

## The Role of Urban Gardening for European's Ageing Societies

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### 1 ABSTRACT

This paper explores the functions of existing and emerging forms of urban gardening for European cities in times of social, economic, and climate changes with special emphasis on ageing societies. It is based on two research backgrounds: On the one hand it presents research results about living preferences of aged persons conducted by the ILS (Research Institute for Regional and Urban Development) and the IÖR (Leibniz Institute of Ecological Urban and Regional Development) in four German cities, thus exploring the needs of an ageing society where besides other factors the access to green space and the social functions of urban gardens can play an important role. On the other hand it presents results of a literature review about the social, economic and ecological functions of urban gardening in European cities and first results of the current COST (European Cooperation in Science and Technology) Action on the topic of “Urban Allotment Gardens in European Cities”.

### 2 INTRODUCTION

European cities have to face relevant challenges such as societal, economic and last but not least climate change. Societal change in Europe is especially characterized by demographic changes, such as an ageing and shrinking population, a pluralisation of life-styles and an internationalisation of society. European Cities have to cope with these challenges in an integral approach. This paper connects the challenges for an ageing society with the revitalized phenomenon of urban gardening which is subject of an ongoing COST Action, titled “Urban Allotment Gardens in European Cities”. In this networking project scientists and stakeholders (e.g. members of garden associations or municipalities) from 30 European countries are co-working to improve the knowledge base about relevance of and challenges for urban gardening in Europe. Four research perspectives (urban development and policy, sociology, ecology, and urban design) are merged by an integral approach. Through cases studies presenting diverse types of existing and emerging urban gardens all over Europe central aspects are examined comprehensively, such as the spatial position of urban gardening between built environment and green infrastructure, its function within ecosystem services, or the role of urban gardening for social integration of people from different age groups, social status and ethnic origin.

The paper starts with an overview about major demographic trends in European cities, summing up empirical research about the future needs of the elderly population that gives strong evidence on required facilities to be provided in the proximate neighbourhood (section 3). Then it addresses the functions of urban gardening for future cities with relation to climate, economic and societal change and especially with reference to ageing societies, and illustrates the potential of urban gardening with examples from European cities (section 4). The conclusion (section 5) focusses on an integral approach which is crucial for the challenges of the European cities and points at open questions that need to be answered in further research.

### 3 WHAT DO WE KNOW ABOUT AGEING?

#### 3.1 Major demographic trends in European cities

The world is growing, but Europe is in stagnation due to low fertility rates. The effects of low birth rates are clearly visible in peripheral rural areas like Northern Spain, Southern Italy, in East Germany and in nearly all Eastern European countries. In some regions, this is compensated by a growing number of migrants from other European countries or from other regions in the world. While countries with higher fertility rates e.g. France, Ireland or Norway and sustained migration rate, continue to having enough inhabitants even in peripheral-rural areas. East Germany, Romania, Bulgaria and many other parts of Eastern Europe are going to be major population losers (Berlin Institute 2008).

What affects all European countries without exception is the ageing of their societies. The ageing quotient of many European countries will nearly double from 2013 to 2050 with an average rate around 50 by 2050 in Europe and countries like Greece, Portugal and Spain having to face a quotient higher than 60 (see Figure 1).

From this perspective it is important to understand and foresee how this generation is willing to live and what their needs will be in years they are literally aged.

