

Parallel Sessions 1

A1 - FHNW Room 115 -> page 22

Can urban gardens change our cities? Critical perspective on urban gardening as a practice and strategy of urban social work

Chairs: Tanja Klöti, Simone Tappert & Matthias Drilling

Allotment Gardens in Switzerland - the challenges of self-governing communities in transforming cities

Authors: Nicola Thomas / Patrick Oehler / Timo Huber; all: University of Applied Sciences Northwestern Switzerland

Urban gardening and the right for centrality. Critical considerations from a disciplinary social work perspective

Author: Christoph Stoik, FH Campus Vienna

Greening Cityscapes and Well-Being: Theory and Practice in Urban Social Work

Author: Lena Dominelli, Durham University, United Kingdom

Tomatoes, yes! But how to grow them? And for whom? A critical analysis of non-commercial urban agriculture projects in the neoliberal city

Author: Sarah Kumnig, University of Vienna, Austria

B1 - FHNW Room 125 -> page 26

The question of spatial justice and governance

Chair: Maria Partalidou

Urban Gardening in Vienna between emancipation and institutionalisation

Authors: Eva Schwab, University of Natural Resources and Life Sciences Vienna, Austria / Philipp Rode, OPK Offenes PlanerInnen Kollektiv, Austria

Spatial justice and heritage enhancement in the urban gardening

Authors: Paola Branduini, Politecnico of Milan, Italy / Coline Perrin, INRA UMR Innovation Montpellier, France / Raul Puente Asuero, Universidad Pablo de Olavide, Spain

Public policy and community gardening in Rome: progress and contradiction

Authors: Filippo Celata, University La Sapienza, Italy / Raffaella Coletti, University La Sapienza, Italy

Urban gardening in Lisbon and Leipzig: a comparative study on governance

Authors: Ines Cabral, German Centre for Integrative Biodiversity Research, Germany / Ulrike Weiland, University of Leipzig, Germany

C1 - FHNW Room 134 -> page 30

Quantifying the sustainability of urban agriculture

Chairs: Francesco Orsini, Esther Sanyé-Mengual

Urban gardening: available tools for quantifying sustainability benefits

Authors: Daniela Gasperi, University of Bologna, Italy / Giorgio Ponchia, University of Padova, Italy / Giorgio Gianquinto, University of Bologna, Italy

Stewardship of Urban Ecosystem Services - Understanding the value(s) of urban gardens

Authors: Johannes Langemeyer, Autonomous University of Barcelona, Spain / Marta Camps-Calvet, Autonomous University of Barcelona, Spain / Laura Calvet-Mir, Universitat Oberta de Catalunya, Spain / Erik Gómez-Baggethun, Norwegian Institute for Nature Research & Norwegian Institute for Nature Research, Norway / Stephan Barthel, Stockholm University, Sweden

Integrating geographic, social and environmental tools for urban agriculture sustainability in Barcelona

Authors: Susana Toboso, Autonomous University of Barcelona, Spain/ Joan Aynès, Autonomous University of Barcelona, Spain / Roger Liarte, Autonomous University of Barcelona, Spain / Carlos Torres, Autonomous University of Barcelona, Spain / Iván Muñoz, Autonomous University of Barcelona, Spain/ Joan Rieradevall, Autonomous University of Barcelona, Spain / Anna Petit-Boix, Sostenipra (ICTA), Spain

A methodological approach to evaluate the links between access to a garden plot and household food insecurity in deprived neighbourhoods of Paris and Sevilla

Authors: Jeanne Pourias, AgroParisTech, France/ Raul Puente Asuero, Universidad Pablo de Olavide, Spain / Christine Aubry, AgroParisTech, France / Thomas Ducrocq, AgroParisTech, France

D1 - FHNW Room 135 -> page 34

From theory to practice (I). Exploring innovative initiatives all over Europe

Chair: Annette Voigt

Community Gardens in Poland - Impulse, Assistance, Expansion

Authors: Donata Kaluzna, Green Cross Poland, Poland/ Andrzej Mizgajski, Adam Mickiewicz University in Poznan & Green Cross Poland, Poland

Urban gardens in Istanbul, Turkey: Forms, uses and challenges

Author: Basak Tanulku, independent scholar, Turkey

Cooperative Kalkbreite - green transition. From parking lot to collective gardening (2009 -2016)

Author: Yvonne Christ, ZHAW, Switzerland

Floating garden demonstrating the future prospects of a new district

Authors: Krista Willman, University of Tampere, Finland

Can urban gardens change our cities? Critical perspective on urban gardening as a practice and strategy of urban social work

Chairs: Tanja Klöti, Simone Tappert & Matthias Drilling

Allotment Gardens in Switzerland – the challenges of self-governing communities in transforming cities

Authors: Nicola Thomas, University of Applied Sciences Northwestern Switzerland, Switzerland (nicola.thomas@fhnw.ch) / Patrick Oehler, University of Applied Sciences Northwestern Switzerland, Switzerland / Timo Huber, University of Applied Sciences Northwestern Switzerland

Keywords: Self-governance, Community Development, Urban Transformation, Allotment Garden Associations

Allotment gardens in Switzerland have a long tradition as being important subsistence and recreation spaces for low-income groups living in dense urban areas. Located on public land, but managed by individual associations, allotment gardens in Switzerland are self-governing communities. They set and implement their own rules and gardening culture in addition to the formal rules set by the public authorities. Mirroring larger transformations in Swiss cities, in recent years allotment gardens however are increasingly undergoing changes: new user groups, often with migration background, or younger creative groups, are increasingly renting gardens, and bring new gardening practices and community values into the gardens. In addition to these changes, allotment gardens in larger Swiss cities are also under increasing pressure from local administrations, who want to develop the garden sites into new green leisure places and/or housing sites. These developments often are protested by the traditional mostly elderly user groups, who fear a changing gardening culture and loss of their reclusive garden space.

These transformations present the association bodies with multiple challenges: how to govern increasingly heterogeneous garden sites, where different, often conflicting practices and ideas meet? How to position the garden for a future that includes new uses and users without leading to the dislocation of existing gardeners? In addition to these challenges, many associations are also facing the problem of reaching new user groups. By drawing upon two case studies in the Swiss cities Basel and Bern, which are part of an ethnographic research study on allotment gardens, this presentation will discuss how the studied communities deal with the multiple challenges they are facing and which resources they can draw upon.

Based on the grounded theory methodology, the research project aims to explore the governing structures of allotment gardens with a set of qualitative methods (observations, interviews, conversations, mappings) and to generate a theory based on the collected data. In a critical outlook, the presentation will point to the shortcoming of the existing governing practices and ask which new ways will be needed in the future.

Urban gardening and the right for centrality. Critical considerations from a disciplinary social work perspective

Author: Christoph Stoik, FH Campus Vienna (christoph.stoik@fh-campuswien.ac.at)

Keywords: Social Work, Struggles for Space, Social Marginalization, Emancipatory Community Work, Right to the City

Growing global cities are marked by growing social inequalities and spatial divisions. The capitalist city is arena for economic struggles for space, social inclusion and exclusion (Sassen 1996, Harvey 2013). From the perspective of the discipline of social work these struggles are relevant in different ways: people who are affected by marginalization, such as homelessness, beggars, drug-consumers and sex workers are pushed to a spatial marginalization. Public spaces in the city centers are redefined as places of consumption, tourism and marketing. On the other side neighborhoods are rediscovered for the real estate market. These tendencies of revaluation lead to displacement of poor populations (Diebäcker 2014, Drilling 2013, Kirsch & Stoik 2012).

In this context, the function of urban gardening is considered critical: Is urban gardening an instrument of struggle for commercialization, gentrification and for displacement-processes? Do urban gardeners become a tool of these transformations? These issues are considered from a theoretical perspective by reference to empirical studies. From a social work perspective urban gardening is considered as threat to marginalized people and as potential with different expectations: Urban gardens can be a social space, where people from different social milieus can connect, as a place for integration. People threatened by displacement could be strengthened in their position.

By acquiring gardening skills the self-efficacy of people is improved. From this perspective urban gardens are starting points for reconquests of public spaces as a social exchange place against commercialization of spaces. Moreover urban gardening is understood as areas of self-determined economic against capitalist exploitation interests. Urban gardening links up to concepts of emancipatory community work and social economy (Baier, Müller & Werner 2007, Stövesand, Stoik & Troxler 2013, Emprechtinger et al. 2010, Elsen 2007). Urban gardening itself is a place of struggle and an instrument of struggle for the right to the city and centrality. Urban gardening oscillates between displacement of vulnerable people and recovery of public space, where human needs take center (Lefèbvre 1991).

