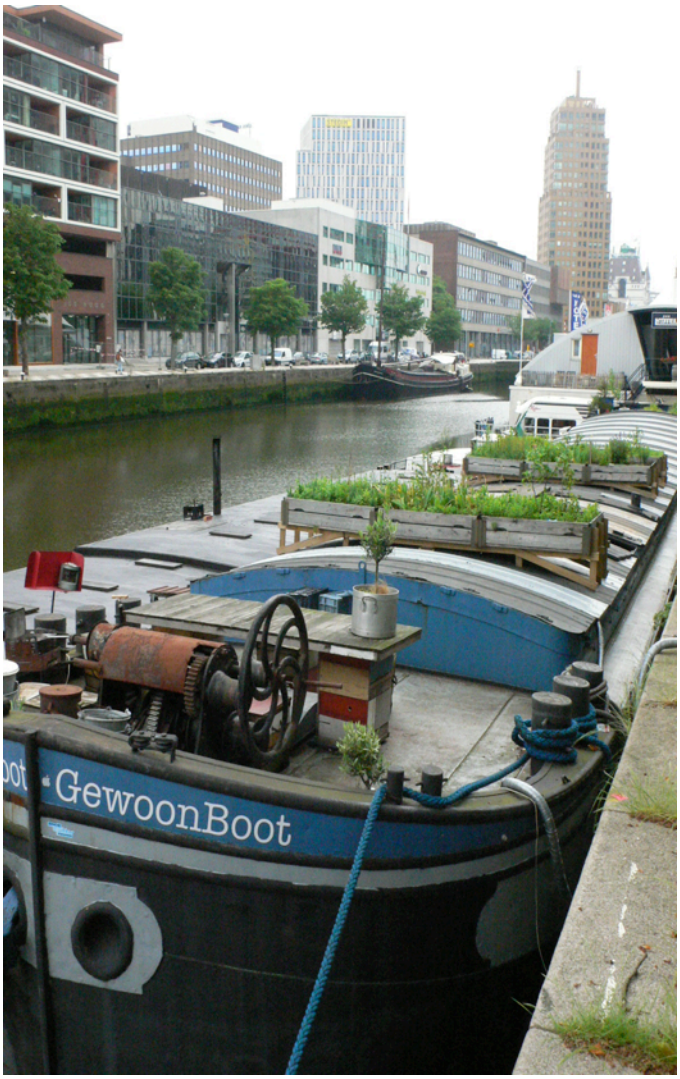
COST Action “Urban Agriculture Europe”: STSM – End of mission report

The urban metabolism of public space and the creation of food commons

Chiara Tornaghi



COST Action "Urban Agriculture Europe"
The urban metabolism of public space and the creation of food commons
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1. STSM: project summary

The aim of this project is to research the interlink between land use policies, ecology and food policies. Its focus is to understand the cultural, ecological and legislative constraints, barriers and incentives involved in changing the land use of open public space into food growing and food commons areas. Given the austerity measures that compel a high number of local government institutions to identify different ways to maintain urban green areas, and the increasing need to implement more sustainable forms of food provision, there are conceptual and practical opportunities to intervene in urban metabolic dynamics, which involve land use change, transformation of brownfield sites to green areas, soil rehabilitation, crop productivity and new ecosystem services related to the use of public parks. These mechanisms are already in place in a number of European cities, but more systematic research on their constraints and the incentives that bring about their success is needed.

2. Project description and rationale. Urban agriculture with closed food loops: practices and politics of commoning in an agroecology perspective

In the current financial, energy, and ecological crisis a number of actors - policy makers, community groups, business-driven enterprises, charities – have started to question the way we run our cities, the existing economic models that regiment our society, and the way we deal with nature and, more broadly, ecosystems, in search of alternatives better placed to deal with the challenges ahead. Times of uncertainty and crisis have been highlighted as being particularly apt for testing new models, inventing alternatives and experimenting with the new (Holloway 2010, Harvey 2012).

Our mainstream socio-economic system fails to ensure social and environmental justice in a number of ways. To mention just a few: two-thirds of the population on the planet does not have access to adequate food and water, and even within the wealthier Global North hundreds of thousands of people go hungry every year, with growing waiting lists for food banks. Natural resources are being depleted and pollinators are endangered.

My starting point in this research project is the belief that alternative models for human development need to be found. As I have argued elsewhere (Tornaghi 2014), I believe that urban agriculture, for its ability to reconnect the sphere of reproduction to its ecological and physical substrate, opens important windows of opportunity for experimenting with radically different mechanisms of territorial development and urban living, which can be based on social and environmental justice.

However, having carried out empirical work and action research in urban

agriculture in the last 5 years, I am aware that there is a wide range of urban agriculture initiatives informed by very different views and values (i.e. they are instrumental to green wash strategies, dismantling of welfare, selling of public goods, etc.) and very few food growing projects establish virtuous mechanisms for social empowerment and food justice. This STSM, therefore, is focused on the discovery and the investigation of a rather specific form of urban agriculture: projects aimed at rebuilding the commons and which have a particular concern for closing food loops: initiatives that are led by 'commoners' and 'metabolists': what I have called 'agroecologists'.
It might be legitimate to ask, at this point, why I am interested in commoning and urban metabolism, and what I mean which agroecology.

Commoning versus new enclosures. As a human geographer interested in food and concerned with social justice I am aware of the role that land enclosures and land grabbing play in the re-structuring of the food system (Corson C. & MacDonald 2012, de Schutter 2011, McMichael 2012, Zoomers 2012) or 'food regime' to use a concept developed by McMichael, which helps to explain its rigidity and how difficult it is to change it. While new forms of massive privatization of land are practiced every year are considered viable answers to food insecurity (to the extent that an area large as Germany and Belgium has changed hands in the last ten years), I am interested in the opposite trend. I am interested in forms of re-commoning private resources, or in alternative management of public land, for the creation of what Nordhal as called 'public produce' (Nordhal 2009).
By 'practices of commoning' I mean those urban agricultural projects that create 'new' commons: that transform public space (and private space too) into productive spaces where the food is produced collectively and shared, and that by doing so enlarge and share the participant's knowledge, build capabilities, contribute to achieving food justice and prepare the way for a radically different food system.
It has been argued in recent literature that community gardening can be an embryonic form of rebuilding the commons (Tornaghi 2012), or actually a manifestation of the commons (Eizenberg 2012). I am interested in exploring practices of commoning in more detail, and to understand their limitations, potentials and pathways for up-scaling.

