1st IASC Thematic Conference on Urban Commons

Track 1: Where do the urban commons come from?

Categorizing Urban Commons – Collective Action in Urban Gardens

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Abstract

As early as the nineteenth century urban gardens were used for recreation and health protection and were even expected to solve socials problems of industrialization. Currently, gardening in cities becomes increasingly important again. Urban gardening and especially community gardening has become a rapidly growing international movement. Most urban gardens are established, organized and managed by communities, with gardeners holding diverse bundles of rights. Therefore, community gardens represent new commons: they are managed collectively, producing commons like knowledge, infrastructure, recreational spaces and last, but not least, food products.

When applying collective action theory to community gardens, it becomes evident that they are special in their motivation why people get organized. Especially in developed countries, urban gardening projects are not about the lack of food. Rather, people lack possibilities and time for socializing, participation or democratic use of public spaces. This way, urban gardens fulfill a vast variety of functions with regard to a sustainable development of urban communities. In most garden projects, there is a high level of biological and social diversity. Furthermore, they are highly diverse in their characteristics as commons, their structures and types of organization, e.g. organization by an association or self-organization by the gardeners. Individual and group property rights are very diverse as well, as is the use of different resource units.

Although urban gardens are often listed as examples of new commons, they lack closer scientific examination. First of all, it is necessary to specify key characteristics of urban gardens defined as new commons. To support our theoretically developed classification

criteria for urban gardens as commons, we use case study examples and a database of the foundation ‘anstiftung und ertomis’. It comprises currently 455 urban gardens in Germany.

In this paper, we will present different criteria to explore the differences between gardens used as new commons or as other forms of collective engagement. Furthermore, we precisely define subtypes of urban commons. We will discuss diverse criteria to define the different garden projects in their function as commons. The criteria include typical characteristics of commons like the degree of collective action or particular elements which are shared. Each criterion is operationalized in turn by various variables capturing the characteristics in a detailed way.

For instance, depending on the garden, a particular criterion might be a plot, equal distribution of the harvest or knowledge. These resources might be used individually, collectively, or a mixture of both.

Based on the above mentioned data analysis, we will classify urban gardens into groups with different levels of collective action. One conclusion is that especially in urban commons, the level of collective action differs widely.

As such, with their vast diversity, urban gardens are a prime example of exploring the new commons and systematizing key features.

Keywords: Urban gardening, community gardens, collective action, new commons, classification

1 Introduction

Throughout history, cultivating food in urban areas played a significant role to ensure food supply for urban residents. Worldwide, civilizations developed urban agriculture systems and created innovative ways for food production, land management, efficient use of water and other resources (Smit et al. 2001a). With the industrialization and urbanization, agricultural production became part of the countryside, while cities focused on production of industrial goods (Smit et al. 2001b).

Alongside this functional separation, the number of inhabitants, the housing density and social problems through poverty or lack of recreational opportunities in cities increased dramatically. These conditions generated small 'gardens for the poor'. The allotment garden movement emerged from these 'gardens for the poor' in the industrialization period (Johannes 1955). Especially in Germany, we still find the typical 'Schrebergärten', pioneered by the ideas of Dr. Schreber in the latter part of the 19th century. These small gardens were founded by citizens and are special because of their idealistic motivation to create spaces for recreation, relaxation or health care (Johannes 1955).

During and after the world wars the importance of allotments increased and gardens played an important role for food security in urban areas. With economic growth after the Second World War, the importance of gardens and agriculture in urban areas declined and gardens became more popular for hobby gardening.

Currently, growing food in cities is getting more important once again. 'Urban Gardening' has become a rapidly growing international movement. Unlike the former allotment gardens most of these urban gardens are *community gardens* which are established, organized and managed by communities, yet at various scopes and extent.

Commons are resources shared by a group. Such resources are vulnerable to enclosure, overuse and social dilemmas and therefore require management and protection in order to sustain it (Hess 2008). Urban gardens can be classified as new commons which are described as shared resources that have recently evolved (Hess 2008)[1]. Urban gardens also produce other commons like knowledge, infrastructure and services.

[1] Additionally urban gardens can be classified as urban green commons which were described as *"physical green spaces in urban settings of diverse ownership that depend on collective organization and management and to which individuals and interest groups participating in management hold a rich set of bundles of rights, including rights to craft their own institutions and to decide whom they want to include in management schemes".* (Colding and Barthel 2013, p.159)

When applying collective action theory to urban gardens, it is important to note that they are special in their motivation why people get organized. Especially in developed countries, urban gardening projects are not about the lack of food. The scarce factor that calls for collective action is rather that people lack opportunities and time for socializing or participation in urban development (Baier et al. 2013; Werner 2011).

