Future of Food: Journal on Food, Agriculture and Society
3 (1) Summer 2015

# Extracting Urban Food Potential: design-based methods for digital and bodily cartography

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**Data of the article**

First received: 14 January 2015 | Last revision received: 05 May 2015
Accepted: 07 May 2015 | Published online: 20 May 2015
URN :nbn:de:hebis:34-2015031947797

**Key words**

critical cartography, spatial agency, bodily engagement, design-based methods, artistic research, urban agriculture

**Abstract**

Sweden's recent report on Urban Sustainable Development calls out a missing link between the urban design process and citizens. This paper investigates if engaging citizens as design agents by providing a platform for alternate participation can bridge this gap, through the transfer of spatial agency and new modes of critical cartography. To assess whether this is the case, the approaches are applied to Stockholm's urban agriculture movement in a staged intervention. The aim of the intervention was to engage citizens in locating existing and potential places for growing food and in gathering information from these sites to inform design in urban agriculture. The design-based methodologies incorporated digital and bodily interfaces for this cartography to take place. The Urban CoMapper, a smartphone digital app, captured real-time perspectives through crowd-sourced mapping. In the bodily cartography, participant's used their bodies to trace the site and reveal their sensorial perceptions. The data gathered from these approaches gave way to a mode of artistic research for exploring urban agriculture, along with inviting artists to be engaged in the dialogues. In sum, results showed that a combination of digital and bodily approaches was necessary for a critical cartography if we want to engage citizens holistically into the urban design process as spatial agents informing urban policy. Such methodologies formed a reflective interrogation and encouraged a new intimacy with nature, in this instance, one that can transform our urban conduct by questioning our eating habits: where we get our food from and how we eat it seasonally.

## Introduction

Gröna linjen is a vibrant transdisciplinary urban platform formed to investigate alternate participation for citizens in the urban design process. This paper responds to several knowledge gaps highlighted in Sweden's report on urban sustainable development, and furthermore, on urban food discussions in the Netherlands. One gap in the report calls for more research into the urban design process where the citizen is viewed as a 'co-creator' in designing the city merely through their participation. Another gap links urban agriculture to well-being, and a third beckons for new participatory and dialogue strategies. Furthermore, the discussion on food in the 2012 exhibition Foodprint in the Netherlands calls for a paradigm shift for individuals' conduct when it comes to food, and creative and artistic practices can play a vital role for this change (Stroom den Haag, 2012). The investigations take place in Stockholm, Sweden, where a growing desire to grow food has emerged and a number of productive foodscapes are appearing. A foodscape refers to an urban food environment devoted to food produc-

Citation (APA):
Orrù, A.M. (2015). Extracting Urban Food Potential: design-based methods for digital and bodily cartography, *Future of Food: Journal on Food, Agriculture and Society*, 3(1), 48-62

tion, distribution and/or consumption, but in the context of this research it refers to urban food production. Urban Agriculture, a term more commonly used, seems too vast as some of these productive foodscapes are small in size, but nevertheless, immense in their community impact. Therefore, in response to the highlighted gaps, can the role of the citizen be strengthened and enacted through new practices in the urban design process? The research investigated methods to transfer spatial agency to the citizen as 'co-creator' and tested new modes for critical cartography. Gröna Linjen staged a safari intervention, an overland green expedition, for locating existing and potential places for growing food by orchestrating encounters with five foodscapes and the community surrounding them. Meanwhile, testing the methodologies for gathering data from these sites, that could be used to inform policy on urban agriculture was also done. The approaches gave way to a mode of artistic research in the study using design-based practices with digital and bodily interfaces for cartography, along with inviting artists to be engaged in the dialogues. The digital interface, the Urban CoMapper app, was a tool for hand-held devices that captured perspectives through crowdsourced mapping in real-time.[1] The bodily interface used the participant's body to gather data from these green spaces, as an individual and in a group, via their sensorial perceptions of tracing the sites with their bodies. The methods encouraged an intimacy with nature and formed a reflective interrogation of our eating habits: where we get our food from and how we eat it seasonally. The challenge remains whether assigning spatial agency, via innovative methods for critical cartography, can develop an urban design approach that integrates citizens as agents and informs policy for urban agriculture.

## Swedish Research in Sustainable Urban Development

To begin with, the motivation for these projects has been the 2011 Formas Report on Urban Sustainable Development, which identified several knowledge gaps in the relationship between citizen and city. The report maintains that 'there is an unquestionable link between built environment and living conditions. Therefore the urban space tends to be understood as something external by which people are affected, while it is forgotten that man, by acting in and appropriating the built environment, is also its co-creator'. In essence, 'the place is created by the people using it in a reciprocal interplay with the place itself' (Swedish Research Council Formas, 2011: 36). This changes our view of experts as being the only ones creating the urban environment, and includes citizens as design agents in the urban design process. More research is needed into this 'co-creating' role and how citizens' effect could shape the urban environment towards sustainable means. This paper responds by examining methods for spatial agency and critical cartography as templates for further enforcing this role.

The Formas report (2011) goes further to highlight a gap in urban agriculture: 'another neglected research field concerns the link between people's wellbeing and urban growing, which is a big topic internationally but not in Sweden.' The aim of the research also accentuates this food-related lifestyle of urban farming and its influence on strengthening citizens' relationship to nature in the city through the act of growing food. The gaps mentioned above are interlinked and it can be assumed that citizens, as creators of productive foodscapes, become designers of the urban landscape. In sum: a transfer and democratization of spatial agency. But how do we incorporate these design concepts? The report identifies a need for 'new forms of user participation and civic dialogue at early stages' of the urban design process using alternate methodologies (Swedish Research Council Formas, 2011, 61). Further dialogue into urban agriculture is needed, and how to include it in the city. The approaches outlined in the paper specifically answer this call with the Gröna Linjen intervention which explores unique methodologies in critical cartography: the digital and bodily to allow both citizen and expert to seek alternative ways to record their contexts, perceptions, and how they engage with green spaces. Therefore, allocating a bridge for the exchange of ideas, information and dialogue towards a practice of 'co-creation' is important.