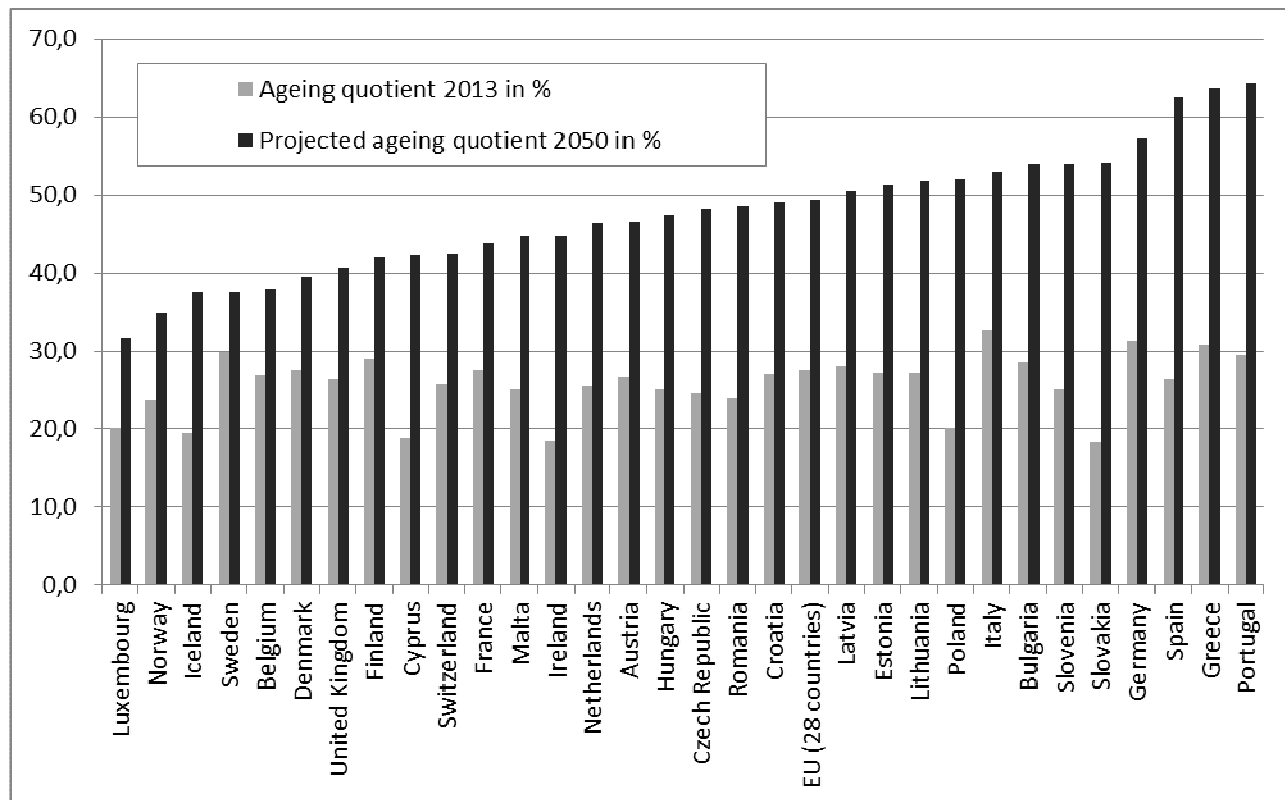


Figure 1: Ageing quotient in European countries in 2013 and projections for 2050. This indicator is defined as the projected number of persons aged 65 and over, expressed as a percentage of the projected number of persons aged between 15 and 64. Source: Author on the basis of Eurostat Population Projections 2010-based (Eurostat 2010)

### 3.2 Results from a survey about living preferences of aged persons

There is strong evidence that the most preferred form of living for elderly people is to stay in a familiar environment (Krings-Heckemeier et al. 2001; Kremer-Preiß et al. 2003). A survey conducted by the ILS (Research Institute for Regional and Urban Development) and the IÖR (Leibniz Institute of Ecological Urban and Regional Development) in four German cities (Dortmund, Dresden, Döbeln, Arnsberg) between 2007 and 2011 amongst persons aged 60 and older, confirmed this (Banse et al. 2014). In total 15,550 persons aged between 60 and 90 were asked to participate, and 4,769 evaluable questionnaires (round 30 %) were returned. Most of the respondents lived already for decades in their house or flat; in Dortmund on average since 28 years. 65 % of the respondents in Dortmund stated that they intended “not to move at all” (questionnaire) although on average only 3 % of the flats had barrier-free standards according to the evaluated answers of the respondents.

In the survey it was also asked which characteristics of the living situation were regarded as very important by aged persons (see Figure 2). It is quite interesting that the respondents claimed “safety in the house” as most important, followed by the characteristic that the “flat has got a balcony or terrace”. This can be explained by the fact that older people increasingly reduce their radius of action. Quite astonishing is that many of the issues which were mostly addressed as being very important by a broad majority are not located within the flat but in the environment of it: “nearby medical support”, “nearby shopping facilities”, that the “house has green space”, a “quiet house”, a “quiet neighbourhood”, “green space or park in walking distance”. Items that refer to standards that are usually identified as age-friendly living (“care in case of illness”, “SOS telephone”, “elevator”) were not chosen predominantly. Staying active when the person is aged obviously affords more than a barrier-free flat with an elevator.

