindustrialization; they were first meant to resolve local problems of sanitation, violence, crime and lack of recreational amenities in neighborhoods without public and private investment (Eizenberg, 2013; Lawson, 2005). In France, the first CG were developed in the late 90s (Baudelet, Basset, & Le Roy, 2008), in the recent historical context of global enthusiasm about environment and sustainable development. In Paris, CG were first informally implemented in vacant lands by groups of citizens, but in 2002, the local authorities initiated the program “Green Thumb of Paris” to frame and guide the setting up of CG (Baudelet et al., 2008). Following this program, Parisian CG that formally belong to this program occupy a public or private vacant land, generally temporarily abandoned before a new assignation or a planned construction. The preconized duration of such CG is one year, extendable up to five years. Nevertheless, some gardens have been open for more than a decade. They are managed collectively by volunteers, through a dedicated association with nonprofit goals; as explained by Torres et al. (2017), “the number of associates can range from a dozen to more than 100 persons, but in that case associates support the initiative but do not necessarily participate in the garden activities” (p. 2). The association must sign an official agreement with the Parisian local authorities, which specifies the modalities of occupancy and use of the dedicated vacant land, the objectives and the duties of the association regarding Paris municipality. In addition, the association must sign the agreement “*Charte Main Verte*” (Green Thumb Charter), and implement participative activities to increase social cohesion and environmental respect (e.g. picnics, concerts, parties or workshops on environmental education, gardening, composting, or even land art) (Baudelet et al., 2008; Mairie de Paris, 2012a; Torres et al., 2017). All Parisian CG that have signed the Green Thumb Charter are accessible to the public at least twice a week, and display the opening hours together with garden general information (Mairie de Paris, 2012b). Nevertheless, in most cases Parisians CG have an enclosure (Baudelet et al., 2008), which misunderstands their public status and makes them perceived more often as private spaces (Baudry, Scapino, & Rémy, 2014). Besides, Torres et al. (2017) found that although local food is produced in some French CG, food production is not a central motivation for gardeners. Indeed, as Guitart, Pickering, and Byrne (2012) highlighted, Parisians CG are similar to, but not synonymous with, urban agriculture.

Apart from the common rules specified in the agreement with Paris local authorities, CG in Paris are highly heterogeneous: they host edible or ornamental plants in dedicated plots, or a combination of both; most plots are collectively managed but some gardens also include individual plots; their size varies widely and they may be inserted or not within a larger green space. Finally, most gardens are managed following Gilles Clément's approach of gardening (see Clément, 2012), and recognize the ecological richness and the aesthetical potential of spontaneous vegetation; but a minority of gardens are managed more formally, they are recognized by their regularity, symmetrical and well-manicured style.

As showed above, the literature about CG is abundant, but more examples are needed to encompass the diversity of situations. Also, few papers focus on how residents appreciate and incorporate CG in their everyday life (see review in Guitart et al. 2012). For instance, Garvin, Branas, Keddem, Sellman, and Cannuscio (2013) showed that in the United States, residents living in the neighborhood of a CG appreciate the transformation of a vacant lot into a CG, because the regular presence of people in a garden makes people feel safe and provides an informal surveillance that is believed to discourage illegal activity. Also, Branas et al. (2018) showed that in United States the restoration of vacant urban lands (including through CG) reduces both people perceptions of safety and their actual physical safety.

To our knowledge, no published study has been devoted so far to evaluate how residents appreciate and incorporate CG in their everyday life in France. Yet, understanding and taking into account residents

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