Food justice. A number of academics have recently been exploring food justice and food sovereignty movements (Wekerle 2004; Rosset, Machín Sosa, Roque Jaime & Ávila Lozano 2011). This STSM research project is built on the assumption that food, alongside air and water, is a fundamental element for human survival and reproduction, and as such one of the fundamentals aims of society should be to achieve food justice.
My definition of food justice expands on and complements the concept of food sovereignty. In brief, I define food justice as a combination of 8 characteristics of a food system: Environmental justice (land access), capabilities justice (skills), social justice (food choice and fair share), economic justice (fair pay for growers, right to build alternatives to the food regime), procedural justice (right of civil society to initiate policy change),

food sovereignty (right to ethical consumption). I believe food growing is a fundamental element of food justice, and the right to grow food should be compatible with urban living, without necessarily implying a preference for urban models based on urban sprawl.

Urban metabolism. Traditional biological metaphors have been used in industrial ecology to describe the flow of materials in and out of a city. A number of human geographers have in recent years offered valid criticisms to the use of this term as an 'objective' description of transactions and natural processes. Political ecologists have pointed out the political and value-laden nature of a wide range of decisions that inform, direct and drive these flows. They help to understand the mechanisms involved in the construction of nature within (and beyond) cities (see for example Broto, Allen and Eriksson 2011; Gandy 2004; Heynen, Kaika and Swyngedouw 2006).

I am interested in expanding these reflections to the link between urban metabolism and urban agriculture. Urban metabolism therefore includes the political decisions and the mechanisms that govern the transformation of soil from a brownfield site to a fertile site, including land tenure and the possibility to control and keep local human waste. In this regard I find the work of McClintock (2010), Atkinson (2013) and Schneider M. and McMichael (2010) interesting starting points. Within this approach, the pan European trend of delegating the management of public space to local communities is a crucial aspect of metabolism, which can potentially impact on nutrient cycles, control of soil quality, and a transformation of soil use into pockets of agroecological experimentation. From the perspective of the commoners, urban metabolic processes have a completely different meaning, and the issues at stake have a particular political nature which we are far from conceptualizing and addressing in the public arena.

Agroecology. This project aimed to carry out primary research specifically to investigate how the concept of commoning and urban metabolism were intersecting and to understand what constraints limited their ability to 'scale up'. I believe the combination of commoning and attempts to close food loops can create forms of agroecological practices, which can be defined as productive and conserving natural resources, culturally sensitive, socially just and economically viable (Altieri & Toledo 2011; Gliessman 2012).
A number of studies in geographical contexts in the Global South have shown that urban agriculture contributes to a large amount of urban food. Agroecological practices, informed by the experience of Campesinos and principles of respect of both natural systems and living beings, are very inspiring for re-imagining the way we can relate to food and nature in urban contexts. To what extent can this be applied to western cities? To what extent is this already happening? What mechanisms would we need in order to expand and scale up this model?

This project is therefore based on the belief that practices of commoning in an agroecology perspective can pave the way for the construction of alternative social, economic and ecological systems, and this STSM wants to be an initial investigation in this direction by looking at a range of projects across the Netherlands.

The choice of the Netherlands as a research field was motivated by a number of considerations: awareness that one of the leading European research institution on agriculture is based in Wageningen and has lead important research in urban agriculture; preliminary evidence that a number of public bodies have policies which have been supporting urban agriculture at a large scale, and their desire to strengthen collaboration and intellectual exchange with academic partners.

An overview of roof space that can potentially be dedicated to food growing around the food growing project De Tuin Fabriek, in Utrecht – the garden is visible in the centre-bottom of the picture
(Photo courtesy of Ester van der Wiel)

3. Methodology

The research design for this mission included visits and interviews with key policy makers, activists and commoners across the Netherlands.
Given the very narrow focus of this project, the geographical boundaries of this research was kept loose, including urban projects and policies within the Randstad, the largest metropolitan area of the Netherlands (and one of the largest in Europe).

3.1 Identification of case studies

The cases were identified through non-random, purposive sampling, based on information collected via desk research and information from key informants in the local context.
COST action WG5 member Henk Renting, and STSM hosts Han Wiskerke and Jan-Willem van der Schans helped to identify relevant local events where to liaise with local people:

- the Purefood conference;
- the National Day of Urban Agriculture,
- the Farm the City café'
- the Rotterdam International Architecture Biennale

Moreover, they provided me with contacts of key informants (for example Guido van Rijkom, the organiser of the National Day of Urban Farming in Utrecht), local policy makers and activists, or they introduced me to them directly.
Snowball sampling was also used to identify other relevant projects and interviewees, and direct contacts were established during the public events mentioned above.

3.2 Data collection

22 semi-structured interviews were conducted with contacts in the cities of Utrecht, Amsterdam, Rotterdam, Almere, Den Bosch and Deventer. These were usually accompanied by visits to one or more of the growing sites managed by the interviewees.
3 semi-structured interviews were planned to be done via Skype (England-Netherlands) because it was not possible to accommodate them within the timescale of the project.
All the interviewees were initially approached via email, providing them with an explanation of the purpose of the project, the funder, the local host, and basic information about myself, including full contact details. In a couple of cases people were approached in person. In this case full information was provided, and follow-up email contact was established to ensure the interviewees could fully exercise their right to withdraw from the research.
Approximately half of the interviewees expressed an interest in receiving a copy of this report and in being informed about future publications.