Amenities offered in the neighbourhood and access to green space nearby seem to be important premises to age in place. Regarding the diversity of urban forms of living, suburban neighbourhoods - the most popular form in the last century – are predestinated to face severe problems in an ageing society. “The attributes of

the single-family house are becoming obstacles to aging well in place, with the distance from shops and services and the lack of walkability” (Dunham-Jones 2012).

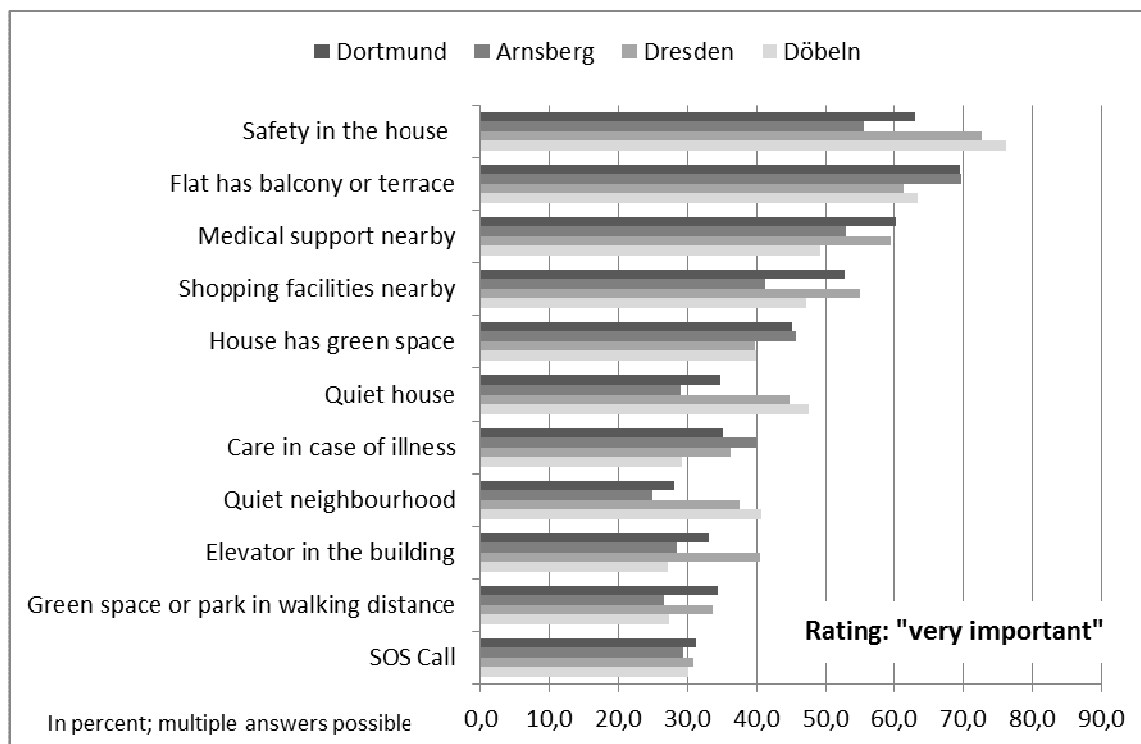


Figure 2: Results of a survey of persons aged 60 and over, conducted in Dortmund, Arnsberg, Dresden and Döbeln; Germany by ILS and IÖR; characteristics of living situation regarded as “very important”; Source: Author on the basis of Banse et al. 2014: 112)

This could be confirmed by a further research project carried out by ILS in cooperation with IREUS (Institute of Regional Development Planning, Stuttgart) and the Hochschule für Technik, Stuttgart which explored the future of mature single-family housing estates in Germany (Berndgen-Kaiser et al. 2012, Berndgen-Kaiser et al. 2014). Alongside other research methods a survey was conducted to get insights into the perception of residents on the advantages and disadvantages of living in a suburban neighbourhood (Berndgen-Kaiser and Fox-Kämper 2012a). The lack of public transport facilities, shopping opportunities and public areas for leisure were addressed as disadvantages especially by older residents in single-family housing areas.

Conclusions from these surveys are not easy to draw as the increasing differentiation of life-styles affects the older population also. In future, the elder population will consist of a diversity of cultures, ethnic origins, and living preferences, and in addition, different sub-groups of ageing have to be considered. In general, most people in their first years of retirement are still very active and able to care for themselves. However, from the age of 80 onwards, serious physical and mental diseases generally accumulate. Research on ageing sub groups refer to these different groups as the "young old," the "old", and the "old-old" groups (transgenerational.org). As a result, planning for age-friendly cities cannot follow a unique pathway but has to take into account diverse living preferences.