Furthermore, there is a high diversity in their characteristics as commons, their structures and type of organization. Some are self-organized, while others are managed by an association. Property rights are very diverse as well, as is the use of different elements. With elements we designate area, infrastructure, resource units and immaterial resources like knowledge, social time and work. Urban gardens differ in these characteristics in various degrees.

Although urban gardens are often listed as examples of new commons, they lack closer examination. First of all, it is necessary to specify key characteristics of urban gardens defined as new commons. In this paper, we will present criteria to explore the differences between gardens used as new commons or used as other forms of collective engagement. Furthermore, we precisely define subtypes of urban commons.

For this purpose, we describe the development and the state of art of urban gardening in section 2. Section 3 describes the distinction between urban gardens, community gardens and allotments. Criteria that classify various gardens and define them as commons are discussed in section 4. Section 5 demonstrates the applicability of these criteria to case studies. Section 6 concludes.

2 The evolution of urban gardens

Agriculture and growing food in cities is as old as the cities themselves. But urban gardens are a new phenomenon. Today, there are a lot of new gardens in cities all over the world, which often don’t look like typical places for growing food. For example, we find gardens on rooftops or airfields, vertical gardens as well as mobile gardens, house gardens, community gardens or intercultural gardens

There is no widely acknowledged definition, neither for the term urban gardening nor for the term urban agriculture. For example, the Food and Agriculture Organization (FAO) defines *urban agriculture* as

> "[…] *crop and livestock production within cities and towns and surrounding areas. It can involve anything from small vegetable gardens in the backyard to farming activities on community lands by an association or neighborhood group.*" (FAO 2010, p. 1).

In this way urban gardening can be described as part of urban agriculture. Another more detailed but still general definition describes urban agriculture

> *"[...] as the growing, processing, and distribution of food and nonfood plant and tree crops and the raising of livestock, directly for the urban market, both within and in fringe of an urban area*." (Mougeot 2006, p. 4f.).

Mougeot (2006) further describes:

> *"It does this through tapping on resources (unused or under-used space, organic waste), services (technical extension, financing, transportation), and products (agrochemicals, tools, vehicles) found in this urban area and, in turn, generates resources (green areas, microclimates, compost), services (catering, recreation, therapy), and products (flowers, poultry, dairy) largely for this urban area."* (Mougeot 2006, p. 4f.).

This definition shows that the term 'urban' not only describes location. Rather, such agriculture is linked to urban functions and economical, ecological and social systems in towns.

The area for urban agriculture can be very diverse, ranging from small, open and vacant spaces unsuited for urban development of less than 20 square meters (household gardens) to peri-urban agricultural land with 10 or more hectares (Smit at al. 2001b). Hence, size is one of the criteria that may help to classify urban gardens. We will come back to this in section 4.

Rasper (2012) describes *urban gardening* as encompassing all gardening activities in the city. Defined this way, urban gardening includes activities like guerrilla gardening[2], tree grate gardening (*Baumscheibenbegrünung*), community gardens, but also private house gardens

[2] Guerilla gardening is a political form of protest, originating in the 1970s (Werner 2011). It means to plant in public spaces without being permitted to do so by the authorities. Planting seeds or practicing tree grate gardening are just two ways of guerilla gardening (Baier et al. 2013).

or micro gardens like balcony gardening. Allotments, in Germany well known as ‘Schrebergärten’, are often described as urban gardens as well (Bendt et al. 2013; Bock et al. 2013).

Since most of urban areas are just available for temporary use and urban ground is usually not suitable for cultivating, gardeners often devise innovative, creative and improvised ways to establish urban gardens. For example, pellets are used to build high plots and bakery boxes as well as rice bags to create mobile gardens. Thus, some of the gardening activities look more like art installations than agricultural activities (Baier et al. 2013).

While in urban agriculture livestock production play a role, livestock is more or less absent in urban gardens. If at all, there are only small animals like chickens, rabbits or pigeons.