3.3 List of interviewees/projects

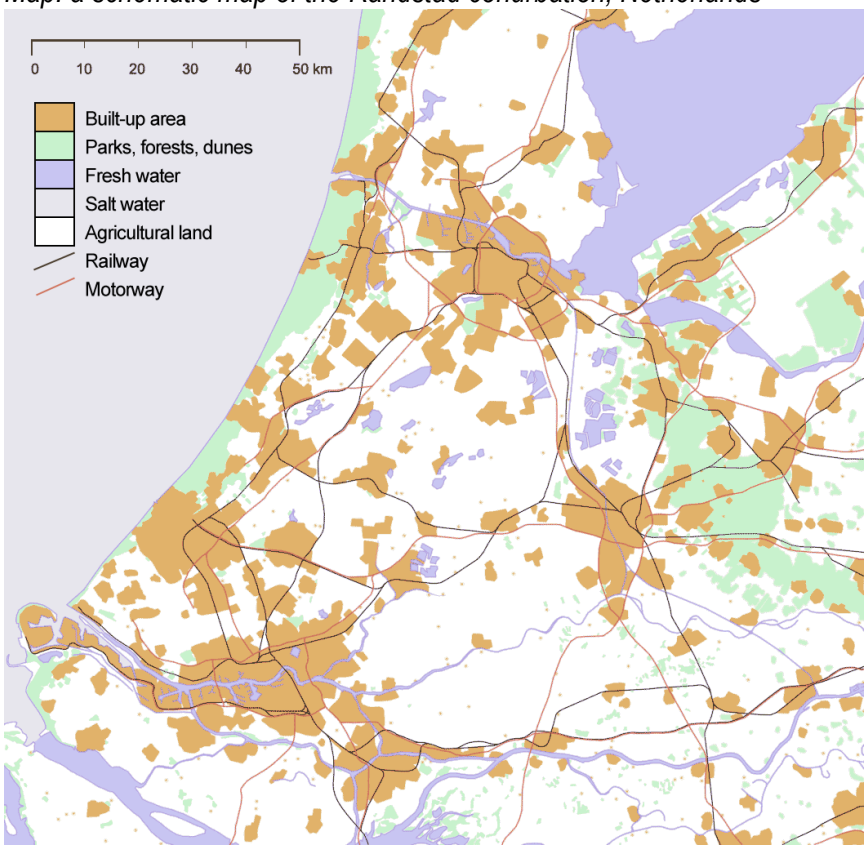
A database of over 60 contacts was put together. Interviews were limited to 22 due to time constraints: travelling to different cities took time, and it wasn't always possible to couple the city where I was based with the location of the interviewees.

In a number of cases there was a quite wide time-lapse between my first contacting email and the interviewee answering and/or availability for interview. This was due to various reasons: people were less keen to set up meetings at weekends; this was a particularly exceptional time of the year when many people were busy in the gardens, and two national events in the field of urban agriculture where underway. This overall presented opportunities and limitations.

Overall, the number of interviews undertaken for this research actually exceeded the estimated number in the original plan.

I am grateful to all my interviewees and colleagues for their time and commitment. This has been one of the most intense and exciting fieldworks I have undertaken in my career so far.

Map: a schematic map of the Randstad conurbation, Netherlands



Source: http://en.wikipedia.org/wiki/File:Randstad_with_scale.png

List of interviewees:

ID	Name	Affiliation	City
1*	Roos Jorgens	Nieuw Rotsoord Children Farm	Utrecht
2	Kees van der Laan	Kees Tuint, Urban Pilots, Nijeveld garden and Tolsteg Garden	Utrecht
3	Kees Bals	Abstede Volkstuinen (Allotment)	Utrecht
4	Hans Pijls	Food for Good (Park Transwilk)	Utrecht
5=	Eva Gladek	Metabolic	Amsterdam
6	Gitty Korsuize	Utrecht City Council	Utrecht
7	Barbara Rijpkema	Utrecht City Council	Utrecht
8	Anke de Vrieze	Farming the City	Amsterdam
9	Gert Jan Jansen	Hof van Twello	Twello, Deventer
10	Debra Solomon	UrbaniaHoeve, Foodscape Wildeman	Amsterdam
11	Tineke van den Berg	Almere City Farm (De stads boerderij)	Almere
12	Erwin Zwaan	Almere City Council	Almere
13	Annemieke Fontein	Rotterdam City Council	Rotterdam
14	Albert van der Most	Transfarmers	Den Bosch
15	Caroline de Vlaam	Willemtuin and Eetbaar Rotterdam	Rotterdam
16	Max de Corte	Buurtmoestuin Kralingen West/ De Moestuinman, Rotterdam Forest Gardens Network	Rotterdam
17	Bob Richters	HotSpot Hut Spot	Rotterdam
18	Elles Kiers	The Pig House	Rotterdam
19+	Rotterdam metabolists	Rotterdam metabolists	Rotterdam
20	Daniel Opbroek	Bergwegplantsoen, Gandhituin, Transition Town Rotterdam	Rotterdam
21	Paul de Graaf	Rotterdam Metabolists, Eetbaar Rotterdam and Rotterdam Forest Gardens Network	Rotterdam
22	Ester van der Wiel	De Tuin Fabriek	Utrecht
23<	Marijke Orthel	Urban Pilots, Eetbaar Utrecht	Utrecht
24<	Chris Monaghan	Metabolic	Amsterdam
25<	Frank Bakkum	Amsterdam City Council	Amsterdam

* Presentation and conversation as part of the Purefood Conference

= Presentation as part of the National Day of Urban Agriculture

\+ Presentation at the Opening day of the International Architecture Biennale Rotterdam

< Planned to be undertaken on the phone due to clashing agendas

4. Preliminary results

The projects and people explored in this research were asked a number of questions that relate to both the themes of commoning and metabolism and how they intersect in their practices. Field work was particularly successful, and I collected some rich empirical materials that still need processing. Given the time constraints for the production of this report (effectively 3 working days), the results presented below can only be preliminary. A more thought-through discussion will be presented at the COST meeting in Lausanne, in September 2014 and in the paper that I aim to publish afterwards.
Most of the projects and people interviewed addressed both commoning and metabolism to a certain degree. Nonetheless, here I have chosen to discuss these separately at first. Paragraph 4.1 and 4.2 will present and discuss distinctive issues and constraints of, respectively, commoning and metabolism. For each section I have identified 4 projects that exemplify some distinctive features and issues (see tables). In the third section, paragraph 4.3, I have selected 4 projects that address particularly well both commoning and 'closed loop thinking': I have called them agro-ecologists. From the issues that emerge from these three sections I will draw some conclusions that address the aim of investigating what alternative social, economic and ecological systems these initiatives can bring about, identifying both possible actions, policy recommendations and avenues for new research.

