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Projet de recherche EnCommuns

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Categorization of the Urban Commons

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Categorization of the Urban Commons
Alexandre GUTTMANN

This paper aims at a categorization of urban commons using different definitions and typologies found in the existing literature. Such an exercise draws its justification from the incredible variety of commons composing society nowadays. These commons can range from elements of natural capital used by humans, such as waterways, to highly sophisticated citizen initiatives meant as alternative governance structures to go beyond the frequently unsatisfactory dichotomy of the government's regulatory reach and private profit motive of enterprise. Their huge differences notwithstanding, either type of commons can be found in cities and play a useful role in climate-change mitigation or adaptation, arguably over the long haul the most pressing challenge faced by the majorities of cities in the world. In this chapter we will distinguish between different types of commons in the urban setting along two different vectors, ultimately yielding a 3 x 3 urban-commons categorization matrix at the end. The first track identifies urban commons on the basis of their purpose, whether ecological, social, or immaterial. And the second criterion of classification deals with access to such urban commons – whether civic, community, or private.

1. Ecological Commons

Vinay Gidwani and Amita Baviskar (2013) have categorized two different types of urban commons, which are ecological commons and civic commons. Gidwani and Baviskar define ecological commons as commons where natural processes dominate the appropriation of shared resources. Such commons consist of air, waterbodies, wetlands, landfills. The value is based on the quality and quantity of natural resource use. Civic commons are commons where human processes dominate the appropriation of shared resources. These commons consist of streets, sidewalks, public spaces, public schools, and public transportation. The value is based on social use or labor use. This paper cited here is important for the typology of the urban commons, because it highlights two principled forms of urban commons which are essential in mitigating both climate change and socio-economic inequalities. In addition, the authors of this paper

are experts in equitable urban planning and have understood that urban commons are essential for the quality of life enjoyed by city dwellers. Much of their research focuses on cities in India, areas that have traditionally used commons to deal with social inequalities arising from rapidly spreading capitalism and in cities that are deeply prone to the effects of climate change. As such, their literature is important in figuring out how best to foster urban commons in economically contentious areas.

Jose Ramos et al. (2016) go further in the typology of urban commons, explaining the difference between inherited and created commons. The authors further differentiate these two categories of commons in terms of what is material and what is immaterial. They define 'inherited immaterial commons' as language and culture. These resources can be passed on from generation to generation and still preserve their original form or influence, meaning these resources are intergenerational. Ramos et alii define 'created immaterial commons' as information, knowledge, and digital data. These resources are created by specific generations at a given time, and they are harder to pass on between generations. The same typologies are used for material commons as well. Inherited material commons are natural resources that have existed since the creation of the earth, as for example oceans, forests, and the atmosphere. In contrast, created material commons are manufactured or anthropogenic natural resources produced in specific local places, such as crops or whatever else gardeners or farmers produce for their specific needs. The Ramos & Co. paper is an important contribution to the categorization of the urban commons, because it brings together several authors who are experts on policy options for cities to create urban commons in order to support socio-economically equitable urban development, something we will need to understand in the wake of rapid urbanization and climate change pressures. The ideas and practices emphasized in this literature are well captured through the typology mentioned above. They also manifest themselves in unique and context-specific ways, so it is important to understand the differences in the ideas and practices to build a correlation between different kinds of urban commons found in cities. We are developing this

typology here to improve our understanding of different commons and to form a matrix of these different commons.