Emprechtinger, J., Förster, K., Gruber, S., Mayrhofer, R., Staller, S., Stoik, C. & Studer H., 2010, Wissenschaftliche Begleitforschung zur Einführung von Nachbarschaftsgärten im Wiener Gemeindebau. Im Auftrag der MA 50 Wohnbauforschung und internationale Beziehungen, viewed January 2016, from <http://www.wohnbauforschung.at/index.php?id=338>

Kirsch-Soriano da Silva, K., und Stoik, C., 2012. Wiener Gebietsbetreuung Stadterneuerung: Quo vadis? In: *dérive*, Zeitschrift für Stadtforschung, Nr. 49, Okt - Dez 2012, S. 37-41.

Krisch, R. & Stoik, C., 2013, „Soziale Arbeit und demokratiepolitische Positionierung in Wien. Ein Glossar „Soziale Arbeit im öffentlichen Raum“, Sozial Extra 7(8).

Stövesand, S., Stoik, C. & Troxler, U. (eds.), 2013, Handbuch Gemeinwesenarbeit. Traditionen und Positionen, Konzepte und Methoden. Deutschland – Schweiz – Österreich. Theorie, Forschung und Praxis der Sozialen Arbeit, 4th edn., Barbara Budrich, Opladen, Berlin & Toronto.

Greening Cityscapes and Well-Being: Theory and Practice in Urban Social Work

Author: Lena Dominelli, Durham University, United Kingdom (Lena.Dominelli@durham.ac.uk)

Keywords: Cityscapes, Well-being, Hyper-urbanisation, Green Social Work, Urban Social Work

Cities are becoming concreted over as developers try to maximise the profits they can extract from land. Their practices can stress the physical environment as they squeeze more and more people into small spaces, producing higher and higher apartment blocks and undermine the well-being of people, and plants and animals that formerly roamed over green fields before they became concreted land in a hyper-urbanised landscape.

This paper examines the changing face of cities from an urban social work perspective that is critical of the exploitation of land with little regard for the health and well-being of people, other living things and our planet. It considers examples of green social work practice in urban areas where greening the city through community gardens in many cityscapes ranging from car parks to roof-tops have transformed local communities. These transformations have included providing grassy green places with trees and plants for leisure activities for all age groups; vegetable gardens or allotments providing poor people with a modicum of food security and a supply of fresh fruit and vegetables; creating wildlife reservations that help safeguard biodiversity; restoring degraded soils through composting schemes; and giving people neighbourhood activities that bring them together and, in multicultural communities, growing plants together helps promote social cohesion and multicultural activities celebrating the foods they have grown themselves. Greening cities is, therefore, also a therapeutic activity.

Urban social workers following green perspectives can make a difference in reducing greenhouse gas emissions by greening the urban jungle and growing food locally; enhance resilience among community members, and reduce the impact of bleak concrete landscapes on their lives.

Tomatoes, yes! But how to grow them? And for whom? A critical analysis of non-commercial urban agriculture projects in the neoliberal city

Author: Sarah Kumnig, University of Vienna, Austria (sarah.kumnig@univie.ac.at)

Keywords: Non-commercial Agriculture, Urban Agriculture, Neoliberal City, Self-organization, Vienna

There seems to be little discussion about the importance of urban agriculture in Vienna. Around 15% of the city area is agricultural land and the municipality provides funds for some community gardens. This does not mean that urban gardens and collective agriculture projects are uncontested spaces. In the context of neoliberal urban development there is a wide range of actors, interests and strategies involved. What will be discussed in the presentation is one specific kind of green urban activity: non-commercial urban agriculture. This refers to a needs-oriented, collective food production, where the production process is organized by a group of people who give away the produce for free in order to decouple access to resources from individual contributions. Here the key questions are: What are the potentials and limitations of non-commercial urban agriculture projects? And how can those experiences strengthen processes of self-organization and collective resistance in a neoliberal city?

References:

- Brenner, N. & Theodore, N., 2002, Cities and the Geographies of “Actually Existing Neoliberalism”, *Antipode* 34(3), 349-79.
- Brenner, N., Peck, J. & Theodore, N., 2010, Variegated neoliberalism: geographies, modalities, pathways, *Global Networks* 10(2), 182-222.
- Magistrat der Stadt Wien, 2014a, Stadtentwicklungsplan 2025, MA 18, Vienna.
- Magistrat der Stadt Wien, 2014b, Agrarstruktureller Entwicklungsplan für Wien 2014, MA 58, Vienna.
- Magistrat der Stadt Wien, 2015, Fachkonzept Grün- und Freiraum, MA 18, Vienna.
- McClintock, N. 2014, Radical, reformist, and garden-variety neoliberal: coming to terms with urban agriculture’s contradictions, *Local Environment*, 19(2), 147-171.
- Moehrs, K., Forster, F., Kumnig, S. & Rauth, L., 2013, ,The Politics of Land and Food in Cities in the North: Reclaiming Urban Agriculture and the Struggle of Solidarisch Landwirtschaften! (Solila!) in Austria’, in J. C. Franco & S. M. Borrás Jr. (eds.), *Land Concentration, land grabbing and people’s struggles in Europe*, pp. 104-137, Transnational Institute, Amsterdam.
- Swyngedouw, E., 2005, ,Governance Innovation and the Citizen: The Janus Face of Governance-beyond-the-State’, *Urban Studies* 42(11), 1991-2006.

B1 - FHNW Room 125

The question of spatial justice and governance

Chair: Maria Partalidou

Urban gardening in Vienna between emancipation and institutionalisation

Authors: Eva Schwab, University of Natural Resources and Life Sciences Vienna, Austria/ Philipp Rode, OPK Offenes PlanerInnen Kollektiv, Austria (eva.schwab@boku.ac.at)

Keywords: Emancipatory Urbanism, Urban Gardening, Urban Development, Public Space

Viennese city planning has increased its investment in public spaces since the early 2000s and grants them an essential role as medium of change for the renovation and development of the city. Since 2010 the city is governed by a red-green coalition which puts special emphasis on the 'attractive' design of public space, because quality of life is 'significantly' supported by it. The government agreement addresses the involvement of civil society on the local level, self-harvesting and community gardens are explicitly mentioned as welcome, because the local level and socio-productive uses of public green space are ascribed the potential to serve as testing ground for alternative lifestyles and city models (Häupl & Vassilakou 2010). Against this background, this paper critically reviews the emancipatory content of Vienna's urban gardening practices and regulations and presents research on current urban gardening practices in Vienna inspired by the notion of an emancipatory urbanism (Amin & Thrift 2004; Mörtenböck & Mooshammer 2013). Specifically, it enquires into the spaces used for urban gardening practices, into the actors of current initiatives and their relationship with official administration as well as the emancipatory content of their practices using site analysis, semi-structured interviews as well as document and secondary sources. This research has found that the initiatives and their practices have enriched the understanding of public space through its socio-productive use as well as addressed issues surrounding social re-densification and planning shortfalls in urban space. At the same time, strong tendencies of particularism and institutionalisation can be detected. The specific Viennese planning culture and policies (Dangschat & Hamedinger 2009) contain the risk to choke alternative expressions of the urban gardening idea and thus hinder the constant revival, critique and contestation that are the foundation of an emancipatory urbanism.

Spatial justice and heritage enhancement in the urban gardening

Authors: Paola Branduini, Politecnico of Milan, Italy / Coline Perrin, INRA UMR Innovation Montpellier, France / Raul Puente Asuero, Universidad Pablo de Olavide, Spain (paola.branduini@polimi.it)

Keywords: Rural Heritage, Social Justice, Urban Agriculture, Urban Gardens

Urban agriculture activities can enhance rural heritage by taking care of the tangible heritage and by supporting intangible heritage transmission, re-interpreting the agricultural function through the needs of contemporary city (Branduini 2015). Urban gardens hold a multiplicity of actors that use the space in different ways and share knowledge, tools and skills, not only agronomic, but also social, relational and economic: they can have different feeling of justice.

Comparing different typologies of urban gardening (family, allotments, squatter, community, educational, therapeutic) recognized by the COST Action UAE (Simon-Rojo 2015) in three Mediterranean metropolis (Seville, Marseille, Milan), the investigation identifies how social justice (investigated in the ongoing JASMINN project funding by the French National Research Agency) is expressed and translated in a spatial form. Results evidence that transmission of tangible heritage is incisive if deliberately chased by the main aims of the association managing the garden, thus the dissemination of intangible heritage is mainly an intergenerational and intragenerational transmission. The procedural justice is a shared tool: once a rule is a priori defined, the participants accept and follow it, no matter if it concerns the maintenance of heritage, the quality of space, the technique and philosophy of cultivation. The commitments are shared and planned in the meetings and are rarely defined by the garden rules. The specific design of the urban garden has also an impact on its inclusiveness. External partnership and educational purposes are fundamental when the gardeners ask for legitimation of the space. Finally, the three metropolis are pursuing similar actions but with different agendas.