4.1 Commoning and commoners. Changing tenure structure of public land: food commons?

To understand the 'commoning' aspect of urban agriculture within these initiatives, it was necessary to investigate the land tenure and the use of the produce. Who owns the land? How much does it cost? Who covers this cost? Does this ensure long term access to the land for people that grow? Do temporary leases affect the choices of soil handling and management, and what is planted? What is the nature of the groups that grow food? Are there forms of empowerment such as re-skilling? Is access to food important for them? Does the project address food access as a component of alternative food systems? Who is entitled to grow food in these projects? What freedom do citizens have to choose their own (alternative) growing methods? What food is grown (or what animals are reared?) Who is entitled to harvest?

Some preliminary observations

Land as a common. Public land is generally given to groups for free for non-business urban farming. This can be a portion of a green/a park, a former school farm, or a land due to be developed. Local authorities have expressed a range of motivations for handing land to citizens on a temporary basis: 1) achieving greater diversity/beauty that reflects a multicultural population; 2) saving money in managing the land; 3) social benefits for the growers (i.e. social cohesion, mental health, active use of

time, re-education); 4) meeting the rising demand for land access; 5) branding strategies to promote a “Green City”; 6) recognized value of producing food for food banks and reconnecting citizens to their food systems. Not all the local councils interviewed shared all of these criteria, but in general they agreed on points 1, 3 and 4. Enabling food provision in itself is not considered a driving reason for handing land to citizens.

Handling over public land for commercial urban agriculture is not very common, but is nonetheless happening. Market prices can be negotiated, and sometimes these are paid by the local authority when the enterprise delivers educational and social programmes.

Private landlords have also agreed to give land to community groups, partially because of a general benign view of urban agriculture that prevailed even over the impulse to repress a squatting action, and partially as a way to gain the favour of local communities in view of future developments.

On their side, community groups access these plots of land with temporary leases. They are confident that they will be given alternative land if and when the plot is taken away, or are looking to cultivate those portions of land that will be set aside as green within the new development (this is a strategy to ensure longer term use of the land). In general, however, even when there isn’t a short-term plan for development, community groups have a 1 year long lease, which is renewed on an annual basis.

Depending on the existence and knowledge of development plans or alternative land uses, the groups decide to plant annual or perennial plants.

In one of my cases, however, people are involved in growing food on land with a commercial destination, within a broader view of establishing a sustainable, small scale agriculture. The project is set up as a foundation, renting 12 hectares of land for commercial purposes at market prices. Part of this land is directly cultivated by the farm owner, and part (1.5 hectares) is allocated to growers: this is called ‘the common’. The growers (called commoners) are trained first, and then allocated a small plot of land for free (40 to 200 sq mt) on an indefinite term, provided they stick to the agreement. The agreement requires them to dedicate 50% of their plot to cultivate a crop decided by the farmer, to be sold in the farm shop to the 800 weekly clients. They get 50% of the income on the sales, plus a number of financial incentives. This effectively enables people to access and secure land for food growing and meet their needs, gain growing skills and to have a small income, but limits their ability to choose gardening styles and techniques (as strict procedures are in place which the farmer deploy to ensure crop quality and healthy soils). This is one of the few projects that I have visited that does not rely on external grants, aims to achieve food self-reliance and effectively sustains permanent jobs.

Produce as a common. Apart a small number of cases, land is most commonly cultivated as a group, and only rarely it is divided into small plots for individual cultivation. In most of the cases produce is shared among active members, cooked on site during convivial events, and the remaining produce is shared among actively involved gardeners.

Projects usually have an interest in inspiring people to grow, or in getting more people involved directly, but harvesting by passers-by or people with no engagement in the project is generally not contemplated, or directly discouraged. There are no specific mechanisms to ensure a fair division of the produce among participants. Attendance at the events is used as primary allocation mechanism.
Among people involved, however, there is very little intention to grow food specifically to feed themselves, and to re-skill themselves for this purpose.
Food gets un-harvested too, and in general there is a need for a facilitator to cook/encourage harvest.
In some cases, usually among those gardeners and project leaders that have developed professional skills, there is an interest in setting up semi-commercial farming, or at least selling part of the produce (more commonly mushrooms, salad or fruit).
Local authorities are aware of a growing demand for income-related projects, and so far are tolerating small scale selling. A number of funding streams are in place, and there is an interest in making these projects economically viable, however there is no specific policy in place to help with this transition.

Food as a common. One project in particular was focused on growing food collectively and making available organic, three-courses-meals for €7 per person.
The project involves reskilling and education, as well as good food availability in neighbourhoods where a number of children 'on the street' get involved in growing, cooking and serving food in a temporary restaurant. This is a very innovative way to transform locally grown produce into food, make good food available and re-skill 200 volunteers around food growing and cooking. However, this is a temporary initiative, which is being endangered by a cloned council-run equivalent not far away in the neighbourhood. Social learning is therefore perpetrating precariousness. Is it possible to rethink the role and the economic model of this kind of initiatives?

Hotspot Hutspot garden and restaurant

Source: Bob Richters

Skills as a common? Many of these projects involve education, learning and re-skilling. To a certain extent people can just get involved in practical activities and learn a number of techniques. However, re-skilling is the pivotal element for most of these projects to meet their financial needs. Either the 'project leaders' get an income from local institutions that recognize the social and educational value of their community work, or the projects survive out of fees paid to the organisers running training workshops (i.e. on foraging, on grafting, mushroom growing, etc.).

