URBAN ALLOTMENT GARDENS

COST Action TU1201

Urban Allotment Gardens in European Cities
Future, Challenges and Lessons Learned

Birmingham Joint MC and WG Meeting
September 3 - 5, 2015

Event Report

BIRMINGHAM CITY University

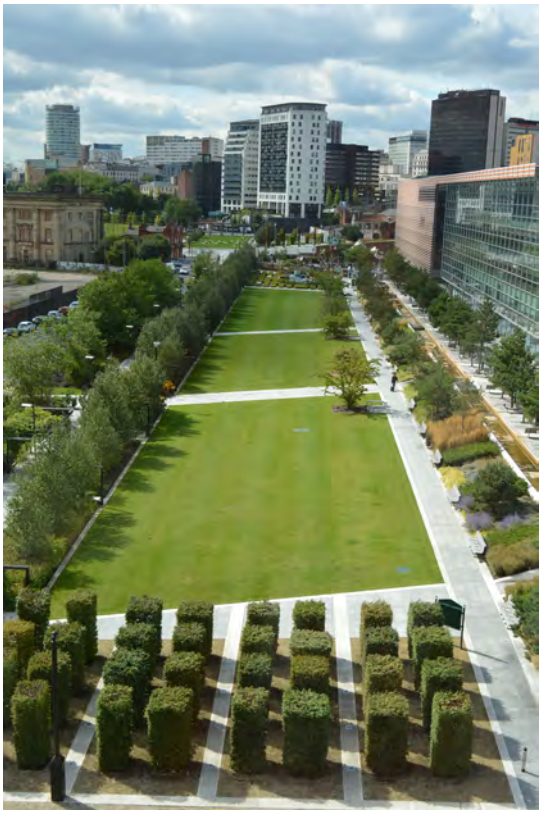
Curzon Building
Cardigan Street
Birmingham
B4 7BD
United Kingdom

EUROPEAN SCIENCE FOUNDATION

cost EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY

ILS – Institut für Landes- und Stadtentwicklungsforschung

URBAN ALLOTMENT GARDENS



Editors:

Nazila Keshavarz

Runrid Fox-Kämper

Date of Publication: September 2015

Abbreviations:

AG	Allotment Garden
CG	Core Group
COST	European Cooperation in Science and Technology
MC	Management Committee
STSM	Short-term Scientific Mission
WG	Working Group

URBAN ALLOTMENT GARDENS

Program of Event

Thursday, September 3

09:00 - 09:30 Registration and morning coffee
09:30 - 11:30 Opening session

Moderator Richard Coles, School of Architecture, Birmingham City University

Welcome Addresses

Tim Wall, Associate Dean for Reserach, Birmingham City University
Mike Hinton, Deputy Parks Manager, Birmingham City Council

Introduction

Runrid Fox-Kämper, Chair of COST Action TU1201

Keynote

Pathways to Policies, Andre Viljoen, University of Brighton, UK

National Presentations

Eating, Growing and Involving – The Power of Food to Bring Communities Together. Examples from a Birmingham Perspective, Chris Blythe, Growing Birmingham

Edible Cities: Incredible Edible Todmorden, Pam Warhurst, founder of Incredible Edible Todmorden

13:30 - 14:30 Lunch

14:30 - 15:00 Short Plenary Session

15:00 - 18:00 Four parallel Working Group meeting

Friday, September 4

09:00 - 12:00 Work in 4 Parallel Working Groups (continue)

12:00 - 12:45 Summary and Preparation of World Café in Working Groups

12:45 - 13:45 Lunch

13:45 - 15:15 World Café

15:15 - 15:45 Coffee break

15:45- 16:45 Closing Plenary Session, conclusions and announcement of the next event

16:45 -18:00 MC Members Meeting

Saturday, September 5

09:00 - 14:00 Field Trip

Contents **Page**

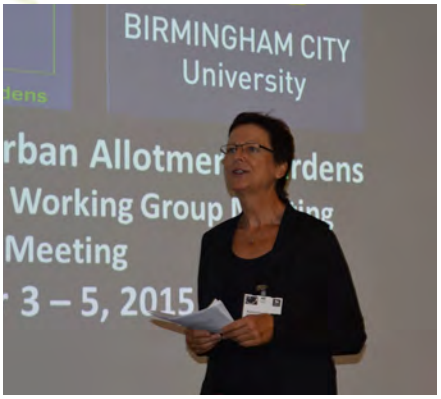
Professor Tim Wall (R), Associate Dean for Research and Richard Coles, Professor of Urban Landscape and Environmental Interaction, Birmingham City University

Mike Hinton (R), Deputy Parks Manager, Birmingham City Council

Welcome Addresses

The event started with a prelude by the moderator and host Professor Richard Coles who organised the event with his team, then the first welcome address was delivered by Professor Tim Wall, Associate Dean for Research, Birmingham City University. He described his own interest in urban gardening as a long-term plot-holder in Birmingham. He encouraged participants to look at diverse range of urban gardens across the city during their stay and think about new research opportunities that the city can offer. Mike Hinton, on behalf of Birmingham City Council was the next speaker who welcomed the attendees and pointed out important facts and figures about the city and its allotment gardens:

- Birmingham City encompasses Europe‘s largest public library and it is second largest city in the UK with more than one million inhabitants.
- The city has the largest provision of allotments of any local authority in the UK with 114 sites and nearly 7,500 plots. Nearly 600 parks and public open space and more than 200 play areas exist as part of the city‘s green infrastructure.
- At present 82% of allotment plots are let to 6,200 plot-holders.
- Birmingham in Bloom is a gardening competition for allotment gardeners and the city was awarded Gold and Category Winner in the Large City Category by the Royal Horticultural Society in Bloom Awards 2012.
- Birmingham is the biggest provider of allotments in the country, however City Council devolved majority of day to day management to gardening associations made up of tenants from sites to undertake:
    - o Plot letting
    - o Rent collection
    - o Monitoring of gardening management
    - o Minor repairs
    - o Plot cultivation checks
- that is because of the reduction of staffs in Landscape Department of the City Council. There used to be three full time employees comparing to present one employee that serves three days per week.
- In 2011 service was subsidised by 83% and a full cost recovery is expected for 2016/17 and annual cost saving is estimated £300,000 for the City Council.
- Small allotment sites buddied up with large sites.
- Tenants level is now back to where they were before rent increases (£28-£89) per annum for standard size plots (201-400 square yards) (168-334 sqm).
- Sites are encouraged to take new tenants.
- Increase in funding for reinvestment in sites is envisaged through events, open days, external grants.
- Green Living Space Plan which is a part of the Green Commission’s Green Vision for Birmingham. The plan adopts a comprehensive approach for the city’s economy, spatial planning, its health care and its low carbon future.



Runrid Fox-Kämper, Chair of the Action

Introduction

Good morning to you all!

My first thanks go to Richard and to Tim Wall who welcomed us on behalf of BCU with their warm welcome and for enabling this meeting in this phantastic Curzon building. It will be a pleasure to meet in these rooms.

Also I would like to thank Mike Hinton for his welcoming words in his role as Deputy Parks Manager at Birmingham City Council. I am sure that in these three days of meeting and fieldtrip we will get great impressions from this wonderful town of Birmingham.

I also want to express my sincere gratitude to the organisers of this event, the team round Sandra and Richard and all the others from BCU. Although, I must say that I am still impressed how you Sandra managed all this as I had the impression that most of the time you stayed in Dubai. Thanks a lot for all you efforts!

Let me have some words about our exciting programme although I am in the comfortable position this time of having Richard as moderator for this morning here. I am sure he will guide you through his programme perfectly and better than I could do.

Those who attended recent meetings might have expected some further national reports from participating countries. But this time we changed the programme structure. We had so many ideas what could be presented and reported from the UK – the motherland of allotments – that we decided to give preference to deeper insights into the situation here in the UK from different perspectives. And so, we are going to get an overview about the ways urban gardening can be included in urban development and policies, we will hear about the power of food from the perspective of the city of Birmingham, about the Edible city concept, and about ways to design for food growing.

I am also glad in the working groups we are going to have some very exciting presentations that hopefully will inspire us for our last year which is more and more dedicated to dissemination tasks such as factsheets.

Some words about dissemination: Most of you are directly involved in the process of book writing (I counted not less than 80 authors and contributors!) and that is why you will have noticed that the draft of the book is already at the publisher. To my opinion this is a great achievement of the Action and its participants who worked hard to deliver chapters on time.

But of course we have to acknowledge and praise the efforts of Simon Bell, who never got tired chasing us and had a job revising and language correcting the last draft. I have a vision of Simon being closed up in an Estonian datcha correcting chapter by chapter for a fortnight from dusk till dawn.

So we can be very optimistic that the book will be ready on time next year. Further on the work on the special issue has started and this meeting is dedicated to the development of factsheets for the broad public. I think these are very tangible results of which we can be proud.

But talking about achievements: For me who applied for this project about four years ago together with Nazila it still is a wonder, how this network of scientists and stakeholders who barely or not knew each other before and of which most of you never had co-worked before, was built up to the position and power that it has got now. It is you who contributed to it and I think that you all have earned applause for this.

And this network is so strong that we are co-working very much according to COST policies: We are a very inclusive network with many members from so-called inclusive target countries. You may ask yourself what inclusive target countries are. These by EU definition are those countries with unequal access to knowledge infrastructures, funding, and resource distribution (In our case: Cyprus, Czech Republic, Estonia, Croatia, Lithuania, Latvia, Malta, Poland, Slovenia, Slovakia, Macedonia, Serbia, Turkey, Portugal and Luxemburg). We encourage a lot of young and early stage researchers to join us and built up career on our network by attending, going for an STSM mission, applying for our three training schools and we are a network with gender aspects perfectly balanced.

So we could lean back and enjoy a bit networking for the last year.

But this is not my idea of it; I have a bit more sophisticated approach: I am still eager to increase the number of peer-reviewed articles written by members of this network as joined work. Hopefully the special issue for LAND will support this. I also hope that before the end of the Action we are going to have a considerable number of factsheets translated in many languages by you.

And, as the final year of the Action is approaching rapidly and we should start to think about the time after the Action has finished. Will there be joint projects such as proposals for Horizon 2020 that members of this network apply for? Will you go on co-working on publications? And which questions are left open? I would like to encourage you all to discuss this in your WGs and during this meeting.
I want to give you one example.

The perspective from which I look at urban development may too much Germany-angled and I apologize for this if you feel this angle is too narrow. But I have the perception that land-use conflicts in many European cities are increasing more and more. Population world-wide is increasing and concentrating in cities. In Europe where on the whole population is in stagnation, many regions are facing extreme growth, mainly triggered by in-migration from other European regions or from outside while others are shrinking.

Late demographic forecasts until 2030 in Germany were calculated on the base of 100,000 or in the most optimistic case 200,000 in-migrants, with the higher figure being regarded as unlikely until 2010. 200,000! But reality shows other numbers. Since 2011, this figure has been constantly excelled, for instance with round 450,000 in-migrants only in 2013. For 2015 800,000 refugees are expected to come to Germany.

Impacts of this still are unpredictable but we can assume that migrants will exacerbate the urban-rural divide with cities experiencing more pressure on

available land e.g. for housing estates or else. At the same time the demand for quality in the urban environment will also increase. It can be questioned how cities can reduce their carbon footprint despite growth.

Perhaps we have to rethink urban space on different scales. Perhaps it will become more important to protect existing urban green space and to stress the benefits of urban gardening for integration, for ecological issues and else. Perhaps the potential within cities for feeding the people needs to be explored more.

There are many open questions in this respect. We need to examine – and this is just one example - , how urban gardening can be integrated into buildings, how it can be inserted in existing housing stock and how to produce foot and save resources at the same time and save o on, and so on. To my opinion there is a lot of stuff to think about for future co-working and I hope you seize some of these suggestions.

I wish you a wonderful meeting, fruitful exchanges in WG´s and in the break, an exciting fieldtrip on Saturday. Thank you.

Runrid Fox-Kämper
Chair of COST Action Urban Allotment Gardens in European Cities

PATHWAYS TO POLICIES: FROM SITE TO CITY, THE FUTURE ROLE FOR PRODUCTIVE URBAN LANDSCAPES WITHIN CITIES

Andre Viljoen, University of Brighton, College of Arts and Humanities, School of Arts, Design and Media
Bohn & Viljoen Architects

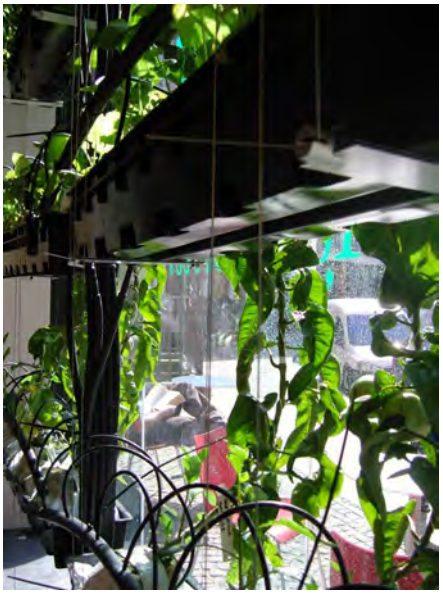
Today it is possible to see allotment gardens as part of an expanding spectrum of urban food growing practices that cover a range of scales and aims, together constituting an emerging urban typology defined as, "Productive Urban Landscapes". Collaborations across this spectrum of practices have the potential to be mutually beneficial, while furthermore making the case that, productive urban landscapes should be understood as an essential element of a sustainable urban infrastructure.

Urban Agriculture : Essential Infrastructure & Ecological Intensification

Urban Agriculture: allotments a personal and seasonal productive urban landscape

ALLOTMENTS AND PRODUCTIVE URBAN LANDSCAPES

Drawing on the on-going work of the UK Arts and Humanities Research Council supported Urban Transformations Network: Pathways from Practice to Policy, and design research led since the late 1990ies by Andre Viljoen and Katrin Bohn we can compare the long tradition of allotment gardening in Europe to the more recent phenomena of community and commercially led urban food growing, now commonly referred to as "urban agriculture". Within the European context, iconic images from post 1989 Cuba, showing extensive and highly productive "organoponicos", commercial market gardens, inspired a generation of new urban farmers. While the context for the re-emergence of urban agriculture in Cuba was crisis, due to the collapse of the Soviet Union and consequent food shortages, the evident environmental and urban benefits of such sites, capable of recycling waste locally and providing fresh and healthy foods, made a powerful case for the introduction of such spaces into all cities. Bohn & Viljoen's approach to this was to research and evaluate the qualitative urban and quantifiable environmental benefits of such spaces, leading to their definition of the Continuous Productive Urban Landscapes (CPULs) concept advocating the coherent design and integration of food productive spaces into cities. Set within a wider network of open urban spaces the CPUL concept accommodates natural and circulation corridors. A 2010 Policy Report by the United Nations University Institute for Advanced Studies on the Convention for Biological Diversity at City Level, notes: "….Linked to this idea is the concept of Continuous Productive Urban Landscapes (CPULs), which represent a powerful urban design instrument for achieving local sustainability while reducing cities' ecological footprints." (United Nations University Institute for Advanced Studies. 2010. Cities, Biodiversity and Governance: Perspectives and Challenges of the Implementation of the Convention on Biological Diversity at the



The Urban Agriculture Curtain
London Yields Exhibition, The Building Centre, London, 2009

The Growing Balcony
Hampton Court RHS Garden Festival, London, 2009

City Level: Policy Report. UNUIAS: Yokohama. Pp 31-32.)

While the design and theoretical case for the reintegration of urban agriculture in to cities was being made, artists, activists and designers all played a significant role in communicating the benefits and positive qualities associated with urban food growing, and their work was significant in communicating these multiple benefits to a new audience. For some years allotment gardens and their advocates, who already understood the benefits of such spaces, co-existed alongside, but separate from, the urban agriculture movement. It is now exciting to see how within this COST Action and the Urban Transformations Network bridges are being

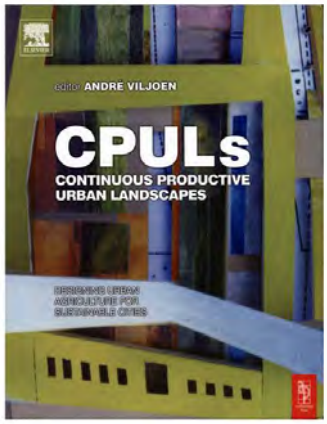
Continuous
Productive
Urban
Landscape [CPUL]

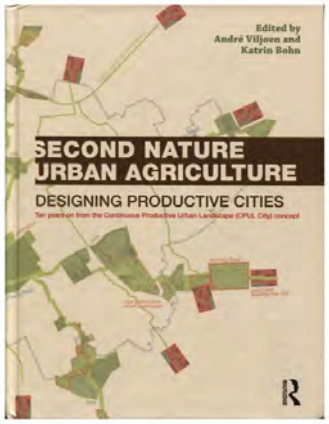
[C] connects open space:
parcels of inner-urban open land,
inner-urban land to a new infrastructure,
inner-urban land to the rural land

[P] uses open space:
through placing Urban Agriculture environmentally,
economically and
socially productive

[U] happens 'inside':
the greenbelt stays green,
greenfield sites stay green,
brownfield sites become green

[L] is landscape:
with spatial and visual qualities of the rural and the urban

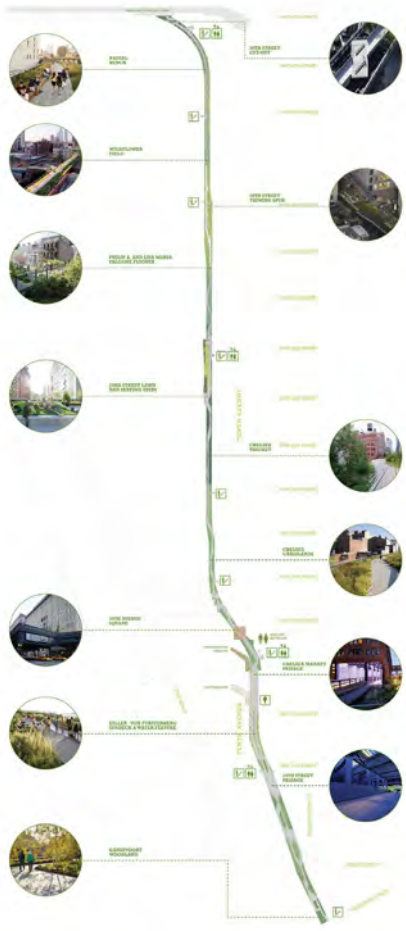




built between these multiple and diverse urban food growing practitioners. There is great potential if social, environmental and urban design goals from all urban food growers can be brought together into a unified concept and movement.

Alongside the ever expanding number of new urban agriculture initiatives, city authorities have started to explore how and if productive and multi-functional urban landscape strategies can work in their favour. It is our impression that at this point in time “practice is outstripping policy”. It was this observation that led to the establishment of the AHRC Urban Transformations Network.

The network’s website (http://arts.brighton.ac.uk/projects/utppp) is developing as a repository for exemplary and pioneering individual urban agriculture projects, many of which include allotment type spaces, as well as highly innovative new social and urban models that address the needs of local residents while also



Growing a CPUL City High Line New York

making visible, literally and metaphorically, how productive urban landscapes work. The individual projects presented also describe a spectrum of modes of delivery with different weightings given to top down and bottom up leadership, but all demonstrate the benefits arising from a meaningful working relationship between these two poles.