Public policy and community gardening in Rome: progress and contradiction

Authors: Filippo Celata, University La Sapienza, Italy/ Raffaella Coletti, University La Sapienza, Italy (raffaella.coletti@uniroma1.it)

Keywords: Urban Gardening, Community Gardens, Public Policies, Rome, Community Based Initiatives

Community gardening has been regarded as a practice through which citizens can challenge dominant power relations and claim back their rights to the city. It has also been considered a form of collaborative government used to reduce state responsibilities in social service provision in a context of neo-liberalization. In any given case, understanding whether public policies are enabling or disabling community gardening initiatives by providing specific regulations, public support or a favorable environment for community organizing, is crucial. This issue has recently garnered much attention worldwide and the aim of this paper is to contribute to this debate by focusing on the case of Rome, Italy. Like many other cities in the world, Rome is witnessing an important diffusion of community gardening initiatives. Thus far, the proliferation of community gardening has taken place in an almost completely spontaneous form and risen from the grassroots level in a lack of a legislative and regulatory framework, both at the national and local scale. In July 2015, the municipality of Rome enacted a regulation in this vacuum which is currently in its initial stages. This paper aims at understanding the aims and expected outcomes of this specific regulation, focusing, in particular, on the extent to which such a policy simply promotes the diffusion of community gardening initiatives, or aims at regulating and disciplining their practices.

Urban gardening in Lisbon and Leipzig: a comparative study on governance

Author: Ines Cabral, German Centre for Integrative Biodiversity Research, Germany / Ulrike Weiland, University of Leipzig, Germany, (ines.cabral@idiv.de)

Keywords: Allotment Gardens, Community Gardens, Leipzig, Lisbon, Governance, Socio-ecological Resilience, Urban Gardening, Urban Horticulture

Urban gardening has seen resurgence in many cities across the globe. Whereas Central European cities have a long tradition of urban gardening and are facing new forms of community gardening, Southern European cities are implementing new urban horticulture programs. In this paper we focus on Leipzig and Lisbon as representatives of the two European regions. After characterizing each city including their gardening approach, we identify governance practices within each city that can be shared. We used fieldwork to identify the main initiatives in both cities and compared their governance status according to a set of pre-determined criteria. We conclude that regulatory governance modes, which have been identified in both cities in their different forms of gardening, should be resolved towards more collaborative modes in order to increase socio-ecological resilience. This way, self-determined citizens can react in a more resilient manner under stress or pressure.

Cabral, I., Keim, J., Engelmann, R., Kraemer, R. Siebert, J. Wolf, F., Banzhalf, Bonn, A., 2015, Assessing Biodiversity and Ecosystem services in urban gardens in the city of Leipzig. Communication at the Conference on Nature based solutions to climate change in urban areas and rural surroundings, November 17-19 2015, Bonn.

Cancela, J., 2010, A Local Partnership for Promoting Urban Agriculture in Lisbon, Portugal, viewed March 2014, from http://www.china-europa-forum.net/bdf-doc-2048_en.html

Deutsches Kleingärtnermuseum, 2001, Deutschlands Kleingärtner vom 19. zum 20. Jahrhundert, Museumsführer, Leipzig.

Firth, C., Maye, D. & Pearson, D., 2011, Developing “community” in community gardens, *Local Environment: The International Journal of Justice and Sustainability* 16(6), 555-568.

Garten Leipzig, 2014, Gemeinschaftsgärten, viewed April 2014, from <http://www.garten-leipzig.net/stiftung/Mitgaertner.asp>

Luz, A. & Pires, I., 2015, ‘Regularização das hortas urbanas na cidade de lisboa - as hortas sociais do Vale de Chelas’ in I. Corrêa da Silva, M. Pignatelli & S. de Matos Viegas (eds.) *Livro de Atas do 1º Congresso da Associação Internacional de Ciências Sociais e Humanas em Língua Portuguesa*, pp.6935-6952.

Mata, D., 2014, Lisbon’s Green Plan Actions: Towards a Green City, viewed March 2014, from http://www.urbanallotments.eu/fileadmin/uag/media/Lisbon/Lisbon_report_NK8.pdf

Rall E., Haase, D., 2011, ‘Creative intervention in a dynamic city: a sustainability assessment of an interim use for brownfields in Leipzig, Germany’, *Landscape and Urban Planning* 100(3), 189-201.

C1 - FHNW Room 134

Quantifying the sustainability of urban agriculture

Chairs: Francesco Orsini, Esther Sanyé-Mengual

Urban gardening: available tools for quantifying sustainability benefits

Authors: Daniela Gasperi, University of Bologna, Italy / Giorgio Ponchia, University of Padova, Italy / Giorgio Gianquinto, University of Bologna, Italy (daniela.gasperi2@unibo.it)

Keywords: Environmental Impact, Urban Horticulture, Allotment Gardens, Life Cycle Assessment

Beyond the reduction of food miles and the resulting social advantages, urban agriculture provides environmental benefits such as the reduction of urban heat island and recycling of resources; this harmonizes with the three dimensions of sustainability: social, economic and environmental. This paper presents a potential quantitative tool, the Life Cycle Assessment (LCA), for evaluating of diverse benefits provided by the urban gardening, in order to support decision - making and improve urban food systems as well as provides with new data on urban food products. LCA was used in the analysis regarding a predetermined system boundary, namely the production process (cradle-to-farm gate), including the impact coming from cultivation systems and agronomic techniques. The environmental impact was assessed according to the IPCC method: the global warming potential (kg CO₂ eq).

Two case studies were evaluated: a home garden of 25 m² in Padova (Italy) and a community rooftop garden of 250m² in Bologna (Italy). The environmental impact of producing tomato (*Solanum lycopersicum*), chili pepper (*Capsicum annuum*), eggplant (*Solanum melongena*), chicory (*Cichorium intybus*), black cabbage (*Brassica oleracea*) and lettuce (*Lactuca sativa*) was compared for the two types of urban production. Results showed two main trends: leafy vegetables yielded better in the home garden of Padova, leading into a lower environmental impact (apart from lettuce, where results were similar); while fruit vegetables were more environmentally-friendly in the rooftop garden of Bologna, due to specific practices (e.g., pesticide-free, home-made compost, re-used materials in the cultivation system).

Further research will focus on comparing different cultivars, the potential use of home compost and the comparison with further literature data.

Stewardship of Urban Ecosystem Services - Understanding the value(s) of urban gardens

Authors: Johannes Langemeyer, Autonomous University of Barcelona, Spain / Marta Camps-Calvet, Autonomous University of Barcelona, Spain / Laura Calvet-Mir, Universitat Oberta de Catalunya, Spain / Erik Gómez-Baggethun, Norwegian Institute for Nature Research & Norwegian Institute for Nature Research, Norway / Stephan Barthel, Stockholm University, Sweden (johannes.langemeyer@uab.cat)

Keywords: Stewardship, Social-ecological Systems, Civic Ecology, Ecosystem Services, Urban Gardens

The notion and assessment of ecosystem services is now an established part of the discourse regarding urban green space performance. Yet, stewardship of ecosystem services in cities is still an open research frontier. Urban ecosystem services are more likely to be maintained, if citizens and urban planners are aware of them and acknowledge the multi-functionality of green spaces in cities. Urban gardens have shown to be valuable for humans due to their capacity to deliver manifold ecosystem services, including food provision, pollination, biodiversity refuge and recreation. In this study, social, institutional and biophysical properties of urban gardens are examined in relation to the ecosystem service values they trigger.

The research is developed on the basis of a survey, interviews, field observation and remote sensing from 27 urban gardens in Barcelona, Spain. Firstly, urban gardens are characterised with regard to (a) biophysical properties, (b) institutions in place, and (c) their users. Secondly, value(s) of urban gardens regarding the provision of ecosystem services are correlated with these garden properties. The assessment of ecosystem service values relies on a cluster analysis and non-metrical dimensional scale approach (NMDS). While urban gardens have generally shown to be beneficial to urban dwellers, the specific social and institutional settings may increase the appreciation of ecosystem services and enhance environmental stewardship. Results indicate for example a correlation between the higher appreciation of urban garden and female gender, and a relation between childhood experiences and stewardship action. Institutional settings, allowing for civic gardening initiatives, including property rights and decision-capacities may also trigger the perception of values and stewardship action.

In providing a differentiated understanding of the value(s) of urban gardens, this study highlights potentials for green space planning in cities to steer the stewardship of urban gardens and related ecosystem services by providing institutional and geographical space for civic gardening initiatives.