OVERALL, there are a number of commoning practices in place, which are very unstable, temporary and insecure, based on small grants or temporary jobs in the social economy that provide the infrastructure and inputs to maintain them. Apart from Hof van Twello here are no mechanisms in place for systematic empowerment of the local population in terms of food access, re-skilling, or progressively

secured land tenure. There is also little direct aim to achieve food security, or to challenge food regimes through community projects. Urban agriculture is generally practiced within two streams:

1) as a voluntary activity, where the main aim is 'fun' and social inclusion;

2) as a job in the social economy, as a symbol of an ethical, spiritual, or alternative way of life, in tune with nature. Scaling up is seen as happening organically once enough demand or food need will push for behavioral change.

Transfarmers, Den Bosch

Commoners: 4 examples

Buurtmoestuin Kralingen West/ The muistunnman – Rotterdam
A community garden realised on temporary leased land. The land was cultivated in common by a group of residents and the produce shared among members of the group. The project is coming to an end due to the redevelopment of the site. In view of this short term use, the group has negotiated another area with the council where to continue to grow in the future, but is now looking into growing more perennial plants

Mushroom farm – a parallel project of the Muistunnman

Transfarmers – Den Bosch
A large plot of land, (near a squatted building and community garden that has been in place for 5 years) was squatted a couple of years ago with the aim of growing food. The landowner has agreed to set up a symbolic rent of €100 a year, rather than going for eviction. The squatting group, which is set up as a foundation, has good relations with the local council, and has set up a scheme: people in the area can become "friends of the acre" for 10 Euros a year, but inability to pay does not impede participation. The land is cultivated in common (at the moment monoculture is encouraged by the project leader) and the produce is shared. The group also runs cooking workshops (funded) and work as facilitators to help other groups to design and set up their own food growing projects.

The potato field, covering a small part of 'the acre'

Hot spot hut spot - Rotterdam
Food is grown in containers on public space, near an empty shop that is leased (via a "meanwhile uses" lease – which requires a seedcorn rent while there is no market demand for the space) and transformed into a temporary restaurant. There are currently 2 restaurants, and 2 are under way. Plants are looked after and harvested by volunteers and kids in the neighbourhood (about 100 people for each restaurant). A core group of 7 kids, with 1 chef and 3 adults (volunteers) eat together and then open the restaurant to everyone in the neighbourhood. A 3 course organic meal is served for €7 (about 1/3 of the restaurant's food comes form the garden).

Eating before the popular restaurants opens

Source: Bob Richters

Hof van Twello - Deventer
1.5 hectares of land, part of a larger plot of land rented by a farmer, are being allocated to people for growing food. People sign an agreement that entitles them to use the land for free, for an indefinite amount of time, provided that they dedicate 50% of the land to growing food for the farmer's shop. What to grow and how to grow is determined by the farmer managing the complex. On the sales, the over 150 micro-farmers get 50% of the income, that can be received in cash or as a voucher (the latter includes a 10% discount) to be spent in the shop. All the produce is organic, and the prices in the shop match those of Albert Heijns (the largest NL supermarket chain).

"The common" at Hof van Twello

4.2 Metabolists in action: closing food loops?

The second focus of the research was an investigation into the range of practices that are related to urban metabolism: are these projects trying to set up food growing projects in a more sustainable way? Are they trying to close food loops? Are they re-using locally available resources, such as food waste, rain water, human manure? Are they trying to be energy efficient? Are they maximizing the use of available resources? Are they reclaiming their own (human) waste as a way to re-gain control over naturally produced nutrients? And if any of the above is in place, what is the primary motivation? Is there any conscious attempt to 'heal the metabolic rift' as a way to achieve food justice?

Preliminary observations

Water catchment is a rather common practice, when a minimal infrastructure is available (i.e. a green house, a shed, or even access to nearby local roofs). Other widely available water sources are used, for example canals or rivers, and occasionally pumps. There are no particular concerns about possible water pollution.

Water collection in Den Bosch

Composting Two or three projects reclaimed waste as a way of exercising control over nutrients, and a number of projects are trying to set up community composting schemes. Some activists have undertaken professional certification as compost 'masters' or 'ambassadors'. Green/brown waste from gardens is collected quite easily, while kitchen waste requires some basic skills that are not always available.

Food waste Even if at a small scale, there have been various examples of the use of kitchen waste, and in particular various ways of experimenting with its transformation (bokashy, fermentation, spreading it on the ground, mixing with carbon rich waste, vermicomposting). Collection of waste, or openly accessible food waste containers have not been successful so far, so alternative projects are under way.
There is a growing interest in the use of specific types of waste (at a large scale) for food production, for example coffee grounds for indoor mushroom growing, or bakery and brewing waste for feeding animals such as pigs. There are very strict regulations about transporting food waste and the possibility of withdrawing waste from local collection. This is perceived as a constraint to community composting in general, and the use of kitchen waste in particular.

Food waste as mulching, in a community garden in Rotterdam

Human manure Only two projects contemplated the use of human manure in their compost. The main barriers are: a perceived psychological barrier, fear of mishandling and consequent spread of disease, and the transfer of residues of medicines from the body to the compost. Rotterdam city council and the NL Water company are the only bodies openly discussing how to recuperate phosphates available in the sewage system. through separation of pee and poo, and water filtering.

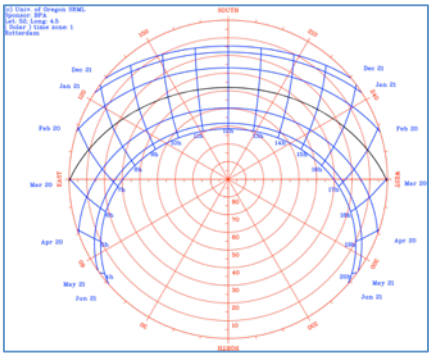
Solar energy Direct sunlight is key for plant growth: one project is involved in a dispute with a developer (who is hoping to build a high-rise building nearby), for "the right to sun" for the garden. On this matter there are specific national laws.
The deliberate use of solar energy to maximize the productivity, or to the produce in food is used –via PV panels –is used in only a couple of case studies.