## Spatial Agency in Foodscapes

Actively engaging citizens as design agents in the urban design process by providing a platform for alternate participation provided the base for a transmission of spatial agency. The citizen as 'co-creator'

ISSN-Internet 2197-411x OLCL 862804632

becomes a spatial agent, which necessitates an alternative way of looking at how buildings and cities might be produced, through citizen rather than only expert involvement. The Gröna Linjen platform, created in January 2014 by 6 enthusiasts including the author of this paper, intended to identify Stockholm's gardening community and offer new forms of participation.[2] The network's title also has a recognizable geographic configuration as it is named after Stockholm's green subway line #17, coincidently also the route where most urban farming initiatives are currently taking place in the city (Figure 1). The group is a vibrant transdisciplinary alliance between artists, architects, gardeners, performers, researchers, geographers, cooks and more, who highlight the barriers and opportunities of urban agriculture provided by linking art, science, practice and research. The network gave opportunity to explore spatial agency as a citywide concept, tied together by the concept of growing food.

'Spatial agency is about a different understanding of the production and dissemination of knowledge. This entails opening it up to the architecture's outside, through acknowledging the contribution of non-experts and through disseminating it in an accessible manner' (Awan, Schneider, & Till, 2011, 63). The task of designing an urban space is handed over to citizens who wish to participate in the design development, cultivation and implementation of these foodscape sites. They are now agents for the space, which gives way to an alternate and

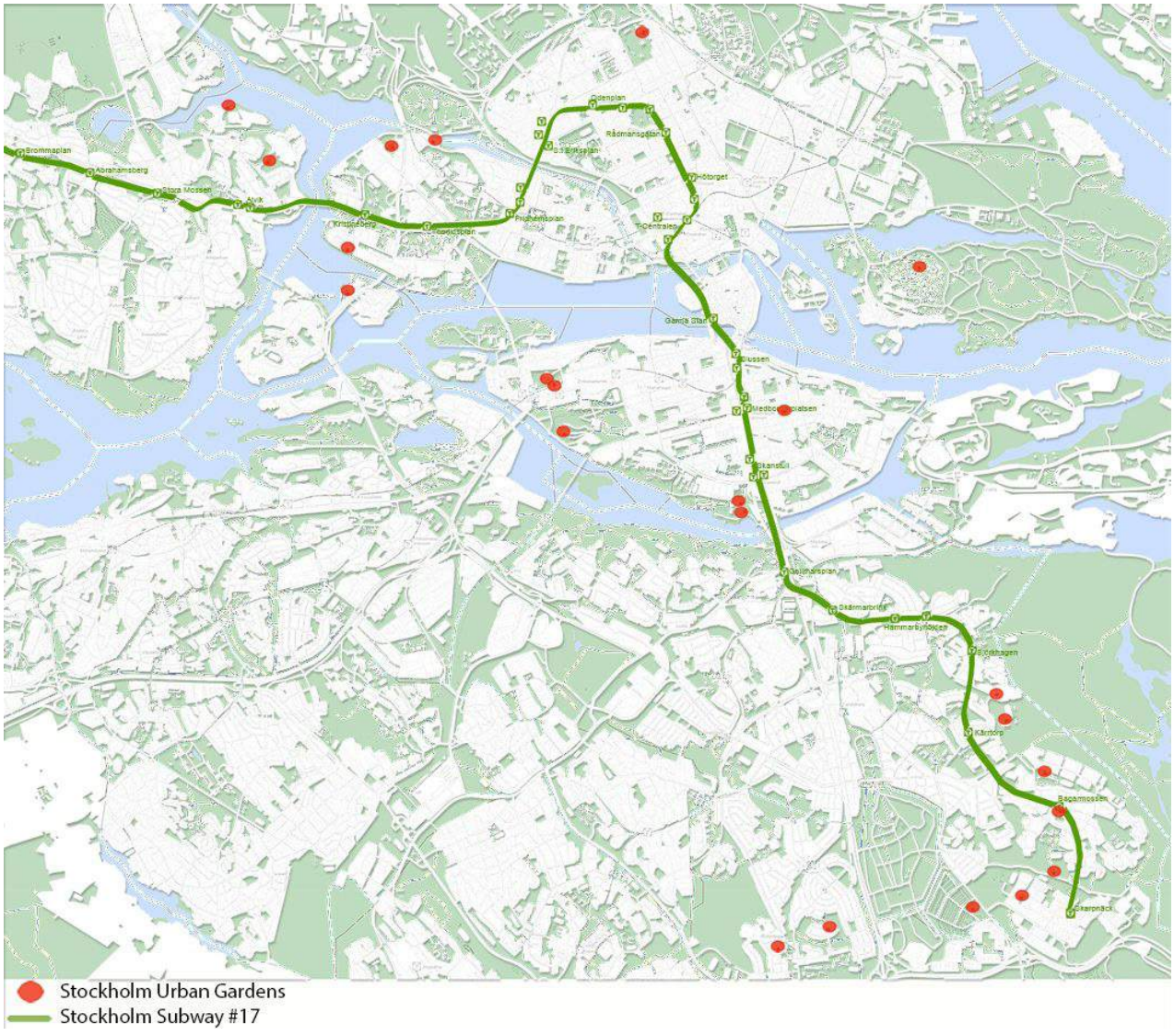


**Figure 1:** Map of existing gardens in Stockholm.
Data Credit: Initial data courtesy of Stadsodling Stockholm 2014
Graphics credit: Anna Maria Orru 2014


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more activated mode of participation and creation. tion.