The P2P organization run by Michel Bauwens, Charlotte Hess, and James Quilligan (2017), found only in the P2P organization's online Wikipedia page, has its own categorization of the urban commons. Their categories of commons are based on common spaces or resources found in different ecological environments, such as the noosphere, biosphere, and physiosphere, as well as types of common resources, such as inherited commons, immaterial commons, and material commons. Their Wikipedia page classifies any commons in the noosphere as indigenous culture and traditions, community support systems, social connectedness, and voluntary associations. Commons in the biosphere are classified as fisheries, agricultural landscapes, forests, ecosystems, parks, gardens, seeds, food crops, genetic life forms, and species of plants and animals. Commons in the physiosphere include elements, minerals, inorganic energy, water, climate, the atmosphere, and the stratosphere. All of these commons coming from specific ecological environments can be classified under the category of inherited commons, which are commons that have been passed on from generation to generation. Inherited commons, such as bodies of water or natural parks, have been under attack for many years due to economic development and capitalist tendencies by enterprises using natural resources for private gains. They are now becoming known as 'scarce commons'. We use the literature of the P2P organization for the same reasons we used Jose Ramos (2016). The scholars working in the organization have some of the most developed expertise and proficiency of the commons itself, and specifically of the different kinds of commons that exist today. The definitions used for 'ecological' commons can be easily used in ecological urban commons, a key category for our matrix. To develop our own understanding of the correlation between ecological commons and urban commons, the P2P organization serves that purpose in bridging those gaps. Moreover, authors such as Charlotte Hess and Michel Bauwens are some of the most renowned scholars in the field, and their explanations make an important contribution to clarifying the subject.

2. Classifying Shared Urban Spaces

Spike Boydell and Glen Searie (2014) focus on different urban spaces that can be considered as contemporary urban commons. This paper uses a case study of Darling Harbor in Sydney (Australia) to categorize specific types of shared urban spaces. In the case study, they had found seven different types of shared urban spaces. The first type of shared urban space is a publicly owned space open for general land use. These spaces are monitored and patrolled by a range of security agents usually on the part of the government, and so they do not require any self governance for appropriate surveillance measures to protect them. The second type of shared urban space is a shared space on the borders of a public area. That means private activities may spill over into the public area. There is a clear demarcation of space that allows the private use of the space. In these cases, the private entity will pay for a license fee as a means of compensation to assure the usage of that space for its business and activities. The third type of space is a public space with general fee requirements. While the space may be open to the public, it is indirectly controlled by an enforcing authority, such as park rangers or municipal police. The fourth type of shared urban space is a privately leased and operated space requiring a fee if it sets aside a public usage, such as a spectacle or a public performance. This kind of space is similar to the second, except in reverse inasmuch as its private users lend their land to public activities instead of an authority. The fifth type of shared urban space is a public space in private facilities or in private lands. This may be considered as a form of privatized commons. The sixth type of shared urban space is a public space that too is located in private facilities of the land, but is financed through entry fees. The difference between the fifth and the sixth space is the no-cost option of usage versus the entry-free option. The last type of shared space is an employment space in either a public or private facility on land leased from an authority, with only an entrance fee possible. These spaces allow certain collaborations to form through organization between different labor entities.

Barchetta (2015) defines the same types of spaces found in Spike Boydell and Glen Searie (2014), but provides specific labels to their functions. The first type of space is defined as *Stricto Sensu Public Green Spaces*, which are green open areas owned by the public authority, mainly for recreational uses. This space has an accessibility for the public at the highest level. The second type of space is the *Special Urban Green Space*, which he defines as public green spaces, which are public green spaces owned by an authority, but access and behavior regulations are based on specific functions of the space. These functions usually require an entry free for usage of this space. The third type of space is a *privately run public green space*, which he defines as open spaces that are temporarily managed by private actors but are under the ownership of the public authority. The private actors in these spaces range from loosely organized non-profit organizations to formal organizations and enterprises. The fourth type of space is a simple private green space. These spaces give their private owners the freedom to control and enforce any kind of restriction on access to these spaces. The fifth type of space is called a *complex private green space*. Those spaces are managed and owned by groups of private residential communities who control the rules of access to them. The last type of space is a *privately owned collective green space*. These spaces are usually privately owned, but provide a service that caters to a large number of people, mainly for commercial activity. Barchetta's definition of these spaces share the same attributes as those defined by Spike Boydell and Glenn Searie (2014) and can be categorized in the same dimensions. Both Boydell and Searie (2014) and Barchetta (2015) use real existing property rights to explain the different forms of urban commons. It is through this literature that one can detect urban commons that arise from public and private property rights. As a result, we need to use both of these papers to define the types of commons that emerge from public access, neighborhood use, and private and enclosed property regimes, a key part of our categorization of the urban commons. These scholars are also experts on common property regimes, which explains their deep analysis on each type of commons based on different types of property rights. Common property regimes are a key node to follow when categorizing urban commons. That is why these articles serve a primary purpose in distinguishing commons that exist

