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URBAN COMMUNITY AND ALLOTMENT GARDENS: RESEARCH TRENDS AND A LOOK AHEAD

SUMMARY

Growing concerns about rapid urbanization and food insecurity in cities worldwide have renewed interest of academic community in urban gardening and urban agriculture. Urban gardens, including community and allotment gardens, are places of local food production that bring many other benefits to local communities, such as improved health, social networking and cohesion, community development and citizen activation. The paper attempts to comprehensively review the extensive body of literature on urban gardens by looking into geographic locations, disciplines and methods applied in each of the examined papers. The aim of the review is to identify gaps in existing knowledge and to suggest research directions for the future. A total of 27 academic articles in English published between 2000 and 2017 have been reviewed. The results of the data analysis point to uneven geographic distribution of research papers on urban gardening, having large body of literature coping with the North American and Western European context. Fields of research are diverse and fall into categories of planning and social studies (37%), health and community development (26%), politics and citizen participation (26%), and food production (11%). The findings recommend future more rigorous research on quantities of food production, effects of urban gardening on health and nutrition, and social aspects of community and allotment gardens. There is also a need to expand geographic scope of the research beyond the cities in developed countries in order to enrich our understanding of urban gardening in various contexts.

Keywords: community gardens, allotment gardens, local food production, literature review.

INTRODUCTION

There is a growing interest of scientific and academic community in political, social, economic and ecological aspects of urban gardening. Relevant papers are published in scientific journals ranging from geography and planning to health (Guitart et al., 2012). Many authors relate the expansion of interest in urban gardening to rapid urbanization and food insecurity issues worldwide (Guitart et al., 2012; Turner & Henryks, 2012; Eigenbrod & Gruda, 2015).

Urban gardens are form of urban agriculture. Depending on the local context, management methods and available land they can be organized as community gardens, allotment gardens, home gardens, gardens within schools

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and kindergartens, hospitals, prisons, gardens on abandoned public land (Turner & Henryks, 2012). Such open green urban spaces, planned for urban agriculture, are multifunctional areas that support ecological functions of the urban system, food production, provide opportunities for recreation, environmental education, and spiritual development (Langemeyer et al., 2016).

Drescher et al. (2006) distinguish three categories of urban gardens: home gardens, allotment gardens and community gardens. Home gardens, also referred to as domestic gardens, are typically located near the place of residence and are cultivated by individuals or households. Allotment gardens consist of separate parcels of land assigned to individuals or households for personal use (Drescher et al., 2006). The parcel size in German allotments ranges from 200 to 400 m² and often includes a shed for tools and shelter (Holmer & Drescher, 2005). Plots are cultivated individually, but gardeners are organized in allotment associations which are in charge of the land lease and setting up of the common rules for the management and functioning of the gardens. Gardeners pay small membership fee to the association (Holmer & Drescher, 2005).

There are many similarities between allotment and community gardens, though community gardens are more diverse in terms of design, organization and management (Turner & Henryks, 2012). Community gardens are cultivated collectively by a group of individuals or households who produce fresh vegetables and fruits primarily for self-consumption (Drescher et al., 2006; Wang et al., 2014; Martin et al., 2017). Glover (2003) defines community gardens as organized initiatives whereby parts of land are used for the production of food or flowers in the urban environment for the individual or collective benefit, while members share resources, such as space, tools, water (cited in Pitt, 2013). Some authors point out that gardens are community spaces that are used and managed jointly by members of the local communities (Guitart et al., 2012, Turner & Henryks, 2012). Although community gardens may contain individual plots that are used privately, the focus is on the collectively shared space. This way community gardens are more public and democratic places than allotments (Firth et al., 2011 cited in Pitt, 2013; Bell et al., 2016), in which “community spirit” is recreated through collective effort and investment in the shared space (Teig et al., 2009). Community gardens are often associated with temporary use of the urban land which has not yet been brought to its final use (Bell et al., 2016).