Integrating geographic, social and environmental tools for urban agriculture sustainability in Barcelona

Authors: Susana Toboso, Autonomous University of Barcelona, Spain / Joan Aynès, Autonomous University of Barcelona, Spain / Roger Liarte, Autonomous University of Barcelona, Spain / Carlos Torres, Autonomous University of Barcelona, Spain / Iván Muñiz, Autonomous University of Barcelona, Spain / Joan Rieradevall, Autonomous University of Barcelona, Spain / Anna Petit-Boix, Autonomous University of Barcelona, Spain (anna.petit@uab.cat)

Keywords: Urban Agriculture, Self-sufficiency, GIS, Avoided Environmental Impacts, Social Motivations

Urban agriculture (UA) is generally appealing from a self-sufficiency standpoint. However, its implementation at a city scale depends on the space availability and social motivations, and tools are needed for assessing its feasibility. This study aims to present an interrelation of Geographic Information Systems (GIS), social perception and environmental benefits of UA for determining the areas with the highest implementation potential in Barcelona (Catalonia, Spain). Given the social and spatial variability of Barcelona, two neighbourhoods with different income and urban density were selected. The available urban spaces (i.e. unoccupied areas and rooftops) with a potential for hosting UA were identified using GIS, housing census and specific UA guidelines. Based on literature, the potential multi-crop and tomato production was estimated considering different production systems (e.g. hydroponics vs. soil cultivation, permaculture vs greenhouse). Because agricultural products are generally imported, the avoided CO₂eq emissions related to their transportation were estimated. Finally, the social motivations of the population towards UA were assessed through surveys. Results show that the theoretical potential area for implementing UA is greater in low-density (LD; 47 m²/inhabitant) than in high-density neighbourhoods (HD; 10 m²/inhabitant). LD has the potential to meet 100% of the demand for multi-crop and tomatoes through most of the cultivation techniques under assessment. In HD, the production might be reduced due to the area availability and increased product demand. The avoided transportation impacts might reach a maximum of 92 tons of CO₂eq./year for tomatoes with a 100% demand coverage in HD. In social terms, 75-80% of the UA users were schools and the main motivations highlighted in both neighbourhoods were the environmental and educational benefits of UA. These tools will help the administration to implement UA through actions and policies in urban areas considering the environment, society and geography. Future studies should provide experimental data that validate this methodological framework.

References:

Sanyé-Mengual, E., Cerón-Palma, I., Oliver-Solà, J., Montero, J., Rieradevall, J., 2015, 'Integrating horticulture into cities: A guide for assessing the implementation potential of Rooftop Greenhouses (RTGs) in industrial and logistics parks', *Journal of Urban Technology* 22(1), 87-111.

A methodological approach to evaluate the links between access to a garden plot and household food insecurity in deprived neighbourhoods of Paris and Sevilla

Authors: Jeanne Pourias, AgroParisTech, France / Raul Puente Asuero, Universidad Pablo de Olavide, Spain / Christine Aubry, AgroParisTech, France / Thomas Ducrocq, AgroParisTech, France (jeanne.pourias@agroparistech.fr)

Keywords: Collective Gardens, Food Insecurity, Self-Production, Food Function, Sevilla, Paris

In France, a national survey undertaken in 2007 showed that one out of 10 adults lived in a household suffering food insecurity (FI) for financial reasons. Meanwhile, in southern European countries, converging signs show an alteration of access to quality food and food patterns of households as an indirect consequence of the economic crisis that hit Europe in 2008. Literature has shown different ways in which collective gardens (CGs) might contribute to address some aspects of FI. However, many authors express doubts on whether CGs reach people most in need.

In this paper, we describe the methodological framework used in AUPA, a 3-years research program aiming at investigating the role of gardens in household food supply and the links between access to a garden plot and household FI in deprived neighbourhoods. We provide critical feedback on the implementation of this methodology and identify success and failure factors. We conclude on the interest of the proposed methodology and we evoke the way further for the next part of the project.

D1 - FHNW Room 135

From theory to practice (I). Exploring innovative initiatives all over Europe

Chair: Annette Voigt

Community Gardens in Poland - Impulse, Assistance, Expansion

Authors: Donata Kaluzna, Green Cross Poland, Poland / Andrzej Mizgajski, Adam Mickiewicz University in Poznan & Green Cross Poland, Poland (d.kaluzna@green-crosspoland.org)

Keywords: Urban Gardening, Social Capital, Urban Greenery

Community Gardens are a new phenomenon in Poland; nevertheless, the traditional Allotment Gardens already have a history of over one hundred years. Appreciating social and ecological premises of local cooperation in urban gardening the Green Cross Poland Foundation (GC PL) initiated the project on development this social activity in Poland.

The innovative approach implemented combines stimulation of the media's interest, stimulation of municipal authorities' positive attitude, choosing local group leaders who would like to establish CGs, elaborating the manual describing the sequence of practical steps from the idea to its fulfilling, providing professional help in garden designing and funding equipment necessary to establish and maintain a garden.

The project started at the end of 2014 with inviting experts to participate in our workshops, during which the strategy and sequence of operational tasks were developed. What was very helpful in the development of the project was the creation of a pioneer website on community gardens, which provides information about our activities and promotes them effectively. Since the beginning, the representatives of GCPL communicated with municipal authorities and promoted the idea of CGs, paying special attention to cities that face substantial social and economic problems. At the same time, we were looking for potentially interested local leaders and groups located in those cities. Till the middle of 2016 the campaign succeeded in creating 10 gardens and another 16 are currently being created. Green Cross Poland is also in touch with the next 7 potential leaders, which are interested in building CGs.

Green Cross Poland can conclude that in a short period of time organization has been able to create a social movement, which is becoming more and more dynamic. This is proven by the increasing number of cities applying to take part in this social activity. Presently the challenge is to ensure the durability of established gardens. GCPL recognizes it and keeps an attention on regular contact with the local groups as well as with authorities.

Urban gardens in Istanbul, Turkey: Forms, uses and challenges

Author: Basak Tanulku, independent scholar, Turkey (tanulkub@gmail.com)

Keywords: Istanbul, Urban Gardens, Forms, Uses, Challenges

Urban gardens, taking different forms, have become an important part of cities across the world (Bell & Keshavarz 2016; Certoma 2015). They are also a very old source for the provision of food and livelihood in Istanbul, the largest city of Turkey (Baser & Tuncay 2010; Kaldjian 2004). Although there has been an increasing interest in the subject, there is not sufficient analysis on the variety of urban gardens and their impact on cities in Turkey. The paper argues that urban gardens in Istanbul are different from each other in terms of ownership and use of land, users, designs, management of space and impact on the city. By adopting an ethnographic approach and the right to the city position, the paper explores three urban gardens in Istanbul. The paper uses the data collected through desk search, site visits and interviews with activists and users of gardens between 2015 September and 2016 May. The paper divides gardens according to their purposes (for livelihood or hobby) and the land use practice (legally or illegally).

The first case study is a garden used legally for livelihood, Yedikule Gardens, located near the historic city walls. The second is a garden illegally used for hobby, Imrahor Garden, without the permission of land owners located in Uskudar, a densely-populated inner-city district and the third is a plot of land where local people deal with beekeeping in Kupluce, another inner-city neighbourhood close to Uskudar. Based on the data collected during site visits, the paper demonstrates that these gardens protect urban green sites and heritage, ensure people's livelihood and contribute to the well-being of local communities. They also redefine the relationship between urban and rural realms and raise questions on food quality and safety as well as tensions between local political actors, land owners and users.

Cooperative Kalkbreite – green transition. From parking lot to collective gardening (2009 –2016)

Author: Yvonne Christ, ZHAW, Switzerland (yvonne.christ@zhaw.ch)

Keywords: Urban Gardening, Roof Garden, Plant, Participatory, Temporary

The garden of the cooperative Kalkbreite is in the 4th district of Zürich, in a central inner-city area. The garden first occupied a parking lot next to train tracks, adjoining a major traffic junction. The project was a 2-year experiment in transforming an improbable area into an attractive public space until the planned building development commenced. At the same time the participants were able to test the reaction of neighbours and passers-by to the garden in terms of acceptance/vandalism etc. In its short life the garden became many things to many people: an oasis in the city for slowing down, a social meeting point, a children's playground or simply a small garden for people living in apartment blocks. The temporary garden Kalkbreite remained as planned until the commencement of work on the housing development in February 2010 and was then dismantled. After the success of the initial project 'collective gardening' was again promoted and used as a social focus after the completion of the new Kalkbreite building. Today - eight years since the start of the project - the garden is on the 6th floor private rooftop of the new building, accessible only for the 250 tenants of the building.

The transition from temporary to permanent garden within a mid-city context was successful: today the main function of the garden is to grow fruit, vegetables and herbs and produce seeds. The garden is shared collectively amongst the (26 in 2016) users and also provides a social platform. As the unit living space per person in the building is limited, the garden becomes even more important. The garden project of the Cooperative is not a scientific research project as such, but a process of exploring the possibilities of green spaces in an inner-city environment: The innovative initiative demonstrates, how an «urban gardening area» can be realised and maintained by enthusiasts at a local level.

References:

Prominski, M., 2004, Landschaft entwerfen, Dietrich Reimer Verlag, Berlin.
Genossenschaft Kalkbreite (eds.), 2015, Kalkbreite, ein neues Stück Stadt, Selbstverlag Genossenschaft Kalkbreite, Zurich.