When reviewing developments in European and North American cities we can see that policy is beginning to be developed to support the integration of productive urban landscapes, for example Berlin and Birmingham specifically refer to this typology in their open space plans. Looking elsewhere we can see new spatial plans in Detroit and Lisbon that closely follow the CPUL concept and it has been explicitly referenced by authors in relation to plans for the new Dutch city of Almere and further afield in the city of Bobo-Dioulasso, Burkina Faso.

As regards developing policy in support of urban agriculture, at this point in time Paris leads the way in Europe and North America, with a well-orchestrated programme to support the development of new food growing initiatives, alongside ambitious implementation targets.

In this highly dynamic situation there is much scope for optimism, but it is also the case that innovative urban agriculture projects and productive urban landscape initiatives are far from the norm. These emerging projects have much to learn

CPUL Context: urban agriculture, advocacy, design + culture

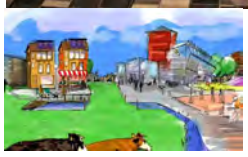
CPUL Background: The Urban Food System

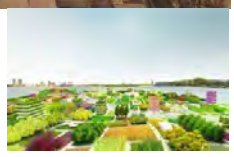
U+D + infrastructural and/or system projects - such as CPUL - need parallel top-down and bottom-up initiative(s)

Vis + qualities of urban agriculture need visualising – drawn and built - to influence decision makers and raise public desire

IUC + an Inventory of Urban Capacity is necessary, esp. of spatial, stakeholder and managerial capacities

R + constant research, development and dissemination will consolidate the CPUL concept





Growing a CPUL City
Agromere, Almere Osterwold

practice is outstripping policy in Europe

LONDON, East Hale Allotment Haringey, Brockwell Park Surgery

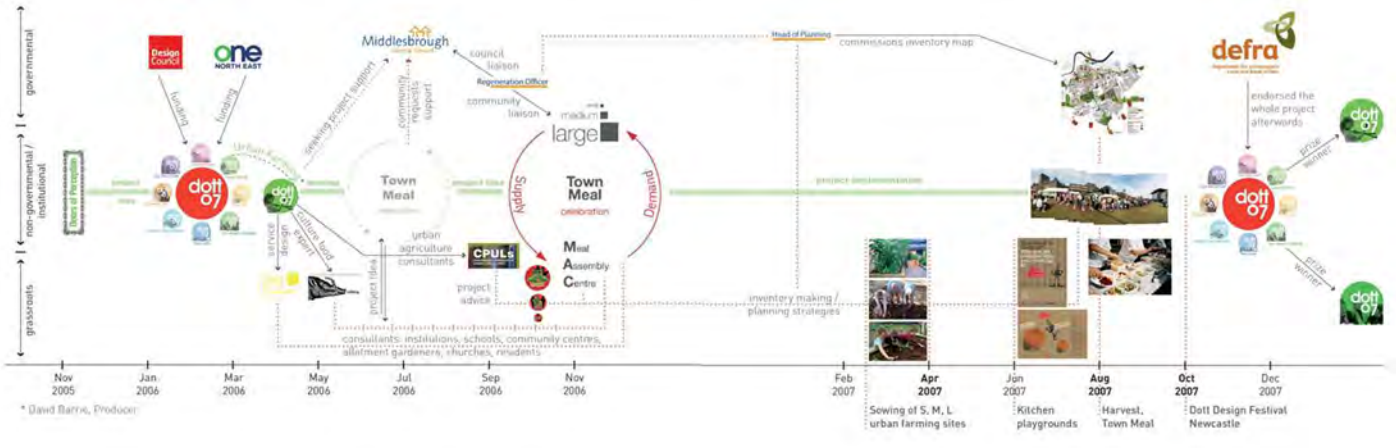
BERLIN, Prinzessinnengarten

from the allotment garden movement, with respect to building their own capacity and claiming their right to urban space. But working together urban agriculture and the allotment movement have the capacity to produce cities that are more resilient sustainable, equitable and enjoyable! There is a long way to go…..

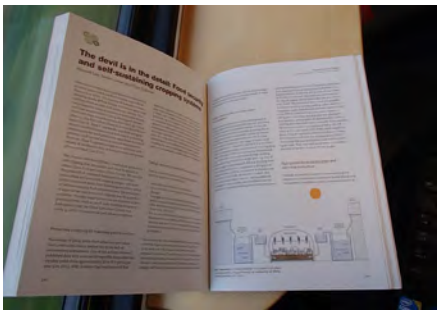
HERE ARE SOME OF THE EMERGING QUESTIONS:

- Will allotment holders and associations benefit from joining forces with other urban food growers?
- Do we need a European wide working group for small scale agriculture?
- If cities cannot collect the evidence / data to make the case for urban agriculture who can? Can we?
- What needs to be done so that Productive Urban Landscapes will be understood as an element of essential green infrastructure?

But policy is emerging



For productive urban landscapes, practice is outstripping policy
Diagram showing processes and interconnections established in order to realise the Middlesbrough Urban Farming Project, commissioned by the UK Design Council in 2006, realised in 2007. Bohn&Viljoen Architects worked on this project with Debra Solomon. Image Bohn&Viljoen Architects and Nishat Awan (FG Stadt & Ernährung TU Berlin 2012). Urban Transformations Pathways from Practice to Policy, UK Arts and Humanities Research Council Network
http://arts.brighton.ac.uk/projects/utppp



Participants Projects: Dr. Howard Lee, HadLOW CARBON Community, Maid-stone

- Who needs to listen (elected representatives?)
- How do we get them to listen?

FOR FURTHER INFORMATION READERS ARE DIRECTED TO:

http://arts.brighton.ac.uk/projects/utppp: website for the UK Arts and Humanities Research Council supported Urban Transformations Network: Pathways from practice to policy. An international network of practitioners and academics exploring how policy impacts on the development of productive urban landscapes and how policy may be developed to support this development.

Book: Second Nature Urban Agriculture: Designing productive cities. 2014 Routledge. Editors A. Viljoen, & K. Bohn.

Participants Projects: Prof. Doina Petrescu, Agrocité Paris

Participants Projects: Craig Verzone, Parc agro-urbain de Bernex st Configon, Geneva

Participants Projects: URBANIAHOEVE / Debra Solomon, and Mariska van den Berg Amsterdam, Rotterdam & Den Haag.

Participants Projects: Andre Viljoen Edible Campus Brighton

URBAN ALLOTMENT GARDENS

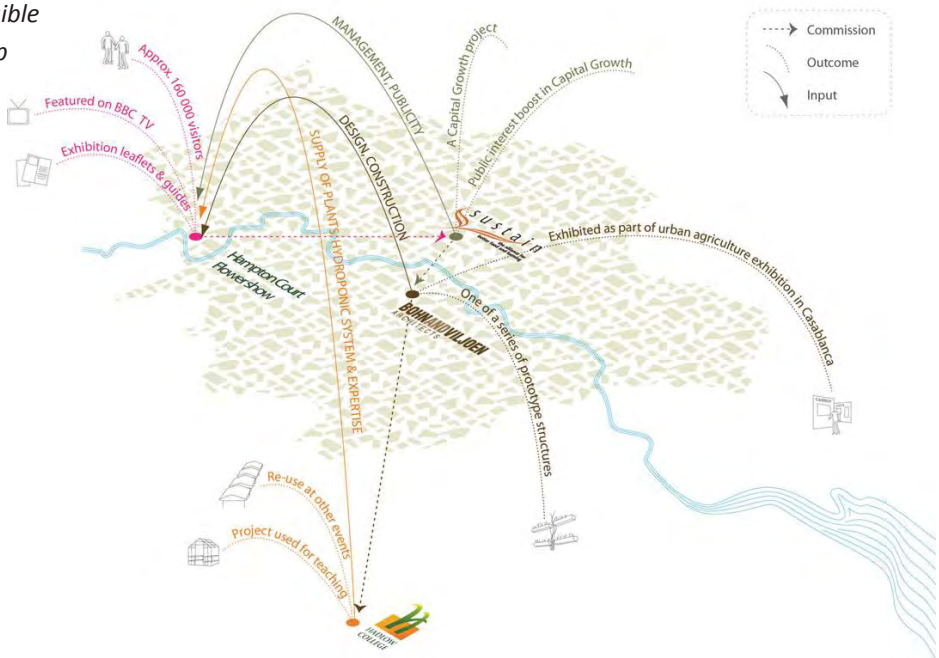
Participants Projects: Prof. Katrin Bohn Spiel/Feld Marzahn, Berlin

POLICY PERSPECTIVES

Clare Devereux (UK) Food Matters Partnership / UK Sustainable Food Cities Network.

EU COST Action "Urban Agriculture Europe" and from an activist perspective,
Dr. Chiara Tornaghi to Coventry University, Centre for Agroecology, Water and Resilience
Prof. Han Wiskerke, Professor of Rural Sociology and Head of the Rural Sociology Group at the University of Wageningen (Netherlands).

The aim of our website is to invite participation from as wide a field as possible
http://arts.brighton.ac.uk/projects/utppp



EDIBLE CITIES: INCREDIBLE EDIBLE TODMORDEN

Pam Warhurst, Founder of Incredible Edible Todmorden

Summary

Incredible Edible is a movement of communities across the UK and beyond using a focus on local food to reconnect people to their environment, their spaces and their own potential to build a kinder world.

The model is simple, based upon three aspects of human experience, community, learning and business and is defined through actions not words.

Working at a locality basis, village, town, borough, whatever a community considers home, the model places a focus on local food at the heart of community spaces, peer to peer as well as formal learning, and support for local businesses.

It encourages people to just get on and make a difference in their settlement through what they buy, what and where they plant, and what new skills can be learned or passed on.

It is not prescriptive, but provides a framework for joined up local actions around food.

Its impact has been considerable. 106 communities across the UK engaged. Policy impact across health, public realm, planning and cohesion to name but a few, Edible green routes, more vibrant market, edible hospital sites as well as food grown across the public realm.

URBAN ALLOTMENT GARDENS

LEARNING

How to do it...

URBAN ALLOTMENT GARDENS

BUSINESS

Local jobs & sticky money...

The recent **European Union Leonardo Project** on the local impact of the IET project established:

- **96%** *of local residents like the growing of food in public spaces*
- **67%** *of local residents collect food and herbs from these public spaces*
- **97%** *local residents say they buy more local food today as compared to five years ago*
- **57%** *of local residents have begun to grow their own food following the example of IET*

(Source: Leonardo IET Project, 2013: Sample of 100 local residents)

PORCUS
WWW.PORCUS.COM
PORCUSPEOPLE

FABULOUS FREERANGE RARE BREED PORK OUTDOOR REARED ON OUR HILLTOP FARM IN TODMORDEN YORKSHIRE

Vegetable tourism

An edible neighbourhood plan?

IncredibleAquaGarden

incredible farm

URBAN ALLOTMENT GARDENS

Incredible edible: Guerrilla gardeners are planting veg for the masses in West Yorkshire

VIEW GALLERY

ws.bbc.co.uk/local/bradford/hi/people_and_places/nature/newsid_8270000/8270668.stm

BBC Sign in News Sport Weather iPlayer TV Radio

BRADFORD & WEST YORKSHIRE

BBC Local
Bradford
Things to do
People & Places
Nature & Outdoors
History
Religion & Ethics
Arts & Culture
BBC Introducing
TV & Radio

Local BBC Sites
News
Sport
Weather
Travel

Neighbouring Sites
Derby
Lancashire

Page last updated at 11:09 GMT, Wednesday, 23 September 2009 12:09 UK

E-mail this to a friend Printable version

Dig for the future in Todmorden

'Local food for local people' is the message in Todmorden as the town's inhabitants embrace the idea of growing produce on their own doorsteps.

The idea's simple, really: to get as many people as possible to grow their own food.

"If a kid can see that a carrot doesn't grow at the supermarket then that'll make our day!" says Pam Warhurst from Incredible Edible Todmorden.

theguardian

News | Sport | Comment | Culture | Business | Money | Life & style

Comment is free

Don't ask for permission. Just plant it

Threatening a couple for planting flowers on the verge outside their home shows that some local authorities don't get it

Pam Warhurst
theguardian.com, Thursday 8 May 2014 12.42 BST
Jump to comments (76)

URBAN ALLOTMENT GARDENS

100+ UK GROUPS

Bedfordshire
Incredible Edible Dunstable

Bristol
Incredible Edible Bristol

Cambridgeshire
Incredible Edible Cambridge

Cheshire
Incredible Edible Alderley Edge
Incredible Edible Chester
Incredible Edible Alleyway Ellesmere Port
Incredible Edible Wilmslow
Incredible Edible Winsford

Cornwall
Incredible Edible Penryn
Incredible Edible Pensilva via The Growing Project

Cumbria
Incredible Edible Crake Valley
Incredible Edible Penrith via PACT
Incredible Edible Ulverston

Devon
Incredible Town Square - Crediton
Incredible Edible Ilfracombe
Incredible Edible Totnes via Transition Totnes

Durham
Incredible Edible Darlington
Veg Out in Barny (Barnard Castle)

Warwickshire
Incredible Edible Leamington Spa

West Midlands
Incredible Edible Coventry

West Yorks
Incredible Edible Armley
Incredible Edible Brighouse
Incredible Edible KirstallLeeds Edible Campus
Incredible Edible Mytholm
Incredible Edible Todmorden
Incredible Edible Wakefield

Wiltshire
IncrEdible Swindon

East Sussex
Edible Eastbourne
Incredible Edible Pevensey Bay

Greater Manchester
Incredible Edible Johnson Fold
Incredible Edible Bromley Cross
Incredible Edible Heaton Moor
Incredible Edible Levenshulme
Incredible Edible Marple
Incredible Edible Milnrow and Newhey
Incredible Edible Prestwich
Incredible Edible Ramsbottom
Incredible Edible Romiley
Incredible Edible Salford
Incredible Edible Summerseat Village Community
Incredible Edible Tottington

Isle Of Wight
Incredible Edible Isle of Wight

Hampshire
Incredible Edible Pompey

Hertfordshire
Incredible Edible Hitchin

Lancashire
Incredible Edible Accrington
Incredible Edible Darwen
Incredible Edible Fylde and Wyre
Incredible Edible Lancaster
Incredible Edible Pendle
Incredible Edible Preston
Incredible Edible Rossendale
Incredibe Edible Trawden

Wales
Incredibe Edible Abergavenny
Incredible Edible Caldicot
Incredibe Edible Conwy/Bwyd Bendigedig
Incredible Farm Eco Gift Economy/Bwyd Bendigedig Eco Fferm Ffrwythau
Incredible Edible Goytre Community
Incredible Edible Prestatyn
Incredible Edible Wrecsam
Incredible Edible Ynysddu
Incredible Edible Ysgol Castellau

Scotland
Incredible Edible Dumfries
Incredible Edible Dunbar
Incredible Edible Gatehouse

Northern Ireland
Incredible Edible Cloughmills

London
Incredible Edible Edmonton
Incredible Edible Greenwich
Incredible Edible Lambeth
Incredible Edible Southwark

Merseyside
Incredible Edible Hoylake

Northumberland
Incredible Edible Ashington

Oxfordshire
Incredible Edible Banbury
Incredible Edible Didcot
Incredible Edible Oxford

Shropshire
Foraging in the 3 Parishes
Incredible Edible Market Drayton
Incredible Edible Oswestry
Incredible Edible Shropshire

Somerset
Incredible Edible Somerset
InQEdible Edible based around Williton

Suffolk
Incredible Edible Ipswich

Surrey
Incredible Edible Ash Vale

Tyne and Wear
Incredible Edible Mackem Organic
Incredible Edible Sunderland
Incredible Edible West Allotment

URBAN ALLOTMENT GARDENS

700+ GLOBAL GROUPS

BELIEVE IN THE POWER OF SMALL ACTIONS

www.incredibleediblenetwork.org.uk

WG 1 POLICY AND URBAN DEVELOPMENT SUMMARY REPORT

Chairs: Nazila Keshavarz, Matthias Drilling

Participants:

Andre Viljoen, University of Brighton, UK
Ans Hobbelink, AVVN, Netherlands
Chiara Certomà, Scuola Superiore Sant'Anna, Belgium
Byron Ioannou, Frederick University, Cyprus
Efrat Eizenberg, Faculty of Architecture and Town Planning, Technion, Haifa, Israel
Giorgia Silvestri, Dutch Research Institute for Transitions, Erasmus University, Rotterdam, Netherlands
Ildikó Séra, Culture Association "in_between: culture", Zurich, Switzerland
Kristine Abolina, University of Lativa, Riga, Latvia
Maik Netzband, Ruhr-University, Bochum, Germany
Malou Weirich, Office International du Coin de Terre et des Jardins Familiaux, Luxemburg
Nazila Keshavarz, ILS Research Institute for Regional and Urban Development, Aachen, Germany
Simon Bell, Estonian University of Life Sciences, Tartu, Estonia
Simone Tappert, University of Applied Sciences and Arts, Basel, Switzerland
Tanja Kloeti, University of Applied Sciences and Arts, Basel, Switzerland
Theodosia Anthopoulou, Panteion University, Athens,Greece

Agenda

Thursday, September 3

- Introduction and welcome
- Status report by the participants
- Presentation 1: Principles for a Systems Thinking Approach for Urban Gardens, Nazila Keshavarz
- Team work on info series/factsheets by keeping line of discussions from Nazila's presentation and outcome of previous events in Riga and Nicosia.

Friday, September 4

- Presentation 2: Art & Urban Gardening, Ildikó Séra
- Team work on info series/factsheets
- Preparation of material for World Café

Issues Discussed

WG1 members initiated a fruitful debate about the Action's factsheets that the idea was incepted in previous events in Riga/Latvia and Nicosia/Cyprus.
Also, as part of the WG1's agenda, two presentations were delivered. First, Nazila Keshavarz presented her own experience of working closely with COST Action TU1201 and challenges she is facing to deal with scientific outcomes and issues in four research areas of the Action that encouraged her to develop a brief presentation about the importance of systems thinking in development and management of urban gardens. Her presentation was a starting point for further discussions on different topics or questions useful for the Action's initiative of info series/factsheets.
The result of brainstorming was recorded as a series of relevant and discrete questions as follows:

1. What are successful projects around Europe?
2. How to be a good gardener from environmental and social perspectives? How to exchange practices?
3. How to bring dormant/disused sites into life?
4. How to secure land for gardening in longer perspective (legal perspective, municipality)?
5. How to avoid instrumentalization of gardeners when they are used to serve politicians and businesses?
6. How to find inspirational examples of community gardens for public spaces?
7. How to start a community garden from scratch?
8. How to engage citizens in project of urban gardening? How to support bottom-up initiatives? How to start a network/empower each other?
9. How to face bureaucracy?
10. What are modern techniques to map urban gardens?
11. How to explore the proper form of urban garden suitable for specific site?
12. How to use cultural themes to develop/improve urban gardens?
13. Inventory of activities and capacities (land, people, skills, benefits)
14. How to create a gardening culture?