In contrast to developing countries where the aim of urban gardening can be food security and subsistence, in developed countries – the focus of this paper – gardens also emerge for recreation or as criticism against globalization. Many gardeners are often engaged in local and global debates, like sustainable urban development, democratic use of public spaces, industrial food production, environmental justice, participation in political decision processes or loss of biodiversity (Baier et al. 2013; Werner 2011). Other garden projects like community gardens are about socializing as well. Surveys indicate that people participate in community gardening because they enjoy the opportunity to meet and make friends (Linn 1999).

Based on the definition for urban agriculture, we define *urban gardens* as diverse places in urban and peri-urban areas which grow food and nonfood for local markets, own or public needs by using unused or underused spaces and resources to generate resources, services and products for the urban area. Urban gardening can be done formally or informally, professionally or nonprofessionally and with different goals and motivations[3]. This overview demonstrates that the usual definitions of urban gardens do not necessarily include commons management.

Despite the increasing importance of urban gardens there is an absence of systematic data, whether on a national or international level (Thompson et al. 2003). Although in the United States the first community gardens were organized about 30 years ago, there is up to now no complete census of urban gardens or their organizations (Hynes and Howe 2004). This may reflect the fact that the phenomenon is relatively new or the fact that there is no widely acknowledged definition of what exactly is an urban garden. This is no trivial problem, since urban gardens have to be distinguished from both private household gardens and allotments

[3] It should be noted that this description is not sufficient to describe the vast diversity which is encountered in the different urban garden projects.

as well, as urban agriculture activities. Estimates for the latter are around 800 million people practicing urban agriculture (FAO 2015). However, this count also includes the often intensive and commercial peri-urban agriculture.

Nevertheless, some data can show the importance of urban gardens in cities. For example, the database 'anstiftung und ertomis' currently comprises more than 450 diverse gardens in Germany (anstiftung und ertomis 2015). The dynamic growth may be seen in this data set as well, as only 16 months ago only 377 urban gardens were listed (Rogge 2014). In addition to these new urban gardens there is a large number of about 1.24 million allotments in Germany with an area of about 50.000 hectares (BMVBS and BBR 2008). In comparison, the American Community Association estimates the existing of more than 18.000 community gardens in the United States and Canada (Kortright and Wakefield 2011).

When looking at larger cities, garden number and sizes vary considerably: Munich (population: 1.4 million) has about 20, Berlin (population: 3.5 million) 40 and Paris (population: 2.2 million) around 70 urban gardens (anstiftung und ertomis 2015; Urban Greens Watch n.d., Statista 2015, Insee n.d.). Concerning the sheer number, New York City (population: 8.5 million) is special – there are more than 600 urban gardens in this city (GreenThumb n.d., City of New York 2015).

3 Distinguishing between urban gardens, community gardens and allotments

Most urban gardens are run jointly or collectively and can be described as *community gardens.* Examples of community gardens are neighborhood gardens, intercultural gardens or student's gardens. They have different aims, motivations, different structures and forms of organization. They also differ in size, area and services they offer to the community. Rosol (2010) defines community gardens as public green spaces run by volunteers. What distinguishes community gardens from private gardens is the fact that they are – in some sense – public gardens in terms of ownership, access, and degree of democratic control (Ferris et al. 2001). Bendt et al. (2013) use the term 'public-access community gardens' (PAC-gardens) to describe community gardens

> *"[…] that are open for anyone at all times, collectively managed by various interest groups in civil society, and in which formal obstacles for immediate participation by the public are absent to low."* (Bendt et al. 2013, p. 19).

Although many urban community gardens are public, some of them are restricted in regard to e.g. access times. Other gardens are not public at all. The ownership of the respective used land, which is most often leased by the community, can be public, private or collective. In some cases the land plots are however also owned by the community or by a subgroup of the community being engaged in the garden project. We consider community gardens as a type of urban gardens: they are managed and organized collectively. Various goods are divided and shared in different ways and extent. These gardens are what we understand as commons.

Furthermore, we distinguish urban and community gardens from allotments. Bendt et al. (2013) argue that these garden types share many similarities but also describe their differences. *Allotments* in Germany, like urban commons, were initiated by citizens in regard to their different urban needs. But allotments differ widely in management and organization, in their structure of the community, way of resource use and existing rules from community gardens. While community gardens are often short term and unstable constructs, allotments in Germany have long term protection through federal law (BKleinG – 'Bundeskleingarten-gesetz'). Another distinction is that allotment gardeners have private plots in a garden plant but use just a few elements collectively, like path-ways, clubhouse or playgrounds. These common elements are sometimes open for the public while the individual gardens are not (Bendt at al. 2013). In regard to organization, allotments are more formal while community gardens have a tradition of being self-organized by stakeholders within the community (Ruitenbeek and Cartier 2001). Another difference concerns the application process: when joining an allotment garden, an applicant often needs to apply formally (Bendt at al. 2013). In the following paragraphs we focus on urban gardens, in particular community gardens and analyze what garden elements are treated as commons.