Historical development of allotment and community gardens is closely linked to the poor quality of living and food insecurity in the times of crises. Origins of the allotment gardens in Europe are traced back to the mid-1800s, whereas in the USA those gardens emerged during the period of industrialization that brought large numbers of people into cities to work and live in poor conditions (Turner & Henryks, 2012). Community and allotment gardens have played significant roles in ensuring food security in times of economic and humanitarian crisis (Turner & Henryks, 2012; Bell & Keshavarz, 2016). Victory Gardens provided 40% of the fresh vegetables consumed in the USA during the World War II. The number of the gardens was estimated to 20 million (Turner & Henryks, 2012). Similar reaction to crisis occurred during the Great Depression

and in the 1970s Oil Crisis in the USA (Turner & Henryks, 2012). Bell et al. (2016) remind us that a similar economic crisis is taking place in several European countries and that it is no coincidence that various types of urban gardens have been emerging in Greece, Spain, Portugal and Cyprus since 2008.

Given the re-emerging importance of community and allotment gardens in the contemporary city and the growing academic interest for the topic, this paper attempts to comprehensively review the existing literature on urban gardens. There have been a few important literature reviews on the topics of urban gardens and urban food production so far (Guitart et al., 2012; Eigenbrod & Gruda, 2015; Poulsen et al., 2015). The aim of this research is to extend the knowledge that has previously been systematized by specifically looking into: 1) fields of research, 2) locations of the gardens investigated in the research, 3) methods applied, 4) motivations of the gardeners, 5) benefits of the gardens, and 6) constraints on urban garden development. The purpose of the review is to identify gaps in existing knowledge and to suggest future research directions in reference to variables assessed in the review.

MATERIALS AND METHODS

The paper presents a review of those academic articles on community and allotment gardens published in English between 2000 and 2017 that have been identified and selected via searches of electronic database of Science Direct. Search of articles included combination of primary keywords “community gardens” and “allotment gardens” with secondary keywords “food production”, “urban gardening”, “motivations”. Only articles that contained keywords “community garden” or “allotment garden” in the title were selected for the review. Furthermore, the search was extended by including relevant referenced literature from the selected articles. The review excluded articles on gardens within schools, kindergartens, hospitals, prisons. It also excluded papers focusing on ecological aspects of urban gardens as this was beyond the scope of the research. The paper focuses on social, institutional and economic aspects of urban gardening.

A total of 27 research papers were found and reviewed (Table 1). Relevant data were collected and systematically organized in tables. The author performed descriptive statistics to analyze geographic and disciplinary scope of the selected articles, methods applied, gardeners’ motivations, benefits and constraints on urban garden development.

For each article, the author identified and recorded the following information: name of the journal in which the article was published, names of the authors and the year of publication, research discipline and general focus of the research, location of the gardens and methods used in the research (Table 1). Other relevant information collected from the reviewed articles included motivations for gardening, benefits and constraints on development of community and allotment gardens, knowledge gap in the existing literature and possible directions for the future research.

RESULTS AND DISCUSSION

The focus of the research is on the social and economic aspects of community and allotment gardens, including several major research directions: food security and food production, health and nutrition, community development and citizen participation, institutional framework and garden governance.

The largest part of the examined articles refers to urban gardening in the USA cities (52%). Interestingly, 36% of those studies is performed in the low income neighborhoods in the post-industrial cities of New Orleans, Baltimore, Flint, Milwaukee, with disadvantaged communities involved in urban gardening. Research articles about urban gardens in Europe make 37% of the reviewed papers. There is one research paper from Australia and one from Israel.

This review confirms the findings of some authors that literature on community and allotment gardens is geographically limited (Guitart et al., 2012; Spilková & Vágner, 2016) with papers from the USA, Western Europe, Canada and Australia being the most numerous (Borčić et al., 2016). What also becomes evident via analysis of the geographic distribution of the studies is the lack of scientific articles from developing countries. The fact that the context of developing countries is missing from the articles that have been identified and reviewed in this paper may imply limitations of the terminology used in the search of the literature database. "Community gardens" and "allotment gardens" are expressions that typically apply in the context of the North American and Western European cities. In research papers on urban gardening in developing countries there is a preference for the term of "urban agriculture" to characterize similar initiatives (Ernwein, 2014). This may also be linked with the distinction often made between the character of urban gardens in developing and developed countries. In developing countries, urban gardens play significant role in nutrition and food security of urban population, whereby poverty and basic existential needs are main drivers of urban agriculture (Holmer & Drescher, 2005; Eigenbrod & Gruda, 2015; Poulsen et al., 2015). Community and allotment gardens in developed countries, apart from food production, may take on an important role in providing recreational opportunities and educational functions, as well as providing place for social interaction and cohesion (Dubbeling et al., 2010, cited in Eigenbrod & Gruda, 2015).

