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Urban Agriculture Approaches – Comparing Small-Scale Initiatives in Cologne, Germany and Edmonton, Canada

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Abstract:

Urban Agriculture (UA) is necessary to mediating the problems of urbanization and food security, while promoting healthy individuals, communities, economies, and environments. However, to date there is a large gap in academic knowledge regarding the topic of Urban Agriculture. This research adds to the discussion of Urban Agriculture through the comparison of UA development in Cologne, Germany to Edmonton, Canada, in hopes to identify best practices and share information. The researcher visited sites and interviewed participants in Cologne, Germany and Edmonton, Canada throughout May-June 2012. Additional project information was found through community garden internet portals and websites. Analytical induction and narrative analysis was used to categorize *Project Types* and project *Functions*. The main Project Types identified include; Individual Plot (of a community garden), Communal Garden, Urban Farm, Education Centre, and Other Projects. Fifteen main project *Functions* as expressed by participants and through project websites were also identified. The *Project Types* and *Functions* were then used as comparison vectors. It was found that community gardening initiatives in Edmonton are more prevalent, are more established, and place more emphasis on being environmentally friendly. Whereas in Cologne there were well-established Education Centres, and newly created communal gardens mixed with entrepreneurial individual plot initiatives. The main emphasis in Cologne was on the physical and social community creation. In conclusion it is hoped that the information gathered from both cities can be used to assist in the further development of UA projects in both cities. The results will also be incorporated into the COST- Urban Agriculture Europe initiative, which aims through working in close cooperation with regional stakeholders to contribute to sustainable, resilient territorial development in Europe (COST – Urban Agriculture Europe).

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1. Introduction:

"Urban Agriculture (UA) plays a key role in two global challenges: urbanization and food security. It can provide an important contribution to sustainable, resilient urban development and the creation and maintenance of multifunctional urban landscapes. In the globally emerging research field of UA, a European approach to the subject needs to be created. It has to integrate the unique European context regarding its urban and landscape pattern, the important role of the Common Agriculture Policy (CAP) and the needs of the European society. The COST-Action Urban Agriculture Europe (UAE) will initiate the definition of this European approach on the basis of existing research projects and reference regions in the partner countries." (COST – Urban Agriculture Europe)

For centuries societies have cultivated their foods within a regional context, and in crises and times of need food was more intensively cultivated directly within an urban setting, as depicted through the American Victory Gardens of the Second World War (Brown and Jameton, 2000). Although it has been noted by Chandal Nolasco da Silva in the research essay "The Urban Agricultural Movement in Canada: A Comparative Analysis of Montréal and Vancouver" (2009) that crises and low income are not necessary characteristics for the instigation of urban agriculture projects. Due to our history of food cultivation, it seems logical that with an increasing urban population that an ever increasing amount of urban agriculture activities will be founded.

The research aims to illustrate the variance and similarities between two cities that are currently fostering in a wave of urban agriculture projects and support. Cologne, Germany and Edmonton, Canada are cities of similar size, development and environmental conditions (Table 3.0). Through the identification of similarities and differences between the cities (and projects located within), best practices are identified and more understanding is gained into the motivation behind UA projects in general. Furthermore, given the two cities' administrative and civil interests in UA, a secondary outcome of the research is the sharing of information between the two cities.

2. Methodology:

Interviews and site visits were conducted throughout June 12, – July 2, 2012. The main mediums used in Cologne were open dialogue interviews and site visits. Project representatives were asked open-ended questions regarding topics such as: motivation for establishment, project evolution and history, project governance structure, rationale behind participation, functions fulfilled by the project, and future goals. The qualitative responses and overall interview interactions were then analysed using narrative analysis. Closed ended questions also asked included: location, income generated (if any), project size, and species cultivated. In Cologne a total of six interviews with site visits were conducted, with an additional six site visits without interviews. In Edmonton only three interviews via telephone or Skype were possible and only two of these sites were visited (see references for more detail).

 To depict a more complete picture of UA in Edmonton and Cologne, additional data was gathered through Internet websites and urban agriculture portals available from

both cities. The urban agriculture portals accessed between May and July 2012 were *urbangruen.de* (Cologne) *sustainablefoodedmonton.org* (Edmonton). It must be noted that the data collected from Cologne was collected in German and translated into English, whereas no translation was required for the Edmonton data. In all cases, information on technical, social, and environmental aspects was sought.

The qualitative data was then analysed using sociological narrative analysis, where the researcher interpreted the word usage/frequency, gestures, and answer structure. The quantitative data between projects was simply manipulated using concepts such as frequency of occurrence or summation. The qualitative and quantitative information resulted in an assigned Project Type classification and *Functions* provided by the project. These qualitative characteristics were compared between with the quantitative data and then compared between the two cities in order to infer the different means of which Cologne and Edmonton foster UA. The research followed qualitative induction analysis guidelines, where the researcher gathered, classified and reclassified information through an iterative process.