"In spatial agency, their agency is effected both through actions and visions, but also through the resulting spatial solutions; and spatial agents have to be responsible for all aspects of their actions, from their initial relationship with others to enabling the production of physical relations and social structures. Spatial agency is here as much about modes of behaviour as it is about modes of making" (Awan et al., 2011, 32). Simultaneously, such modes of collective visioning can increase green areas in the city and promote biodiversity especially in underutilized urban spaces, for example, unused grass patches between housing complexes. In such areas, local involvement is a vital ingredient in the maintenance and setup of a productive foodscape as it requires vigilant care to keep them running, thus strengthening the bond between caretaker and their garden. The vulnerable nature of such food-productive spaces requires this spatial connection to have agency, as the ongoing-costs are usually not included in urban landscaping budgets. In conversation with a Stockholm planner, she mentioned that the main opposition towards community food gardens is maintenance, who takes care of them or their associated costs, is fundamental to their existence. Therefore, having citizens seize agency and accountability of their foodscape spaces gives them responsibility to maintain them, especially if they are in close proximity of their homes. It also gives them the opportunity to be more engaged in urban discussion, as they become keepers and voices for their foodscape by way of their experiences. The eco-urban network called Ecobox, is an example of establishing opportunity for spatial agency to occur in a neighbourhood, set up by Atelier d'Architecture Autogeérée (aaa) in 2001 (Atelier d'Architecture Autogeérée, 2009). The network started a series of food-productive gardens in the La Chapelle area of northern Paris, and is a successful example of setting up spatial agency that created a platform for social participation, collaboration, engagement and action. The project included mobile raised beds, constructed from recycled materials, giving the possibility for food cultivation, production and consumption. However, it also gave the potential for urban dialogues to form around local activities and discussions. The project, though started and curated by Atelier d'Architecture Autogeérée, was fully operated by local residents who also took the primary role in advocating a new site when the garden was evicted from its original location. Likewise, the Gröna Linjen network is aimed to explore spatial agency within urban agriculture movement on a city-wide urban level, rather than only a neighbourhood. Its' intentions were manifold and responded to what was needed for the Stockholm context: to start up urban discussions on the challenges of growing food in the Nordic city, to weave together the different urban farming initiatives along the #17 route, and to provide them with 'a place on the map' and within the urban fabric. Furthermore, the platform also allotted artists the opportunity to be engaged in the gardening movement, and in discussions about sustainability within the context of food. All intentions gave the possibility to inform policy where experts and citizens gathered for discussion in demonstration sites.

Hence, there is particular weight given to production of a community around this activity, and how individuals come together around gardening that is directly linked to their agency. The question remains, where should these productive foodscapes be located in order to craft this close tie and psychophysical relationship to the farmed site? Both site and interested groups need to be clearly identified for a relationship to be nurtured and to ascertain their potential impact – politically, socially and ecologically.

## Critical Cartography through Community Mapping

This paper investigates new modes of critical cartography for locating and allocating foodscapes and their agents. Critical cartography is a contemporary approach incorporating both theoretical and practical underpinnings for the mapping of 'new societies'. Here, the theoretical parameter questions the social relevance of mapping: its knowledge, ethics and power relations. The practical aspect is associated with new mapping capabilities, including development of open-sourced and pervasive tools (Crampton, 2006).

Within this research context, this relevance is further extended to include an inquiry into the anatomy of urban agriculture. Urban food production is not a


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new phenomenon in Swedish urban contexts with its long-standing tradition of private allotment gardens called koloniområden. There are however not enough allotments to meet the current demand in Stockholm, coupled with long waiting lists, up to 15 years in some cases, for citizens wishing to have a space in the centre for growing food. Hence, the design challenge will be to find and create communal spaces that meet the desires of people who want to grow in them. Opportunities surface in underutilized urban plots, at the same time, producing potential for different forms of integration and participation.

Community mapping is a method within the practice of critical cartography, which could identify suitable sites, simultaneously reinforcing the project's ambition for a transfer of spatial agency. Between 1978-1986, the Calcutta organization Unnayan prepared maps to detail and locate informal settlements that did not exist in official and commercial city maps. The maps rendered the communities visible, whereas official maps labelled them as 'vacant land', illustrating how cartography can be used to gain basic rights for dwellers to 'have a place on the map' (Mogel & Bhogat, 2007). Similar to revealing communities, maps can also render invisible practices, such as urban agriculture, visible within the urban fabric. Chris Perkins defines community mapping as local mapping, produced collaboratively, by local people and often incorporating alternative local knowledge. Such democratized mapping offers new possibilities for articulating social, economic, political or aesthetic claims. He further states that 'expertise in participatory techniques is shared at the grassroots level, and that wider social influences are fundamental for all community mappers' (Perkins, 2007: 136). Critical geographer Brenda Parker (2006) states that community mapping is often centred on the allocation of local resources, or at least the judicious reallocation of resources (Parker, 2006: 470). She argues that these mapping processes serve as an empowering process, where local capacity is built-upon with the emergence of a particular 'community' around a mapping activity. Parker (2006) considers community mapping to employ three themes: inclusion, transparency, and empowerment. For inclusion, she suggests two dimensions: the involvement of populations formerly excluded from mapping, and diverse involvement within local communities (Parker, 2006: 472). She affirms Denis Wood's reference for transparency which 'considers the lucidity of the goals, context and authorship of community maps.' She turns to Christina Drew who sees transparency as being 'associated with many concepts - including clarity, accessibility, accountability, and openness' (as cited in Parker, 2006: 472). Parker refers to Maeve Frances Lydon who states that 'Community Mapping is not mapping for or of a community, it is mapping by the community of their values, assets, and visions for the future' (as cited in Parker, 2006: 477). Furthermore, in terms of empowerment, Parker offers one viewpoint from varying sources, Freidmann, Elwood and Kyem, on the topic that describes empowerment as 'building capacities or human capital for collective action, in which communities acquire skills, politicised consciousness, or knowledge that informs or inspires collective action' (as cited in Parker, 2006: 477). All three mechanisms allow community maps to provide a medium for interaction, consciousness-raising, and conceivable action. By mapping their land, communities reclaim the territory for themselves, figuratively and literally (Parker, 2006: 479). As a result, they are better equipped to make decisions about allocation of resources, such as redefining green areas in cities to be allotted for growing food. She concludes her study on critical cartography and community mapping by stating that: 'what seems most crucial then is that scholars and practitioners draw on multiple methodological and theoretical approaches to critically evaluate community-mapping projects in a sustained manner. This effort can help sort hyperbole from politically and socially embedded "realities" of mapping agendas, and can contribute to the production of a more robust and reflexive cartographic counterculture' (Parker, 2006, 482). This statement serves as a springboard for the cartographical modes used in the Gröna Linjen intervention, where diverse methodologies endeavour to engage the community around growing food and to provide space for these green encounters. These alternative cartography practices enable new forms of urban green space to emerge, and a transfer in spatial agency to occur for a co-creative urban planning. The digital cartography tool Urban CoMapper, with the thematic of urban green potential, was designed to reveal places of and for urban food production. The tool provided participants the opportunity to map a green Stockholm through the lens that he/she would