WG1 members were divided into three subgroups, each developed three different themes for info series/factsheets based on the grouped and revised questions. It is expected to have overlaps with the works of other three working groups that in a later stage the issues will be identified and resolved by Core Group members. The outcome of this practice in three subgroups are the following topics:

- Inventory of Urban Vacant Sites with Potential for Community Garden. Authors: Nazila, Maik, Ildiko, Malou
- How to engage citizens and cities over time? Authors: Byron, Theo, Kristina, Simon, Georgia, Ans
- How to secure land for gardening in longer perspective? Authors: Simone, Efrat, Tania, Kristina, Chiara

PRINCIPLES FOR A SYSTEMS THINKING APPROACH FOR URBAN GARDENS

Nazila Keshavarz, ILS - Research Institute for Regional and Urban Development, Aachen, Germany

INTRODUCTION

This article is based on personal experience gained by being involved in COST Action "Urban Allotment Gardens in Europe", in the last four years, and dealing with the complex nature of studies that are reflected in the Action's four interconnected research areas (policy and urban development, urban design, ecology, and sociology). The aim of bringing systems thinking into the realm of urban gardening is to depict a new and clear picture of the practice and the multitude of scientific and practical domains that are shaping it. Also based on the principles of systems thinking, it is aimed to introduce a different problem-solving approach that is not a traditional linear approach based on causal chains of events but a circular approach with a feedback loop, although in this brief paper, the key feedback loops which are characteristics of a dynamic system are not discussed and articulated that need further research. So, to flesh out the idea, urban garden as a social reality and growing trend in cities is broken into its basic components that are many layers or spheres of principles and disciplines bounded together to shape food/leisure producing activities. This visualsation of thoughts and orders helps to create an inventory of basic elements of urban garden development that in a later stage will be converted into dynamic systems based on their attributes and characteristics.

In another notion, we are living in a world of numerous interconnected organizations of systems that is growing complex every day with the city situated in the core of this growing complexity. There are horizontal and vertical systems that shape and affect cities and if they work harmoniously alongside each other and together, as one holistic system, the city will flourish and survive. Accordingly, our concern, within the complex realm of urbanism is to develop livable spaces through available means including collective potential within society to experience a better life in many favorite ways of which one is to engage with urban gardening and urban farming with minimum impact on environment. Urban gardens are subset of a number of important spatial domains such as urban planning, urban design, community enhancement, social cohesion, and environment stewardship to name a few. If we delve into each domain, with considering urban garden/farm as the reference point, many subdomains or subsystems, factors, and building blocks of a common urban green space will be unfolded. Looking at a big picture by knowing all detail will help to understand major game players that are forming or preventing to form a functioning system including an urban garden. Systems thinking in this respect helps to understand something we no longer see as chaotic or complex because we use adequate concepts to explain its complexity (Gharajedaghi 2006). This paper mainly focuses on demonstrating these concepts that remove chaos and complexity around the subject of urban gardens/farms.

WHAT IS SYSTEMS THINKING?

Barry Richmond's in 1987 coined the term and defined it " the art and science of making reliable inferences about behaviour by developing an increasingly deep understanding of underlying structure" Based on his definition, the nature of underlying structure needs to be fully comprehend and stretched that in most cases is hidden under many superficial layers of matters and concerns. In other words, the advantage of systems thinking is its potential to provide a transdisciplinary framework for such understanding as described by Richmond that help to explore the relationship between our perceptions and conceptions and the worlds they mean to characterize. Also it is a problem-solving approach that views problems as parts of the overall system and not as a single entity. The process of understanding how things relate to one another within a whole system and how each system relates to another is the cornerstone of the systems thinking that focuses on a cyclical rather than a linear cause and effect (Harich 2015) (Figure 1).

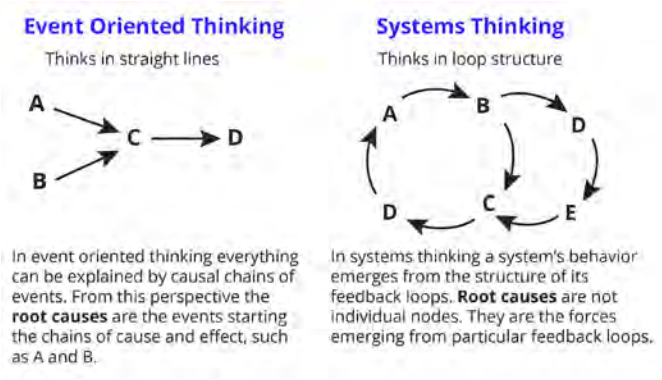


Figure 1 – Differences between linear and circular thinking with a problem-solving approach. (Source: Harich 2015, used with the author's permission)

Main principle of systems thinking is that the whole is greater than the entirety of its interdependent components with linkages and interactions between the components that comprise the entirety of that defined system (Philips 2013). The problem-solving approach in a loop structure is different from that of traditional forms of analysis that focuses on the separating the individual pieces of what is being studied in a linear problem-solving fashion. This means instead of isolating minute parts of the system being studied, systems thinking takes into account larger numbers of interactions and components. As a result, different conclusions will form comparing to those generated by traditional forms of analysis, especially when the subject matter has numerous interactions with other internal or external sources (Richardson 2004).

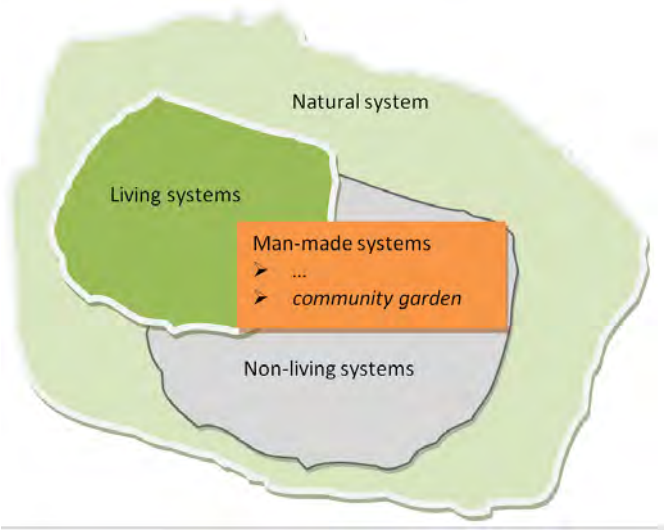


Figure 2 – Interconnectedness and overlaps of major systems within the mega system of our world. A natural system is one that exists in nature, independent of any human involvement, living systems are open self-organizing living things that interact with their environment and are maintained by flows of information, energy and matter. Source: author.

MEGA-SYSTEM OF OUR WORLD

Our world is a mega system. It is an amalgamation of living, non-living, natural and man-made systems that are interconnected and overlapped with various sub-systems that if necessary they interconnect with other elements of the mega-system (Figure 2).

Natural systems of living and non-living elements are interconnected and interdependent. There are network of relationships, feedback loops, cyclical flows of energy and matter, natural recycling, cooperation and partnership

with flexibility and diversity with natural systems (Capra 2009). Also living systems has the capacity to develop and evolve with ecosystem that has biophysical, economic, and social limits. The environment is constantly in a state of flux, causing ecosystem to change. To some degree, ecosystem is capable of recovering from externally forced shocks.

Man-made systems are systems of people, structures and processes that work together such as social systems that are organizations of laws, principles, duties, and values, transportation systems that convey networks of highways, roads, airlines, oceans and alike, permaculture system which is a system of agricultural and social design principles centred around simulating or directly utilizing the patterns and features observed in natural ecosystems, communication systems, manufacturing systems, financial systems and so on. They are all systems that have structure, behavior and interconnectivity and they are less efficient comparing to natural systems because of "waste" element in the system. They are made with purposes achievable by delivery of outputs and people are able to consider potential consequences of their decisions on different parts of a man-made system (Laszlo & Krippner 1998).

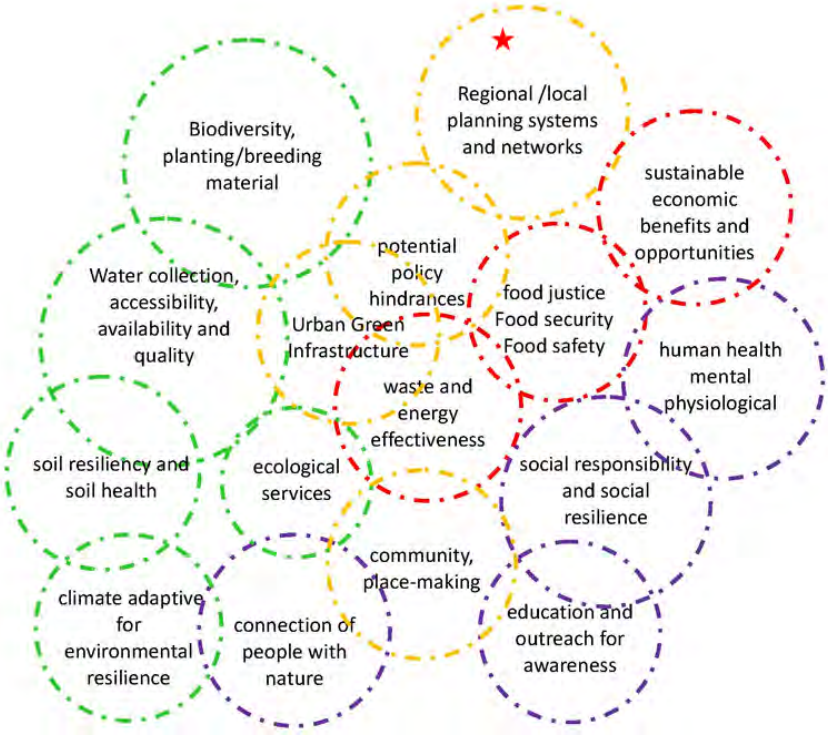


Figure 3 - Major domains dealing with an urban garden/farm through four overarching spheres of bio-eco (green), social (purple), economic (red) and urban development (yellow). The overlapping of spheres and their positions are only indicative. Source: author.

A WEB OF URBAN GARDEN SYSTEM

If we understand what are the components of an urban garden system and how they are interacting and working together, the chaos and complexity that we feel in time of thinking about the whole matter will be diminished. Here, major domains that form an urban garden are introduced which can be applied to a number of similar situations.

In theory, there are four umbrella domains that can be converted into active systems as major players involved in one or more aspects of shaping, managing and running urban gardens. These are bio-ecosystem, social, economic and urban development domains that possibly have the nature of an active system with a set of components working together as parts of a mechanism or an interconnecting network, in other words, a complex whole. (Figure 3).

The importance of demonstrating underlying components that shape urban gardens is to visualise how and where each component is connected to other parts, how they behave together and where the focus needs to be implemented in time of assessments and problem solving. For example, connection of people with nature means dealing with a system of people living in a certain neighbourhood with certain age groups, genders, social classes, cultural background, income,

education and personal skill in gardening. These people have aims and objectives, e.g. to get engaged with a practice which brings another sphere of economic into consideration with domains such as food security, health and job opportunity. Similar arrays of domains can be retrieved from another sphere of local planning and gardening networks that are in place to enhance development of urban gardens or prevent such development through change of policies and land uses.

COMMUNITY GARDEN PLANNING AS A SYSTEM – A CASE STUDY

Based on a public community garden start-up guide, one domain or sphere which is the sphere of Regional/Local planning systems and network – the sphere with a red star in Figure 3 - is chosen to demonstrate multi-layered character and structure of activities and interconnected elements of a community garden planning and design that are withdrawn from a start-up guide. The guide is a to-do list instruction for members of community who want to establish a community garden for the first time and adopts a linear approach that here is converted to an array of spheres on a loop, with the aim of converting them into feedback loops based on systems thinking principles in a later stage (Figure 4).

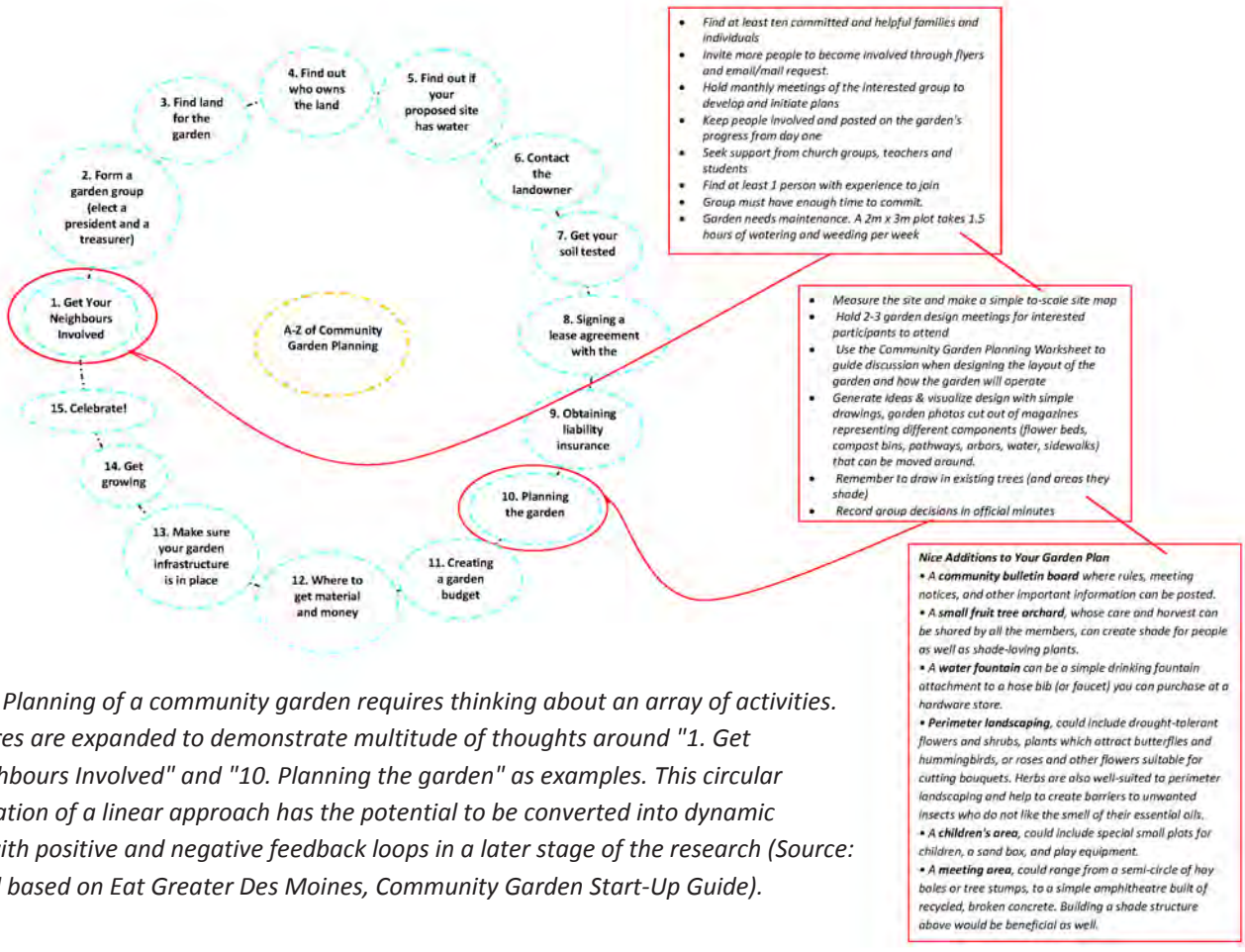


Figure 4 – Planning of a community garden requires thinking about an array of activities. Two spheres are expanded to demonstrate multitude of thoughts around "1. Get Your Neighbours Involved" and "10. Planning the garden" as examples. This circular demonstration of a linear approach has the potential to be converted into dynamic systems with positive and negative feedback loops in a later stage of the research (Source: developed based on Eat Greater Des Moines, Community Garden Start-Up Guide).

CONCLUSION

As a researcher in urban development, for four years I had challenges to categorize, classify and above all to comprehend numerous aspects of urban gardens and farms in four interconnected research areas: policy and urban development, urban design, ecology, and sociology. To help myself in saving time and absorbing as much as information I can in realm of urban agriculture and gardening, I delved into the philosophy of science and systems theory. I have found that using principles of systems thinking will help to depict a new and clear picture of the practice by demonstrating the multitude nature of scientific and practical domains that are shaping urban gardens or even preventing them to shape. This ongoing practice of thinking helps to adopt a new way of problem solving based on the principles of systems theory that is not a traditional linear approach but a circular one with a feedback loop. For these reasons, urban garden as a social reality and growing trend in cities is analysed in this paper, however very briefly. The analysis is done by looking at basic components and spheres of an ideal community garden and how its formation from scratch involves many systems that are connected together to form food/leisure producing activities in today's world of complexity and chaos.

REFERENCES

1. Capra, F. & Luisi P. L. (2014): The Systems View of Life: A Unifying Vision; Cambridge University Press
2. Eat Greater Des Moines, Community Garden Start-Up Guide: https://www.eatgreaterdesmoines.org/content/introduction (accessed August 2015)
3. Gharajedaghi, J. (2006): Systems Thinking: Managing Chaos and Complexity – A platform for Designing Business Architecture, 2nd edition, Elsevier.
4. Harich, J. (2015): in Finding and Resolving the Root Causes of the Sustainability Problem http://www.thwink.org/sustain/glossary/SystemsThinking.htm (accessed August 2015)
5. Laszlo, A. & Krippner, S. (1998): Systems Theories: Their Origins, Foundations, and Development. Published in Systems Theories and A Priori Aspects of Perception, Amsterdam: Elsevier Science, 1998. Ch. 3, pp. 47-74.
6. Philips, A. (2013): Designing Urban Agriculture: A Complete Guide to the Planning, Design, Construction, Maintenance and Management of Edible Landscapes. Wiley publication
7. Richardson, R. (2004): Here, There and Everywhere: Belonging, Identity and Equality in Schools. Trentham Books, Stoke-on-Trent
8. Teaching And Learning For A Sustainable Future, Globalisations: http://www.unesco.org/education/tlsf/mods/theme_c/mod18.html (accessed August 2015)

RELATION OF ART AND URBAN GARDENING FROM A SOCIOLOGICAL, ART AND URBAN DESIGN PERSPECTIVE

Ildikó Séra, Culture Association "in_between: culture", Zurich, Switzerland

merkurgarten

nachbarschaftsgarten zürich-hottingen

Figure 1: Allotment garden "Merkurgarten"in Zurich, Switzerland

The urban gardening project "Merkurgarten" is situated in a typical urban neighbourhood of Zurich, surrounded by diverse middle-size public buildings, like a church, a music school, rehearsal rooms of the Zurich Opera and some more or less strongly frequented roads.
Sources of inspiration for establishing the garden were several well-known European urban gardening projects, like Prinzessinnengarten in Berlin, as well as other types of temporary use projects in Zurich.

The users loan contract between the association of „in_between : culture" the founding body of Merkurgarten and the Horticulture Office of the City of Zurich started June 2013 and it regulates the use of the area of 1400m2, containing a natural meadow, a gravel area and a grove with 9 trees.

The Merkurgarten is more than just a common cultivated garden bed: cultural events such as exhibitions, concerts, theatre plays and readings accompany the gardening and put it into a larger context.

Figure 2: Gardenparty at "Merkurgarten"

Those who are simply looking for recreation are also welcome to join in on the activities.

The integration of this location and networking with the surrounding neighbourhood are crucial aspects in the design of the project. For example, a study of the allowable soil loads was determined. Strategies for the use of existing resources such as rainwater have been developed. The potential for cooperation with neighbouring institutions (music school) are being explored. Thus, ongoing fundamental questions of gardening are raised in an urban context and subjected to experimental testing. The Merkurgarten also provides a framework for cultural practices, for a different kind of perception of the urban nature and at the end for an urban renewal from its wasteland.

Figure 3: Concert at "Merkurgarten"

THE ART SERIES „KUNST PFLANZEN”

In recent years, programs of green urban regeneration aiming at converting abandoned lots into green areas regularly include public art programs.

Like the High Line Park in New York or the Gleisdreieck – Railway Triangle in Berlin. These projects are related to the art series in Merkurgarten in terms of combining an urban type nature with art. But they aren't allotment gardens, these projects are parks. Combining urban gardening with conceptual art is a unique and ambitious approach, which we are happy to take at the art series in Merkurgarten.