### 3.3 Age-friendly cities as cities for everyone

The World Health Organisation’s guide for global age-friendly cities has aims at engaging “cities to become more age-friendly so as to tap the potential that older people represent for humanity” (WHO 2007: 1). It identified eight topics that have to be addressed “to give a comprehensive picture of the city’s age-friendliness” (ibid: 9): outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information, and community support and health. The report states that “the outside environment and public buildings have a major impact on the mobility, independence and quality of life of older people and affect the ability to age in place” (ibid: 12).

Taking into account that ageing is a life long process that starts from birth, that cities need to be attractive not only for aged persons, but for all generations such as young inhabitants and families with children, and being

aware of the fact that the differentiation of life styles affects also the old generation, it can be stated that age-friendly cities are liveable cities for everyone if they meet all needs in integral approach. “Beyond the direct development of services for an ageing population, there is also a need to look at the mix of the whole population. The cities of tomorrow will have to not only ensure that the elderlies are well integrated in society, but also be attractive in terms of quality of life and opportunities for young people, not least young families.” (European Commission 2011: 96). And this is where urban gardening can play an important role, as the importance of having access to green spaces is acknowledged as “one of the most commonly mentioned age-friendly features” (WHO 2007: 12).

The benefits of gardening for society and for aged persons especially are highly acknowledged (e.g. Van den Berg et al 2010). Wang and Macmillian (2012) conclude after a review of publications and studies dealing with this issue that “gardening is enjoyable for older adults and that it benefits overall quality of life, physical ability, and activeness.” (Wang and Macmillian 2012: 175). They emphasize the fact that gardening is a desirable activity for both: older adults who are healthy and older adults with functional or cognitive limitations, as “growing plants, fruits, and vegetables of one’s choice can be a way of allowing individuals to remain connected to their family, community, and cultures” (ibid: 179). Thus, gardening provides opportunities for social interaction, supports intergenerational exchange, and has the potential to meet the mentioned living preferences of all generations, but especially of aged persons, the more if the garden sites are located in proximity of residential areas.

## 4 THE ROLE OF URBAN GARDENING FOR FUTURE CHALLENGES IN EUROPEAN CITIES

### 4.1 What is urban gardening?

Before the role of urban gardening for future challenges in European cities and especially for the ageing society can be discussed in detail, it is necessary to explain what can be understood under the term “urban gardening”. There is no unique definition available, but it can be stated from literature review that urban gardening does not exclusively focus on food production. It also includes the experience of horticultural activities and recreation. Urban gardening regularly is regarded as a part of urban agriculture as the broader term which encompasses all forms of food production within or in a narrow spatial and functional relation to cities (RUAF Foundation). Urban gardening occurs in different types according to objectives, function, spatial context, user groups, legal status, location, accessibility.

The classical form of urban gardening are *allotment gardens* (see Figure 3), which consist of privately managed garden plots, governed by allotment garden associations, often on land owned by the municipality. They “primarily originated as a response to food shortages during the transition from feudal agrarianism to urban industrialism” (Colding and Barthel 2013: 160). Today, in many countries allotment gardens are institutionalised, protected by planning law, and in addition, special laws.



Figure 3 (left): Typical plot in allotment garden in Poznan, Poland; photo: Author. Figure 4 (right): Community garden Palagino in Hannover, Germany; photo: Martin Sondermann

*Community gardens* (also called neighbourhood gardens, intercultural gardens) often were developed following examples of community gardening in New York in the 1970s. They often use derelict sites such as brownfields, or underused parks, and many of them emerge as bottom-up initiatives (see Figure 4). Usually

no general framework exists, and their perspective as interim-use on vacant plots the perspective is short- or mid-term. Due to the poor quality of soil on the former brownfield, raised beds are quite common in community gardens. Other forms of urban gardening e.g. are *rooftop gardens* or the *edible city* concept.