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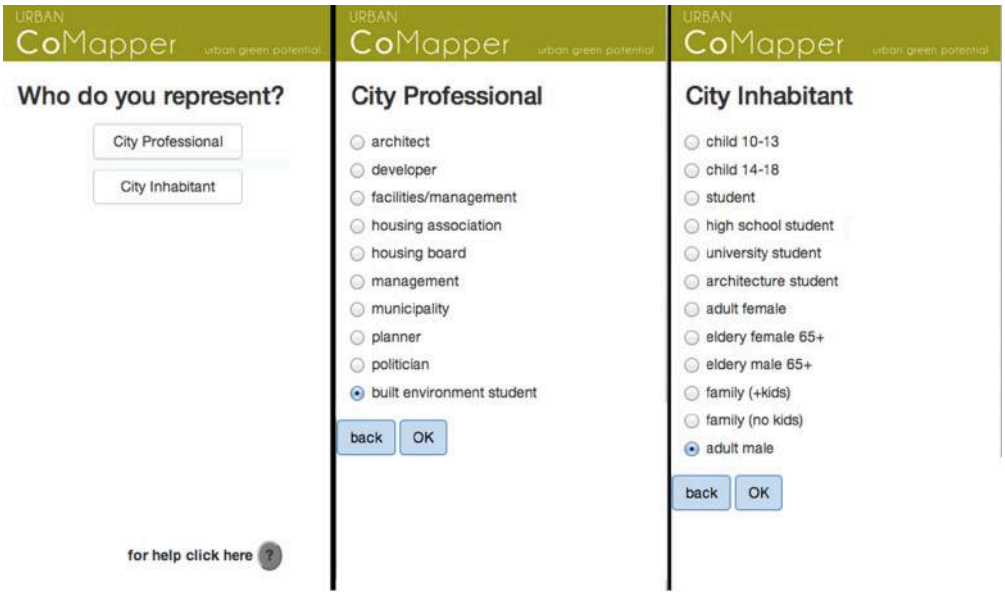


**Figure 2:** Urban CoMapper Interface (3 screen shots) - The survey offers city inhabitant and professional registration.
Source: Urban CoMapper 2014

like urban agriculture to be understood (Figure 2).

Citizens involved in the allocation of these green spaces take pride in being included in the dialogue concerning the allocation of green spaces in the urban fabric. In critical cartography, 'social movements employ spatial and cartographic knowledge in order to analyse and transform existing spaces and prefigure alternative ones' (Herb, Häkli, Corson, Mellow, Cobarrubias, & Casas-Cortes, 2009: 339). Their daily experiences and contact with the sites generate knowledge that could be used in the planning of urban agriculture.

**Digital and Bodily Cartography – An Introduction:**

The proposed strategies explore new methods for locating and allocating foodscapes. Both cartographical approaches provided for data collection, however it is the methodology and not the data that is the focal point in these investigations. Each method was diverse in its approach and documentation. The digital cartography, a smartphone app called Urban CoMapper, was used for a tacit reflection and tracing of the sites to input data in real-time from the site (Figure 3). In the bodily cartography, the participant's body was used as an interface and became an active tool for reflection. This bodily experience provided a tracing of the

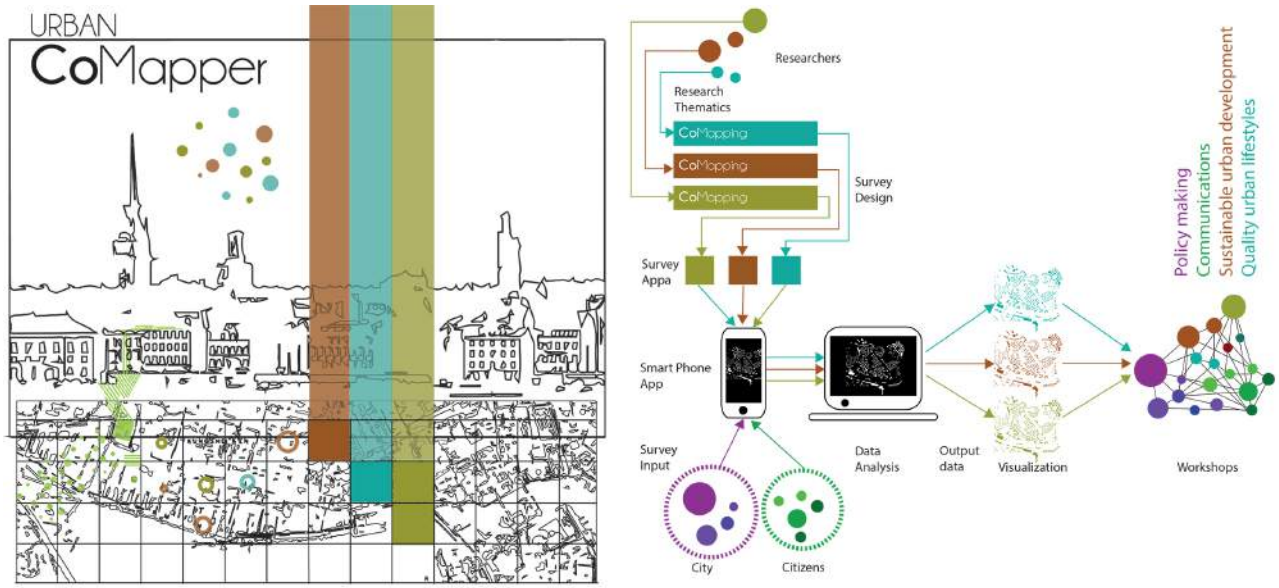


**Figure 3:** Urban CoMapper diagram showcasing the framework for data gathering and communication
Graphics Credit: Hye Kyung Lim & Anna Maria Orru 2014

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foodscape sites on the ground, via a bike and foot tour, with the stomach and mouth for further sensorial examination of the grown data – the produce. The intervention was a bike-riding tour safari through the city along a set agenda of garden visits (Figure 4). In the tradition of a safari, participants were invited to an overland green expedition through five Stockholm's sites and met the various communities involved in the growing (Figure 5a). The intention was to have them meet gardeners, but in the process of organizing the event, it also became apparent that the gardeners did not know each other. In preparation for the safari, participants were given a small 'survival guide' booklet for their journey which outlined the timetable, route and involved persons (Figure 5b).