My curatorial mandate is to invite every month artists from Switzerland and other European countries to realize an artwork in Merkurgarten. They are free to work in any art field, the only criteria is to be site-specific, to react or incorporate its environment and to have a strong connection to nature. The invited artists have all a multi-disciplinary background. They are working process-driven and research-based, with the possibility of not producing a physical or permanent artwork.

All the artworks are situated in the garden, with a great variety of different spatial characters, which artists can choose from. At the same time the whole garden is within the public space of the city, so they have to deal in the whole art process with the public realm.

The diversity of the artworks will be emphasised by their close proximity. They start a dialogue with each other and with the place itself. Beyond their artistic statements they are experimental urban set-ups, serving as an analysis of the public space through artistic interventions. We are aiming at an art series, which goes beyond the interest of the art scene, gaining autonomy as an intervention in the realm of public interest.

The overlap of a vegetable garden and an art space offers a wide range of productive irritations, and shifting meanings. The art series gives you the possibility of provocation, change of perspectives and joyful questioning of certain urban truths. It also challenges new ways of perception of artworks. This wider scope of public art can embrace different practices and art forms. Moreover, the audience is a major factor of the artistic interventions in public space.

ARTISTIC INTERVENTIONS 2015

"Petit Swiss"

Art Sowing by Microcollection - Elisa Bollazzi/I in collaboration with Hubert Renard / F

Figure 4: "Petit Swiss"- art sowing action with Italian artist Elisa Bollazzi

Microcollection contains hundreds of fragments of contemporary artworks started in 1990 by Italian artist Elisa Bollazzi. The art fragments are saved from oblivion and most of them visible only under a microscope. Microcollection Art sowings activates a process which changes the way we look at the «art system» in a beneficial way, that stimulates creativity and starts thought-provoking spaces in contemplation of a growing art garden.

During the opening artist Elisa Bollazzi sowed in a public art action fragments of nine Swiss contemporary artists artworks into the earth:

Figure 5: "Petit Swiss" - labels of the art fragments planted into the earth

Each of the art plants received a yellow label with the artists name & title, as well as the year of origin.
On the occasion, French artist Hubert Renard, as a botanist, wrote teaching notes, which provide subtle, erudite observations, evoking the properties, qualities and virtues of each species planted in the garden. This way the imaginary art plants can start growing in our heads.

During the opening we had the possibility to have a closer look at pieces of Microcollection under a microscope. At the buffet the Conceptual cake by Elisa Bollazzi pleased the palates, baked by the artist herself. Joan Miro once said: "More important than a work of art itself is what it will sow. Art can die, a painting can disappear. What counts is the seed". www.microcolelction.it

"Archaeology of Memories"

Hungarian artist Séra Ildi, is an installation made of words and air, aims for showing the hidden stories floating around in the streets and places of Zurich.

Figure 6: "Archaeology of Memories" of Hungarian artist Séra Ildi

The artist had been collecting memories of inhabitants & visitors of Zurich for months; in internet-communities and also in a special Post-box of Memories at the Theatre Gessnerallee in Zurich. These stories are about moments of everyday joy, about quiet and unquiet pain, boxes of magnesium flying through closed windows, the ballroom Josefwiese, lines of saliva between the mouth of a man (father) and a woman (mother), about a rabbit in the Helmhaus, the understatement-richness of the city, about poetic and concrete bleedings, and a hopeful purchase of a bear soap.

Figure 7: "Archaeology of Memories"

The artist absorbed the memories, cut the sentences apart, put them together again, in order to create skeletons of stories. The words had been printed on labels, thread on thin ropes and stretched between 2,5m high bamboo sticks, creating a physical space with the three spruces of Merkurgarden, which is though also an imaginary space, containing fragments of memories of unknown people. The audience can pass through the created „real" space, while putting words and stories together in a new way, experiencing the installation, imagining the memories of others.

At the opening event Séra Ildi realized moss graffiti together with the visitors. Connected to the artwork, an alphabet soup was offered at the buffet.

www.seraildi.com

"12 stones"

German artist Andrea Silbermann created an artwork of natural materials.

Figure 8: "12 stones" of German artist Andrea Silbermann

"12 stones" is a system of foundlings from Northern Germany, covered by a kind of "skin" made of paper and linseed oil, lay in a grid of 3 x4.

Her theory behind the artwork was inspired through Asian philosophy: THE NUMBER 12 - The Perfect One
It describes one entire cycle. Perfection will often be connected with happiness.

The idea of perfection was over and over again linked to the idea of nothing.

The perfect will be thought in Daoism as empty, soft and spontaneous.

In the mathematics it will be called as one of the only two sublime numbers.

Figure 9: "12 stones"

The foundlings impress the landscape of Northern Germany; they come originally from the Scandinavian countries. They will be collected from the fields every year and real cairns will be built this way over the years. The stones are said to grow in the soil. The foundlings were often polished to a round form by the ice, which took them from the North.

The paper in combination with the linseed oil will change the materiality of the stones.

They seem to be organic under this skin - as if a new life would evolve from them.

In order to include also imperfection, which is a fundamental part of life, she replaced one of the twelve foundlings by a fire circle made of little stones.

"Ardzack"

An artwork made of rammed earth by Swiss artist Anna Kanai.

Figure 10: "Ardzack" of Swiss Artist Anna Kanai

The artist planned a "sitting sculpture" combining several tetrahedrons. She had been working for a week in the garden before the opening, creating a precise formwork for her complex object. After grabbing the forms into the earth, filling them with clay, stamping them and drying them, some of the tetrahedrons were ready.

Figure 11: Stamping the tetrahedrons of "Ardzack"

At the opening the audience had the chance to stamp the forms, too, either with their own bare feet, or with a stamping stick. The week after the opening Anna Kanai continued working in the garden, finishing a completely different artwork, than she planned: she put each single tetrahedron into a big wooden box, opening the lid as much, as needed in order to show the „treasure" inside, made by pure earth.

www.annakanai.com

"Fragment of the Rose Hedge" of Swiss artist Lisa Schiess and "Moss landscapes" from Swiss artist Jürg Egli

Figure 12: "Fragment of the Rose Hedge" of Swiss artist Lisa Schiess

Lisa Schiess printed names of different roses on a fabric in a nearly endless row. Instead of planting roses she is planting words, creating the actual rose hedge in the imagination of the audience. Therefore the „Rose Hedge" has the same methodology, as "Archaeology of Memories" and "Petit Swiss": all of them are triggering the process of imagination through the physical presence of words.

Figure 13: "Moss landscapes" of Swiss artist Jürg Egli

Jürg Egli created four moss landscapes in metal boxes with their own unique history. The first two landscapes he saved from his last exhibition, where he cut out a huge moss piece from the rooftop of a temporary art space and delivered it into the building. He took two smaller pieces from this artwork, one with a miniature chestnut tree growing from it and one without. These deep green moss pieces have an amazing topological quality if you take a closer look at them: like a bonsai landscape from Southern England, they offer a great variety of different slopes and valleys, bushes and trees.

Figure 14: "Moss landscapes"

The third one he took from a future construction site, where the extension of Kunsthaus Zurich will be built. This area is covered now by different kinds of grasses, weeds and moss.

The fourth box contains wooden pieces of a possible artwork from a little pound, situated in a city-centre brown field land, where the future Garden of Arts of the Kunsthaus Zurich will be built.

www.lisaschiess.ch

www.analyse.ch

Now the Merkurgarten is filled with public art: after two more openings this year we'll close both the garden season as well as the art series 2015. Next year we'll include also performance & contemporary dance events, besides the continuing public art series.

www.merkurgarten.ch

WORKING GROUP 2 SOCIOLOGY SUMMARY REPORT

Chairs: Mary Benson, Susan Noori

Participants:

Barbora Cakovska, Slovak Agricultural University in Nitra, Slovakia
Beata Gawryszewska, Warsaw University of Life Sciences, Poland
Helena Nordh, Norwegian university of Life Sciences, Norway
Hervé Bonnavaud, French Federation of Allotment Gardens (FNJFC), France
Hug March, Universitat Oberta de Catalunya, Spain
Jeanne Pourias, AgroParisTech INRA, France
Krista Willman, University of Tampere, Finland
Mary Benson, Maynooth University, Department of Sociology, Ireland
Nicola Thomas, Institut Sozialplanung und Stadtentwicklung Hochschule Basel, Switzerland
Susan Noori, Birmingham City University, UK

Agenda

Thursday, September 3

- Action points from last meeting and themes for fact sheets;
- Presentation: 'Urban allotment gardens in the city in crisis: Insights from Sevilla (Spain)', Jeanne Pourias, STSM study 2015, followed by Q&A.

Joint Session: WG3 Ecology and WG2 Sociology

- WG2 Presentations:
  - 'Motivations behind Urban Gardening: "here I feel alive", Hug March
  - 'Cropping practices in urban allotment gardens: Agronomical analysis of gardeners' technical decisions and cropping practices in Paris and Montreal gardens', Jeanne Pourias
- WG3 Presentation:
  - 'Environmental relevant attitudes and behaviour of urban allotment gardeners in Europe: Insights and challenges for socio-ecological research', Annette Voigt and Andrew Hursthouse
- General discussions and ideas for collaboration, i.e. methods, research, publications, fact sheets, etc.

Friday, September 4

- Developing fact sheets in thematic groups;
- Actions to be agreed for future collaboration;
- World Café presentation.

Issues Discussed

Thursday, September 3

The meeting commenced with welcome by chairs and a review of the agenda for the working group's activity in Birmingham. Action points from last meeting in relation to the fact sheets were reviewed to give participants a broad understanding of discussions in Nicosia. A document had been distributed to the WG prior to this meeting in relation to these action points. These mainly revolved around the development of ideas and themes for fact sheets. Then, Jeanne Pourias gave a talk about her STSM study (2015) in Spain, where she investigated the impact and relationship of the economic crisis and the dynamics that led to the growing phenomenon of urban gardens in the city of Sevilla and how urban gardens contribute to food security in the context of the economic crisis (see presentation 1).

In the second part of the afternoon, the two WG3 Ecology and WG2 Sociology hold a joint meeting to discuss and share knowledge about the 'attitudes and behaviours of urban gardeners' from a multidisciplinary point of view. The session included three presentations from researchers of both WGs. During the first presentation, Motivations behind Urban Gardening: "here I feel alive", Hug March presented findings from case studies of a number of cities across Europe which shows that the typology of garden (allotment, squatted, etc.) is the expression of different motivations while at the same time it may frame the motivations of new gardeners. Thus, motivations are not isolated from wider societal trends, i.e. economic crisis, environmental concerns, etc. (see presentation 2).

This was followed by a presentation by Jeanne Pourias about agronomical analysis of gardeners' technical decisions and cropping practices in Paris and Montreal gardens (see presentation 3). The last presentation was by the Ecology Working Group researchers Annette Voigt and Andrew Hursthouse. They discussed about and presented insights to environmental relevant attitudes and behaviour of urban allotment gardeners and challenges for socio-ecological research (see WG3 report).

An interesting discussion took place between researchers of both WGs surrounding methods and methodological approaches for researching attitudes and behaviours of urban gardeners, challenges, limitations and what methods can potentially generate to best results. Furthermore, it was discussed that there is a lack of knowledge about pesticides among gardeners in terms of their understanding of the word pesticide and level of use of commercial (chemical or organic) products. This perhaps could lead the group to develop combined fact sheets on:

- Motivations – linking this with Practices and the problems that can arise
- Transfer of knowledge – lack of knowledge around pesticides
- Good gardening practices

Friday, September 4

The session was devoted to fact sheets. Following a short brainstorming exercise, participants suggested several numbers of themes and ideas, which they believe, are some of the current urban garden challenges and have the potential to develop fact sheets surrounding these issues which could be useful for gardeners, garden associations, policy makers or other urban garden stakeholders. The following list is not exhaustive and other ideas can be developed into fact sheets:

- How to establish a traditional Eastern European structured garden
- How to educate with an urban garden – aimed at gardeners/schools/ community groups. The links between these groups revolve around issues of sustainability and the preservation of resources (knowledge is also a resource)
- Benefits of urban gardening – for policy makers
- How to turn an allotment garden space into a place – placemaking; aimed at gardeners
- How to facilitate social interaction and place-making. How can you build this into the design of the garden itself. Aimed at associations/councils.
- How to establish a community garden – aimed at communtiy groups
- How to develop social interactions and community on newly developed sites
- How to study allotments – methodological approaches
- Information on motivations for policy makers
- Different motivations need different typologies of allotment gardens. Allow space to develop new motivations (flexibility is key)
- How to motivate people
- What is good gardening
- Strengthing your garden in a neighbourhood

Participants split into small groups and each group selected a theme and started developing the draft of their fact sheet. Selected themes were:

- How to make an urban garden into a neighbourhood learning space;
- What motivates gardeners?
- Advice for practitioners; and place-making in an urban garden.

The meeting was concluded by a presentation of the drafts of the fact sheets to the group and to other WGs during the World Café.

URBAN GARDENS IN THE CITY IN CRISIS: INSIGHTS FROM SEVILLA (SPAIN)

Jeanne Pourias, AgroParisTech INRA, France

The 13th of October 2008, the Time Magazine ran a headline "The New Hard Times", showing on its cover a picture of a depression-era soup kitchen, as the global market experienced what is considered by some as the « worst financial crisis since the Great Depression of the 1930s », reminding America of bad reminiscence of the 1929 banking crisis (Ferguson, 2008; Lopez Bernal et al., 2013). The crisis of the banking sector soon became a global economic and social crisis that led most western countries to recession and contributed to the European sovereign-debt crisis. However, not all national economies experienced the crisis in a similar way and the southern part of Europe has suffered the consequence of this economic crisis more intensely. In Spain, the crisis hit the country in the peak of economic prosperity in terms of GDP growth and employment creation, driven mainly by the construction sector and related industries and services (Guardiola and Guillen-Royo, 2013). Among the various consequences of this crisis on the Spanish economy, one can highlight the abrupt slowdown of the construction industry, leaving many construction works unfinished and vacant buildings. The rate of unemployment rose suddenly from 11,2% of the workforce in the 3rd quarter of 2008 to 17,2% at the beginning of 2009. In 2013, it reached 26,9% of the total workforce.

With regards to Spanish citizens, the effects of the economic crisis on individuals are diverse. They affect both the material conditions of living and immaterial aspects including well-being, health or maintenance of traditional habits (Guardiola and Guillen-Royo, 2013). The loss of financial means at the scale of a household can also directly result in physical health disorders. In the first place, a secure access to food can rapidly be endangered: in fact, income is the first determinant of diet (Godfray et al., 2010). This is especially true for fresh products, which can rapidly become a lower-priority in household budget and turn inaccessible to the most vulnerable (Bricas and Seck, 2004).

In Spain, no research was conducted to assess how the financial crisis may have affected food access or diets of households. However, in other countries from southern Europe such as France, Greece and Italy, there are converging signs of an alteration of access to quality food and food patterns of households as an indirect consequence of the economic crisis (Grigoriou, 2013; Kirby, 2013; Prudhomme, 2013).

In this context, noting the increasing number of initiatives promoting urban gardening and people involved in such initiatives, many advocates of urban agriculture in southern Europe have made the connection between this growing interest for urban gardening and the direct and indirect effects of the crisis, presenting urban gardens as an "anti-crisis remedy" (Angeles, 2012; A.S.O, 2013; Astier, 2015; Bonneau, 2013; Cueto, 2014; Mitralias, 2013). However, very little research has been conducted to assess the potential benefits derived from urban gardens that could contribute to alleviate the effects of the economic crisis

that has been affecting European countries since 2008. Furthermore, how the dynamics of creation of urban gardens is related to the economic crisis remains to be investigated. Through the case study of Sevilla, I propose i) to contribute to the understanding of the dynamics that led to the growing phenomenon of urban gardens in Sevilla and how the economic crisis affects or not this dynamics; (ii) to describe how urban gardens contribute to food security in the context of the economic crisis.

METHODOLOGY

We used a mixed methodology, which included on-field observations, interviews with local stakeholders and gardeners and archive exploration.

Visits to the gardens and on-field observations

In spring 2015, we visited 9 urban allotment gardens and 3 urban agriculture projects in Sevilla. General information about the project, its history, its status and its organization were collected. After or during the visit, we realized on-field observations on several topics including the general layout of garden sites and the cropping practices of gardeners.

Interviews

Two types of interviews were conducted. 7 interviews with local stakeholders aimed at understanding the general context of urban gardening in Sevilla and the role and position of institutions and organizations involved in the creation and management of urban gardens. 11 interviews were also conducted with gardeners in the Parque Miraflores and in the Parque del Alamillo to understand the motivations of gardeners and their objectives. During the interviews, gardeners were asked to select one in a series of statements that best matched their appreciation of the food supply function of their garden. This series of statement defines five situations that cover the various ways the garden can contribute to the gardeners' diet by providing fresh fruit and vegetables, from anecdotal food production to complete self-sufficiency (Figure 1).

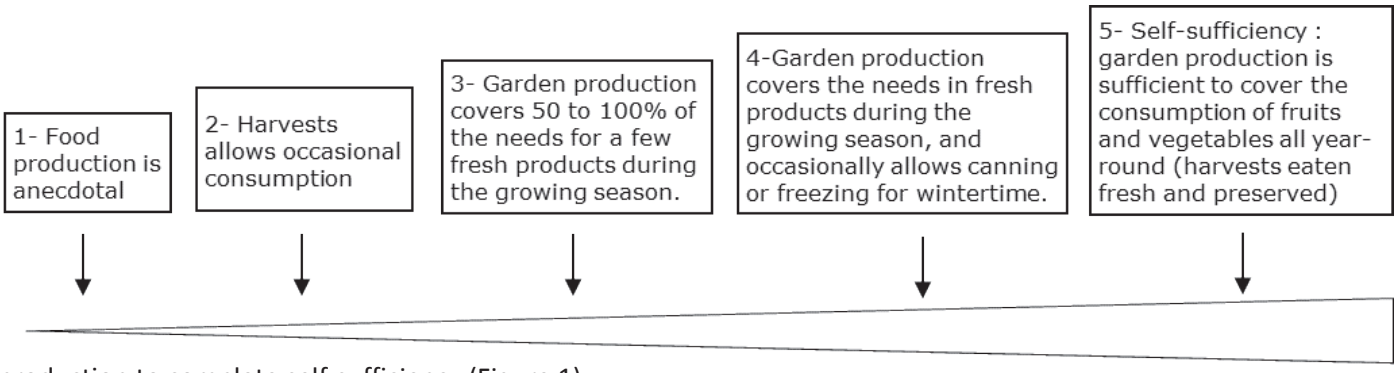


Figure 1 Gradient of urban garden's contribution to the gardeners' s food supply (Retrieved from Pourias, 2015)

Archive exploration

We worked on the archives of the Agencia de Vivienda y Rehabilitación de Andalucía (AVRA), service of the Region of Andalusia in charge of managing public lands, and which was at the origin of the creation of the Parque del Alamillo gar-

den. These archives contained application files sent by each gardener willing to obtain a plot at the opening of the garden in 2013, which included a document explaining the motivations of gardeners. From the 91 application files of the AVRA archives we could access, we collected the following information: (i) motivations mentioned, (ii) composition of the group (men, women, age), (iii) job situation of each member of the group, (iv) when mentioned: highest degree completed by each member of the group.

The motivations mentioned by groups of applicants in the application files were grouped together by keyword, and then sorted into broad themes of motivations. The number of applicants who mentioned each motivation was quantified in order to situate the weight of each function or sub-function within the set of motivations described.