3. Results:

Cologne and Edmonton were chosen for comparison because of their similar population size, environmental and industrial surroundings, as well as they were relatively well known and accessible to the researcher. However, these similarities (Table 3.0) and the researcher's familiarity of the cities are not the only reasons which made the Cologne and Edmonton good candidates for UA research. Both cities are experiencing a recent wave in community gardens and the city administrators are currently working with stakeholders in both cities to best facilitate the new community and rights oriented land-use associated with UA.

The City of Cologne and the City of Edmonton reach out to UA participants in an effort to try and understand the phenomenon of UA. Both city administrations are looking at ways to support and promote UA as a means of city imagining and furthering sustainable practices. The City of Edmonton is currently (summer 2012) writing their "made-in-Edmonton food and agriculture strategy" (Food and Agriculture Project, City of Edmonton Website), while the City of Cologne offers grants for UA initiatives and is creating an educational pamphlet with information on current projects and how to participate, who to contact regarding questions, and how to start your own project. The hard work being put forward by both city administrations illustrates the profound commitment existent in both cities regarding UA.

The similarities previously mentioned led the researcher to believe that perhaps the UA phenomenon was more of a global or westernized development and that distinct differences within Cologne and Edmonton would not appear. Upon initial analysis it appeared that Edmonton and Cologne had developed and were continuing to develop in a similar fashion regarding UA. However, upon further investigation and categorization of *Project Types* and *Functions* it became apparent that the cities did indeed have different UA cultures and structures.

The variation between Cologne and Edmonton became apparent through the iterative process of identifying *Project Types* and *Functions*. The *Project Types* identified included; Individual Plot (of a community garden), Communal Garden,

Urban Farm, Education Centre, and Other Projects. The Individual Plot classification refers to a community garden or shared space, which is then divided into personal plots for personal use. For most of these projects a member must pay a rental fee or usage fee for the summer. In Cologne the Individual Plot projects are driven through an entrepreneurial model; and therefore have higher rental fees. A typical Individual Plot in Edmonton had a usage fee of $20 - $30 CAD (15 - 24€); whereas in Cologne rental fees ranged from 400-600€, for what in most cases is a larger plot. Square metre prices are difficult to determine, because not all plots are charged on a per area basis. However, some examples of area prices include 2.80 € ($3.47 CAD)/m^2 with *Garten Glück* in Cologne, $2.15 (1.73€)/m^2 with *Highlands Community Garden* in Edmonton, and $6.67 (5.38€)/m^2 with *Idylwylde Cheery Tomato Community Garden* in Edmonton. Communal Gardens are the projects that plant, cultivate, and reap the benefits equally amongst users or volunteers (or in some special cases the produce/income is donated to a local charity). There is no formal personal ownership within the garden; however a fee for participation may be required. Urban Farms are the operations whose main goals are to produce food for sale or consumption as a necessary means for personal sustenance and support (Sarah Rich, 2012). These operations may lean more towards production efficiency, and operate with employees, which may be supplemented with volunteers. Education Centres are the operations whose main focus is on providing training and education regarding gardening and food production in general. Food may be produced, sold and/or consumed on the sites; however there is a structured curriculum or facilities for learning. Other Projects include "homeless" projects that may not have a core group of members, may not have a standard location, and do not fit amongst the other four *Project Types.*

In addition to *Project Types*, fifteen main project *Functions* as expressed by participants and through project websites were identified and grouped under societal environmental, educational, and economic motivations. Food Production was left as a stand-alone function.
The *Functions* include;
- Food Production: producing fresh, healthy (organic) food,

Societal
- Venue: location to host an event,
- Socialization: meeting and interacting with new people,
- Recreation: enjoying the process of gardening and being outdoors,
- Sharing Information,

Environmental
- Promotion: actively promoting environmental sustainability to the surrounding population,
- Aesthetics: beautifying an area,
- Land Remediation: improving the surrounding natural environment,
- Biodiversity Preservation,
- Experience Nature: experiencing a less anthropogenically disturbed atmosphere,

Educational
- Inclusive Education: including special needs students through a gardening medium,
- Education: supplementing classroom education,
- Integration: facilitating and supporting the integration and inclusion of minority demographics,

• Therapy: providing a calming/healing experience, and
Economic
• Income: providing a source of income.