**Digital Research Cartography - Urban CoMapper:**

The digital interface, Urban CoMapper (UCM), created a web-based setting for allocating and mapping urban agriculture which could be used in the urban design process. In report for the World Future Council, authors stated, 'In order to set up an urban agriculture programme, we need a framework of policies' (Girardet & Bree, 2009: 14). Today, many cities worldwide have instigated food councils to contemplate urban agriculture, but it is still unclear how to implement food as a seamless building block for the making of green spaces in cities. For instance, the city of Stockholm has indicated a vision for urban agriculture as part of their Green Walkable City report from observing engaged and involved citizens who currently, through their own initiative, have started gardening in Stockholm responding to a lack of available private allotments and long waiting lists for such spaces (Stockholm Stad Stadsbyggnads Kontoret, 2013). But Stockholm has yet to draw up policy for the effective inclusion of urban agriculture, or a technique for collecting data on existing and potential sites. Currently, a citizen-initiated map-blog called Stadsodling Stockholm/ City-farming Stockholm, provides a map of existing farming initiatives with data collected spontaneously through word of mouth or yearly harvesting/


**Figure 4:** Gröna Linjen Safari, 15 June 2014
Photo credit: for © images Ulrika Flodin Furås, other: Anna Maria Orru 2014


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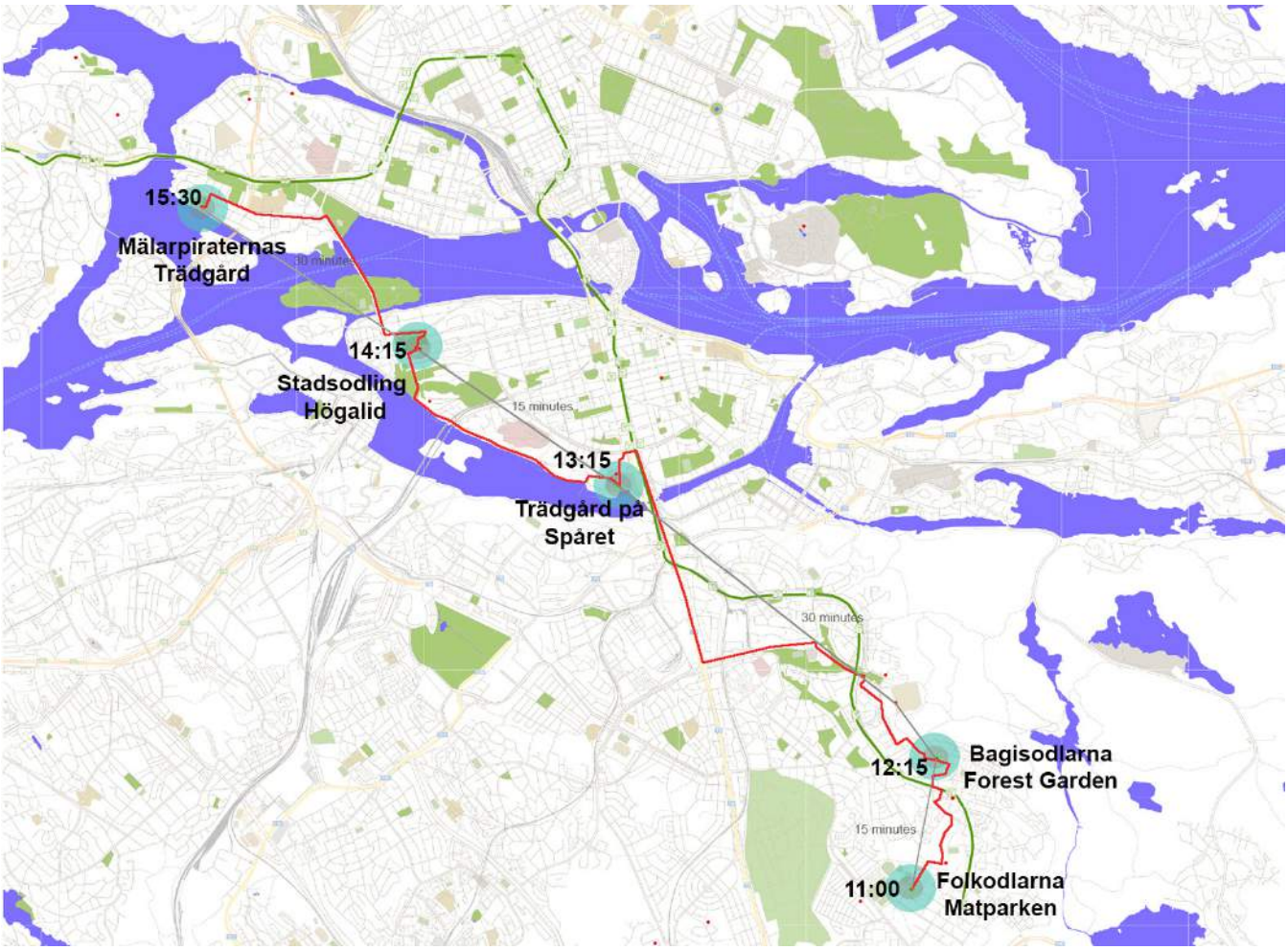


**Figure 5a:** Gröna Linjen Safari map: A day agenda for 5 sites
Graphics Credit: Anna Maria Orru, David Relan 2014


**Figure 5b:** Gröna Linjen Safari survival guide booklet
Photo Credit: (first left image) Ulrika Flodin Furås, other: Anna Maria Orru 2014

gardening events (Stadsodling Stockholm, 2013). However, there is a need for gathering this information in real-time on site by citizens themselves, keeping it regularly updated, and linking it to urban planning by feeding data directly into the design process.