RESULTS

PART I: DYNAMICS AND CONDITIONS OF EMERGENCE OF URBAN GARDENS IN SEVILLA (1990-2015)

History and location of urban gardens in Sevilla

In Sevilla, the first urban allotment garden (Parque Miraflores) was created in 1987 upon the demand of inhabitants of the northern district of Sevilla. This first experience has served as a model for the other gardens created later. Since then, 10 other gardens have been created, 6 of them since 2008. 9 of them are situated on public lands: 6 on municipal land, 2 on a land belonging to the Region of Andalusia and 1 on a land belonging to the Province of Sevilla. 1 is situated on a private land. These gardens are the result of sometimes lengthy processes that involve at the same time citizens' requests brought by local organizations, usually rooted in a wider dynamic centred on a neighbourhood, and more or less proactive intervention of local authorities. I identify three different processes directly or indirectly related to the economic crisis, which impact the dynamics of creation and functioning of urban gardens in Sevilla: (i) the varying implication of public institutions, (ii) an evolution in gardener's profile and motivations, (iii) a diversification of the types of initiatives.

Institutional support and initiatives

Two public institutions have been involved in supporting and promoting urban gardening for the past 10 years in Sevilla: the Ayuntamiento de Sevilla (the City Council) and the Junta de Andalucía (Region of Andalusia). The City Council was actively involved from 2004 to 2011, through the implementation of participative budgets. This program came from a political will, and aimed at decentralizing the attribution of municipal budget and at increasing participatory democracy. It brought to the foreground local demands to create two new urban gardens and gave support to existing ones. The participative budgets ceased in 2011, after the election of the right-wing party at the City Council.

The implication of the Region of Andalusia in the creation of urban gardens arrives more lately, through the AVRA. During the years of the real-estate "boom" (2000-2008), AVRA mostly acted as a real-estate developer. The crisis led to the

collapse of the land prices and the slowdown of the construction industry: many construction projects stopped and a lot of land remained vacant. For a few years, AVRA has been investigating new ways to use these vacant lots, which forced it to change its basic mission. One of the options to use the vacant land owned by AVRA has been the creation of urban gardens. Four gardens were created across Andalusia, including one in Sevilla (Parque del Alamillo).

Evolution of gardeners' profile and motivations

While urban gardeners were previously mostly retired people gardening for leisure and social contacts, interviews show that more and more young and unemployed people appear on the lists to access a garden. I identified several motivations described by gardeners or applicant gardeners as responses to the effect of the economic crisis. Some are linked to the direct effects of the crisis, like growing food in order to save money. Other motivations were more related to the indirect effects of the economic crisis. With respect to this latter aspect, we identify two set of motivations. Firstly, many gardeners describe the garden as a mean to strengthen the family and to transmit traditional values to the youngest, referring in many cases to an idealized vision of the past life in the countryside. The garden appears as a "healthy place" for family life and a way to produce its own food in a search for self-sufficiency that would allow being more independent of the stir of the society. Secondly, another set of motivations relates to a will to experiment new models of social organization. Gardeners describe a will to build a new society, the garden being seen as a "small world", where to put in practice this new organization.

Diversification of the types of projects

Aside the creations of urban gardens, since the beginning of 2010's four entrepreneurial urban agriculture projects have emerged in Seville. These projects are led by organizations that previously had direct or indirect experiences in creation and management of urban gardens. All these projects share the will to create meaningful jobs in a context of crisis that let many unemployed and that calls more broadly for a re-assessment of the current economic system. Three of them envision local food production as a mean to experiment alternative ways of development that beneficiate to disadvantaged population and neighbourhoods.

PART II: CONTRIBUTION TO COMMUNITY FOOD SECURITY

Food production in the gardens

The surface area available for food production differs from one garden to another. Individual plots range from 25m² in the Poligono Sur garden to 175m² in Miraflores garden. One garden, El Huerto Del Rey Moro, offer one collective plot. Some gardeners use various techniques to increase their productive area. Some use mixed cropping technique, which consists in growing two or more crops simultaneously on the same piece of land (Figure 2), others design raised cultivation systems to take profit of the vertical dimension (Figure 3), and others take profit of vacant spaces around the garden. I couldn't assess directly the amount of food produced in the gardens. However, gardeners were asked to estimate to what extent their

One was in his first growing season and therefore could not provide yet this estimation.

Figure 2 - Example of mixed crops: carrots growing beneath tomato plants (Picture, J. Pourias, 2015)

Figure 3 Raised bed in a plot of the

garden contributed to their diet by providing fresh fruits and vegetables. 6 out of the 10 gardeners interviewed estimates that their ''garden production covers 50 to 100 % of their needs for a few fresh products during the growing season'' and 3 estimates that ''garden production covers their needs in fresh products during the growing season and occasionally allows canning or freezing for wintertime."

Parque del Alamillo garden: lettuce are grown above, strawberries below (Picture, J. Pourias, 2015)

Regarding economic aspects, as I already witnessed in gardens of Paris and Montreal (Pourias et al., 2015), debate surrounds gardeners' estimations of the economic benefits of the fruit and vegetables they produce. Some gardeners consider that the most important aspect of garden products is their quality, as the garden allows them to produce fresh and diversified vegetables. Gardeners who consider that their garden allows them to save money on food evoke various strategies regarding the produce they choose to grow in their garden. Some gardeners choose to produce "a little bit of everything", while others rather choose to produce in the garden the most expensive crops and to buy the rest. For example, one gardener states that zucchinis are cheap in shops: therefore, he prefers saving the space of his plot to produce other vegetables, more expensive, such as tomatoes.

Regarding the destination of the harvests, most gardeners interviewed explain that a part of their harvest is given to friends, family members or to other gardeners. Furthermore, in the Parque del Alamillo garden, one collective plot has been dedicated to producing vegetables for a food bank. The plot is cultivated by gardeners who, in majority, also have an individual plot for their own needs. The harvest is given to a social canteen managed by a convent in the center of Sevilla.

Knowledge and know-how on how to grow food

Gardeners refer to three distinct learning sources: rural and agricultural background, exchanges with other gardeners and internet. The rural and agricultural background described by gardeners comes either from a personal experience of farming, in the childhood or as a previous work before moving to the city, or from a family connection to agriculture. For gardeners who do not refer to an agricultural background, internet and interactions with other gardeners are the two options to learn gardening techniques.

Again, the garden seems to be the place that allows different sources of knowledge to coexist, mix and interact: "traditional" knowledge, which comes from rural and agricultural backgrounds, mostly called up by people who have personal or family reference to this background and transmitted through oral exchanges, and knowledge from "new Media", i.e internet, mostly called up by people who have no reference to agriculture. These first observations seems to support Barthel et al. 's hypothesis that states that gardens are "pockets of socio-ecological memory" , as they play a role in the maintenance, revival and transmission of knowledge and know-how (Barthel et al., 2014).

Maintenance of open space and agricultural soil in the city

Contrary to many cities of northern Europe or America, the history of Sevilla has

not involved many industrial activities: therefore, many vacant lands are directly inherited from past agricultural uses, even though urbanization has progressively surrounded them. This gives to the vacant spaces of Sevilla a very special value, both in agronomical and cultural terms. This is understood and addressed by gardening associations. Some of them have made of this heritage a central aspect of their claims and a justification of the existence of their garden. For example, volunteers of the Comité pro-parque Miraflores have made an important work of investigation to reveal the archaeological remains of the site where the garden is located. Thanks to these investigations, they have uncovered an important ancient hydraulic system including a Noria (ancient water wheel, Figure 4), several ancient agricultural buildings and an olive mill. One of the buildings has been converted into a "house for gardeners", where events take place, and which includes is a library, exhibition of old tools, etc. The olive mill has been restored and the project is to transform it into an "eco-museum" explaining traditional farming in Andalusia, the cultivation of olive trees, etc.

Figure 4. The ancient "Noria", piece of the hydraulic system built in the 16th and 17th century (Picture, J. Pourias, 2015)

Similarly, the land of the Parque del Tamarguillo garden had an agricultural use that progressively turned into an unauthorized dump during the 20th century. The association which put the garden in place also worked on uncovering the agricultural past of the land and promoting the ancient farm building located on it (Figure 5).

The soil of the Huerto del Rey Moro, has been dedicated since the 15th century to the growing of vegetables for the mansion located next to it. The Parque del Alamillo garden and the San Antonio garden are located in the middle of former orange orchards and the Parque del Alamillo garden is still surrounded by orange trees (Figure 6). In this context, urban gardens in

Figure 5. Ancient farm buildings in the Parque del Tamarguillo (Picture, J. Pourias, 2015)

Figure 6. Orange orchard surrounding the Parque del Alamillo garden (Picture, J. Pourias, 2015)

Sevilla have a function, not only to maintain open spaces in the city, but also to preserve soils with important cultural and agronomical values.

Link to the agricultural periphery

I already described the exchanges of knowledge between urban gardeners and inhabitants of the rural or peri-urban periphery of Sevilla. Urban gardeners also have material links with peripheral areas. Figure 7 show the material exchanges between the Parque de Miraflores garden and peri-urban gardens and farms.

Three types of materials are exchanged with peripheral areas:

- Manure (collective purchase): the provision of manure is organized collectively in the Miraflores garden. The Comité pro-parque Miraflores is organized in several "working committees". One of them is in charge of organizing a common purchase of fertilizer every year. Manure is purchased to a farmer of the outskirts of Sevilla: it is a very rich and balanced mix of horse and goat manure, as the farmer raise both goats and horses. When delivered to the garden, the manure is already half composted: it is stocked in a corner of the garden during the end of its maturation process.
- Seeds and plantlets (collective greenhouse): young plants are produced by the "seedling committee" in a collective greenhouse. Every year, gardeners have the option to pay 10€ to get a mix of young plants for the whole season. For some species like tomatoes, from one year to another the responsible of the "seedling committee" retrieves seeds from his plot and asks to market-gardeners of the outskirts of Sevilla to produce the young plants in order to avoid cross-pollination and keep the varieties stable from one year to another.
- Seeds, plantlets … (individual initiatives): beside exchanging knowledge, urban gardeners frequently get plants from friends or family members who have either a garden or a farm in rural or periurban areas. For example, several gardeners have explained that the perennial aromatics they grow in their plot come from the mountainous area in the North of Sevilla. I underline here the potential contribution of urban gardens to make city's metabolism more

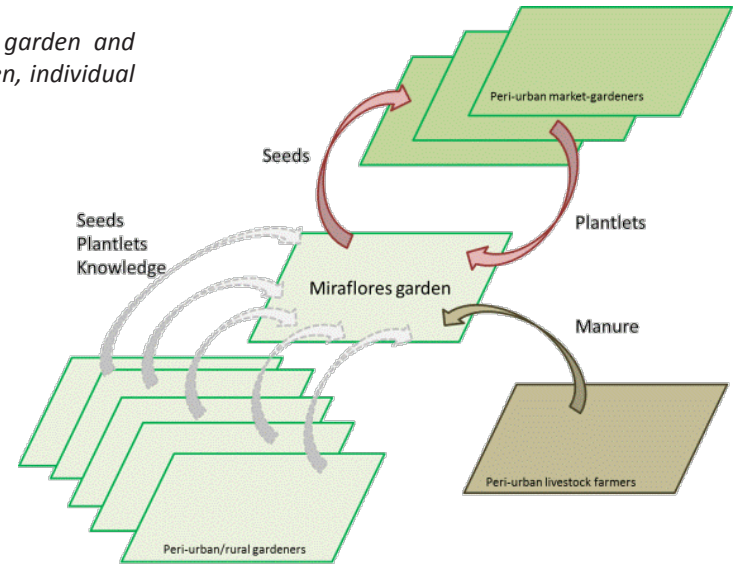


Figure 7. Flows of materials between Miraflores garden and peri-urban gardens and farms (Legend: in pale green, individual initiatives; in dark green, collective organisation)

circular, by recycling nutrients, and to the long-term food security of the city by maintaining concrete interconnections with peri-urban areas.

CONCLUSION

The crisis did have an influence on the creation of gardens; however, in Sevilla, a strong dynamic of creation of gardens already existed before 2008. The crisis has changed some parameters, like the cost of the lands which has engaged public authorities to look for alternative ways to use vacant lots. However, politic context has also played a very important role in the creation of gardens since the beginning of the 2000's.

With respect to the motivations of urban gardeners, gardens are seen by some as a way to produce food and then to save money. However, it appears that gardeners have not massively turned towards the gardens to save money, as this is sometimes recounted in press articles. In urban gardens, the most visible impacts of the economic crisis are linked to its underlying effects, causing a lack of confidence in the capacity of the actual society and economical model to provide good living conditions. We have witnessed that several entrepreneurial urban agriculture projects have emerged in Sevilla for the past years. These projects potentially represent a more powerful response to the crisis than urban allotment garden per se. Therefore, while we emphasize the need to assess thoroughly the actual benefits derived from urban gardens regarding various aspects such as food access, health, etc., we underline here that an interesting aspect of urban allotment gardens in the city in crisis may also be the space they create to experiment networks and social organizations and to foster knowledge and know-how that allow the emergence of professional urban agriculture projects.

I identified four ways urban allotment gardens can contribute on the short and long-term to city food security: production of food per se, maintenance and propagation of knowledge and know-how on how to produce food, maintenance of open spaces and soils with interesting agronomical properties and creation of a link to the agricultural periphery of the city.

These aspects would be interesting research topics for future investigations. More precisely, I identify four possible topics for future research projects:

- To quantify and qualify the actual production of fruits and vegetables in the gardens of Sevilla, and to compare the yields with similar measures taken in gardens of Montreal and Paris, most of the time in gardens set on urban soils. This would contribute to assess the importance of pedo-climatic conditions in the yields achieved in urban gardens, with respect to other determinants related to the cropping practices of gardeners for example.
- To investigate more deeply the transmission of knowledge in the gardens: how efficient is the oral transmission of "traditional" knowledge for people who are used to use Internet or other media as a major learning source? Is there permeability between these two ways of learning? That is to say, do people who have agricultural knowledge also refer to Internet? ...

- To assess the actual agronomical profile and possible contaminations of the soils of the gardens of Sevilla, through historical investigations and soil analysis.
- To identify and quantify material flows in and out of the gardens (nutrients, plant materials…) in order to evaluate the contribution of urban gardens to the more global metabolism of the city and analyze "metabolic interactions" (Barles, 2007) between urban gardens and market-gardening peri-urban areas.

REFERENCES

1. Angeles, L., 2012. Crece el cultivo de huertos en Europa para ahorrar en el mercado. BBC.
2. A.S.O, 2013. Huertos sociales: pequeños tesoros verdes en tiempos de crisis. Hoy.es.
3. Astier, M., 2015. A Lisbonne, les parcs deviennent des potagers urbains. Reporterre.
4. Barles, S., 2007. Urban metabolism and river systems: an historical perspective. Paris and the Seine, 1790-1970. Hydrol. Earth Syst. Sci. 11, 1757–1769.
5. Barthel, S., Parker, J., Folke, C., Colding, J., 2014. Urban gardens: Pockets of social-ecological memory, in: Greening in the Red Zone. Springer, pp. 145–158.
6. Bonneau, E., 2013. Les jardins anti crises. Environnement.
7. Bricas, N., Seck, P.A., 2004. L'alimentation des villes du Sud: les raisons de craindre et d'espérer. Cah. Agric. 13, 10–14.
8. Cueto, C., 2014. Los huertos ciudadanos entre el ocio y la necesidad. D. Sevilla.
9. Ferguson, N., 2008. The New Hard Times. Time Mag.
10. Godfray, H.C.., Crute, I.R., Haddad, L., Lawrence, D., Muir, J.F., Nisbett, N., Pretty, J., Robinson, S., Toulmin, C., Whiteley, R., 2010. The future of the global food system. Philos. Trans. R. Soc. Lond. B. Biol. Sci. 365, 2769–2777.
11. Grigoriou, P., 2013. Il était une fois à Athènes... Monde Dipl. Le Laboratoire Grec.
12. Guardiola, J., Guillen-Royo, M., 2013. From market needs to human needs: Spain and the economic crisis (FEG Working Paper Series No. 02/13). Faculty of Economics and Business (University of Granada).
13. Kirby, E.J., 2013. Healthy Italian diet suffers as economic crisis bites. BBC News.
14. Lopez Bernal, J.A., Gasparrini, A., Artundo, C.M., McKee, M., 2013. The effect of the late 2000s financial crisis on suicides in Spain: an interrupted time-series analysis. Eur. J. Public Health 23, 732–736. doi:10.1093/eurpub/ckt083
15. Mitralias, R., 2013. Du champ à l'assiette, en Grèce les initiatives se multiplient ! Assoc. Pour Autogest.
16. Pourias, J., Aubry, C., Duchemin, E., 2015. Is food a motivation for urban gardeners? Multifunctionality and the relative importance of the food function in urban collective gardens of Paris and Montreal. Agric. Hum. Values.
17. Prudhomme, C., 2013. Acheter de la nourriture devient difficile pour les plus modestes. Le Monde.fr.

MOTIVATIONS BEHIND URBAN GARDENING: "HERE I FEEL ALIVE"

Presenter: Hug March, Universitat Oberta de Catalunya, Spain

Authors of the chapter: Laura Calvet-Mir, Hug March, Helena Nordh, Jeanne Pourias and Barbora Čakovská

As populations become more urbanized across Europe and lose their rural roots (which were lost a long time ago in countries such as the UK or Germany), many urban dwellers have started to demonstrate an increasing interest in growing things. Many initiatives in favour of urban gardening emerge, whether traditional allotment gardens or newer forms such as collective gardens. Many city authorities and urban garden associations have seen waiting lists grow recently and in some cases people may wait several years before they can rent a plot for gardening.

Over recent years the benefits and virtues of gardening have been studied from different scientific perspectives. Gardens have been demonstrated, among other aspects, to: a) support social interactions and networks (e.g. Mason and Conneeley 2012); b) increase social integration of groups at risk of exclusion and help in community-building (e.g. Anguelovski 2013); c) contribute to food production/ sovereignty in urban areas (e.g. McClintock 2014); d) contribute to city resilience (e.g. Camps-Calvet et al. 2015); e) provide cultural and educational benefits (e.g. Gomez-Baggethun and Barton 2013); f) maintain rural identity in the city (e.g. Domene and Sauri 2007). Nonetheless, these studies describe motivations from an external (scientific or practitioners) point of view and few studies have dealt with gardener's perspectives (e.g. Larder et al 2014). Our chapter explores the specific motives leading people to engage in urban gardening.

To carry out the research we collected data from four case studies on which the authors of the chapter have been working: Barcelona (Spain), Nitra (Slovakia), Oslo (Norway) and Paris (France). Basically this encompassed semi-structured interviews with urban gardeners in the period 2011 to 2014 (see table 1) in different types of urban gardens: allotment gardens divided into plots tended individually (Oslo, Nitra, Barcelona, Paris) and self-organized squatted urban gardens (Barcelona).

Case study	Methods	Information source
Barcelona (Spain)	Semi-structured interviews (n=10), field diary, participant observation	Primary data gathered in 2014 by Calvet-Mir and March
Nitra (Slovakia)	Semi-structured interviews (n=27), non-participant observation	Primary data gathered in 2014 by Cakovska
Oslo (Norway)	Semi-structured interviews (n=33)	Data gathered in 2013 by master student under supervision from Nordh (Wiklund and Koppang 2014)
Paris (France)	Semi-structured interviews (n=25)	Data gathered in 2012 by Pourias

Table 1. Overview of case studies, methods and information source of each case study

Figure A: Recreation type of allotment garden with fruit tree in Nitra. (Photo: Maria Bíhuňová and Barbora Čakovská)

Figure B: An image from Etterstad allotment garden in Oslo. (Photo: Helena Nordh)

Figure C: Squatted urban garden, Barcelona. (Photo: Hug March)

Figure E: Traditional layout of a family garden; big plots with an individual cabin. (Photo: Jeanne Pourias)

Based on results from all case studies we created 5 main categories of motivations. In what follows we briefly describe each category and include some quotations from gardeners that serve to exemplify them.