Floating garden demonstrating the future prospects of a new district

Authors: Krista Willman, University of Tampere, Finland (krista.willman@uta.fi)

Keywords: Urban Gardening, Co-creation, Participatory Design, City Branding, City Activism

This paper presents a case of a floating garden established on a pontoon dock on the lakeside of Hiedanranta, a former industrial area bought by the city of Tampere (Finland) for urban development. In visions of the city, Hiedanranta will be a multifunctional new district for 15,000 inhabitants, potentially combining the ideas of sustainability and productivity (Viljoen & Bohn 2014) in local food production. Before starting land-use planning, the city has opened this brownfield area for temporary uses devised by the citizens. The floating garden is one of these bottom-up initiatives implemented in the area in 2016.

The aim of the paper is to explore the cooperation between active citizens (bottom-up) and the project leaders of the city (top-down) from the viewpoint of co-creation. The analysis is based on interviews and participatory observation in the initial workshops and other events during the gardening process. The results point out the roles of civic, private sector and public actors in management, the mutual benefits and potential pitfalls in participatory design, and the importance of mediators during the process. These factors are probably essential in many projects of co-creation in urban regeneration.

References:

- Eshuis, J. & Edwards, A., 2013, 'Branding the City: The Democratic Legitimacy of a New Mode of Governance', *Urban Studies* 50(5), 1066-1082.
- Manzini, E. & Rizzo R., 2011, 'Small projects/large changes: Participatory design as an open participated process', *CoDesign* 7(3-4), 199-215.
- Viljoen, A. & Bohn, K. (eds.), 2014, *Second Nature Urban Agriculture: Designing Productive Cities*, Routledge. New York.





Poster Session

FHNW Room 115

Chair: Sandra Costa

Heavy metal contamination in allotment gardens: a case study from Brazil

Authors: Silvia Mancarella, Bologna University, Italy/ Livia Marchetti, Bologna University, Italy/ Livia Vittori Antisari, Bologna University, Italy/ Gilmo Vianello, Bologna University, Italy (silvia.mancarella@unibo.it)

Keywords: Pollutants, Urban Horticulture, Allotment Garden, Road Traffic

More than three quarters of Brazilian population inhabit cities. Consistently, growing concerns about the quality and cost of food, and food insecurity have increased interest in growing food locally in cities including in community or allotment gardens. Urban horticulture, besides its recognised role in improving emancipation and healthiness of the diet, may have some risks. In urban environment, vehicle emissions are considered one of the main sources of contamination of heavy metals. Plants grown in urban allotments nearby the road have shown high level of lead, zinc, chrome, nickel and tin. Heavy metals, which can cause chronic diseases, are transported in human body through food consumption. The present study analysed the heavy metal contamination in urban gardens compared to rural farm and allotments and at different distance from a highway. Ions analyses were conducted on plant material collected in Brazil in the cities of Recife (Pernambuco) and Teresina (Piauì). In Recife, where the soil may contain fluvial and lacustrine material, lettuce and okra leaves were collected in different urban allotments at distances between 0 and 20 m and between 20 and 50 m from the highway BR-232 (average daily volume of 33000 vehicles). In Teresina, where the soil has high content of iron and aluminium oxides, lettuce and chives were collected from urban gardens, a rural allotment and a rural commercial farm. Lettuce leaves collected near road in Recife presented higher content of Cr, Al, Ba, Sb and Cu, while okra leaves collected near road showed higher content in Cd, Cr, Sn and Al, as compared to vegetables grown farther. In Teresina lettuce showed the highest contents of Cu in the rural and urban allotment, while chives accumulated less Pb, Sr, Ba and more Sb in urban allotment than plants of the rural farm.

References:

Instituto Brasileiro de Geografia e Estatística, 2010, CENSO 2010, from <http://censo2010.ibge.gov.br/>

Corrigan, M.P., 2011, 'Growing what you eat: developing community gardens in Baltimore, Maryland', *Applied Geography* 31, 1232-1241

Evers, A., 2011, Food choices and local food access among Perth's community gardeners, *Local Environment*, 16(6), 585-602.

Säumel, I., Kotsyuk, I., Hölscher, M., Lenkerei, C., Weber, F. & Kowarik, I., 2012, 'How healthy is urban horticulture in high traffic areas? Trace metal concentrations in vegetable crops from plantings within inner city neighborhoods in Berlin, Germany', *Environmental Pollution* 165, 124-132.

Assessment of ecosystem services and disservices of urban gardens using case-study analysis of Berlin (Germany), Durban (South Africa) Vancouver (Canada)

Author: Tristan Jane Duthie, University Leipzig, Germany (tjduthie@gmail.com)

Keywords: Urban gardens, Ecosystem Services & Disservices, Sustainable Development

Though a number of extensive global research initiatives pertaining to ecosystem services exist, a small part of this constitutes assessments on ecosystem services in urban contexts, and even less so, the portion of urban research dealing with ecosystem disservices. While urban ecosystem services and disservice research remains a largely unexplored area, urban gardens comprises an even rarer part of this research. They are a ‘forgotten realm’, as emphasis is placed on the ‘big and tangible’ urban green spaces like urban forests and parks. Yet, when added up, urban gardens make up a substantial share of space in urban landscapes, thus many citizens often have their main experiences with urban ecosystem services and disservices in their own backyard. Urban gardens are therefore essential in the context of urban sustainable development because people are more likely to take action for biodiversity and better behavioural practices if they have direct contact with nature. Considering cities are the predominant domain of human habitation, it is important that more research goes into better understanding the ecosystem services and disservices of urban gardens, in light of global and local sustainable urban development goals. This is imperative, now more than ever, as cities face unprecedented challenges regarding infrastructure requirements, land-use competition and changes, and resource competition/depletion. Improved sustainable urban planning and development can therefore not be overstated, especially with the omnipresent threat of climate change to long-term quality of life for people in cities. Considering a general paucity of urban ecosystem services and disservices research, this study aims to identify and understand the dynamics of ecosystem services and disservices emanating from urban gardens, using three unique city landscapes, namely: Berlin and Vancouver, as case-study settings. Methods employed to achieve the research objectives include quantitative interpretation of ortho-imagery together with GIS techniques, ecosystem services indicator methods and qualitative survey methods.

References:

- Von Döhren, P., & Haase, D., 2015, Ecosystem disservices research: a review of the state of the art with a focus on cities, *Ecological Indicators* 52, 490-497.
- Haase, D., Larondelle, N., Andersson, E., Artmann, M., Borgström, S., Breuste, J., Gómez-Baggethun, E., Gren, Å., Hamstead, Z., Hansen, R., Kabisch, N., Kremer, P., Langemeyer, J., Rall, E. L., McPhearson, T., Pauleit, S., Qureshi, S., Schwarz, N., Voigt, A., Wurster, D., & Elmqvist, T., 2014, ‘A quantitative review of urban ecosystem service assessments: concepts, models, and implementation’, *AMBIO* 43, 413-433.
- Beumer, C., & Martens, P., 2015, Biodiversity in my (back)yard: towards a framework for citizen engagement in exploring biodiversity and ecosystem services in residential gardens, *Sustainability Science* 10(1), 87-100.
- Cilliers, S., du Toit, M., Cilliers, J., Drewes, E., & Retief, F., 2014, ‘Sustainable urban landscapes: South African perspectives on transdisciplinary possibilities’ *Landscape and Urban Planning* 125, 260-270.

Meaning of organic gardening in Swiss allotment gardens

Authors: Ingrid Jahrl, Research Institute of Organic Agriculture (FiBL), Switzerland/ Robert Home, Research Institute of Organic Agriculture (FiBL), Switzerland (ingrid.jahrl@fibl.org)

Keywords: Motivation, Perception, Organic Gardening, Allotment Gardens, Switzerland

Urban allotment gardens can contribute to biodiversity by providing diverse habitats (Perez-Vazquez et al. 2005), but cities face the problem of reduced ecosystem services and loss of biodiversity due to, inter alia, intensive management practices in allotment gardens (Christl et al. 2004, Bieri 2012). Allotment gardeners can therefore contribute to either biodiversity conservation or biodiversity loss: depending on their cultivation practices. Organic cultivation is commonly misunderstood as meaning simply foregoing the use of synthetic pesticides and fertilisers, but actually includes a range of principles, such as consideration of the effects on biodiversity. The aim of this contribution is to determine what motivates Swiss allotment gardeners to manage their gardens according to the principles of organic cultivation. Based on qualitative interviews, focus group workshops and a face-to-face quantitative survey (N= 574) in the cities of Basel, Lausanne, Lucerne and St. Gallen, we examined urban allotment gardeners' perceptions of, motivations for, and approaches to organic gardening practices. Although the study revealed a high degree of interest in organic gardening, the results show that the perceptions and definitions of what constitutes 'organic' vary greatly, and some gardeners who identify themselves as organic gardeners do not always follow organic gardening practice. A further key result is that the decision of whether to garden organically is a combination of the attitude held by the gardener and the culture among neighbours, with city regulations playing a less important role. We conclude by identifying strategies to enable gardeners to easily find information about what organic cultivation means and how to implement organic management practices; and strategies to inform gardeners that organic practices offer a viable alternative to intensive management practices. Through demonstrating the advantages and practical applications of organic gardening management, there is potential for creating a culture for organic gardening in Swiss allotment gardens.