4 Criteria to classify urban gardens as commons

Based on literature research on commons and urban gardening, we develop diverse criteria to define different garden projects in their function as commons. These criteria include typical characteristics of commons and urban gardens.

One important and very diverse attribute of gardens is their surface area. Concerning area, we have to distinguish between the entire garden area and the area being cultivated. Vertical gardens, e.g., may have a very small garden area but may cultivate a large area by using vertical space.

Besides the size of the resource system, the size of the community also matters. We divide the community in four groups: ‘external users’, ‘gardeners’, ‘core group’ and ‘management group’. This structure of the community depends in turn on the structure of the garden project. For example, in public access gardens, citizens belong to the user group. In addition, there is a gardener group which includes all gardeners, including volunteers who participate rather irregularly. Typically, there is a core group of gardeners as well as a management group which may consist of the board members of an association. Some gardens will reflect the structure of the community while other gardens are less diversified. The variables ‘community size’, ‘management form’ and ’participation level’ - in their combination – allow us to deduce how many persons in a garden project are users or activists, respectively. Moreover, they allow us to determine the involvement of the community in decision-making processes.

Land used for gardening, like in traditional commons, may be owned by governments, individuals or community groups and may be used as open access resource to various extent. The form of land ownership can be important for the long-term maintenance of urban commons (Colding et al. 2013). Particularly, private land, which is rented by the gardening communities, could be seen as more insecure for long-term use, when owners decide to sell the ground or use it for other purposes (Linn 1999). However, municipal governments are only willing to issue temporary leases for urban gardens, too (Linn 1999). Although a lot of urban gardeners are rarely owners and have only short-term and insecure contracts, they nevertheless spend much time and energy to create urban green places on vacant plots.

These few variables discussed already demonstrate the large diversity of urban gardens. Overall, we use more than 100 variables in a survey to capture gardens as commons in a detailed way.

For instance, to closer look at the bundles of property rights, we use the above mentioned subdivision of the community and examine which of these user groups holds which bundle of rights (access, withdrawal, management, exclusion and alienation) (Schlager and Ostrom 1992). The access rights, for example, determine who may enter the urban garden and in this way defines the larger user community, too. While authorized people may hold access rights to an urban gardening project, they lack other rights like withdrawal (Colding et al. 2013). In this way, the bundle of rights defines who shares which elements of a garden, as shown in Figure 1.

With this in mind, we aim to develop a classification that leads us to ‘typical’ garden projects. The core building blocks are criteria that define which elements in the gardens are shared or

divided. Especially the different forms of participation in all the various elements make urban gardens special. It is necessary to examine in detail which kind of elements in urban gardens are used collectively and which individually. Since some elements are used collectively, it is important to find out how these processes work in detail. Therefore, we divide collective use according to various degrees of sharing and dividing (Figure 1).