Pollution and contamination The possibility of ground or atmospheric pollution is not generally seen as a barrier, although occasionally the issue has been raised in relation to air and soil (not water). There seems to be some monitoring of soil run by local councils.

OVERALL, while a number of practices for closing food loops are in place, there is little systematic application, circulation of knowledge or attempts to close the whole food loop. Practices and skills tend to be applied when there are resources available or skilled members in the group. Kitchen waste, which is a huge source of nutrients is under-considered and underused, partially also due to local legislation (in particular on transporting your own kitchen waste, or on the use of kitchen waste to feed animals such as pigs). There is a tendency from local authorities to supersede the application of the law for projects of a small scale, but nonetheless this discourages follow on and scaling up.
There seems to be, also, controversial/debatable knowledge on the importance of re-using kitchen compost, for example ideas about excessive richness of soil, or the self-sufficiency of nature in conditions similar to forest environments.
Permaculture techniques tend to be used quite broadly as soil management strategies (i.e. use of green manures and nitrogen fixers). More knowledge is needed in general on how to close the loops.

A community compost at Bergwegplantsoen, Rotterdam

Sun path polar chart based on Rotterdam



Source: Wikipedia

Ideas for urban algae production, form the International Architecture Biennale Rotterdam

Source: IABR

Metabolists – 4 Examples

Willemstuin – Rotterdam

A community garden which aims to become a hub for community composting. The garden is openly accessible and located near a bus station. The composting area has clear instructions. Participants can bring their own waste.

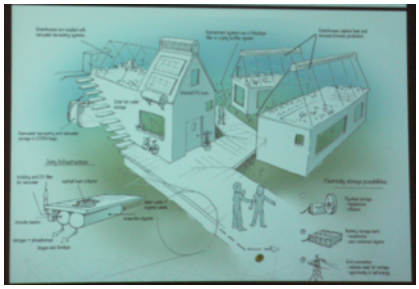
De Tuin Fabriek - Utrecht

A rooftop garden on top of a shopping mall, that revived a space originally designed to be a meeting point for mall users, railway station passengers and local residents. A compost tumbler is located on the site, where waste from the garden, the chickens and some shops in the mall (a fishmonger, a café', a supermarket, a fast food, …) is collected and either cooked, fermented using the bokashy system, or composted. Rain water is collected from the roof of the greenhouse and the adjacent buildings. The local food and the eggs are shared among people participating in the chicken club or the garden club. The garden is accessible to all only during opening times (twice a week)

Source: Ester van der Wiel

Metabolic – Amsterdam North

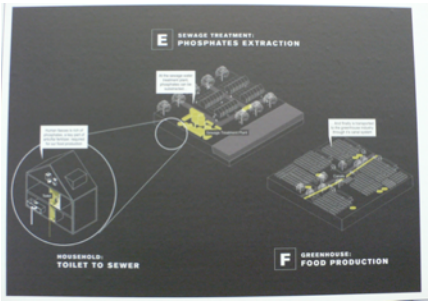
A former brown field is being redeveloped with the principles of closed loops. Polluted soil is being cleaned with fito-remediation. Existing buildings are being retrofitted and transformed into offices and a restaurant. All organic waste is planned to be composted and the nutrients retrieved for food growing. The food will then be cooked on site, and food waste composted.



Source: Metabolic

Rotterdam-Biennale study on metabolic flows

In preparation for the biennale, the council undertook an analysis of flows of materials, energy and people, and identified possible ways to recover important resources from the waste stream, such as the 582 tons of phosphates that go into the sewage system in Rotterdam each year (data from IABR Atelier Rotterdam), or kitchen waste that could be composted and used for urban agriculture



Source: IABR, Atelier Rotterdam

4.3 Commoners + Metabolists = Agroecologists

In this last section I will highlight examples of practices that combine both an attempt to re-create the commons and to close food loops: I have called them 'agro-ecologists'. Commoning and closing food loops are in fact two important pillars in agroecology, seen as the application of ecological principles to the study, design and management of agroecosystems that are productive and natural resource conserving, culturally sensitive, socially just and economically viable (Altieri & Toledo 2011; Gliessman 2012). As with the previous two sections, I will present some preliminary observations, followed by 4 examples of cases that could be considered as belonging to the family of agroecology.

Preliminary observations

Land for people, not for profit. 'Agroecologist' projects represent attempts to shift from a 'single management' land system (where the manager is the council or a private landlord), to a community group. There is general agreement that a productive landscape is more interesting, beautiful and can create abundance. Local authorities, facing budget cuts, are in favour of temporary management transfers as a way to save costs. However, these initiatives tend to be the outcomes of individuals negotiating with the landowner or the council, rather than a cohesive, coordinated community claim that land should primarily be for people's welfare, rather than profit. The driving principle that cities are for buildings tends to go un-discussed. Is urban agriculture challenging the 'modern' meaning of cities? Would the scaling up of community gardens represent a preference for low density cities? Or is it possible to deliver ecological intensification and agroecological settlements within dense European cities, without ending up with urban sprawl? What is the role of planning as a discipline in foreseeing and directing land use changes?
This above is clearly just a series of questions that arise when discussing alternative models for land use, in view of scenarios that scale up urban agriculture. A reflection on land use brings us to the next point, food justice.

Food justice, this unknown. The growing number of people in need of food banks does not seem to have contributed to wider considerations of whether or not our food system is just. While there are a number of social and public health programmes that fund urban agriculture for their contribution to healthy food, or for providing food for food banks, the overall, fundamental definition of the right to food includes very minimal parameters. So, while these projects, de facto, challenge mainstream approaches to food systems, their meaning as cells of radically different 'food regimes' still needs to be articulated. An intense cultivation of vertical and horizontal urban space is possible and can produce a low threshold food self-reliance in areas with medium population density or an abundance of flat roofs. There is, however, a more fundamental need to expand the use (harvesting) of produce, which is still too limited.