#### 4.2 The benefits of urban gardening

European cities have to face relevant challenges (summarised e.g. in European Commission (2011)). Climate change affects European cities with phenomena like urban heat islands or heavy rainfalls. Economic change goes together with globalisation and the international division of work that takes effect on spatial configurations. Societal change in Europe encompasses in particular the well-known demographic change with phenomena such as ageing, internationalisation and partly decline of population. Related to these challenges urban gardens can provide several benefits, such as water household regulation, enrichment of biodiversity and air quality improvement, urban generation of derelict areas and food production, social cohesion and education.

The *ecological functions of urban gardening* are highly acknowledged in literature (summed up in Lovell 2010). In many papers it is suggested that urban gardening reduces the carbon footprint, contributes to carbon storage and sustainable waste management through re-use and composting. It also is proposed that urban gardening contributes to tackling of climate change by regulating the water household and providing green space for temperature regulation, and that it protects and enriches the habitat (Gomez-Baggethun et al. 2013). It is obvious that urban gardens are part of the urban green infrastructure, thus research that highlights the role of green infrastructure for the eco-system in general can be assigned to urban gardens, although there is only few empirical evidence for the described manifold ecological benefits of urban gardening in particular. The importance of allotment gardens for the pollination of urban areas has been confirmed in some research according to which their specific management practices and social structures that are favorable for the growth of bumblebee populations (Andersson et al. 2007). Other research results suggest that the typical plant and soil characteristics in urban gardens support the water retention and thus retard floods after heavy rainfalls (Edmonson et al., 2014; Watts and Dexter, 1997).

*Economic aspects of urban gardening* are most commonly connected to food production. A retrospective consideration of the role of urban gardening in different European countries confirms that urban gardens served as source for food supply, especially in different contexts of economic crisis, for instance during the World Wars or in times of food shortages in East European countries (Colasanti et al. 2012). E.g. in the British history of allotments the “Dig for Victory” campaign in World War II played an important role to raise food production rates by providing allotment plots even in public parks (Hope and Ellis 2009). At times of economic growth the aspect of growing own food is getting less important. In UK, the number of allotment plots decreased from 1.4 million in the 1940s to an “insufficient supply of about 200,000 allotments” at present (Hope and Ellis 2009: 12). Research results in Germany (Buhtz et al. 2008; Breuste 2007) showed that in large cities there is a continuous high demand for allotment gardens with a simultaneous competition of other kinds of land use while in shrinking regions a declining demand and partly a vacancy of plots can be noted. Especially in cities with shrinking population urban gardening can contribute to urban regeneration. In contrast to countries with a long history of urban gardening, in most Southern European countries urban gardening had no tradition, is not regulated and not recognized in urban master plans. Here the recent financial crisis led to the emergence of urban gardening initiatives from 2008 onwards (see Figure 5).

Upcoming community-, guerrilla-, intercultural- or neighbourhood gardens in many countries are a response to recent urban crisis and an expression of a growing interest in “green activism” (Rosol 2010). To sum up economic benefits, it can be stated that urban gardening helps to transform abandoned urban sites, supports local identity and place-making, furthermore it can contribute to lower costs for municipalities and gardeners, as it reduces public maintenance costs, supports a healthy living and feeds people (Been and Voicu, 2006).



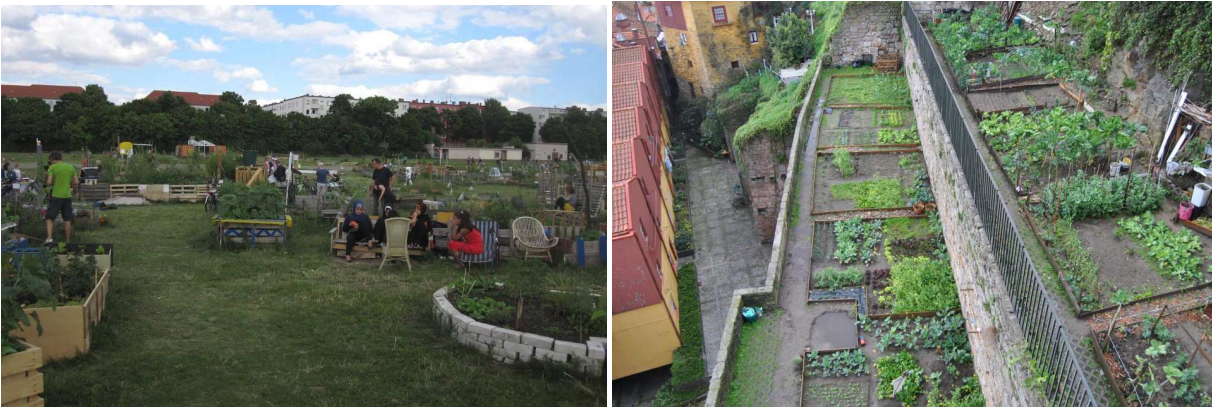


Figure 5 (left): Allotment plots on vacant land in the dense urban fabric of Porto, Portugal; photo: Sandra Costa. Figure 6 (right): Space for interaction in community garden “Prinzessinnengärten”, Berlin, Germany; photo: ILS