References:

- Bieri, A., 2012, 'Gifte in Schrebergärten und auf Feldern bedrohen Bienenvölker', Tagesanzeiger, 22 April, from <http://www.tagesanzeiger.ch/wissen/natur/Gifte-in-Schrebergaerten-und-auf-Feldern-bedrohen-Bienenvoelker/story/25787050>
- Kretzschmar, R. & Schulin, H. R., 2004, Umgang mit Bodenbelastungen in Familiengärten der Stadt Zürich. Abschlussbericht der Fallstudie des Departements für Umweltnaturwissenschaften, Institut für Terrestrische Ökologie ETH Zürich, WS 2003/04. Institut für Terrestrische Ökologie ITÖ, Fachbereich Bodenchemie und Bodenschutz, ETH Zürich, from <http://e-collection.library.ethz.ch/eserv/eth:27236/eth-27236-01.pdf>
- Perez-Vazquez, A., Anderson, S. & Rogers, A. W., 2005, Assessing benefits from allotments as a component of urban agriculture in England, in Mougeot, L.J.A (ed.), Agropolis: The social, political and environmental dimensions of urban agriculture, pp. 239-266, Earthscan and the IDRC, London.

Project nascent - New opportunities for a sustainable food industry through transformative economic systems

Authors: Christine Lenz, Carl von Ossietzky University, Germany/ Nina Gmeiner, Carl von Ossietzky University, Germany (christine.lenz@uni-oldenburg.de)

Keywords: Transformative Initiatives, Sustainable Enterprises, Empowerment, Sustainable Practices, Food Sovereignty

This poster shows the outline of the research project nascent (Universities of Oldenburg and Munich). Developing a sustainable food industry that enables and supports food sovereignty (Heisteringer 2011) and resilient food production requires emphasis on local food production initiatives. By adapting creatively to rapidly changing environmental conditions, these initiatives reduce the impacts of exogenous disruptions. At the same time, they often no longer fit the traditional classificatory concepts of production and consumption, urban and rural, or evaluations of economic success. In nascent we identify these new concepts of added value (e.g. social entrepreneurship, solidary economic activity (Miller 2010)) and assess their contribution to a great transformation towards sustainability (WBGU 2011). By conducting research with 28 initiatives from the practical working field in the Regions of Oldenburg-Bremen, Freiburg, Berlin-Leipzig and Munich, nascent works with a transdisciplinary approach. The methodology is hands-on, based on workshops with all partners, interviews and visits during their practical work. A typology is being developing based on the surveyed data to help to identify thematic subgroups and describe their transformational potentials. Many of the initial conjectures could be confirmed up to this point of the research project. The new economic forms are highly heterogeneous, but share some common values or ideas, e.g. the aim to develop capabilities (Nussbaum & Sen 1999) and knowledge among the customers, or even prosumers on top of providing goods and services (Antoni-Komar et al. 2012). They rethink urban-rural-relationships and reflected on "economic growth". Also they share a courageous trial and error approach to the development of their initiative or business, often free of fear of loss. This depth of research on the topic is new in Germany. While the assessment of the role of the initiatives for a societal and economic transformation will take until the end of the project in 2018, first findings about transformational mechanisms and potentials will be presented at the conference.

Antoni-Komar, I., Lautermann, C. & Pfriem, R., 2012, 'Unternehmen und Konsumenten in Verantwortungsgemeinschaft jenseits des Konsumismus. Nachhaltigkeit erfordert, das Zusammenwirken zwischen Produzieren und Konsumieren neu zu denken', *zfwu* 13(3), 297-316.

Heisteringer, A., 2011, *Leben in Gärten. Warum urbane Gärten wichtig sind für Ernährungssouveränität, Eigenmacht und Sortenvielfalt*, in C. Müller (ed.), *Urban gardening. Über die Rückkehr der Gärten in die Stadt*, ökom Verlag, München. 305-318.

Miller, E., 2010, *Solidarity economy: Key concepts and issues. Solidarity economy I: Building alternatives for people and planet*. Center for Popular Economics, Amherst, MA.

Nussbaum, M., and Sen, A., 1999, *The quality of life*, Oxford University Press, Oxford.

WBGU – Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen, 2011. *Welt im Wandel: Gesellschaftsvertrag für eine Große Transformation*.

Urban & peri-urban productive landscapes: an advanced landscape design strategy

Authors: Mosè Ricci, Università degli Studi di Trento, Italy/ Emanuele Sommariva, Leibniz University, Germany (emanuele.sommariva@gmail.com)

Keywords: LCA, Urban Agriculture, Urban Design Strategies, Soil Analysis, Site-specific Crop Management

In the world of urbanism, architecture and landscape, new paradigms are currently changing the way people think about or interact with socio-economic trends, technology production, quality of life, self-made practices, and survival strategies (Ricci 2012). Emergent urban markets, rising food and fuel prices, growing dependence on raw material imports and the climate change, threaten long-term sustainability. In this scenario, the scale and pace of contemporary urbanization and ephemeral landscapes of pop-up settlements are challenging the notion of permanence as a basic condition for cities. Landscape Character Assessment (LCA) has become a key framework for EU policies and in recent years serves as a basis for territorial analysis, evaluation and design concept development. Information on distribution, potential and limits on urban open spaces and peri-urban land use management is needed to best sustain the capability and suitability of urban and peri-urban farming practices (UPF). The regeneration of the city in the 21st century aims to the definition of multi-level (inter-territorial, but also multi-local and global-networked) approaches associated with today's socio-spatial challenges. Especially in the metropolitan areas, many potential conflicts are emerging such as land-cover or land-use patterns modifications, environmental/landscape transformation, higher levels of self-sufficiency and ecological resilience required. Many of the most promising ideas in this field are that of the reformulation and reclamation of variable patterns (spectral, textural, morphological, and topological features) related to open spaces as real generators of urban life.

This paper presents a theoretical and methodological framework, understanding how monitoring analysis and design on the risks/potentials of small-scale urban pattern configuration offers an important perspective also for precision agriculture (PA) or site-specific crop management (SSCM) in cities. Urban regeneration, through the „bottom up“ redevelopment of these residual spaces, can represent an attempt to reduce degradation of peri-urban fragile environments and to find environmentally compatible ways of increasing certified local production (Drescher 2000).

Urban gardening near highways: utopia or new way of thinking in Serbia?

Author: Ivana Sentić, University in Novi Sad, Serbia (ivanab@polj.uns.ac.rs)

Keywords: Highway Landscapes, Urban Gardening, Improving Visual Landscape Image

For millennia, mankind has shaped landscapes, particularly through road networks (Navarro & Pereira 2012). Landscape through which highway pass can be particularly valuable, worth of seeing and driving through it. So, inclusion of urban gardens into highway landscape could reflect new values of design, where nature, culture, leisure, and production are present, mutually complementary with a strong involvement of the population.

This research examines the highway landscape that belongs to the city of Novi Sad, utilization of its potential for urban gardening (UG) and improving the visual image of the entire area. Among all, the aim is to study people's awareness regarding to UG. The challenge is even bigger if they are encouraged to think about highway landscapes. Method that has been applied was survey. The questionnaire consisted of three parts. The first part evaluated respondents' state of mind related to urban gardens. In the second part respondents had task to select the most appropriate location for the research purpose. At the end, it was conducted the survey with illustrated character, where respondents were asked to highlight adequate landscape design for the selected location. The results showed that respondents are willing to open themselves to UG, but insufficient knowledge puts them in a position of scepticism, especially towards developing UG in highway areas. However, in the third part of the questionnaire, through the illustrations, higher percentage agreed that adequate design of such sites can be acceptable.

Since UG is quite new in Serbia, it is not strange that people are a bit reserved related to this issue, especially for raising gardens next to highways. But, some of good examples with similar problems can be of help, in Europe: Quinta da Granja Urban Park in Lisbon (Santos et al. 2015), Ville Saint Cloud in France (Rubino 2007), and ÖBB allotment garden, Salzburg; and beyond - Sao Paulo's Urban Garden (Morgan 2014).