Category A) **"Food production and sovereignty"** includes motivations related to self-production or self-sufficiency, with respect to food security, food sovereignty, or the production of quality food. "I grow what I want, and the food I trust!" (Paris); "I don't like the "plastic" vegetable from supermarket, you don't know if you eat apricots or tomatoes…" (Nitra)

Category B) **"Psychological and physical health"** covers aspects of well-being, physical activity, mental restoration and self-achievement. "I think it gives a lot of life quality. When one comes home from work, tired and stressed one can just lie down on the grass and experience a completely different world" (Oslo); "Here I feel alive, in this place you can feel that is worth living" (Nitra)

Category C) **"Environmental, political and economic urban issues"** refers to motivations directly related to environmental issues such as the conservation of agrobiodiversity or more generally the greening of the city. "Gardens are a 'green lung' for the city" (Barcelona). Urban gardens also emerge as a source of collective empowerment to defend the "right to the city" by "bringing life to vacant plots" and creating spaces of resistance towards neoliberal urbanism and urban speculation: "A place where we can develop initiatives, not just contemplative spaces such as urban parks" (Barcelona)

Category D) **"Weaving socio-cultural relations"** refers to the development of interpersonal associations, which include strengthening community ties, interest in inter-cultural exchanges within the garden, community building as well as enhancing social cohesion within the neighborhood where the garden is located. "Urban gardens help to solve the issue of individual loneliness in the city" (Barcelona); "Our garden is in a park, and it's also intended to engage people who frequent the park, to call on people from the neighborhood, to play a role of actor, of symbiosis, a crossing point, a place of exchange… Of friendliness! It's not only the idea of growing; it's also the contact with people… And it's a source of pleasure, clearly…" (Paris)

Category E) **"Learning, educating and transmitting knowledge"** includes motivations related to the urban garden as an arena for learning or education such as education of children and the general public, knowledge co-production and sharing, intergenerational knowledge exchange and experimentation. "I use to come here with my grandchildren to show them where beans come from" (Barcelona); "My first goal was to learn. To learn, not just to watch others doing. [...] I need to touch, to learn well" (Paris).

From our results we can infer that the type of garden already embodies and limits the scope behind the motivations of the gardeners involved; in other words, the typology of garden (allotment, squatted, etc.) is the expression of different motivations while at the same time it may frame the motivations of new gardeners. Thus, motivations are not isolated from wider societal trends

(economic crisis, environmental concerns, etc.). On the other hand we can also argue that the categories of motives presented in this chapter can be explained on different scales such as personal, neighborhood, city and country scale.

Through the analysis of interviews with gardeners from the four European cities of Barcelona, Nitra, Paris and Oslo, we have demonstrated the complex, multi-scalar and dynamic set of connected motivations that gardeners express and that interact with societal changes and with their broader context of emergence. The various motivations expressed by gardeners underline the multiple benefits derived from urban gardens. Urban gardens should offer the opportunity to express the various motivations gardeners are looking for, while at the same time providing a flexibility that can withstand the inevitable changes that may occur in the individual motivations of gardeners, in the group of gardeners or more broadly in the expectations linked to the evolution of society.

Bibliography

1. Anguelovski, I. (2013): Beyond a Livable and Green Neighborhood: Asserting Control, Sovereignty and Transgression in the Casc Antic of Barcelona. International Journal of Urban and Regional Research 37(3), 1012-1034.
2. Camps-Calvet, M.; Langemeyer, J.; Calvet-Mir, L.; Gómez-Baggethun, E.; March, H. (2015): Sowing Resilience and Contestation in Times of Crises: The case of Urban Gardening Movements in Barcelona. Partecipazione e conflitto 8(2), 417-44.
3. Colasanti, K.; Hamm, M.; Litjens, C. (2012). The city as an agricultural powerhouse? Perspectives on expanding urban agriculture from Detroit, Michigan. Urban Geography 33(3), 348–369.
4. Domene, E.; Saurí, D. (2007). Urbanization and class-produced natures: Vegetable gardens in the Barcelona Metropolitan Region. Geoforum 38(2), 287–298.
5. Gómez-Baggethun, E.; Barton, D. N. (2013). Classifying and valuing ecosystem services for urban planning. Ecological Economics 86, 235–245.
6. Larder, N.; Lyons, K.; Woolcock, G. (2014). Enacting food sovereignty: values and meanings in the act of domestic food production in urban Australia. Local Environment: The International Journal of Justice and Sustainability 19(1), 56-76.
7. Mason, J.; Conneeley, L. (2012). The meaning of participation in an allotment procets for fathers of preschool children. British Journal of Occupational Therapy 75(5), 230-236.
8. Wiklund, K.T; Koppang K. E. (2014). Kolonihager i Oslo - en studie av motiv, betydning og bruk. Master Thesis. Oslo: Norwegian University of Life Scienses, Oslo.

CROPPING PRACTICES IN URBAN ALOTMENT GARDENS: AGRONOMICAL ANALYSIS OF GARDENERS' TECHNICAL DECISIONS AND CROPPING PRACTICES IN PARIS AND MONTREAL GARDENS

Jeanne Pourias, AgroParisTech INRA, France

Cropping practices of gardeners are not well known. Literature show that the yields achieved in urban gardens are very variable (Algert et al., 2014; Gittleman et al., 2012; Pourias et al., 2015; Smith and Harrington, 2014), however, the determinants of this variability have not been investigated. In this study, we investigated cropping practices of gardeners and how these practices were related to their motivation. In particular, we analyzed how the intensity of gardeners' cropping practices is related to the importance they give to the food function of their garden. In 2012 and 2013, we interviewed gardeners in urban gardens of Paris and Montreal at the beginning of the growing season on their motivations and their cropping practices. We then monitored cropping practices each month during the whole growing season: (i) organization and planning of crops in time and space (crop calendars, spatial organization of crops on the plot, level of crop planning) and (ii) cultivation operations (soil management, fertilization, and pest management). Each of these practices was rated according to their degree of intensification and the level of expertise implemented by gardeners. On the basis of this notation, we then built a typology of gardeners according to the intensity of their practices. We observed three types of strategies: low-intensity strategies, in which gardeners have on the whole non-intensive practices, high-intensity strategies in which gardeners have on the whole intensive practices and combined strategies, in which gardeners combine non-intensive practices and intensive practices. For example, one may have fertilize intensively his plot, but have very low intensive practice regarding soil tillage. From this statement, we tried to understand the determinants of these diverse strategies. We found that the intensity of gardeners' cropping practices is positively correlated with the importance they attribute to the food function of their garden. Other motivations are also positively or negatively correlated to cropping practices: for example, gardening during wintertime (intensity of crop calendar) is described by gardeners as not compatible with the garden as a space for leisure. Similarly, gardeners who came to the garden in a search for a contact with nature had a tendency to have less intensive practices regarding soil tillage and weeding. To conclude, we want to draw the reader's attention on the fact that gardeners' cropping practices are very diverse, but this diversity and complexity doesn't mean that their practices are random. They are in fact part of strategies, which respond to the diversity of objectives and motivations that gardeners express. Unlike professional farmers, food production might not be a central objective for gardeners: therefore, the tools and concepts of agronomy need to be adapted to this non-professional context.

WORKING GROUP 3 ECOLOGY SUMMARY REPORT

Chairs: Andrzej Mizgajski, Annette Voigt

Participants:

Andrew Hursthouse, University of the West of Scotland, Paisley, UK

Andrzej Mizgajski, Adam Mickiewicz University Poznan, Poland

Annette Voigt, University of Salzburg, Austria

Ari Jokinen, University of Tampere, Finland

Avigail Heller, Ministry of Agriculture and Rural Development, Haifa,Israel

Béatrice Bechet, French Institute of Science & Technology for TDN, Paris, France

Francesca Bretzel, National Research Council Institute for Ecosystem Study,Pisa, Italy

Francesco Orsini, Dep. Agricultural Scienes, University of Bologna, Italy

Ligita Balezentiene, Aleksandras Stulginskis University, Akademija, Lithuania

Martha Węglewska, Adam Mickiewicz University, Poznan, Poland

Monika Latkowska, Warsaw University of Life Sciences, Poland

Paulo Filipe Luz, Institut Nacional de Investigacao Agraria e Veterinaria (INIAV), Oeiras, Portugal

Sàrka Petrova, Institut of Experimental Botany ASCR, Prag, Czech Republic

Teresa Leitão, National Laboratory for Civil Engineering (LNEC), Lisbon, Portugal

Zane Vincevica-Gaile, University of Lativa, Riga, Latvia

Agenda

Thursday, September 3

- Welcome and short introduction
- Adoption of the agenda
- Summary of the WG3 meeting in Nicosia; relevant Information
- Very short report on recently finished / ongoing projects as well as project ideas of WG3 members such as papers, presentations...current work of WG3 members (if necessary: Continuation the next day)
- Info about LAND paper (Monika Latkowska)
- 'Garden usage, horticultural practices and ecological awareness of the users in selected Warsaw allotment gardens – analysis of the methodology and results from the studies, directions for the future research' (Monika Latkowska)

Joint Session: WG3 Ecology and WG2 Sociology

Presentations:

- 'Motivations behind Urban Gardening: 'here I feel alive'', Hug March, WG 2
- 'Cropping practices in urban allotment gardens: Agronomical analysis of gardeners' technical decisions and cropping practices in Paris and Montreal gardens', Jeanne Pourias, WG2
- 'Environmental relevant attitudes and behaviour of urban allotment gardeners in Europe: Insights and challenges for socio--- ecological research', Annette Voigt and Andrew Hursthouse, WG3

- General discussions and ideas for collaboration, i.e. methods, research, publications, fact sheets, etc.
- Summary and input for the World Café

Friday, September 4

WG 3 General session (continue)

Presentations:

- UAG and water governance issues (Paulo Brito da Luz)
- Anthropogenic flow of matter and energy through allotment gardens as a reflection of management manner (Marta Węglewska, K. Rzańska & L. Poniży)

Final discussion

- Fact sheets/information templates as an outcome of the COST Action: WG3: topics and authors (Andrzej Mizgajski)
- Next steps and how to proceed (in following meetings)
- Preparation of World Café (What to report about: chapters; future collaborations; further outputs; next steps)

ENVIRONMENTAL RELEVANT ATTITUDES AND BEHAVIOR OF URBAN ALLOTMENT GARDENERS IN EUROPE: INSIGHTS AND CHALLENGES FOR SOCIO-ECOLOGICAL RESEARCH

Annette Voigt, Andrew Hursthouse

Summary

The presentation was aimed to explain the interest of WG3 members in social research and to raise questions for discussion with the members of WG2.
The research of the members of WG3 shows a wide range of interests and approaches such as geochemical and botanical studies, vegetation mapping and floral analysis, contamination of the cascade systems including soils - water – plants, soil and ground water protection, position of urban gardens in urban structure, urban gardens as urban ecosystems and their ecosystem services: effects on urban climate, food provision, biodiversity, cultural service, urban gardens users ecological relevant attitudes and behaviour. All topics have a "human dimension" and for research it is important to integrate biological, geographical and social perspectives and methods.

Concerning the topic of urban gardens users ecological relevant attitudes and behaviour, gardener's attitudes (e.g. environmental, social/moral values, world views), their individual motivations for gardening (e.g. relaxation or food provision), and their horticultural/ecological knowledge (or beliefs) are important determinants of gardening behaviour and activities such as practices of soil improvement, pest control, use of fertilizers, plant choice, waste and sewage management, water consumption, etc. The behaviour has objective, measurable effects on the environmental conditions (and gardeners' health), e.g. on soil, water, food quality and quantity as well as habitat quality.

Despite the growing understanding of the multiple benefits humans can derive from urban gardens, the environmental and ecologically relevant behaviour of urban gardeners is not well understood. Do urban gardeners behave in an environmentally friendly manner? With the aim to discuss these relationships, we presented the first results of an international survey on urban gardening in six European urban regions. Between 2012-2015 members of WG3 undertook a series of questionnaire surveys (#396) focused on the motivations, environmental attitudes and ecologically relevant behaviour of gardeners in Salzburg in Austria, the Polish cities Warsaw and Poznań, Lisbon in Portugal, Paide in Estonia, and in a number of locations in the West of Scotland.

Our results highlight the wide range of motivations for urban gardening in Europe with emphases on recreation and food supply and disparities in environmentally and health relevant behaviour and attitudes. Interestingly, there is a gap between self-perceptions and attitudes of gardeners and their actual behaviour.
We discussed results and methods with the members of WG2. We agreed that to increase benefits of urban gardens, it is useful to look on gardeners' motivations, their attitudes and practices.

URBAN ALLOTMENT GARDENS

1) Attitude-Behaviour Relationship

Gardener's **attitudes** (e.g. environmental, social / moral values, world views), their individual **motivations** for gardening (e.g. relaxation or food provision), and their horticultural/ecological **knowledge** (or beliefs)

are important determinants of gardening **behaviour and activities** (such as practices of soil improvement, pest control, use of fertilizers, plant choice, waste & sewage management, water consumption…)

Attitudes, Motivations, Knowledge → Gardening behaviour & activities →

Do you think that you behave in an ecological/sustainable manner in your allotment?

Ecological behaviour	Sb	Pz	Pa	WS	Li
Yes, always	19.7%	23.0%	66.7%	53.3%	80.0%
Mostly / more often	70.4%	58.0%	26.7%	46.7%	5.0%
Sometimes	-	-	0%	0%	10.0%
Hardly/ rather seldom	5.3%	13.0%	0%	0%	0%
Never	0,7%	0%	0%	0%	0%
I don't know	4.0%	6.0%	0%	0%	5.0%
Number of answers, n=	152	100	15	15	20

(-) means 'not asked'

Sb = Salzburg (Austria); Wa = Warsaw (Poland); Pz = Poznan (Poland); Pa = Paide (Estonia); WS = West of Scotland (UK); Li = Lisbon (Portugal)

Do you use any pesticides?

Usage of Pesticides	Sb	Wa	Pz	Pa	WS	Li
regularly	1.9%	6.0%	5.0%	0%	0%	0%
sometimes	54.2%	20.1%	53.0%	0%	0%	25.0%
On rare occasions	-	22.2%	-	13.3%	0%	35.0%
never	43.9%	51.7%	42.0%	93.3%	100%	40.0%
Number of answers, n=	155	90	100	15	15	20

(-) means 'not asked'

What were the main motivations for choosing an allotment?

Motivation	Sb	Wa	Pz	Pa	WS	Li
Recreation and recovery	XXX	XXX	XXX	X	-	XX
Space for children to play	X	X	X	0	-	0
I love gardening / is hobby	XX	XX	X	X	X	XX
Silence/ fresh air	XX	XXX	XXX	X	X	X
supply of fruits and vegetables	XX	X	XX	XXX	XXX	XXX
Compensation for missing garden	XX	X	X	XX	0	X
Community spirit / ties with others	X	X	X	X	0	X
connectivity with nature	XXX	XX	XX	XX	0	-
Number of answers, n=	157	90	100	15	15	20

(Multiple answers possible; (-) means 'not asked')

2) Environmental Impacts

behaviour has (objective, measurable) effects on the **environmental conditions (and gardeners' health),** e.g. on soil, water, food quality and quantity as well as habitat quality

Attitudes, Motivations, Knowledge → Gardening behaviour & activities → Environmental conditions & health

U. Chukwura on her STSM on the variability and mobility of potentially toxic elements in garden soils

Pesticide residues?

Gardens as sources of invasive species?

Gardens as habitats

Why do you consume your home-grown vegetables and fruits in particular?

Reason of Consumption	Sbg	Pz	Wa	Pa
It was produced and has to be consumed	11.1%	19.0%	12.3%	0%
Quality (taste) is better	31.3%	18.0%	50.0%	20.0%
It is healthier / less harmful substances	47.5%	37.0%	56.7%	86.7%
I can save money	-	2.0%	28.7%	66.7%
It is fun / I simply like it	-	-	71.0%	40.0%
Others	10.1%	-	-	26.7%
I don't cultivate fruits nor vegetables	-	24.0%	7.0%	-
Number of answers, n=	99	100	90	15

(-) means 'not asked'

In Salzburg and Poznań only one answer was possible, in Warsaw and Paide multiple.

Challenges for socio-ecological research on UAGs

Questions:

- What we need to help decision-makers of technical services of cities is a methodology to know what to do when there is a crisis in UAG due to environmental problems (contamination of soils or vegetables) or to problems between gardeners in the associations in charge of the management of each UAG.
- Joint projects:
  comparison of problems (such as pollution) and how the problems were addressed.
- Ideas for cooperation on fact sheets?
- Potential for H2020 project(s)
- Other funding opportunities

WG3 Abstracts

GARDEN USAGE, HORTICULTURAL PRACTICES AND ECOLOGICAL AWARENESS OF THE USERS IN SELECTED WARSAW ALLOTMENT GARDENS – ANALYSIS OF THE METHODOLOGY AND RESULTS FROM THE STUDIES, DIRECTIONS FOR THE FUTURE RESEARCH

M. J. Latkowska (project leader), A. Rutecka (M.Sc. student)

Warsaw Univ. of Life Sciences, Faculty of Horticulture, Biotechnology and Landscape Architecture

Studies were carried out in 2013 in 3 AGs colonies (ROD) in Warsaw: „KBM Północ" (3,3 ha, 82 plots); „Lotnisko" – (9 ha, 198 plots), and „Park Dolny" (11 ha, 257 plots). The mean plot area was 327 m2. Analyses of plot usage, cultivation methods, and ecological awarness of the plot holders were the aim of the studies.

Questionnaires based on Salzburg example (modified) with 40 closed and open questions were used to analyse: users' characteristics, ways of plot usage and its development, horticultural practices, ecological awareness of the plot holders. They were used during the interviews with garden users in 30 randomly selected gardens per one AG colony. Results of the studies will be presented during the WG 3 meeting.

Critical analysis of the questions posed and results obtained from the study led to elaboration of new questionnaire with more precise and deeper questions oriented on gardening practices and their possible impact on the environment, as well as on horticultural and ecological knowledge of the plot holders. Proposed questionnaire will be discussed with WG 3 members.

URBAN ALLOTMENT GARDENS AND WATER GOVERNANCE ISSUES

Paulo Brito da Luz, INIAV, Portugal

UAG – Madeira Island

An important urban societal challenge is to properly connect activities to the use of resources. As a particular case, this goal is observed in UAG activities with multifunctional characteristics and taking into account the sustainability of natural resources. Also, in the context of those thematics, public governance can be understood as a system/exercise, involving decision-makers and stakeholders, to establish a multidisciplinary framework of objectives and guidelines to UAG development.

UAG issues, concerning this COST Action, are approached within four key domains of knowledge, reported to working groups (WGs): 1) Policy and Urban Development; 2) Sociology; 3) Ecology and 4) Urban Design. Each one is focusing specific interests and concerns. Moreover, the aim of this COST is also to find main linkages to promote integrated decision support tools and strategies in a holistic way.

Water is an issue to be thoroughly assessed in any agricultural system, regarding its value in three main aspects: 1) Agro-environmental; 2) Economic and 3) Social, in order to ensure its sustainability. Furthermore, the linkage of water to soil, air/atmosphere and energy is identified within an overall management of natural resources and ecosystem services. A large set of water cycle studies, involving ecological aspects (e.g. resources use and resources quality) are needed to characterize main interlinked parameters, considering soil-plant-atmosphere systems at different scales (from plot to countries).