Social cohesion, interaction and community building are often described in research findings about *social benefits of urban gardens* (Armstrong 2000; Guitart et. al. 2012). Research results highlight the importance of access to green infrastructure in the direct neighbourhood in general (Ferres and Townshend 2012; Grahn and Stigsdotter 2003, Ellaway et al. 2005, Martin and Marsden, 1999) and state that having or participating in an urban garden (Smit 1996; Stocker and Barnett, 1998) may improve the health of users and especially of aged persons. Van den Berg et al. (2010) who provided empirical evidence for health benefits of allotment gardens stress the potential contribution of urban gardening to an active, healthy lifestyle, especially among the elderly.

People have different reasons to practice urban gardening. For example the Capital Growth Strategy by which 2012 new community food growing spaces should be set up in London from 2008 up to 2012 (Capital Growth 2013) states in its assessment report that “Capital Growth spaces have helped to bring together different cultures and generations and contributed to bridging the divides between different ethnic, socio-economic and age groups” (Capital Growth 2013: 11). Assessment results pointed out that 71 % of people have made new friendship with someone in the neighbourhood and that in 66% of the sites people aged 60 and older are engaged (ibid). Especially in the developed societies of Europe urban gardening can be a catalyst for social amelioration. (Caputo 2012). Urban gardens allow recreational activities for different lifestyles and, what is important especially for aged persons, they offer this often in the proximity of the dwellings. Being important space for interaction and communication and thus for integration of minority groups or people living alone, urban gardens offer a place to be (see Figure 6).

### 4.3 Implications for Practice

Although urban gardens are highly appreciated in public debate for their various contributions to social cohesion and a sustainable development of liveable urban environments, their position in cities is not always secured and local politicians and planning authorities still feel insecure how to support them. From the perspective of urban development the question arises how municipalities can use urban gardening as a tool to requalify deprived neighbourhoods and to meet needs of a changing society. The following section demonstrates with examples from *France, Lisbon and Barcelona* how this is done practically.

As an answer to the decreasing demand of classical allotment plots and to approach new user groups, the *French Federation of Allotment Gardens (FNJFC)* developed two new approaches.

*Firstly*, they developed a concept to turn underused lawns between multi-storey family dwellings in suburban districts into so called open allotment gardens. One example is located in Aulnay-sur-Bois, in the North of Paris and is called *Les Jardins du Zéphyr*. In past times the open spaces between the dwelling blocks were degraded and covered with rubbish thrown from the windows. The requalification of the area began with the creation of a green space which included an allotment garden between the dwelling blocks. Individual small plots are cultivated by dwellers living in the surrounding blocks. Neighbours can walk through the site where they can have a chat with the plot holders. There are benches along the alleys and playgrounds for the children. Residents are now taking advantage of a greener area, growing own food and enjoying the experience of nature (see Figure 7).



Figure 7 (left): Allotment garden “Les Jardins du Zephir” inserted in a social housing neighbourhood, Aulny-sur-Bois, France; photo: Town of Aulnay. Figure 8 (right): Raised beds and beds for persons in wheelchairs inside an allotment gardens site in Quetigny, France; photo: Hervé Bonnavaud

Secondly, the federation promotes the concept of *jardins partagés* (shared gardens) in existing allotment sites, in which each member is given a small plot (20 - 30 m<sup>2</sup>), and which includes plots for groups such as school children, or for disabled people, or unemployed people for which group gardening is used as a social therapy. Special emphasis is given to the provision of facilities for aged or disabled persons. Thus raised beds or special beds for persons in wheelchairs are provided that facilitate or enable gardening in a sitting position (see Figure 8)

Lisbon’s Green Masterplan of 2007 encompassed a wide range of measures and improvements to meet to constant loss of inhabitants by improving the ecological quality of the environment. Within this masterplan the city has developed a specific programme for promoting urban allotments as a new use for green parks and gardens replacing spontaneous and disorganized illegal land-use. On the whole the Urban Allotments Parks Programme intends to implement more than 20 urban allotment parks until 2017. Some of them seem to be of very large scale, such as Chelas Valley with almost 220 parcels (see Figure 9). It is located in a valley at the bottom of a social housing neighbourhood where most of the plot holders come from as the principal criterion for getting a contract is the proximity of the dwelling place. Many of the plot holders in the new urban allotment parks are aged persons (see Figure 10).