In total 47 projects were studied. 35 projects were based in Edmonton and 12 in Cologne. 25% of the projects in Cologne were classified as Individual Plot, 33.33% of the projects were Communal Gardens, and 25% were Education Centres. There was also 1 Urban Farm and 1 Other Project. In Cologne the projects are well distributed amongst the identified *Project Types*. However, in Edmonton there is a large trend towards Individual Plot gardens, with these making up 60% of the Edmonton projects. Next comes Communal Gardens with 28.5% of the projects. Edmonton is also home to 2 school education projects labelled as Education Centres, 1 Urban Farm, and 1 Other Project. Overall there were more projects taking place in Edmonton, a city with a slightly smaller population than Cologne. However the surface area studied in Cologne was 200 times larger than the area of cultivation in Edmonton. This is due to the inclusion of the Kleingärten area in Cologne. As depicted in Figure 3.1 it can be seen that the idea of having a community garden (Communal or Individual Plot) ignited earlier in Edmonton. This earlier ignition coupled with a larger surface area and a currently supportive City Council are likely resulting in the large number of initiatives.

Differences in gardening culture became apparent through the interviews and websites regarding the themes of community/society and the environment. In actuality, the researcher could not strongly distinguish between correlations between *Functions* and *Project Types* and city. However while performing interviews and searching websites it was acknowledged that Cologne participants placed more emphasis on the social aspects of the projects, regardless if they were Individual Plots, or Communal Gardens. Having a meeting place within the growing space and meeting neighbours was the first theme to emerge and was brought up multiple times within an interview. In Edmonton, the social and environmental contexts were often woven together, but the emphasis was placed on "organic", "sustainability", and other environmentally friendly related terms. 57% of the projects actively stated that their projects provided environmentally friendly *Functions* such as sustainability promotion, improving aesthetics, enhancing the environment through land remediation, preserving biodiversity, and providing the opportunity to experience nature (see Figure 3.0).

Figure 3.0 - Project *Functions* and Main Motivations
Functions identifying main motivation highlighted in yellow

Cologne, Germany   **Edmonton, Canada**

The differences in motivation and participant perceived *Functions* are worthy to note, as they will help the cities to further cater towards the needs of their residents. These findings state that Cologne residents are looking for space to recreate and meet new people, whereas Edmontonians are searching for ways to assert their environmentally grounded values. This is not to say that Cologne residents do not share the same environmentally grounded values. In fact the general list of *Functions* depicts that Edmontonians and Cologne residents participating in UA share most of the same values, instead the results are showing a gap in provision.

Throughout the interview and Internet research process it was clear that UA projects are multi-facetted and a complete comparison between Cologne and Edmonton is not possible. The different *Project Types*, situational variances, and *Function* variances do not allow for a clear-cut distinction between practices in Cologne and Edmonton. All projects served multiple *Functions* and shared these *Functions* between the *Project Types* and cities. A project operating in Cologne could be transplanted into an Edmonton setting without looking out of place and vice versa.

The multi-facetted characteristic exhibits itself through the bottom-up initiation of projects in both cities, as projects are created to serve the specific domestic needs and desires of residents. In the cases of Cologne and Edmonton, the civil movement occurred prior to the arrival of municipal governments trying to sort out UA. This allowed the projects to remain multi-facetted and serve the *Functions* desired by participants. It enabled residents to exhibit their needs and wants through a productive non-harmful manner medium, while the city shares the greening effect offered by the projects.

4. Conclusions:

The results obtained from the research are beneficial to the UA projects and city administrations in Cologne and Edmonton. City administrations should pay attention to the motivations and perceived *Functions* from participants in order to best support and promote the further greening of the city. Follow-up research should be conducted and another comparison made after the two city administrations have administered their UA plans. This second comparison should focus on the effect of a top-down approach of a political food and agriculture strategy as is being developed in Edmonton, vs. the bottom-up approach of promotion and educational support offered by the City of Cologne.

Nevertheless, because most of the research took place in Aachen, Germany it was more difficult to contact projects in Edmonton and conduct comparable interviews and site visits. The use of narrative analysis was best suited for the project, but the lack of formal interviews in Edmonton led to gaps in knowledge and having to rely on and interpret written script within a website. This medium does not allow for spontaneous response and the option to ask for clarification or more information from the researcher. In the future studies should include dialogic interviews and written script such as a website or information pamphlet from all parties to prevent bias.

In addition, due to the short time-span of data collection, it was not possible to create an exclusive list of UA projects in neither Cologne nor Edmonton. Within the researcher's list of projects are projects, which are known to the researcher, but do

not have any data sets. These projects were not included within the 47 projects categorized and analysed, but are included within the mapping exercise and, if possible, the surface area of a city being occupied by UA (in Table 3.0). The data is updated to July 2, 2012; however after this date, new gardens were popping up within both cities. This depicts the commitment and prime atmosphere for UA to grow in Cologne and Edmonton.