with public, neighborhood, and private property regimes and will be used to develop the specific end of our matrix.

Shirley (2013) identifies commons through typologies of urban green space and urban design. He classifies parks and gardens as anything consisting of public urban parks, country parks, and formal gardens. He then classifies amenity green space as anything related to housing green spaces, informal recreational spaces, domestic gardens, village greens, and any other incidental space with some form of public access. He continues with identifying allotments and community gardens as any space ranging from urban farms, community gardens, and allotment spaces. He then considers natural and semi-natural urban green spaces as its own classification, which includes grassland, heath or moor, wetlands, open and running water, wastelands, and bare rock habitats. The last of his classifications concerns green corridors, which include rivers and canal banks, road and rail corridors, cycling routes, pedestrian paths, permissive paths, and rights of way. These categories of commons can easily be synchronized into the categories presented by other papers in this literature review. While this paper does not specify the types of urban gardens that exist within the theory of the commons, it focuses on urban gardens themselves. With that said, we use this literature to attribute the urban gardens to key forms of urban commons. By looking into the lens of urban gardens through the context of commons, we can easily identify many different kinds of urban commons that fit into the typologies of the above-mentioned papers. Moreover, this paper includes many different types of urban gardens that are useful in identifying different kinds of ecological and civic urban commons.

3. Urban Gardens

Rogge, Frey, Strassner, and Theeshold (2013) use a very similar categorization as Shirley (2013) and provide definitions for each category they find. They also identify specific criteria to help identify different types of commons. They define urban gardens as diverse spaces in urban and semi-urban areas used for obtaining basic natural

resources such as food growth for local markets. Urban gardens can suit the public's needs by using unused or underused spaces and mechanisms to generate resources, services, or products for a wide range of people in an urban area. Such gardens can be found on rooftops, airfields, vacant urban spaces. They can also be considered as vertical gardens, mobile gardens, house gardens, community gardens, intercultural gardens. Urban gardens may not only be used to obtain and manage a natural resource, but can also be used for socializing or participation in urban development. Cities often lack proper outdoor spaces to socialize, so people may use the creation of urban gardens to foster these kinds of opportunities to socialize. This paper then considered community gardens as a subcategory of urban gardens. Community gardens are defined as urban gardens that are run jointly or collectively. Examples include neighborhood gardens, intercultural gardens, and student gardens. The paper also considers allotments as its own separate category away from community gardens, because of differences in management and organization. The key difference between the two is that allotment gardeners have private plots in a garden plant, but certain resources in the allotment space, such a storage shaft, clubhouse, pathway, or playground, are collectively managed. Allotments are more formal while community gardens have a tradition of being self-organized by all stakeholders. Another key difference is the application process to participate in these urban spaces. For allotments, the application process is a lot more formal. We use this paper for the same reasons as Shirley (2013) to further expand our definitions of different kinds of urban commons in the lens of urban gardens in general. All these references discussed here improve our understanding of the different kinds of urban commons that could exist in cities, whether they are for ecological or civic purposes. Both Shirley (2013) and Rogge, Frey, Strassner, and Theeshold (2013) help us identify the different kinds of urban gardens that can arise depending on general purpose and the type of property regime they exist in. To conclude, both papers help expand our matrix on the categorization of the urban commons through types of community and allotment gardens.