The majority of these gardens are grassroots initiated and spring up where interest is assembled and implemented, which is difficult to keep track of. Therefore, how can the support be implemented and available land be allotted? The intention of the UCM tool is to connect communities to a site that is being farmed or could be cultivated, based on collected crowd-sourced data. The aim is also to connect the gardening communities to each oth-


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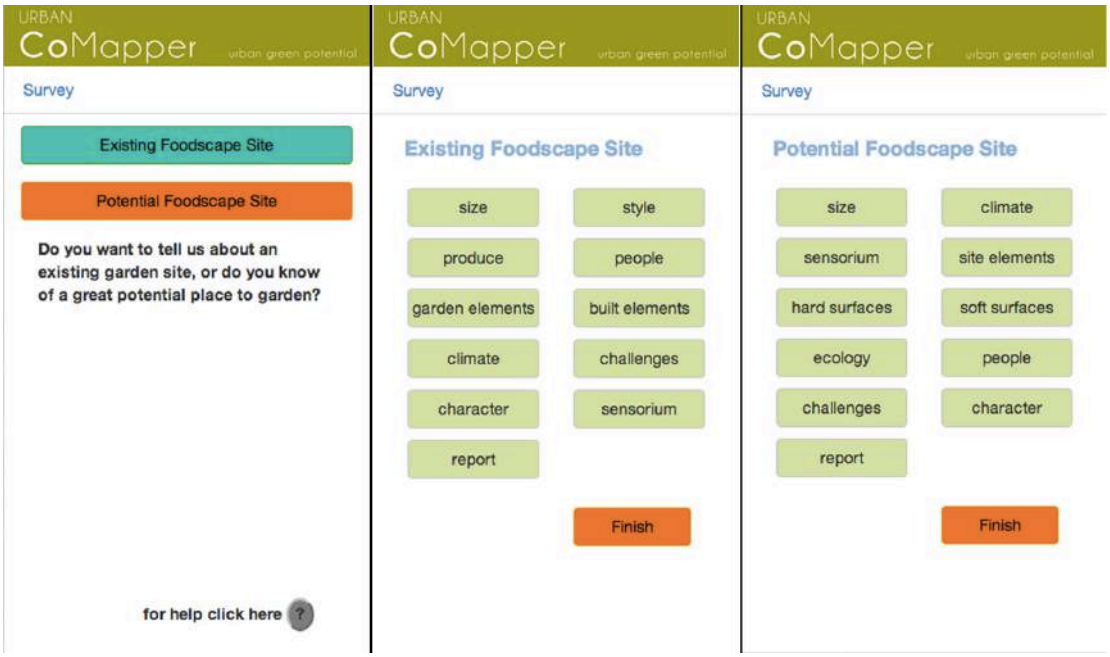


**Figure 6:** Urban CoMapper Interface (3 screen shots) - Survey categories for locating existing and potential sites for urban agriculture
Source: Urban CoMapper 2014

er, through the emergence of a real-time database identifying these areas and creating dialogue between citizens and planners. The tool explores the collection of data for locating both existing and potential sites. It locates the user and asks them to report their perceptions according to several interlinking factors (Figure 6). These factors include:

- Size – site size (existing sites) and location options (potential garden)
- Style – existing design, site and built elements, its sensorial description
- Site conditions - hard and soft landscaping, surface and site elements such as zoning areas and traffic conditions (potential garden)
- Produce/ecology – existing green infrastructure
- Climatic conditions pertaining to sun, wind, and seasonal perception

The aim with this range of data is to create a holistic mapping of urban agriculture that can provide adequate input into the urban design process. The collection of data via smartphone momentarily pulled participants away from the 'safari group' into their digital task, creating a reflective space to enquire the site intricately. The UCM tool becomes an interface between the users experience and their perception, along with setting up a link to urban design experts. Martijn de Waal (2014) sees urban media devices as an interface to the city, especially into the making of new urban public spheres and specialized communities. It's the stage or platform where city dwellers show who they are (make their way of life public) and, as a result, become acquainted with other people's ways of life and compare themselves with them. City dwellers can recognize like-minded people and, together with others, be absorbed into new collectives (new publics) or distinguish themselves from other city dwellers (De Waal 2014: 14). Furthermore, the UCM tool becomes a 'territory device', explained by de Waal as 'an appliance or system that can influence the experience of an urban area' (De Waal, 2014: 19). This is a vital association into agriculture that establishes alternative forms and scales of the green landscape that are not mainstream urban lifestyles. This research explores whether this alternative and effective approach to identifying, greening and engaging with the city, can perhaps transform our urban behaviour around food. The challenge is whether this short exposure to gardening sites is transmissible and can arouse non-gardening individuals living close to a site, to become interested in 'growing communally'. UCM tracks such occurrences of contact, locates them, and hopes to increase the possibility for more to emerge.

In sum, the UCM tool by no means claims to have worked out themes highlighted by geographer Brenda Parker because of project limitations, such as finance, time and media design. There was also a problem of the smartphone app to reach a wide


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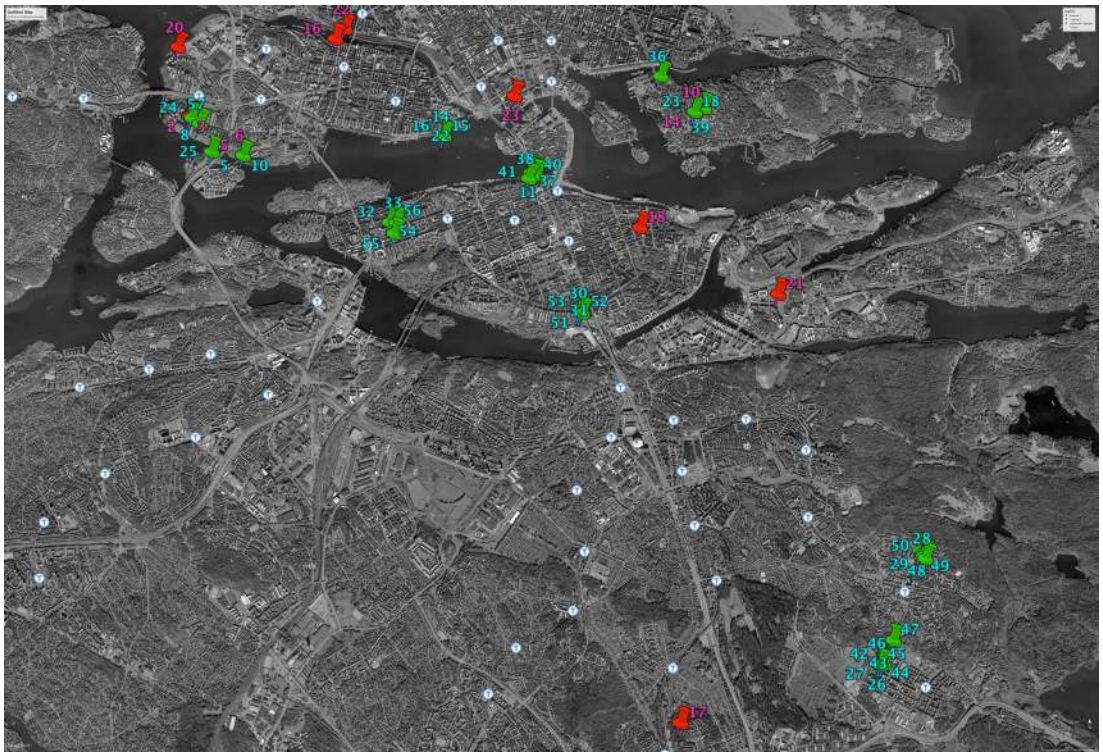