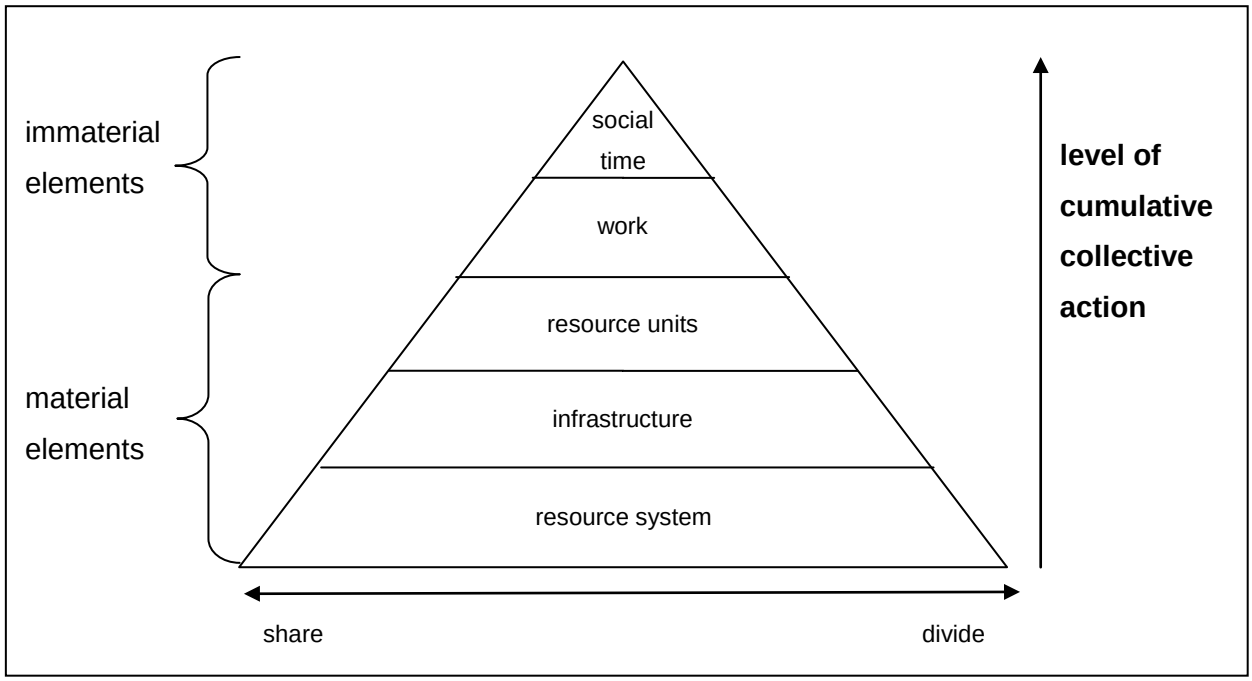

Figure 1: Elements shared and divided in urban gardens

Figure 1 illustrates what makes urban gardens so particular and rich as commons. They comprise various elements that can be used collectively in different degrees. While traditional commons like irrigation systems share the system itself and its infrastructure but nothing else, urban gardens add the benefits of immaterial goods. Moreover, these shared social elements are in fact the desired 'products' of urban gardens, not the food. Sharing one's time, interacting socially with other gardeners, working together and share knowledge are key motivations for most members to participate. In most gardens, meditations, community events or BBQ-festivities are among these collective activities.

In some gardens, all elements are used collectively while in others there is a mixture of collective and individual use. Elements can be used collectively through dividing and sharing. With divided elements we mean collective use taking place within the community through assignment or division. With shared elements we mean elements that are used collectively without a clear assignment.

The first and most basic element (at the bottom in Figure 1) is the garden or the urban area as the resource system. We capture this element in a detailed way by the above mentioned variables (e.g. size, ownership). The resource system can be used individually or collectively. In a collectively used area, the community can divide the total system between different users. In some gardens there may be individually used plots only through division of the resource system. In other collectively used resource systems there is a mixture of individually and collectively used plots. Another form of collective use of the resource system is sharing the entire space. In this case, there are no individually used spaces, plots or beds. The community shares the space without a clear allocation. Variables like 'property rights', 'decision processes' or 'rules in place' reveal the degree of collective use of this element. For example, there may be a small authorized user group which divides and allocates different plots or there may a division of plots by the entire user community through democratic principles.

Regardless of dividing or sharing a resource system, other shared or divided elements (infrastructure, resource units, work and social time) may exist. A community may also share or divide different parts of the infrastructure. Such parts are for example paths as well as toilets, access to water, outdoor furniture, tool sheds or tools. For instance, in some garden projects each gardener has an individual tool shed. In other projects we find a mixture of individual and collective used tool sheds or tool sheds that are only used in a collective manner. If the tool shed is used collectively by sharing, all gardeners can use it without a clear allocation of space or tools.

Furthermore, some gardens may also use diverse inputs, outputs and resource units collectively. These are for example seeds, soil, compost, water and harvest. Some of these criteria can also be used collectively through sharing or dividing, as well as individually or a mixture of both. A closer examination shows again that the harvest may be used individually or collectively, shared or divided. There may be rules to divide the harvest in regard to working hours, other conditions or the harvest is shared without any clear allocation rule. One example for these default rules may be that each gardener may take what he or she needs or that all gardeners eat the harvest together. While the latter constrains an individual in his or her withdrawal rights, it increases the socially shared time.

While traditional commons like irrigation systems share the system itself and its infrastructure but nothing else, urban gardens add the benefits of immaterial elements. Moreover, these elements are often the desired 'products' of urban gardens. The more immaterial elements are shared, the better this new commons movement answers to social needs.