Waste as a common. We currently pay for our waste to be removed: kitchen waste, sewage, waste water, garden waste, recyclable waste, etc.. A number of projects have started to challenge this, reclaiming the right to handle their own waste, considered as an asset, through which re-gain control over soil fertility. Some of these challenges have been open, in the public domain, some have been just done, enacted through direct action, without associated claims for the recognition of this right. Responses from local authorities are patchy and inconsistent. There is a recognition that waste, in all its forms, is an asset, but there is not overall agreement on who is entitled to control this and its exploitation. Panels presented at the Biennale in Rotterdam show an interest for industrial approaches.

The importance of urban agriculture for closed loops. Some of the projects explored came to urban agriculture 'from the back door': starting with a reflection around closed loops, urban agriculture became the obvious choice to make a good use of the nutrients retrieved from the loop. This is also a very interesting approach and an important argument to support new policies for urban agriculture.

What economic alternatives for new, local, food systems. Two main economic models emerge out of this research on food commons, metabolism and agroecology.
1) Alternative land management and the creation of food commons is brought forward largely by one or two individuals per project who seek to make a living (as educators, social workers, land managers) through short term contracts. Most of them didn't start intentionally as farming businesses and did not have education in horticulture. The initiators end up finding themselves in a full-time green jobs, usually starting with short term contracts funded by arts/education/social programmes, and then moving to explore urban agriculture and the food sector more substantially. These jobs rely on two factors: a) the existence of volunteers as co-workers and b) the existence of volunteers as 'service users', which provides a reason for their own salary. While these projects have a crucial role in expanding knowledge around urban agriculture, building an infrastructure for urban agriculture and inspiring new community groups, their role is short term: they are economically insecure, and provide local authorities with cheap solutions - when not directly with a justification to go ahead with cuts to the administrative machine, driven by the market.
2) Commercial initiatives, on the other hand, create 'constrained' commons, where members of the community put their work at the service of a 'cause', usually led by a coordinator. This makes it possible to create larger benefits for the whole local community – i.e. organic meals at affordable prices, or organic vegetables that match the price of the larger distributor's non-organic vegetables, plus some small economic incentives. In both the cases above there isn't a direct, explicit, connection between land and food security. Are these the only economic models we can foresee for urban food commons? Can we conceive of something more radical, like taking "food" out of the market (food decommodification)?

Agroecologists: 4 examples

Gandhituin/Wilgenplantsoen/Kinderparadijs – Rotterdam
This is a network of projects that create edible community gardens in public space using permaculture principles. There is a strong commitment to share learning by doing, to use an inclusive language (for example minimizing the use of the word 'permaculture' itself), to combine green manures with own/home made compost, to harvest water and recycle food waste. One of the projects is equipped with a self-made greenhouse and is used as plant nursery and hub for the neighbouring projects. Another site has a shelter and cooking facilities, and is used for convivial events on a regular basis.

The Wilgenplantsoen garden

Foodscapes/UrbaniaHoeve – Amsterdam/Den Hague
This is a project aimed at creating edible landscapes. The site in Amsterdam has two interconnected sites (an open space and a community training area with composting and cooking facilties, and infrastructure for tree propagation). The open sites are cultivated with permaculture principles, the number of edible 'layers' depends on the age and location of the garden, ranging from 2 to 9 layers. The choice is usually for perennial plants, although some annuals are grown in ad-hoc spaces.

Foodscapes

Food forest/ Rotterdam Forest Garden Network – Rotterdam
The project seeks to create a number of 'food forests' in public space, following Martin Crawford's forest gardening model. The sites are established on public land with the support of start up funding. The sites are expected to be harvested by a core group of people involved in the project, or during specific training events, which can function as fundraising events or on–going income streams.
The project has a learning dimension: it is intended as a way to experiment with nutrient management systems within forest gardens, understand their productivity potential, and experiment with different ways of managing nature in an urban environment.

Rotterdam forest garden network

Source: www.rfgn.nl

Pig house – Rotterdam, Tilburg
The 'pig house' was an arts-funded community pig sty were two pigs were kept for a few months to be fed with kitchen waste from the local community and be subsequently slaughtered for meat. The project took place in Tilburg and in Rotterdam.
In Rotterdam the project has been highly controversial for a number of reasons: opposition of a local professional chicken farmer, communities fearing unpleasant smells, (non-vegetarian) activists petitioning for the pigs not to be slaughtered, and council regulations against the use of kitchen waste as animal feed. Eventually the pigs were slaughtered and the meat distributed in the community.
In Tilburg the community has decided to continue the project independently after the end of the funding, and to have two new pigs fed collectively.

Pig house Rotterdam

Source: Rotterdam Oogst

5. Conclusions

5.1 Can a learning map become a manifesto?

Projects focused on food growing tend to be rather disconnected from projects with a mayor focus on cooking. Various metabolic processes are not handled simultaneously.
I believe it is possible to map the limitations of these disconnections as well as the learning points, which can contribute to identifying community action and policy recommendations, as well as a manifesto for the enhancement of *urban agroecology*.
This map will be prepared for the presentation in Lausanne and will constitute the core of an academic journal paper to be submitted in November 2014.

5.2 Future collaboration: Interdisciplinary consortium on agroecology and urban metabolism

The possibility of setting up an interdisciplinary, and transdisciplinary, consortium on agroecology and urban metabolism is currently being explored, with the aim of involving academics and practitioners in action-research, training and dissemination.
Field work has highlighted a number of potential members:

- Debra Solomon
- Paul de Graaf
- Daniel Opbroek
- Ester van der Wiel

Potential activities include training for WG5 in Leeds.

5.3 Foreseen publications/articles resulting from the STSM

The main foreseen publication resulting from the STSM research will be in the form of a scientific journal paper which is planned to be submitted for publication in Autumn 2014.