References:

- Morgan, H., 2014, 'Sao Paulo's Urban Garden is a Green Paradise in the Center of Brazil's Most Cosmopolitan City', viewed 24 March 2016, from <http://inhabitat.com/sao-paulos-urban-garden-is-a-green-paradise-in-the-center-of-brazils-most-cosmopolitan-city/>
- Navarro, M.L. & Pereira, H.M., 2012, 'Rewilding Abandoned Landscapes', *Ecosystems* 15(6), 900-912
- Rubino, A., 2007, 'The allotment gardens of the Ile de France: a tool for social development', *Journal of Mediterranean Ecology* 8, 67-75
- Santos, A., Branquinho, C., Gonçalves, P. & Santos Reis, M., 2015, Lisbon, Portugal case study city portrait; part of a green surge study on urban green infrastructure planning and governance in 20 European cities. Fundação da Faculdade de Ciências de Lisboa, Portugal, viewed 29 March 2016, from http://greensurge.eu/filer/GREEN_SURGE_Report_of_City_Portraits.pdf

Multilayered Identity of Urban Allotment Gardens. A comparative study within European countries.

Author: Ilona Feklistova, Estonian University of Life Sciences, Estonia (ilona.feklistova@gmail.com)

Keywords: Place Identity, English Allotments, Polish Family Gardens, Danish Garden Colonies

Dacha Urban Allotment Gardens (UAG) are embedded into the landscapes of many European cities, where despite allotments' simplicity they are easily recognised within the urban fabric. They exist beyond standardisation and legal constraints thus facilitating and enhancing personal and communal identity. The aim of this dissertation is to explore the distinctive and common features of UAGs' identity across different European cultures. These results will help us to understand how the process of identification within UAGs is established by their users. This is achieved by researching the functions that users of allotment consider important and the meaning that they attach. The data was collected through personal observation and questionnaires in four European countries - Estonia, Poland, Denmark and UK. These countries were chosen to represent allotments that were established within different economic and social systems. This approach allowed the research of UAG identity on two levels. Firstly, what are the general qualities of allotments taking into account different cultural, historical and geographical contexts and, secondly what are the distinctive characteristics. The results of the interviews were examined using thematic analysis. The findings indicate that the cultural context and historical development affect the functional value of allotments whereas their users share the imaginable identity of allotment. Further studies can explore the relation of function and meaning of allotments in relation to physical setting of it.





Parallel Sessions 2

A2 - FHNW Room 115 -> page 54

Understanding the gardeners: motivations of the Homo Hortensis

Chair: Susan Noori

Urban agriculture in Barcelona: Meanings for transformation

Authors: Laura Calvet-Mir and Hug March, Universitat Oberta de Catalunya, Spain

From Homo Faber to Homo Hortensis: Gardening Practices in the Anthropocene

Author: Astrid Schwarz, ETH Zurich, Switzerland

Informal Allotment gardens in Lisbon: the gardener's perspective

Authors: Filipa Grilo / Paula Gonçalves / Ana Catarina Luz / Cristina Branquinho / Margarida Santos-Reis, all: University of Lisbon, Portugal

Characteristics of appropriation and sense of ownership associated with different urban gardens

Authors: Sandra Costa, Birmingham City University & Centre for the Research of Technology and Agro-Environmental and Biological Sciences, United Kingdom & Portugal / Frederico Meireles Rodrigues, University of Trás-os-Montes and Alto Douro & Centre for the Research of Technology and Agro-Environmental and Biological Sciences, Portugal / Cláudia Andrade, University Institute of Lisbon, Portugal / Gabriel Muiños, University of la Laguna, Spain / Carla Mouro, University Institute of Lisbon, Portugal

Urban garden as space of everyday life: case study of Baštalište garden

Authors: Vladan Djokic / Jelena Ristic Trajkovic / Verica Krstic, all: University of Belgrade, Serbia

B2 - FHNW Room 125 -> page 60

Urban planning instruments for implementing urban gardens and designing neighbourhoods

Chair: Silvio Caputo

Town planning, development patterns and the reduction of private gardens in the suburbia of Cyprus

Author: Byron Ioannou, Frederick University, Cyprus

Environmental Design Solutions to Promote Safety in Urban Gardens

Authors: Sandra Treija, Riga Technical University, Latvia / Alisa Korolova, Riga Technical University, Latvia / Monika Latkowska, Warsaw University of Life Sciences, Poland

The Influence of Community Gardening on the Status of Housing Estates in Budapest

Authors: Adrienne Csizmady, Hungarian Academy of Sciences, Hungary / Zsuzsanna Fácányi, Szent István University Ybl Miklós, Hungary

The Future of Urban Allotment Gardens in Latvian Cities as Reflected in Spatial Development Plans

Authors: Kristīne Āboliņa / Anna Skredele / Andis Zilāns, all: University of Latvia, Latvia

C2 - FHNW Room 134 -> page 64

Enhancing resilience and ecosystem of cities

Chair: Andrzej Mizgajski

Water management & resilience of urban allotment gardens against climate risks

Author: Paulo Brito Luz, Instituto Nacional de Investigação Agrária e Veterinária INIAV, Portugal

The influence of atmospheric particles on the elemental content of vegetables in urban gardens of Sao Paulo, Brazil

Authors: Luís Fernando Amato-Lourenco / Tiana Carla Lopes Moreira / Vanessa Cristina de Oliveira Souza / Fernando Barbosa Junior / Mitiko Saiki / Paulo Hilário Nascimento Saldiva / Thais Mauad, all: University of Sao Paulo & National Institute for Integrated Analysis of Environmental Risk & Nuclear and Energy Research Institute, Brazil

Anthropogenic flows of matter and energy through allotment gardens as a reflection of the method of management

Authors: Lidia Poniży / Marta Węglewska / Karolina Rzańska, all: Adam Mickiewicz University, Poland

Ecosystem goods and species pools: biodiversity maintenance through collective urban gardening

Authors: Ari Jokinen, University of Tampere, Finland / Pertti Ranta, University of Helsinki, Finland/ Ville Viljanen, University of Tampere, Finland

Enhancing ecosystem services in cities through multifunctional rooftop gardens - Insights from a co-designed pilot project in Barcelona, Spain

Authors: Johannes Langemeyer, Autonomous University of Barcelona, Spain / Lidia Calvo, EixVerd, Spain / Ana Isabel Abellán García, independent consultant, Spain / Francesc Baró, Autonomous University of Barcelona, Spain / Mònica Batalla, Polytechnic University of Catalonia, Spain / Martí Boleda i Torrent, Pompeu Fabra University, Spain / Vidal Guerrero, EixVerd, Spain / Esther Sanyé-Mengual, Autonomous University of Barcelona, Spain / Montserrat Bosch González, Polytechnic University of Catalonia, Spain

D2 (see next page)

Quality of soils, groundwater and vegetables in urban gardens versus environmental pressures

Chairs: Béatrice Bechet & Salvatore Engel di Mauro

Strategies for reducing heavy metal accumulation in urban-grown food

Authors: Giuseppina Pennisi / Francesco Orsini / Livia Vittori Antisari / Gilmo Vianello / Giorgio Gianquinto, all: University of Bologna, Italy

Evaluation of soil, groundwater and vegetable quality in Lisbon urban allotment gardens

Authors: Teresa E. Leitão & Maria José Henriques, National Laboratory for Civil Engineering, Portugal / Maria do Rosário Cameira & Miguel Mourato & Luísa Louro Martins, University of Lisbon, Portugal / Hugo D. Costa & João Miguel Pacheco, former MSc from University of Lisboa, Portugal

Spatial distribution of trace elements in urban allotment gardens: influence of and on land-use change

Authors: Cécile le Guern, Regional geological survey Pays de la Loire, France / Liliane Jean-Soro / Béatrice Bechet, both: The French institute of science and technology for transport, development and networks & Federative Research Institute on Science and Technology of the city, France

An exploration of potential airborne contamination of urban garden in Rome, Italy

Author: Salvatore Engel-Di Mauro, Department of Geography, State University of New York at New Paltz, United States

Variability transfer of potential toxic elements transfer in vegetables grown on urban allotment gardens - A case study from the West of Scotland

Authors: Alaba Agboola & Andrew Hursthouse, University of the West of Scotland, United Kingdom / Simon Cuthbert, University of the West of Scotland, United Kingdom / Roslyn McIntosh, Inverclyde Council, United Kingdom

Understanding the gardeners: motivations of the Homo Hortensis

Chair: Susan Noori

Urban agriculture in Barcelona: Meanings for transformation

Authors: Laura Calvet-Mir, Universitat Oberta de Catalunya, Spain / Hug March, Universitat Oberta de Catalunya, Spain (lcalvetmir@gmail.com)

Keywords: Agroecology, Smart Agriculture, Social Network Analysis, Urban Agriculture, Urban Challenges

One of the most important urban challenges in the 21st century is achieving more socially inclusive, healthy and environmentally sustainable cities in an economically turbulent context. Among the different urban strategies to meet these challenges urban agriculture has recently received major attention. However, urban agriculture should not be thought as a monolithic category but one that has diverse meanings and that takes different forms and competing visions, ranging from initiatives devoted to food production as a leisure activity to politicized ones reclaiming the right to the city (Camps-Calvet et al. 2016). This research focuses on the Network of Urban Agriculture created in 2014 in the city of Barcelona, which includes most of city actors related to urban agriculture, with the aim to assess the structure of the network and dig into the concept of urban agriculture held by the network. We conducted fieldwork from 2014 to 2016 combining qualitative and quantitative methods, including surveys (n=29), semi-structured interviews (n=15), and participant observation in the meetings and events of the Network of Urban Agriculture. We analyzed data following social network analysis (Borgatti et al. 2009) and no predefined coding (Newing 2011). Our results show that a few number of actors have a central role both in articulating the network and in acting as brokers with the rest of agents. Interestingly actors hold different meanings of what is urban agriculture that revolve around two radically different visions of urban agriculture: smart agriculture (a technocratic approach pointed to food production) vs. agroecology (a multi-dimensional framework that articulates the productive, social and political levels). We discuss the potentialities and limits of each of these visions in terms of their transformative potential to enable a more sustainable, healthy and inclusive urban future.