**Figure 7:** Urban CoMapper - Preliminary visualized map after Safari. (Red pins = Potential gardens. Green pins = Existing gardens)
Image Credit: courtesy of Google Earth Maps 2014

enough audience. However, the app managed to instigate a platform of research that highlighted sites, engaged citizens and experts in dialogue, and connected existing gardening communities (Figure 7). Continued design efforts are needed for such urban agriculture digital platforms, as are staged events like the safari, in order to promote and remedy issues associated with such tools. Here a prototype has been executed which could be used to go further into discourse with municipalities, who could develop such tools further, making them seamless and more useful to urban planning.

**Bodily Research Cartography:**

The bodily cartography experience allowed participants further reflection based on their bodily contact with the sites, something that could not be achieved only through the digital device. The UCM provided an opportunity to capture the perceived experience of the site but could not provide for tracking the sensorial aspects that are integral to fostering a deeper relationship with urban gardening - a bodily act in itself. The bodily tracing of the site gave opportunity to activate the bodily senses, and provided a 'lived experience' rather than only a perceived one. Its aim was to become a sensuous immersion and encounter, but how was the bodily cartography staged? The safari activated the body in a number of ways: the cycle ride from garden to garden, the tour on foot in each garden, the act of planting a seed and seeing others that have grown, and the simple act of tasting something from the garden and eating food amongst growing produce. All these experiences viewed the body as a catalyst for a food-related awareness because of its direct connection to an embodied experience. Notwithstanding that, creating an awareness of sustainable urban eating through growing, touching and eating becomes a playful act, one in which citizens are more likely to participate.

Traversing a landscape using your body, such as walking or biking is a known and used concept in the artistic world. Artist Hamish Fulton utilizes walking as a medium to explore many different areas around the world documenting it in various formats. He describes his work as 'What I build is an experience, not a sculpture' (McKibben, Tufnell, Scott, & Wilson, 2002, 16), and believes that walking, unlike objects, has a spiritual dimension to it that cannot compete with an experience (Vettese, Hapkemeyer, & Messner, 2005). Fulton's art is connected to the environment in some manner, encouraging us to gently revisit our personal relationships with it. He may


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place his walk at a juxtaposition of seasons in order to experience them, observing the interconnectedness between the wilderness and at times the urban environment (Fulton, 1999). Another example, where walking is used as a device and research, is by architect Francesco Careri. He refers to this as 'an instrument of phenomenological knowledge and symbolic interpretation of the territory, as a form of a psychogeographical reading of it' (Careri, 2009: 11). Using bodily experiences to understand a site is synonymous to how performance studies looks into different ways that a body can be sourced for comprehending an emotion. The term psychophysical blurs the border between mind and space, where the body in a particular physical space can be used for creating awareness, in this instance, a body in a space that grows food can create an awareness of our food-related behaviour. This extends to a lived understanding of food in different seasons. Nordic winters pause food gardening, and thus an experienced physical understanding transpires of what is available to eat through the lack of it, or non-act of it. The body in essence becomes a political body with knowledge to give. This does not assume a Cartesian approach to the subject, where the body is transformed only into an object of knowledge, because the body is also a lived experience or entity. Here, the research is underpinned by phenomenology, developed by Maurice Merleau-Ponty, who described this sensorial based experience of the world. He stated that 'sense experience is that vital communication with the world, which makes it present as a familiar setting in our life. It is to it that the perceived object and the perceiving subject owe their thickness. It is the intentional tissue which the effort to know will try to take part' (Merleau-Ponty, 1962: 61). Likewise, Constance Classen (2010) argues that, 'A full bodied experience of the world requires all the senses. If we are to counter the domination of sight in contemporary culture, Classen suggests paying attention to touch. By cultivating tactile values of intimacy, interaction, and integration - values that promote engagement with our physical and social worlds - we can more effectively sustain both our cities and ourselves'(Classen, 2010: 69). Both Classen and Merleau-Ponty support the association between the sensorial bodily experience and psychophysical awareness. Performer Ladron de Guevara clarifies this 'lived body' to senses connection further. He states, 'we experience and make sense of the world through the interplay of a wide range of senses, systems, internal and external stimuli. Merleau-Ponty refers to this dynamic grouping as one's being-in-the-world. Our perception not only filters (and therefore articulates) reality but also, it necessarily implies as active engagement with the world surrounding us' (Ramírez Ladrón de Guevara, 2011: 25). One can argue that it does not only imply, but rather mandates this bodily engagement to take place, 'because our conceptual systems grow out of our bodies, meaning is grounded in and through our bodies' (Lakoff & Johnson, 1999: 6). For it is in this activated role that we develop a relationship with the outside world, and with our ecological values, gesturing us to engage or not and perhaps change our behaviour.

Another difference between the bodily cartography from the digital is that it was an activity done in a group rather than by oneself. Whereas the digital interface made participants input data into a smartphone in an isolated practice of concentration, the bodily experience was conducted with other participants together in a group. 'Sensuous encounters between individuals and environments are produced and structured, not just by their material features, but also by the particular social and cultural contexts in which encounters take place' (Cowan & Steward, 2007: 2). The experience of these spaces was changed when it was done within a group tracing the route. Activating a body by oneself is a reflective and intimate encounter, however activating it within a group dynamic allows for the 'act' to become a peer interaction and critical conversation to take place. What becomes interesting is that through the bodily group experience, versions of spatial agency occur. As Martijn de Waal referred to digital tools as territory devices, where like-minded people recognize and create collectives with each other around an activity, could this collective bodily experience also be seen as form of collective and territory making? In essence, both the bodily and digital exercises could not be conducted by themselves if they are to commit larger questions of sustainable behaviour.