In this regard we examine work as another element. In some gardens work may be done individually, without any influence of the community. As an example, a gardener might work on his or her individually used plot. However, work may also be done collectively or as a mixture of both. Collective work can be done through dividing or sharing. Usually, in urban garden projects work is divided in regard to working time or working activities (tasks). For instance, a community may allocate a specific working hour or specific tasks – like mowing the collectively used lawn – to each gardener. In this case work is divided – that does not necessarily mean work is not done together. Sharing work means that there are specific times or meetings for gardening when people work together. In such cases, gardeners share working time and working activities, i.e. socializing time. For each garden project, it is necessary to examine closely if and which work is shared, divided or done individually.

A different immaterial element is social time. Sharing one's time, working together, interacting socially with other gardeners and share knowledge are key motivations for most members to participate. Social time can be spent together through diverse events like cultural events, garden parties, barbecues or other collective activities. In contrast to all other elements, the benefits of socializing - spending time with other gardeners – can only be shared, not divided.

It seems clear that there are various positive feedback loops between a tightly knit by community by social activities and trust which in turn influences norms and rules in a positive way. The better members know and spend time with each other, the less free riding there should be, making other collective action even more likely and successful.

The more of the mentioned elements are used collectively, the more cooperation, communication and organization is required to manage these collective uses. Furthermore, shared elements require a higher level of collective action than divided elements. Thus, the level of cumulative collective action increases, as shown in Figure 1. Therefore, we determine the level of collective action through the degree of collective used elements and whether elements are shared and divided.

Initial thoughts are to add further elements like knowledge. On the one hand, knowledge is another important element which is shared within communities. Aspects like an exchange of experience could be understood as a shared element, which plays an important role in intercultural and inter-generative garden projects. On the other hand, knowledge can also be kept as an individual asset. Yet, we can only illustrate whether there are coordination arrangements that facilitate sharing knowledge.

5 Typical urban gardens and its characteristics

The following section demonstrates possible configurations of urban gardens using three case studies. We studied two urban gardens located in Muenster, and one in Cologne. They have been selected from the 'anstiftung und ertomis' data base as typical for the respective patterns.

The 'Campusgarten GrüneBeete' in Muenster is 1300 qm^2 large, has around 22 community members and was founded 2013 with support and financial help of the University which also provides the space as well as private and public support. The intercultural garden project 'Pardis Interkulturelles Gärtnern' in Muenster is somewhat smaller with 800 qm^2, has 12 community members and was founded 2012 with private and public support. 'Campusgarten Köln' located in Cologne, has about 25 community members and was founded in 2013 with help from General Student Committee (AStA) and public support.