References:

Borgatti S.P., Mehra A., Brass D.J., & Labianca G. 2009, 'Network Analysis in the Social Sciences', *Science* 323(5916), 892-895.

Camps-Calvet M., Langemeyer J., Calvet-Mir L. & Gómez-Baggethun E. 2016, Ecosystem services provided by urban gardens in Barcelona, Spain: Towards broader recognition in land use policy, *Environmental Science and Policy* (in press).

Newing H. 2011, *Conducting research in conservation. Social science methods and practice*, Routledge, London.

From Homo Faber to Homo Hortensis: Gardening Practices in the Anthropocene

Author: Astrid Schwarz, ETH Zurich, Switzerland (astrid.schwarz@phil.gess.ethz.ch)

Keywords: Philosophy of Technology, Gardening Practices, Socio-technical Design, Care, Mode of Existence

My main thesis is that concepts and practices being afforded in the urban gardening movement provide a blueprint for the conceptualisation of actions to respond to the societal as well as philosophical requirements of climate change. Gardening activities are likewise identified with material and social techniques, with values like care and esteem, beauty and benefit, and of course with questions of lifestyle, of comfort and design. All of these seem to be useful to reflect on practices of maintenance and sustainability and to develop “options of adaption and mitigation” for our future societies, altogether commonplaces in the climate change debate. Similarly, the label ‘Anthropocene’, being provided by natural scientists to describe fundamental changes in the biochemical cycles of the planet, may be used to introduce questions about the modes of human existence into a debate being dominated by political deliberations about an adequate interpretation of complex scientific models. Instead, a gardening-practices vantage point could help to shift attention to already available management techniques and concepts in the present (or known from the past). It helps to focus more on considerations about epistemic and normative capacities at hand being implemented to a large extent, or at least being debated, in many societies. Thus, putting my main thesis in another way, local gardening practices and their forms of life provide techniques and values that may help to manage global problems in the Anthropocene. This is conceptualized in a transformation from homo faber to a homo hortensis, substantiated by discussing existing material practices, types of communalities, as well as shared values that meet with what has been raised as engagement with nature, and as matters of concern about the human condition.

Informal allotment gardens in Lisbon: the gardener's perspective

Authors: Filipa Grilo, University of Lisbon, Portugal/ Paula Gonçalves, University of Lisbon, Portugal / Ana Luz, University of Lisbon, Portugal / Cristina Branquinho, University of Lisbon, Portugal / Margarida Santos-Reis, University of Lisbon, Portugal (afgrilo@fc.ul.pt)

Keywords: Allotment Gardens, Agriculture, Green Infrastructures, Human Well-being, Urban Green Spaces

Due to the rapid growth of cities worldwide, green spaces – including informal allotment gardens – have an important role in delivering ecosystem services providing ultimately well-being for the local population. In recent years, the municipality of Lisbon has developed a strategy for urban agriculture through the creation of horticultural parks within the city. However, most of the gardening activities still occur spontaneously (not controlled by the municipality) and informally in derelict land. To consider the importance of these spaces in future planning and decision-making by the municipality, we assessed the motivation, benefits and challenges faced by gardeners who use these allotment gardens. We conducted semi-structured interviews with gardeners in 60 informal allotment gardens in Lisbon. Questions focused on the gardeners' profile, their motivations for cultivating, and the challenges faced during cultivation. The interviewees consisted mostly of elderly, retired men, previously acquainted with agricultural activities. The great majority cultivated crops for leisure and highlighted the importance of being outdoors, not referring the potential economic benefits from such endeavours. Still, more than 60% of the interviewees believed that they do save money with this activity. The most recognised challenge, due to the climatic features of the city, was related with water shortage, preventing gardening activities during hot months. The importance of gardening activities for elderly gardeners was also highlighted, as an activity that can help to provide physical, psychological, and social well-being. This study emphasized the importance of these spaces for the well-being of these gardeners, suggesting the need to regulate these spaces to maintain active this sector of elderly gardeners, while providing better conditions to cultivate all year round and possibly increase Lisbon's urban green infrastructure.

Characteristics of appropriation and sense of ownership associated with different urban gardens

Authors: Sandra Costa, Birmingham City University & Centre for the Research of Technology and Agro-Environmental and Biological Sciences, United Kingdom & Portugal/ Frederico Meireles Rodrigues, University of Trás-os-Montes and Alto Douro & Centre for the Research of Technology and Agro-Environmental and Biological Sciences, Portugal/ Cláudia Andrade, University Institute of Lisbon, Portugal/ Gabriel Muiños, University of la Laguna, Spain/ Carla Mouro, University Institute of Lisbon, Portugal (sandra.costa@bcu.ac.uk)

Keywords: Socio-spatial Configurations, Urban Growing, Ownership, Private-Public

This paper explores a range of factors associated with appropriation and sense of ownership prevailing in a set of urban growing spaces. Data was collected by the means of personal interviews and spatial surveys in urban gardens with different socio-spatial characteristics, which included conventional allotment gardens, allotment parks and community gardens, located in the UK, Portugal and Spain. The paper looks at the individual, social and spatial dynamics associated with boundaries, gardeners' uses, attachment, territorial and place making behaviours and how these are related to space appropriation, sense of ownership and attitudes towards others (e.g. other gardeners and passers-by). The research shows that different socio-spatial configurations produce distinct urban experiences and even though gardening is positioned at the core of the experience it is far from being an exclusive activity. The research emphasises how public and private values and dimensions collide or merge. Spatial configurations that provide safety and clear separate public and private domains favour the expression of territoriality and place making and of place attachment. With this research we begin to consider new paradigms that move towards a coexistence of better public-private relationships and the sharing of multifunctional spaces.

References:

- Blomley, N., 2007, 'The Borrowed View: Privacy, Propriety, and the Entanglements of Property', *Law & Social Inquiry* 30(4), 617-661.
- Brown, G., Lawrence, T., & Robinson, S. L., 2005, Territoriality in organizations, *Academy of Management Review* 30, 577-595.
- Noori, S., & Benson, M., 2016, Urban Allotment Garden. A case for place-making, in S. Bell, R. Fox-Kämper, N. Keshavarz, M. Benson, S. Caputo, S. Noori, & A. Voigt (eds.), *Urban Allotment Gardens in Europe*, pp. 291-319, Routledge, New York.
- Hardman, M. & Larkham, P., 2014, *Informal Urban Agriculture: The Secret Lives of Guerrilla Gardeners*, Springer, London.

Urban garden as space of everyday life: case study of Baštalište garden

Authors: Vladan Djokic, University of Belgrade, Serbia / Jelena Ristic Trajkovic, University of Belgrade, Serbia / Verica Krstic, University of Belgrade, Serbia (arch.jelena.ristic@gmail.com)

Keywords: Belgrade, Culture, Everyday Practice, Nature, Sustainable Environment

This paper deals with the urban garden as the space of everyday life. It studies the importance of urban gardens as a living environment, where human presence and human actions are a central theme. The relevance of research topics reflects the need to reconsider existing and explore new forms of relationships between users and nature in accordance with current environmental and climate issues, as well as with the changing position of nature in contemporary culture. The study explores everyday gardening practice (the activities, behaviour and motivations of users), as well as the patterns they create in lived space, on the case study of “Baštalište” urban garden in Belgrade.

The results of this study are descriptions of these practices and the plurality of both significant and ordinary links between them. Thus the paper contributes to the research of urban gardens in the specific local context of Serbia and points out the importance of the research of local context, but also, in the wider sense, the paper contributes to the research of spatial aspects of urban gardens that affect relationships between user, built environment, culture and nature in general. This paper emphasizes the production of a new socio-ecological world and participatory structure as crucial aspects of gardening in the city. Ultimately, the research shows that the concept of urban garden practice presupposes the establishment of a sensitive relation to the specific climatic and ecological, social and cultural context.