## The Role of Artistic Practice in Urban Agriculture

Though both methods of cartography differ in their approach, it could be said that their compli-


ISSN-Internet 2197-411x OLCL 862804632

mented combination, along with the Gröna Linjen and safari experience, makes way for new forms of artistic research into cartography. The bodily tracing and experience of urban agriculture lends to strengthening its impact and longevity into mainstream lifestyles. The way to get participants is to guide them on an experience of this kind, introduce them to a growing community, and wrap the experience in a creative playful envelope. In essence, the aim of the Gröna Linjen safari was to overlap sustainable living with garden play, composing sustainability into a pleasurable encounter. To this extent, the research interventions not only intended to take participants on a nomadic excursion but also to 'intersect' food artistically. The safari invited several artists to investigate food through artistic performance and discussion. One artist, Malin Lobell, discussed the politics behind urban growing. Her art piece entitled 'kan växter bli politiska?' (can plants be political?) was exhibited in the Hogalidsparken garden in the Hornstull neighbourhood (Figure 8). In addition, at the Mälarpiraternas Garden, Lobell together with artist Ulrika Jansson moderated a discussion on the role of art in urban gardening (Figure 9) .

Finally, artist Andrea Hvistendahl conducted a glimpse into the bodily interface with her performance 'No Waste Cooking.' Her artistic practice engaged participants to trace their neighbourhoods using their stomachs by bringing up the discussion of wasted food in society. Participants were welcomed to ingest the delicacies from the Mälarpiraternas garden in the neighbourhood Fredhäll and from local supermarkets' that had volunteered their expired produce (Figure 10A and 10B). The body once again took on a reflected internal journey of what nature provides in the city, and how we con-


**Figure 8:** Artist Malin Lobell's exhibition on the politics of plants
Photo Credits: Ulrika Flodin Furås 2014

**Figure 9:** Artists Malin Lobell and Ulrika Jansson in discussion
Photo Credits: Anna Maria Orru 2014

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sider this prospect.

All these performances gave yet another dimension of an artistic approach to food-related behaviour in the city. They assembled dialogues into what role artists and creative urban practices play in urban agriculture and its dissemination. In the book following the Foodprint exhibition, Louise Fresco, a Dutch scientist was quoted from her 2005 Cleveringa Lecture, 'food stands at the beginning of all moral awareness. Food implies many dangers: not only health risks, but also challenges to values and ways of life. We need a new paradigm, a coherent set of rules of conduct for individuals, government bodies, businesses, and civil society, so that food can once again become central to a fair and sustainable global society' (Van Roosmalen, 2012: 10). Arno van Roosmalen (2012), director from the art centre stated: 'art can play a role in this process through its capacity to create unprecedented situations, present parallel worlds, and make the invisible visible. In these ways, art can spark individual awareness of ethical, social and political issues and speak to the motivations, convictions, or emotions underlying rules or laws' (2012: 10). It can be said that sustainability needs a more creative approach, combining art with science, in order to make citizens participate and take agency for their cities.

## Concluding statements

In summary, this paper responded to several research gaps as highlighted in the Swedish Formas report on urban sustainable development. The proposed strategies offered a platform for alternate participation for engaging citizens into the urban design process with underpinnings from critical cartography and spatial agency. An urban platform called Gröna Linjen was formed to stage an intervention safari through Stockholm's urban foodscapes. Methodologies for digital and bodily cartography were used to locate existing and potential sites for urban agriculture. The digital approach designed a smartphone app for locating and allocating space for urban agriculture through a perceived experience of the site. The bodily approach used the body as a device for recording the sensuous encounter through the lived experience of the site. At the start of the research, it was assumed that the two cartographic modes were in opposition to each other. What came through after the intervention was that both modes complimented one another, and if we are to include citizens in the urban design process, both are needed for a holistic approach. The purposes behind these experiments are clear and motivated: the first was to create new engagement processes into the urban design process, forming new practices for citizens' contribution into urban poli-

**Figure 10A:** Andrea Hvistendahl performance with ingredients from local supermarkets set to be thrown away.
Photo Credits: Anna Maria Orru 2014


ISSN-Internet 2197-411x OLCL 862804632

**Figure 10B:** Andrea Hvistendahl - 'No Waste Cooking'
Photo credits: Ulrika Flodin Furås 2014

cy and to build a bridge for dialogue with experts. Another was to give alternative opportunities and platforms for citizens to have spatial agency for their green spaces. Finally, it challenged our rapport with the natural urban environment and our food-related behaviour in the city. All these notions bring urban agriculture into the forefront as necessary alternative ways of making urban green spaces because of its ecological, social and political impact. Future research will broaden the use of artistic research into studying food in urban sustainable design. The intervention strengthened the author's intuition to use the body as an interface and cartographical instrument because of the sensuous information it can gather which the digital interface could not. The next set of research experiments will use a form of Japanese dance called Butoh to further intervene with urban agriculture, as its choreography is taught through the act of farming itself. The question remains: what paradigm shifts in urban sustainable design and behaviour could concur from positioning the body in recreating urban space?

[1] Urban CoMapper app was developed during 2014 by PhD candidates, Hye Kyung Lim and Anna Maria Orrù, with two varying research thematics: Urban Green Potential-Foodscapes and Compact Mixed City.

[2] The Gröna Linjen platform was initiated by Christina Schaffer, Ulrika Flodin Furås, Mattias Gustafsson, Ulrika Jansson, Malin Lobell and Anna Maria Orrù.

## Acknowledgements

The author would like to give gratitude to the research institute, Mistra Urban Futures, for supporting the Gröna Linjen Safari. Also to fellow PhD candidate Hye Kyung Lim for her collaboration on the digital interface work, and to the Gröna Linjen Platform crew. Thanks should also be given to the Safari intervention participants and to Stockholm City planners who were involved. The author also would like to thank the anonymous peer reviewers and journal editors for their constructive comments on the paper, in addition to my PhD supervisors.

## Conflict of Interests

The author hereby declares that there is no conflict of interests.

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ISSN-Internet 2197-411x OLCL 862804632