This presentation aims to identify some tools to adress UAG and water issues, involving the concept of governance. Besides, some approaches and analysis suggested may integrate data and information from WGs thematic sections, namely WG2 and WG3. It should be noted, in this respect, that sometimes "difficulties" are to be expected, due to the use of specific disciplinary terminologies.

A basic tool increasingly used is the common "indicator system", very useful for comparative purposes and to be applied in advanced procedures and modeling (e.g. Decision Support Systems, Artificial Intelligence, Multicriteria Analysis or Benchmarking) regarding solutions, as "compromising solutions", to solve potential conflicts or competing objectives, at technical-environmental-socioeconomic domains. On the other hand, the need is also to develop guides and tables of indicators to identify standards, limitations or the risk level related to quality (design, management or equipments) of UAG options.

Also considering the role of multidisciplinary science, as a support, governance shall contribute with innovative solutions, recommendations and policies, concerning the UAG-Water nexus, to improve "socioecological efficiencies and practices".

ANTHROPOGENIC FLOW OF MATTER AND ENERGY THROUGH ALLOTMENT GARDENS AS A REFLECTION OF MANAGEMENT MANNER

Marta Węglewska, Karolina Rzańska, Lidia Poniży, Adam Mickiewicz University, Poznań, Faculty of Geographical and Geological Sciences

The main aim of the study was to indicate the relationship between matter and energy flow through allotment gardens' ecosystems regarding the way of use. Firstly, we have identified anthropogenic flows of matter and energy through allotments based on the model of "black box" and then collected the necessary data. Survey was the main tool to collect data. 11 users of plots from 4 allotment gardens located in Poznań filled the questionnaires under authors' supervision. The study lasted six months, from May to October 2014, it is a vegetation period in Poland. Based on the survey sheet, data on the usage of the plot were obtained and divided into the „inputs" (water, chemical fertilizers, pesticides, organic fertilizers) and „outputs" (sewage, organic waste, fruits and vegetables). These raw data allowed to indicate the type of plots usage.

Next, all the data were brought to the same weight units [kg] as well as energy units [MJ] and referred to the plot area [sqm]. To assess the anthropogenic flows of matter and energy through allotment gardens we used two indicators: (i) indicator of matter management efficiency - M and (ii), energy efficiency indicator -E. The results enabled a quantitative comparison of plots and showed differences resulting from the usage of allotment gardens. Finally, we characterized types of usage allotment gardens taking into account the differences in the matter and energy flows. Recreational way of use stands out with low weight coefficients of "input" and "output" flows. The "inputs" and "outputs" are dominated respectively by water and sewage. In productive usage weight coefficients of "input" flows are high and dominated by water use for irrigation. Weight coefficients of "output" are low. Mixed usage characterized by relatively high and balanced inputs and outputs. Water is the dominant "input" and output flows are varied in quality, but quantitatively achieve similar amount.

Regarding outcomes concerning energy flow analysis, the energy coefficients of chemical fertilizers and pesticides are dominated at input but among the outgoing flows the highest energy equivalent is characterized by organic wastes.

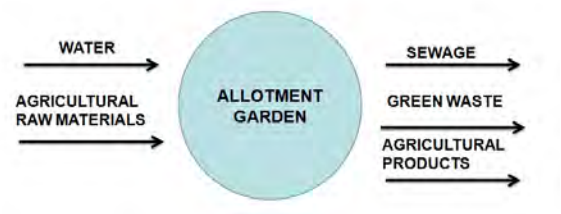


Figure 1. Considered anthropogenic flows of matter and energy through allotment garden

Table 1. Raw data – inputs and outputs

Type of plot	RECREATIONAL			FOOD PRODUCTION			MIXED				
	II_A	II_B	II_C	I_C	III_A	III_B	I_A	I_B	IV_A	IV_B	IV_C
Area (m²)	382	380	422	416	350	396	300	300	518	475	450
INPUT											
Water (L)	3000	1300	1300	18000	8200	2150	6000	5000	6000	16500	7500
Chemical fertilizers (Kg)	15	10	2,25	14	7	_	41	29	40	20	10
Organic fertilizers (Kg)	20	_	_	15	120	100	10	7	8	15	5
OUTPUT											
Sewage (L)	2000	1000	1200	1200	0	0	1500	1200	2000	2000	2000
Organic wastes (L)	550	567,5	585	650	300	350	1900	400	1250	900	1300
Flowers (Kg)	2,6	2,9	3,3	33	32,5	1,9	6,3	16	10	31,5	7,5
Fruits (Kg)	53	107	5	111	74,5	6	64	10	175	110	42
Vegetables (Kg)	73	14	0	49	99	7	7	4	140	26	19

Table 2. Weight and energy coefficients

Type of plot	RECREATIONAL			FOOD PRODUCTION			MIXED				
	II_A	II_B	II_C	I_C	III_A	III_B	I_A	I_B	IV_A	IV_B	IV_C
Area (m²)	382	380	422	416	350	396	300	300	518	475	450
Weight „inputs“ coefficients											
Water [kg/m²]	7,846	3,418	3,078	43,230	20,688	5,424	19,982	16,652	11,573	34,706	16,652
Chemical fertilizers [kg/m²]	0,039	0,026	0,005	0,034	0,020	0,000	0,137	0,097	0,077	0,042	0,011
Organic fertilizers [kg/m²]	0,052	0,000	0,000	0,036	0,343	0,253	0,033	0,023	0,154	0,032	0,022
Total weight „inputs“ coefficient $\sum W_{in}$	7,938	3,444	3,083	43,300	21,051	5,677	20,152	16,772	11,804	34,779	16,685
Weight „outputs“ coefficients											
Sewage [kg/m²]	5,231	2,629	2,841	2,882	0,000	0,000	4,996	3,996	3,858	4,207	4,440
Green waste [kg/m²]	0,425	0,388	0,350	0,389	0,214	0,221	1,583	0,333	0,603	0,474	0,722
Fruits [kg/m²]	0,139	0,282	0,012	0,267	0,213	0,053	0,213	0,027	0,338	0,232	0,093
Vegetables [kg/m²]	0,191	0,037	0,000	0,118	0,283	0,018	0,023	0,013	0,270	0,055	0,042
Flowers [kg/m²]	0,007	0,008	0,008	0,079	0,091	0,005	0,021	0,053	0,019	0,063	0,014
Total weight „inputs“ coefficient $\sum W_{out}$	5,986	3,336	3,202	3,735	0,710	0,292	6,816	4,370	5,069	4,967	5,298
W	1,33	1,03	0,96	11,59	29,65	19,46	2,96	3,84	2,33	7,00	3,15
Energy „inputs” coefficients											
Chemical fertilizers [MJ/m2]	5,143	3,447	0,698	4,408	2,620	0,000	17,901	12,662	10,115	5,515	1,455
Organic fertilizers [MJ/m2]	0,094	0,000	0,000	0,065	0,616	0,454	0,060	0,042	0,028	0,057	0,040
Total energy „inputs“ coefficient $\sum E_{in}$	5,237	3,447	0,698	4,473	3,236	0,454	17,961	12,704	10,142	5,572	1,495
Energy „outputs” coefficients											
Sewage [MJ/m²]	0,066	0,033	0,036	0,037	0,000	0,000	0,017	0,016	0,049	0,053	0,056
Green wastes [MJ/m²]	1,212	1,104	0,996	1,110	0,611	0,630	4,513	0,950	1,719	1,350	2,058
Fruits [MJ/m²]	0,339	0,688	0,029	0,652	0,456	0,129	0,521	0,065	0,825	0,565	0,228
Vegetables [MJ/m²]	0,339	0,065	0,000	0,209	0,502	0,031	0,041	0,024	0,480	0,097	0,075
Flowers [MJ/m²]	0,016	0,018	0,018	0,188	0,217	0,011	0,049	0,126	0,044	0,150	0,034
Total energy „outputs“ coefficient $\sum E_{out}$	1,957	1,890	1,061	2,007	1,569	0,791	5,092	1,054	3,073	2,066	2,417
E	2,68	1,82	0,66	2,23	2,06	0,57	3,53	12,05	3,30	2,70	0,62

WORKING GROUP 4 URBAN DESIGN SUMMARY REPORT

Chairs: Silvio Caputo, Sandra Costa

Participants:

Alice Claydon, LDA Design, Oxford, UK
Alisa Korolova, Riga Technical University, Latvia
Andre Viljoen, University of Brighton, UK
Andrej Erjavec, IN.KA.BI BI. Ljubljana, Slovenia
Antoine Zammit, University of Malta, Malta
Cristian Suau, University of Strathclyde, Glasgow, UK
Dimitra Theochari, National Technical University of Athens, Greece
Emanuele Sommariva, Università degli Studi de Genova, Italy
Eva Schwab, Institute of Landscape Architecture, BOKU, Vienna, Austria
Frederico Meireles, University of Trás-os-Montes and Alto Douro, Portugal
Ina Suklje Erjavec, Urban Planning Institute of the Republic of Slovenia, Ljubljana, Slovenia
Inga KrivkKova, University of Liepaja, Riga, Latvia
Jasminka Rizovska Atanasovska, UKiM, Faculty of Forestry, Skopje, Macedonia
Jenny Anderson, Birmingham City University, UK
Kostas Tsiambaos, National Technical University of Athens, Greece
Runrid Fox-Kämper, ILS Research Institute for Regional and Urban Development, Aachen, Germany
Russell Good, Birmingham City University, UK
Sandra Costa, Birmingham City University, UK & University of Trás-os-Montes and Alto Douro, Vila Real, Portugal
Silvio Caputo, University of Portsmouth, Portsmouth, UK
Veronica Barry, Birmingham City University, UK
Wan Teng, Birmingham City University, UK

Agenda

Thursday, September 3
Introduction from Chairs (Sandra and Silvio)
Three presentations of projects/case studies:
Urban Agriculture in Cuba and design for urban food growing - Alice Claydon, Landscape Architect
Frederico Meireles (A Design Model of Urban Allotment Gardens to the Metropolitan Area of Porto
Cristian Suau (YELLOWFIELD: a Sunflower Garden at MOBILELAND)
Q&A session
Factsheets session
Breakup groups: organisation for the work session of the following day

Friday, September 4

Summary of the discussion on Thursday from Chairs
Break up groups (3/4 groups) debating WG4 topics for factsheets
Presentation from each group
Discussion and finalisation of topics. Identification of authors for factsheets.
Finalisation of deadlines for the draft of factsheets
Preparation for the World Cafe'

Issues Discussed

Thursday, September, 3

The session started with three presentations by:

- Alice Claydon, Urban Agriculture in Cuba and Sitopia: A 21st Century Garden City
- Cristian Suau, YELLOWFIELD: a Sunflower Garden at MOBILELAND
- Frederico Meireles, A Design Model of Urban Allotment Gardens to the Metropolitan Area of Porto

A few questions were asked after each presentation. In particular the last presentation on design projects of urban allotments in Portugal, which focused also on spatial and formal explorations for allotment sites, generated questions on the balance between formal and informal approaches, with designers usually taking an interest to the former and users generally adopting the latter. There was also some discussion regarding growing systems in Cuba and the economical and political landscape associated with urban agriculture. Some interesting insights were given with regard to the importance of urban agriculture in Cuba. For example, Alice mentioned that farmers earn twice as much as other professionals. However, it is difficult to measure the success of urban agriculture in Cuba because information provided by farmers or the government may not be reliable.

During the remainder of the afternoon there was a general discussion on the factsheets' blueprint, with participants proposing possible improvements. The following is a summary of the most relevant observations:

- The language to be used should avoid terms and expressions commonly used by experts and not easily comprehensible by all. Instead there should be an effort to write texts accessible to all
- The first page should be structured as follows: a) title; b) short paragraph explaining the title (e.g. brief/background/introduction) and c) text exposing the challenge the factsheets is going to address
- Currently, the second and third page contain two sections each (message and advice note – advice note and policy brief). However, text in columns on each page does not differ in substance. It is therefore suggested to eliminate the sections and write the text under a unique headline on each page
- The reference section on each factsheet could include links to case studies

Friday, September, 4

After a short introduction from the Chairs, followed by a summary of what was

discussed the previous day, break up groups were formed to put together a list of topics for factsheets that can be of relevance from an urban design perspective. It was decided to form three break up groups, each one including authors of each chapter written in this work group. Topics proposed reflect the foci of these three chapters. Subsequently, the three lists of topics were collectively discussed and two topics were selected out of each list. What follow is the complete list of topics with those shortlisted in in italics.

Group 1 (Chapter 8)

- Strengthening the position of your garden/Making it more relevant and attractive
- Let's activate a vacant site!
- How public/private is your garden?
- How can you make the city edible? Make your city Edible!

Group 2 (Chapter 9)

- Cannot find an allotment? Where else can you grow? (roof, vertically, boxes, raised beds, etc. – multi-page factsheet with one page for each type)
- Found a place? Who is going to do it?
- Did you start it? How will you keep it going?

Group 3 (Chapter 10) (this group suggests a specific audience for each topic/ factsheet as opposed to the two audiences for all suggested in the blueprint)

- Your garden is part of something bigger (for gardeners)
- Allotments as part of the green infrastructure (for designers and policy-makers)
- What do I need to include in my allotment? (for gardeners)
- Do I need design support for my garden? (for gardeners)
- Providing design support to gardeners (for designers and policy-makers)
- How can we manage potential conflicts with our gardens? (for designers and policy-makers)

The last part of the session was dedicated to discuss issues that are still outstanding with regard to websites to be proposed to all participants during the world café session. These are:

- An interface to access factsheets on the website should be designed, in order to easily find factsheets of interest for each audience
- There should be a dedicated factsheet on the lifecyle of allotments and how these can be recycled/upgraded
- A different language could be used depending on the audience
- Not all topics are relevant to all audiences
- Other audiences (rather than the two targeted in the factsheets' blueprint) should be addressed.

During the world café sessions, comments from participants were recorded. What follows is a summary of such comments

- WG 2 is using the factsheet template (4 pages) for one target audience only.
- A member of WG3 suggested that the spaces allocated for images are not

sufficient, and that factsheets should be a more visual piece… It was explained that the columns could have also images.

- It was suggested to developed a factsheet targeting children which could have inputs from the 4 WGs.
- Some of the issues might need external input, either from other WGs or external members.
- Factsheets can also target neighbourhood groups (how to develop these spaces with others) not only gardeners and planners/practitioners.
- Make you city edible! / Edible gardens but also this factsheet could reflect how to make gardens for biodiversity.
- Adding new/more functions to gardens (see examples of in between cultures spaces, MerkuregGarten / www.merkurgarten.ch)
- There are overlaps between WGs (mentioned by WG2) and this should be taken into consideration.
- The time aspect and temporality of UAGs are interesting and important issues also for other groups
- It‘s important to have a fact sheet about how it is possible to utilise vacant site
- We need to check and discuss overlapping between groups – there is overlapping between WG3 and WG4 about green infrastructure and larger scale of UAGs – proposal that Beatrice from WG3 and Runrid from WG4 discuss about
- There is so many bad and unreliable information on internet about gardening – we need to select and provide good references as a part of the fact sheets (but there were different opinions whether or not to provide also links)
- There are aspects and topics that should have answers from different groups for each fact sheet – cooperation between groups is needed
- The text should be user friendly!

URBAN AGRICULTURE IN CUBA AND SITOPIA: A 21ST CENTURY GARDEN CITY

Alice Claydon, LDA Design, Oxford, UK

Alice is a landscape architect working at LDA Design in Oxford. During her time as a student at BCU she won the Landscape Institute travel award to visit Cuba and research urban agriculture. For her final year project ‚Sitopia: A 21st Century Garden City' she applied her research to the UK to explore the potential benefits of incorporating edible infrastructure into cities.

Britain is currently facing a housing crisis: there are too few homes, they cost too much and are often not fit for purpose, which is contributing to a decline in living standards for the average person. The Government's response to this crisis is to announce two 'garden cities' to be built at Ebbsfleet and Bicester; prototypes of a more sustainable approach to future large scale development in the UK. How exactly garden cities should be delivered was a question posed by the Wolfson Economics Prize in 2014, and Urbed's winning entry suggested taking 'meaningful bites out of the Green Belt'.

However, one of the main concerns with the concept of garden cities is that they are based on utopian ideals, first conceived by Ebeneezer Howard in 1898, which have yet to be successfully realised anywhere. Howard's key principles of town-country living within self-sufficient communities containing proportionate areas of housing, employment and agriculture surrounded by countryside, have become nothing more than overpriced commuter suburbs for economically dominant cities such as London and Birmingham.

So instead of basing future communities on unachievable ideals (utopia: 'ou'-no, 'topos'-place) this talk explores how garden cities can address the real issues we currently face such as climate change, unhealthy lifestyles and economic uncertainty. There is one thing that can have an impact on all of these problems, and that thing is food.

As Professor Tim Lang, Professor of Food Policy at City University London, has been warning for the last 35 years, we are currently facing a global 'food crisis' which is already having a catastrophic effect on people's health, livelihoods, and the natural environment.

On a global scale, food production is the single biggest cause of climate change - greater than any other human activity on the planet. It is estimated that the industrial food system

emits more greenhouse gases than the entire transportation network, or even all energy generation on Earth.

We already use 60% of the Earth's land for food production, and the other 40% cannot viably sustain efficient agricultural production. In order to ensure global food security we need to address the way that global food is produced, distributed and consumed. Currently one billion people in the world are obese, and yet another one billion are starving.

Diet-related health problems are placing huge strains on health care systems all over the world. By 2035, it is predicted that diabetes alone will cost the NHS £16.8bn. To put this into perspective, over £162bn was spent on diabetes last year in the USA. Producing more food will not compensate for unbalanced global consumption; it is estimated that 30-50% of all food produced never even reaches a human stomach anyway. With poor practices in harvesting, storage and transportation, as well as market and consumer wastage, we are actually already producing enough food to comfortably feed 7 billion of us now.

The distribution of people across the planet is rapidly changing. One of the direct effects of the widespread conglomeration of agricultural land is the displacement of people from rural to urban contexts. Since 2012 we have for the first time in human history become a predominantly urban species, and feeding cities has become one of the greatest challenges of our lifetime.

Not that most of us in Britain would be remotely aware of this challenge and the monumental environmental costs of putting daily food onto our plates. Supermarkets create the illusion of a permanent global summertime by offering a constant and vast array of food, over 40% of which is imported. The majority of us never have to worry about where we will get our food from - so surely that means the system must be working?

Well actually Lord Cameron, head of the Countryside Agency, realised after the fuel protests in 2000 that any disruption to the supermarkets' just-in-time delivery supply chain would mean that only three days of food per person would be left on the supermarket shelves. We are living in a country where, every day, we are potentially 'nine meals from anarchy'. More recently, Oxfam's Good Enough to Eat Index compared the availability of food, its price, quality and nutritional value in 125 countries worldwide. Britain came out as the worst country in Europe.

As we move into a less stable economic, political and environmental future, the likelihood of mass disruptions to the global energy and food supply chain grows

ever more real. What would it be like if suddenly for some reason we had no industrial food to rely on? There is one place in the world we can look to for an example of the industrial model falling apart practically overnight, and that is Cuba.

In 1989 the Soviet Union collapsed, taking with it Cuba's main source of GDP and nearly all of its imports of fossil fuels, fertilisers, pesticides and agricultural machinery. Tractors and harvesters stopped dead in the fields, trucks could not transport food around the country and hundreds of thousands of cattle starved to death without the grain to feed them. The government declared a state of emergency know as the 'Special Period in a Time of Peace', made worse by the continuing US trade embargo. A radical new model of food production was rapidly needed to prevent mass starvation.