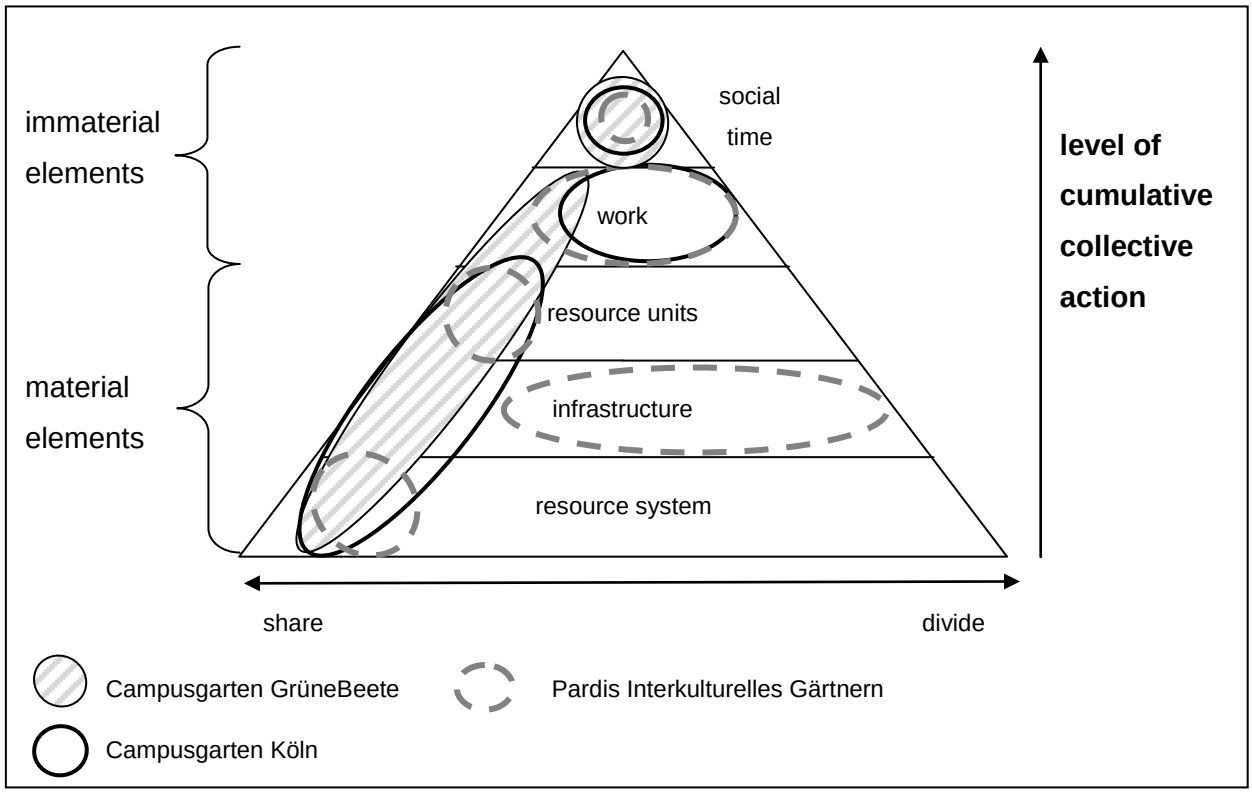

Figure 2: Elements shared and divided in case studies

Figure 2 shows preliminary results of our research. As can be seen, there are different degrees of collective action. The 'Campusgarten GrüneBeete' is a good example for a

garden where each element is shared. While in the ‘Campusgarten Köln’, they share all elements, too, ‘work’ is both shared *and* done individually. In both gardens, socializing is a key motivation of gardeners. In a direct comparision, in the ‘Campusgarten GrüneBeete’ social activities are shared more often as in ‘Campusgarten Köln’.

In contrast, the garden ‘Pardis Interkulturelles Gärtnern’ is a prototypical example for a mixture of shared, divided and individual use. Socializing was also mentioned as a motivation for joining the garden project, while social activities are shared less. According to our initial classification, given the number and degree of shared elements, the ‘Campusgarten GrüneBeete’ would be estimated as showing the highest level of cumulative collective action, followed by ‘Campusgarten Köln’ and the intercultural garden project in Muenster.

6 Conclusion and Outlook

Urban gardening is an ongoing international movement. In regard to their diversity, a large amount of variables is needed to capture the characteristics of the gardens in a detailed way. Urban gardens are prime examples of the collective use of urban spaces and they are special in the way people in cities organize their commons.

In some urban gardens, we find a diverse community or providers which offer a collective use of a huge amount of various elements. The garden itself can be used collectively, but includes a lot of other different examples of urban resources collectively used. These examples range from material elements to immaterial elements like work as well as social time and knowledge. Gardens also fulfill a lot of different functions for urban areas and provide various offers to citizens like space for recreation or education. In this way, urban gardens often share elements within a closer community but also with ‘external users’.

We use diverse variables and the characteristics of collective and individual use of various elements to determine the level of collective action in urban gardens. Therefore, we look closely on material goods like the resource system and infrastructure as well as inputs and outputs to produce resource units. We examine immaterial goods like work and social activities, too. Using a large number of diverse elements in a collective way, requires a high level of collective management. Other aspects that play into that are the composition of the community, organizational forms, communication, cooperation as well as a sense of fairness and trust.

The case studies analyzed demonstrate multiple possibilities of sharing and dividing in regard to different elements. While in some gardens more elements are shared or divided, our case studies show different degrees of collectively used resources and therefore diverse levels of collective action.

Since urban gardens seem to be very diverse in their structure and collectively used goods, one conclusion is that the level of collective action accordingly differs widely. As such, with their vast diversity, urban gardens are a prime example of exploring the new commons and systematizing key features. In further research, we will precisely categorize urban gardens into groups with different levels of collective action. For this, we have implemented a quantitative survey which will allow us to validate the above mentioned elements, by collecting data from different urban gardening projects in Germany, using the database of ‘anstiftung und ertomis’, which comprises currently 455 urban gardens.

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