A variety of disciplines cope with the subject of community and allotment gardens. The reviewed articles are clustered in four groups based on the topic of research and the disciplinary focus of the journals in which papers are published (Table 1).

Most of the selected articles could broadly be placed within the domain of planning and social studies (37%). These studies include research of gardeners' motivations and benefits of gardening (Middle et al., 2014; Church et al., 2015; Da Silva et al., 2016), food security (Corrigan, 2011; Wang et al., 2014), education (Bendt et al., 2013), aesthetics and beautification of green areas (Morckel, 2015), and garden management strategies (Drake & Lawson, 2015). They provide possible implications for urban planning and policy based on the examined social and spatial criteria.

Articles that cope with community gardens within domain of politics and citizen participation make 26% of the examined papers. Some of the issues that are addressed in these articles are importance of social networking in grassroots garden development (Ghose & Pettygrove, 2014), placemaking and civic engagement (Filkowski et al., 2016; Passidomo, 2016), meanings and functions of gardens in historically different social and political settings (Borčić et al., 2016), top-down and bottom-up garden governance (Fox-Kämper et al., 2017).

An important number of authors have examined the role of community gardens in health promotion and community development (26%). These articles investigate influence of community gardens on healthy lifestyles (Teig et al., 2009; Castro et al., 2013), therapeutic effects of urban gardening (Hale et al., 2011; Pitt, 2014), fruit and vegetable intake among urban gardeners (Alaimo et al., 2008; McCormack et al., 2010).

Only a few authors have investigated and quantified the amount of food produced in community and allotment gardens (Algert et al., 2014; Pourias et al., 2015; Martin et al., 2017). Most of the selected papers have applied qualitative research methods using in-depth interviews and observations as main research techniques. Eight papers used quantitative data. Only three articles combined quantitative and qualitative data in the research (Table 1).

Table 1: Collected data on reviewed papers

	Authors (year)	Journal	Location	Field of research	Method
1	Armstrong, D., (2000)	Health and Place	New York, USA	health and community development	qual
2	Ghose, R., & Pettygrove, M. (2014)	Geoforum	Milwaukee, USA	politics and citizen participation	qual
3	Wang et al. (2014)	Applied Geography	Edmonton, Canada	planning and social studies	quant
4	Da Silva et al. (2016)	Urban Forestry & Urban Greening	Vila Nova de Gaia, Portugal	planning and social studies	qual
5	Bendt et al. (2013)	Landscape and Urban Planning	Berlin, Germany	planning and social studies	qual
6	Teig et al. (2009)	Health and Place	Denver, USA	health and community development	qual
7	Passidomo, C. (2016)	Urban Forestry & Urban Greening	New Orleans, USA	politics and citizen participation	qual
8	Martin et al. (2017)	Appetite	Marseille, France	food production	qual & quant
9	Filkowski et al. (2016)	Urban Forestry & Urban Greening	Israel	politics and citizen participation	qual
10	Morckel, V. (2015)	Urban Forestry & Urban Greening	Columbus, USA	planning and social studies	quant
11	Hale et al. (2011)	Social Science & Medicine	Denver, USA	planning and social studies	qual
12	Borčić et al. (2016)	Geoforum	Zagreb, Croatia	politics and citizen participation	qual
13	Ernwein, M. (2014)	Geoforum	Geneva, Switzerland	politics and citizen participation	qual