A picture of a portion of Almere, looking to become a future visionary and green city. Room for an agricultural city?

6. References

ALTIERI M. A. & TOLEDO V. M. (2011): The agroecological revolution in Latin America: rescuing nature, ensuring food sovereignty and empowering peasants, *The Journal of Peasant Studies*, 38:3, pp587-612

ATKINSON A. (2013), Readjusting to reality. Urban and peri-urban agriculture to ease the downward passage, *City*, 17 (1), pp. 85–96

BROTO V.C., ALLEN A. and ERIKSSON A. (2011), Urban Metabolism at UCL – A working paper, accessible at: http://www.ucl.ac.uk/environment-institute/research/metabolism

CORSON C. & MACDONALD K. I. (2012), Enclosing the global commons: the convention on biological diversity and green grabbing, *The Journal of Peasant Studies*, 39:2, pp. 263-283

DE SCHUTTER O. (2011), How not to think of land-grabbing: three critiques of large-scale investments in farmland, *The Journal of Peasant Studies*, 38:2, pp. 249-279

EIZENBERG, E. 2012. Actually Existing Commons: Three Moments of Space of Community Gardens in New York City. *Antipode.* 44(3), pp.764-782

FERNANDEZ, M, GOODALL, K, OLSON, M & MÉNDEZ, V.E. (2013), "Agroecology and Alternative Agri-Food Movements in the United States: Towards a Sustainable Agri-Food System", *Agroecology and Sustainable Food Systems*, 37:1, pp. 115-126

GANDY M. (2004), Rethinking urban metabolism: water, space and the modern city. *City* 8, pp. 363-379

GLIESSMAN S. (2012), Agroecology: Growing the Roots of Resistance, in *Agroecology and sustainable food systems*, 37, pp. 19-31

HARVEY D. (2012), *Rebel cities: from the right to the city to the urban revolution,* London: Verso

HEYNEN N. KAIKA M. and SWYNGEDOUW E. (2006, eds.), *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism.* London: Routledge

HOLLOWAY J. (2010), *Crack capitalism*, London: Pluto Press

HOLT-GIMÉNEZ Eric & ALTIERI Miguel A. (2013), Agroecology, Food Sovereignty, and the New Green Revolution, in *Agroecology and Sustainable Food Systems*, 37:1, pp. 90-102

MCCLINTOCK N. (2010), Why farm the city? Theorizing urban agriculture through a lens of metabolic rift, *Cambridge Journal of Regions, Economy and Society*, 3, pp. 191-207

MCCLINTOCK N. (2013), "Radical, reformist, and garden-variety neo-liberal: coming to terms with urban agriculture's contradictions", *Local Environment: The International Journal of Justice and Sustainability*, published online 10th January 2013, pp. 1-25

MCMICHAEL P. (2009), A food regime genealogy, in *The Journal of Peasant Studies*, 36:1, pp. 139-169

MCMICHAEL P. (2012), The land grab and corporate food regime restructuring, in *The Journal of Peasant Studies*, 39:3-4, pp. 681-701

NORDAHL D. (2009), *Public produce. The new urban agriculture*. Washington: Island Press.

ROSSET P. M., MACHÍN SOSA B., ROQUE JAIME A. M. & ÁVILA LOZANO D. R. (2011), The Campesino-to-Campesino agroecology movement of ANAP in Cuba: social process methodology in the construction of sustainable peasant agriculture and food sovereignty*, The Journal of Peasant Studies*, 38:1, 161-191

SCHNEIDER M. and MCMICHAEL P. (2010), Deepening and repairing, the metabolic rift, in *The Journal of Peasant Studies*, 37:3, pp. 461-484

TORNAGHI C (2012a) Public space, urban agriculture and the grassroots creation of new commons: Lessons and challenges for policy makers. In: Viljoen A and Wiskerke JSC (eds) Sustainable Food Planning: Evolving Theory and Practice. Wageningen: Wageningen Academic Publishers, 349–364.

TORNAGHI C. (2014), Critical geography of urban agriculture, in *Prog. Hum. Geog, on-line first,* DOI: 10.1177/0309132513512542

WEKERLE Gerda R. (2004), Food Justice Movements: Policy, Planning, and Networks, Journal of Planning Education and Research, 23: 378

ZOOMERS A. (2010), Globalisation and the foreignisation of space: seven processes driving the current global land grab, *The Journal of Peasant Studies*, 37:2, pp. 429-447

COST- the acronym for European COoperation in the field of Scientific and Technical Research- is the old- est and widest European intergovernmental network for cooperation in research. Established by the Ministerial Conference in November 1971, COST is presently used by the scientific communities of 35 European countries to cooperate in common research projects supported by national funds.

The funds provided by COST - less than 1% of the total value of the projects - support the COST cooperation networks (COST Actions) through which, with EUR 30 million per year, more than 30.000 European scientists are involved in research having a total value which exceeds EUR 2 billion per year. This is the financial worth of the European added value which COST achieves.

A “bottom up approach” (the initiative of launching a COST Action comes from the European scientists them- selves), “à la carte participation” (only countries interested in the Action participate), “equality of access” (partici- pation is open also to the scientific communities of countries not belonging to the European Union) and “flexible structure” (easy implementation and light management of the research initiatives) are the main characteristics of COST.

As precursor of advanced multidisciplinary research COST has a very important role for the realisation of the European Research Area (ERA) anticipating and complementing the activities of the Framework Programmes, constituting a “bridge” towards the scientific communities of emerging countries, increasing the mobility of researchers across Europe and fostering the establishment of “Networks of Excellence” in many key scientific domains such as: Biomedicine and Molecular Biosciences; Food and Agriculture; Forests, their Products and Services; Materials, Physical and Nanosciences; Chemistry and Molecular Sciences and Technologies; Earth System Science and Environmental Management; Information and Communication Technologies; Transport and Urban Development; Individuals, Societies, Cultures and Health. It covers basic and more applied research and also addresses issues of pre-normative nature or of societal importance.