Figure 9 (left): New allotment park “Chelas Valley” in Lisbon, Portugal; photo: Author. Figure 10 (right): Leisure time in new allotment park “Granja” in Lisbon, Portugal, photo: Author

Although *Barcelona* is one of the the most densely populated cities in Europe urban gardening had a long tradition, but the fast developments of built infrastructure provoked a decline of gardens in the city since the mid twentieth century. Since the late 1990s, urban gardening has started to revive, through both: municipal (top-down) and informal (bottom-up) initiatives. Recently the Barcelona City Council has included urban gardens in its Barcelona green infrastructure and biodiversity plan 2020, and since 1997 it launches a programme that offers organic gardens especially to persons aged 65 and over. 14 garden sites have been developed since then. Parallel 13 “informal” gardens established through bottom-up processes by different social movement and associations, organized in a network of communitarian gardens (Calvet-Mir 2014).

These three examples demonstrate how public authorities or garden organisations managed to integrate urban gardening in planning processes. Examples from France show that classical form of allotments can be



adapted to new and changing user groups that need perhaps smaller plots, plots that are used commonly, or different kinds of beds that e.g. support gardening as aged persons. The examples from Lisbon and Barcelona give some evidence that urban gardening can be a successful part of programmes aiming at improving the liveability of the city for aged persons (but not only for them), if it is connected to other green infrastructure.

It is most important that urban planners or other stakeholders recognize urban gardening as an integral part of the city, the urban green infrastructure and urban neighbourhoods, and thus integrate it in urban planning. For meeting needs of bottom-up initiatives public authorities need an appropriate governance structure, which is based on a positive attitude towards civic gardening projects and open-mindedness.

## 5 CONCLUSION

Europe's cities are affected by the ageing of their inhabitants. There is a rich body of research and practical guidelines aiming at the implementation of barrier-free standards in flats, buildings and other physical structures, and in addition, ICT technologies promise smart tools that enable ageing in place (ambient assisted living). The importance of barrier-free standards is acknowledged, but there is also some evidence that staying active as aged person affords more than a barrier-free flat with an elevator. The provision of amenities for daily living and social infrastructure in the neighbourhood and the access to green space are recognized as central aspects in empirical studies that reflect living preferences of aged persons (cf. section 3). This has to be considered by public authorities, urban planners, housing societies and others who want to enable a healthy ageing in place.

The ecological, economical and social benefits of urban gardening have been described manifold (cf. section 4). Especially in neighbourhoods with disadvantages urban gardening can improve local climate and enrich habitat, help to transform abandoned urban sites and thus support local identity and place-making. And, even more important, urban gardens in neighbourhoods are places for social cohesion, interaction, and for integration and thus provide space for different life styles, generations and ethnic groups. As urban allotment or community gardens often are located within or near residential areas, they allow recreational activities in proximity of flats, which is important especially for aged persons. In this respect both, existing classical form of allotment gardens as well as emerging forms, offer a lot of opportunities for the ageing society.

Albeit these benefits the potentials of urban gardening in general and the opportunities different form of urban gardening offer for the needs of an ageing society are not recognized enough by public authorities in many European countries. Local planners need both: a willingness to integrate urban gardening in urban planning (top-down) and an open mindedness to develop a positive attitude towards gardening projects (bottom-up). Although from a social perspective some encouraging examples can be studied regarding urban gardening areas successfully coping with downgrading neighbourhoods, it must be stated that the role and contribution of urban gardening for the regeneration of urban neighbourhoods on long-term and the development of supportive governance structures need further research.

Europe's cities have to meet challenges arising from societal-, economic- and climate change. Concerns about the environment, uncertainties related to the economic development and the society in general trigger a new interest in gardening. The integration of urban gardening in urban neighbourhood and the green infrastructure of the city offers opportunities to meet these challenges, especially with regards to the ageing societies.

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