5. Evaluation:

The research was presented at the COST UAE Working Group Meeting (July 9-11, 2012), where the importance and advancement of UA was discussed amongst European and International experts. During discussion it became apparent that there exist varying views or what constitutes UA and for what purpose it should be further developed. Small-scale initiatives were commonly brought up within a sociological and policy context as a means for self-sufficiency and pride. It was within this context that the research conducted in Cologne, Germany and Edmonton, Canada became relevant, as it provided specific examples of *Functions* and motivations for the occurrence of UA through small-scale mediums.

However, given the European and International context of the COST UAE initiative it is clear that the examples of Cologne and Edmonton are not stand alone phenomena, and that individual cities express UA through different *Project Types*. While speaking amongst experts from Sweden and Portugal other *Project Types* not found within the research in Cologne and Edmonton were identified and warrant further research.

At the meeting, researchers also approached the author with questions regarding methodology, process, and findings, as similar comparison projects are taking place throughout Europe, such as Poland and Germany. It is valuable to share the difficulties, best practices of research, and research results with other researchers. This information sharing will lead to a clearer picture of UA in Europe (and the world), so that UA can be further developed and supported.

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7. Appendices:

Table 3.0 - City Statistics

Data: 2010	Cologne, Germany	Data: 2006, 2011	Edmonton, Canada
Population (2010)	1 007 119	**Population** (2011)	812 201
Male	487 419	Male	404 875
Female	519 700	Female	407 325
% change (2005-2010)	2.3%	% change (2006-2011)	11.2%
Immigrant population (Nichtdeutsche)	162 764 (16.2%)	Immigrant population (2006)	165 615 (23%)
Age (2010)		**Age** (2011)	
18-29 (persons)	168 235	18-29	164 435
30-49 (persons)	321 309	30-49	238 870
50-64 (persons)	176 125	50-64	150 750
65+ (persons)	183 399	65+	94 660
Area (km²) (2010)	405, 17	**Area** (km²) (2011)	684,37
Research UA Area (km²)	min 6.487909	Research UA Area (km²)	min 0.03
Population density (persons/ km²) (2010)	2 485,7	**Population density** (persons/ km²) (2011)	1 186,8
Agriculture land area (ha) (2010)	6 989	**Agriculture land area** (ha)	---------------
Individual income (mean after tax) (2010)	20 298€ ($25 244)	**Individual income** (mean after tax) (2006)	$25 117 (20 196€)

Figure 3.1 - Timeline of Establishment for Currently Operating Projects
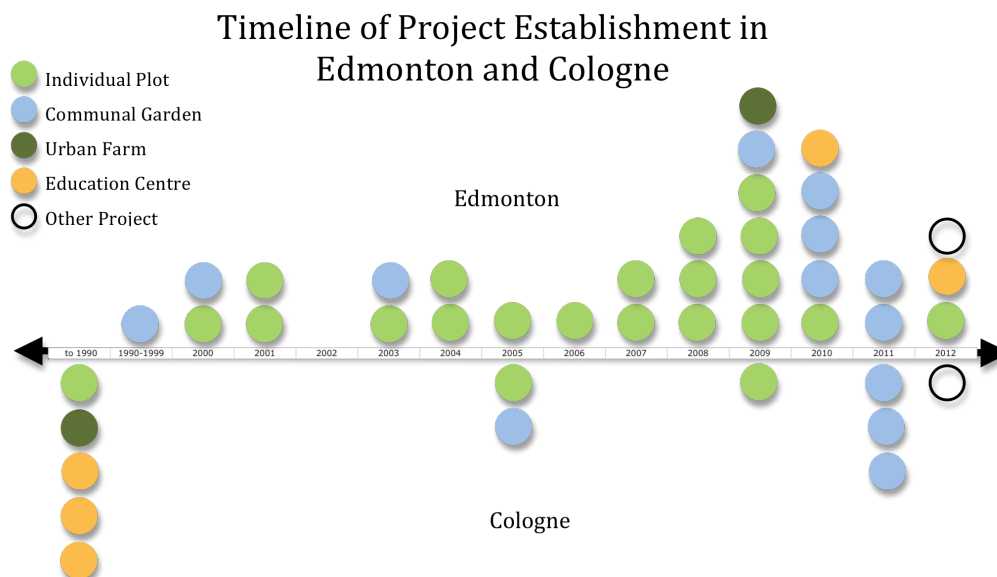

Timeline of Project Establishment in Edmonton and Cologne

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Figure 3.2 – *Project Types* vs. Number of Projects Studied