During the Special Period the average Cuban lost between 5-25% of their bodyweight. Although there was widespread famine, mass starvation was prevented as the government implemented a system of 'usufruct' (essentially a long term lease with little or no cost) for anyone to grow food on vacant land in the cities and the countryside. New techniques for growing high yield, pest resistant, organic produce were developed by Cuban scientists, and networks to disseminate and share knowledge and skills spread across the nation. Urban agriculture not only became a viable means of feeding the predominantly urban population, but it also emerged as a key driver on the country's road to recovery.

I visited Cuba in November 2014 to see this edible revolution first hand and if there's one thing I took away from my time in the country it's this: 'Si, se puede!' - 'Yes, you can!'

If a country facing economic collapse, political isolation and widespread shortages could transform itself into a world leader in sustainable development within a decade, then surely it's possible anywhere. During my trip I discovered some of the secrets to the success of Cuba's urban agricultural movement:

1. **State support:** Over forty government departments are dedicated to every aspect of low carbon organic food production providing support, training and research. Learning how to grow food is entrenched in education from nursery school upwards. Schools, hospitals and elderly care homes all have organic gardens which teach people how to grow and prepare healthy food. Widespread political propaganda also re-enforces the message that self sufficiency contributes to national security.
2. **Citizen participation:** Encouraging people to participate in urban agriculture is essential to its success, and there are incentives for producers and consumers alike. Rationing in Cuba still exists, which allows each citizen to purchase a small number of essential goods at reduced prices each month. Urban farmers can earn more than twice the state salary of doctors or teachers because their

pay is directly linked to productivity. National criteria for excellence are set across all forms of urban agriculture and these are assessed regularly. Meeting these criteria greatly improves a farm's reputation and boosts morale.

3. **Flexible typologies:** A decade-long iterative design process has created a clear set of productive landscape typologies which can be adapted to fit nearly every situation. These typologies range from the smallest scale private gardens or urban lots, to large scale co-operatives and suburban farms. Different combinations of scales, functions, and users have been tested in a variety of contexts to create a robust set of models which can be easily deployed by people with little or no previous experience in growing food.
4. **Fine grain networks:** The production and distribution of fresh food in cities is almost universally integrated into every neighbourhood. The small scale nature of urban agricultural plots and markets allows them to be retrofitted into existing urban grids which creates a wider and more even spread of fresh food sources. Organic production is also far more manageable in smaller spaces because of the level of manual input needed. Another result of these networks are the personal and responsive relationships between producers and consumers, which gives people a sense of ownership over their environment.
5. **Agroecology and permaculture:** A huge amount of research has been carried out by Cuban scientists into natural processes which can improve crop yields and disease resistance. These include concepts like interplanting, microbial-based pesticides and symbiotic fungal associations. 'Organoponicos' were developed as long and narrow raised beds filled with organic matter which can be intensively planted and meticulously maintained to produce high yields. Closed loop systems are the key to reducing waste and maximising efficiency - current industrial methods are 10% energy efficient whereas Cuban methods are 200% efficient.

However, the Cuban model is by no means perfect and some of the key issues with it include:

- **Cost of food:** The Cuban state salary is less than $20 US a month and around 75% of that is spent on food. To compare, in the UK we currently spend around 11% of our monthly salary on food (although Cubans do not have other high monthly costs). With the tourist industry rapidly expanding in Cuba people are finding themselves priced out of the market by hotels and restaurants, which often leaves little food left for everyday consumption.
- **Contamination**: Water and soils are not tested and monitored for harmful contaminants and pollutants. Given that most urban sites were once industrial, and reclaimed materials are used to build raised beds, there is potential for heavy metals and toxins to be passed through the food chain. Roadside farms absorb vehicular emissions which helps to clean the air, but few studies have been carried out into the health implications of consuming this food.

- **Integration:** By their very nature urban farms are valuable and are secured with fencing, which excludes them as public amenity spaces. I could not find any examples of recreational public spaces used for community growing. There is certainly potential to integrate productive urban landscapes into the street scene and combine them with other forms of green infrastructure such as SUDs, pocket parks and urban forests, but the current focus for Cubans is on the economic viability of their productive land.
- **Hard work:** There's no getting around it - growing low carbon organic food can be hard work! Low carbon agriculture relies on man power instead of fuel-hungry machinery and chemicals. This is challenging in aging populations and in Britain we are struggling to get younger generations involved in agriculture. The average age of a British farmer is 59 years old. Cities have the highest proportion of young people, so bringing food production to them is the best way of diversifying participation.

My visit to Cuba showed that although urban agriculture is not the only solution to the world's food problem, it can certainly help to develop more resilient communities and it has a whole range of benefits. Growing more food in cities improves biodiversity, air pollution, green space, public health, food literacy, community engagement, employment prospects and urban regeneration. It also minimises waste, transportation, storage, packaging, vacant urban land, flooding, soil degradation and the urban heat island effect.

So how could we apply the very real benefits of urban agriculture to the utopian ideals of garden cities in the UK? In her recent book 'Hungry City' architect and writer Carolyn Steel coined the term 'Sitopia' ('sitos'-food) to describe the concept of a 'food-place' which is based around the production, distribution and consumption of food. My Birmingham City University graduate research project applied the principles of a 'food-place' to 21st century garden cities to explore the kinds of sustainable communities we could be building in the future. I believe that food (buying, growing, consuming) will become an essential and integral form of infrastructure in future cities, just as water, roads and communication currently are now.

Some of the key design principles of 'Sitopia: A 21st Century Garden City' include:

- Walkable neighbourhoods: high density, mixed use, flexible blocks with easy access to local amenities and green space. Wide, tree lined avenues and boulevards with strong active frontages.
- Lively streets: Residential (farm) yards; 'Moo-nerven', based on Dutch shared space principles bringing life to the streets through local growing spaces, natural play and democratic design.
- 'Locavorism': consuming local resources such as food, timber, energy, water and waste.
- Modern town-country living: access to culture and recreation in thriving city

centres with private and public gardens reflecting the seasonal change and productivity of the countryside.

- Diverse employment opportunities: new 'food related' local employers such as universities, technology, healthcare and research companies. Small scale, low rent spaces in city hubs encourage cafe culture.
- Public transport: Fine grain regular bus, tram, cycle and pedestrian connections to local airports, train stations, employment centres, and city neighbourhoods
- Edible typologies: development framework based around access to local growing spaces and food distribution centres such as markets, supermarkets and city farms to make the most of existing edible resources.

YELLOWFIELD: A SUNFLOWER GARDEN AT MOBILELAND

Cristian Suau, University of Strathclyde, UK

The phenomenon of shrinking cities worldwide has generated many derelict voids. If left to fall into neglect and urban inertia, these spaces will have a detrimental effect on local neighbourhoods regarding environmental quality, social health and local economies. Stalled Spaces gardens in Glasgow provide places to play and to learn about nature and technologies as well as to do something useful for your personal development and people encounters and affordable techniques for gardening, food production and harvesting in cities.

MOBILELAND Garden https://mobilelandglasgow.wordpress.com performs as a catalyst for community actions; produces an improvement in the aesthetics and rebrands stigmatised residential areas; contributes to the green infrastructure of the city; and generates safe public places for local dwellers.

A pioneering landscape recovery initiative called YELLOWFIELD at MOBILELAND Garden has recently been established to reactivate the existing greenfield with 50 sunflower planters and phytoremediation soil treatment enabling physical and biological recuperation through temporary greenery and community-led place making. This project started on the 1st of May 2017 and it will complete in November 2015.

The YELLOWFIELD project demonstrates how ecologically driven activity can be woven into existing urban environments and will hopefully instigate the start of more productive nature sites around the city. The sequencing of key activities is as follows:

A. Bio-filtration

Bio-filtration is the reduction of polluting chemicals in the environment through the use of plants. The urban planting of sunflowers can be particularly useful because of their large bio mass and big root system, as well as being quick to grow.

B. Phytoremediation

Sunflowers are a very effective plant for cleaning soils contaminated with industrial waste. It is being seen around the world as a clean, cost effective and environmentally friendly way to reclaim and reuse land. Sunflowers are being used because of their quick growth and size and their visual appeal. The sunflowers take in the toxins from the soil as they would nutrients, at the end of the year's growth the plant is removed from the site and destroyed.

C. Water Management

A major problem in cities is the concern with surface run off water that can lead to flooding and associated pollution. The planting of sunflowers because of their biomass and large root system can be a very effective drainage vehicle in the urban environment.

D. Wild Pollinator Conservation

Bees and wild pollinating insects are in progressive decline. Sunflowers are very good for these pollinating insects. The planting of sunflowers on a large scale in the city will be hugely valuable in supporting the irreplaceable contribution of wild insects and will help to stall their decline.

In synchronicity with Green Glasgow 2015 and Glasgow City Council, YELLOW-FIELD is creating environmental awareness and debate on smart and sustainable ideas locally through the transformation of a brownfield site into an open public garden and ecologically productive land. This bottom-up intervention aims to re-animate future brownfield sites: from Brown to Green. Dr Cristian Suau (Architecture); Dr Christine Switzer (Civil & Environmental Engineering) and Amanda Currie (external landscape artist & gardener) are the main team.

YELLOWFIELD at MOBILELAND Gardens. Glasgow, sumertime 2015.

A DESIGN MODEL OF URBAN ALLOTMENT GARDENS TO THE METROPOLITAN AREA OF PORTO

Frederico Meireles, University of Trás-os-Montes and Alto Douro, Portugal

Urban allotment gardens (UAG) can be seen as the meeting point of both the agriculture and the park realms. Therefore, theise places have been proved to be great means of aiding family economies and also providing recreation and restoration to people. This presentation aims to demonstrate the value and specific nature of UAG in different urban contexts, and to elaborate a conceptual model adjusted to the context of Grater Porto region, focusing on the "Horta à Porta" programme, developed by LIPOR. The research included methods of survey, inventory and evaluation of the allotments, based on a set of parameters, in view of the analysis of 21 UAG. Different urban contexts, spatial configuration and typologies, were considered. Two models were presented as result, the Urban Centre and Periurban, which can be applied to the establishment of new sites and programmes in the Greater Porto region. The models were piloted in the redesign of three existing allotments which helped to sustain that productive urban landscapes can also be sustainable, visually attractive and adjusted to user's needs.

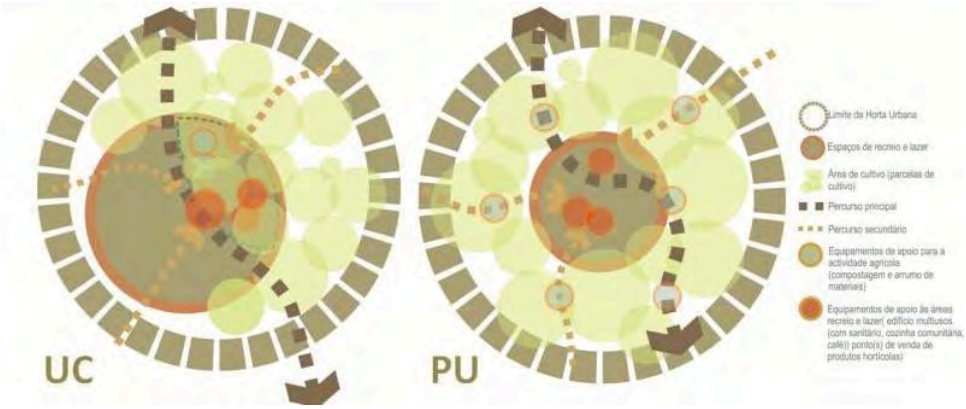


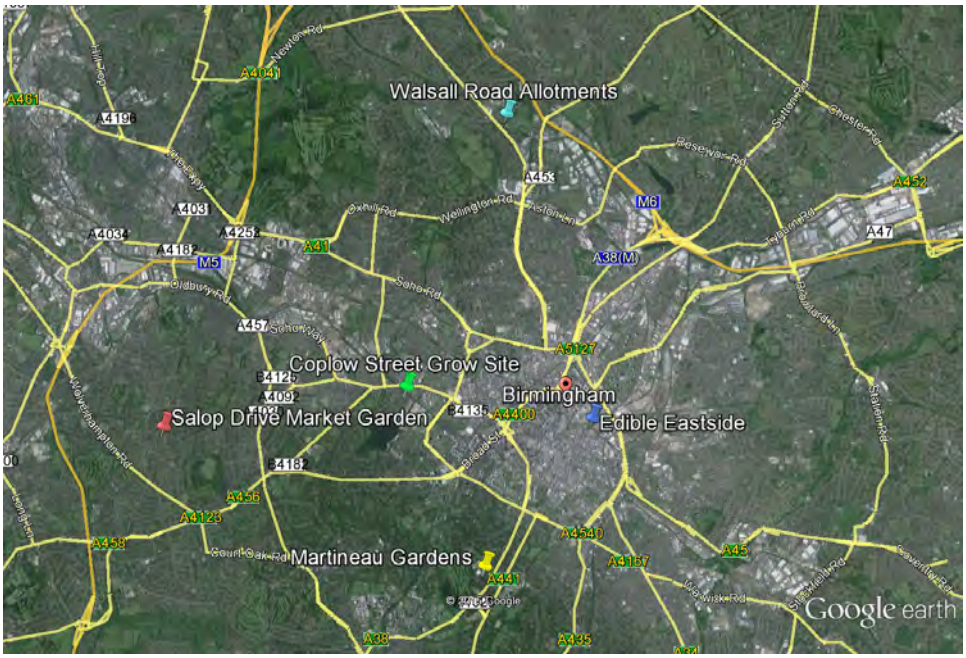
Figure: conceptual design models for consolidated urban areas (UC) and periurban areas (PU) for LIPOR and in the context of Greater Porto. By Maria Inês Sousa.

FIELD TRIP

Saturday, September, 5 (09:00 – 14:00)

Birmingham field trip was arranged to visit five urban gardens with variety of history from traditional allotments to community-led pop-up gardens. They are established based on different initiatives as public or private projects with support from Birmingham City Council. All visited sites are located within the city boundary with direct access to the nearby neighbourhoods. The following brief is a short summary of visited sites.

1. Edible Eastside
2. Martineau Gardens
3. Coplow Street Grow Site
4. Salop Drive Market Garden
5. Walsall Road Allotmens



URBAN ALLOTMENT GARDENS

Edible Eastside

EDIBLE EASTSIDE is a community garden and a not for profit business that established in 2011 by Jane Bradley on a disused industrial canal side space which was a former propane gas-filling depot. It is around 2000 square meter of land located in Digbeth, a home of old industrial buildings and now a district within Birmingham City Centre which is undergoing a large redevelopment scheme. The garden is formed by raised beds and temporary containers. It has more than 40 wooden container plots and members can sign up for annual membership. Alongside the plots, the project works with homeless people, local community groups, food banks on programmes to teach people essential food skills like growing and cooking. There is a joint venture ongoing between Edible Eastside and Birmingham City University under which students explore role of a community garden in the fabric of the city and challenges it can address such as urban resilience, sustainable development, climate change and cultural diversity. The garden communicates its message through music, poets and artists every first Friday of the month.

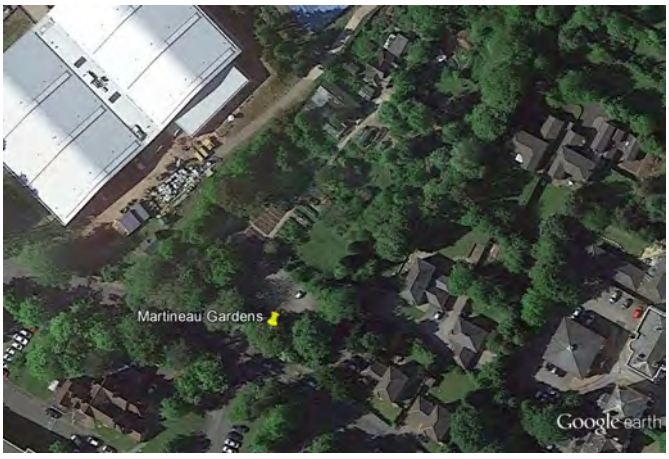
Photos of field trip by Nazila Keshavarz

URBAN ALLOTMENT GARDENS

MARTINEAU GARDENS is a community garden on Priory Road in Edgbaston that were established in 1997 containing two and half acres of woodland, wildlife meadows, orchard, formal garden, vegetable plots, a hot-house, children playground, charity shops that offer produces from the garden complex. Martineau Gardens are administered by a registered charity and are a member of the Federation of City Farms and Community Gardens. The gardens are also designated a Site of Local Importance for Nature Conservation (SLINC) and have been awarded a Green Flag Award in 2010, 2011 and 2012, in recognition of being a well-maintained green space.

Martineau Gardens provide therapeutic horticulture service to people from all over the city. Therapeutic service of the garden is offered to all social classes, age groups and ethnicities. The gardens' regular volunteers have included people with disabilities or support needs such as volunteers with mental health issues, elderly, learning disabilities, autistic and physical disabilities.

Martineau Gardens



URBAN ALLOTMENT GARDENS

COPLOW STREET GROW SITE is a community garden funded by the Heart of Birmingham PCT in 2010 on a derelict car park in Coplow Street, Ladywood district. The garden has a motto which is Grow It, Eat It, Move It, Live It (GEML) and it is based on its mission that has four aspects: Growing food, cooking it effectively, becoming fitter, and reclaiming public open spaces. The garden is cosy and small green space that served 27 families in 2010. It is less than 1200 square meter, with 68 growing beds in different sizes and heights.

URBAN ALLOTMENT GARDENS

SALOP DRIVE MARKET GARDEN in Sandwell is a three acre working market garden with a vision to establish a local food project which supplies bags of freshly grown vegetables to local households. The garden has a greenhouse, polytunnels, outdoor growing beds, toilets and handwashing facilities, classroom, limited off road parking, allotment plots, healing and decorative garden and wildlife area. Both gardens are accessible and supervised by trained horticulture therapists who can tailor gardening activities to suit your needs.

URBAN ALLOTMENT GARDENS

WALSALL ROAD ALLOTMENTS is a classical allotment garden although it is established in 2004 by Birmingham City Council. The allotments are managed by a committee of unpaid allotment volunteers on behalf of the City Council and meets every month to discuss the running of the site.

The garden receives an allowance of £2216 from Birmingham City Council to cover the cost of water, cesspit cleaning and general repairs to Council owned structures. Plot-holders pay an annual Association fee of £5. There are 122 plots, varying in size from 149 ft x 26 ft , to 25 ft x 25 ft. From October 2015 rent will be £87.50 per year for a large plot, £58 for a medium plot and £46.50 for a small plot. (half price for over 65s). Plot holders range in age from 21 to 90 and come from 14 different countries - England, Ireland, India, Pakistan, Bangladesh, North Cyprus, Iraq, Mauritius, Kenya, Brazil, West Indies, Poland, Sweden, Italy). There are paved roadways, grassed amenity areas, toilets, meeting room with kitchen which plotholders can use, standpipes, car parks, high fence and locked gates, shed/lockup for every plotholder. There is a shop which sells gardening items at discounted prices. Tea/coffee/toast are always available in the pavilion, plotholders leave a small donation to cover costs and the profit is donated to charity. There are regular deliveries of free manure and wood chippings to car parks on the site. The garden has a website www.growit.btck.co.uk and an email group of approx 70 plot holders who all receive regular emails. Plants are grown from seed and sold in aid of the Lymphoma Association. So far, over £3,500 has been raised. With the support of North Birmingham Cats Protection, plot holders care for a small group of feral cats. The site has an 'Open Gate' policy every Sunday morning for visitors from the local area and other allotment sites.

URBAN
ALLOTMENT
GARDENS