14	Alaimo et al. (2008)	Journal of Nutrition Education and Behavior	Michigan, USA	health and community development	quant
15	Castro et al. (2013)	American Journal of Preventive Medicine	USA	health and community development	quant
16	Corrigan, M. P. (2011)	Applied Geography	Baltimore, USA	planning and social studies	qual
17	Church et al. (2015)	Ecological Economics	Europe	planning and social studies	quant
18	Middle et al. (2014)	Urban Forestry & Urban Greening	Perth, Australia	planning and social studies	qual
19	Pudup, M. B. (2008)	Geoforum	San Francisco, USA	politics and citizen participation	qual
20	Pourias et al. (2015)	Journal of Agriculture, Food Systems, and Community Development	Paris, France Montreal, Canada	food production	qual & quant
21	Drake, L. & Lawson, L. J. (2015)	Agriculture and Human Values	USA and Canada	planning and social studies	qual & quant
22	McCormack et al. (2010)	Journal of the American Dietetic Association	USA	health and community development	qual
23	Krusky et al. (2015)	Landscape and Urban Planning	Michigan, USA	planning and social studies	quant
24	Spilková, J. & Vágner, J. (2016)	Land Use Policy	Prague, Czechia	planning and social studies	quant
25	Pitt, H. (2014)	Health &Place	Wales, UK	health and community development	qual
26	Fox-Kämper et al. (2017)	Landscape and Urban Planning	developed countries	politics and citizen participation	qual
27	Algert et al. (2014)	Journal of the Academy of Nutrition and Dietetics	San Jose, USA	food production	quant

In several articles authors have investigated gardeners' motivations and have identified benefits of gardening. Some of the most mentioned reasons for gardening are access to fresh and organic food (Wang et al., 2014; Da Silva et al., 2016), supplementing family budget especially in times of economic hardship (Church et al., 2015; Da Silva et al., 2016), enjoying nature (Wang et al., 2014; Martin et al., 2017), health (Wang et al., 2014), social networking (Teig et al., 2009; Martin et al., 2017), pleasure and enjoyment (Martin et al., 2017), relaxation and stress relief (Corrigan, 2011; Pitt, 2014; Filkobski et al., 2016), education (Da Silva et al., 2016), physical exercise (Da Silva et al., 2016), connecting with the soil and watching plants grow (Martin et al., 2017). Benefits of gardening often correspond to reasons why people garden. Urban gardens are important for health promotion through increased physical activity, improved

nutrition and mental health (Armstrong, 2000; Teig et al., 2009), for community development and citizen activation (Armstrong, 2000; Borčić et al., 2016; Passidomo, 2016), for recreation (Ghose & Pettygrove, 2014), and food production (Church et al., 2015; Pourias et al., 2015). Most of the examined articles address the constraints on development of community and allotment gardens. At the institutional scale, major challenges are access to land and land tenure (Armstrong, 2000) and lack of official documents and strategies that integrate gardens into urban planning (Borčić et al., 2016). At the level of garden governance and day-to-day management, the most common challenges are funding, supply of resources including water, compost and manpower and discontinuity in participation (Drake & Lawson, 2015; Filkobski et al., 2016).

Finally, nearly all of the selected articles have given recommendations for future research directions to expand the knowledge related to their field of study. Identified gaps in literature include research on integration of community and allotment gardens into formal green space planning (Middle et al., 2014), quantity of food productions and assessment of household cost savings realized through the practice of gardening (Algert et al., 2014; Pourias et al., 2015), qualitative and quantitative research on day-to-day garden management (Drake & Lawson, 2015), effects of urban gardens on public health (Armstrong, 2000; Hale et al., 2011), gardeners' motivations prior engagement in gardening and motivations arising from the experience of gardening (Da Silva et al., 2016).

CONCLUSIONS

Urban community and allotment gardens are becoming increasingly present in cities of industrialized countries. They have received a great deal of attention in the research of various disciplines. The purpose of this paper was to review the existing literature, to categorize the selected articles according to the geographic scope, discipline and method applied in the research and to identify gaps in the knowledge.

The author acknowledges the limitations of the methods used in the review. Namely, selection of only one database for literature searches as well as limited use of search keywords increase the chances of excluding some of the relevant papers from the research and may lead to reduced validity of conclusions. Adding other relevant keywords in the search of database would probably lead to inclusion of research papers from developing countries. The author has tried to tackle these shortcomings by including relevant referenced literature from the selected articles into discussion of the results to verify the findings.

The review has confirmed that there is a vast body of literature on community gardens in the post-industrialized cities in the USA, as previously reported by Guitart et al. (2012) in their important review on urban community gardens. To increase our knowledge of benefits of urban gardening and constraints on development of community and allotment gardens, the future research should geographically expand beyond the context of developed

countries. This would enrich our understanding of social, economic and political aspects of gardening.

Further research is recommended on the methods of integration of urban gardens into official planning strategies. Urban planning and decision making depends on systematic, consistent and valid data. This is why reliable and methodical knowledge of food production, health and social impacts of urban gardening is needed in the future.

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