In addition, Rogge, Frey, Strassner, and Theeshold (2013) use size of the space and the dimensions of a community as key criteria to subcategorize urban gardens. The area of service for an urban garden must be distinguished between the entire garden area and the area used for cultivation. To determine the dimensions of a community, the community classification is divided into four groups, which include external users, gardeners, core group, and management group. External users are those that do not reside nearby nor do they have an affiliated relationship with the garden itself, but are allowed to use it without restriction. Gardeners are considered as volunteers and participants of the garden who may only use the garden irregularly. But they hold a diverse bundle of rights in the usage, management, and participation of the garden itself. The third and fourth groups are similar, and they comprise gardeners who consider themselves members of the organizational component of a community garden.

The article by Rogge et al (2013) delves into a theoretical set of arguments to show the potential uses of space and collectivity that are qualitatively discussed in the theory of the commons. The groups arise in context-specific management approaches to a garden, which in turn depends on the structure and size of the garden itself. These categories may prove vital in distinguishing between different kinds of urban commons. As such, this paper will enrich our understanding of the different outcomes that each kind of commons will pursue, further developing our categorization of the urban commons. In addition, this paper illustrates how different communities will use and respond to each set of urban commons, which is an important aspect of this categorization. These authors are specialists in detecting how community users will use each type of common within the different urban contexts.

Rodrigues et al. (2012) identify different types of allotment spaces, which include occupational allotment gardens, subsistence allotments, as well as subsistence and recreational allotments. The authors define an occupational allotment garden as a space where its users are mainly looking for a leisure occupation. This means that these allotment spaces are devoted to civic activities. A subsistence allotment is a space

where its users rely on certain privately managed plots within a common space to grow part of their daily food regimes, as a means to manage a family's economy. A subsistence and recreational allotment is a space used by a series of different users., The use of the plot is determined by the occupants while the common area is maintained by the city. Some families may use the space to increase their own revenue, while others may use the space to hold public recreational activities devoted to the inhabitants of a neighborhood. While this paper focuses solely on types of allotment gardens, allotment gardens are a huge component in the categorization of the urban commons. This paper puts emphasis on the categories of allotment gardens based on the characteristics that arise from specific urban contexts in regards to spatial distribution of urban green space. That said, the categories found in this paper enrich our understanding as to what types urban commons can arise in cities and how community users will use each type of urban space.

Shirley and Moughtin (2013) distinguish between different types of urban landscapes and describe which processes dominate the use of the space. The activities in these processes can either be dominated by humans or nature. Urban commons in brownfield sites, or urban commons with natural or semi-natural features, are areas where natural processes dominate the use of the land. However, working landscapes such as urban farms and allotments, or formal landscapes such as parks or community gardens, are spaces where human processes dominate the use of the land. This paper can be seen as another way of categorizing which commons are considered to be ecological and which are considered to be civic. Distinguishing according to the dominance of human processes or that of natural processes further enriches the categories of ecological and social commons found in the earlier papers. This distinction should thus also be used in our categorization of the urban commons.

Brody (2015) defines the specific functions of gardens where citizens cultivate in a city. The paper distinguishes between bottom-up gardens, top-down initiated gardens, and hybrid gardens. Bottom-up gardens are considered to be projects initiated and

maintained by a group effort of individuals without any financial support from any institution. Top-down initiated gardens are considered as projects that are exclusively started, funded, and managed by institutions. The institutions are responsible for defining the mode of operation in the garden as well. This category of top-down initiated gardens can be broken down into three categories, which are top-down greening projects, top-down activating projects, and top-down social projects. Top-down greening projects are used to balance the co-existence of both landscape and nature in certain neighborhoods. Top-down activating projects are there to encourage active citizenship policies and volunteer work through gardening, while top-down social projects are designed for promoting self-governance in neighborhoods that suffer from deprivation of resources and a low quality of life. The last category of cultivating gardens that Brody (2015) identifies is the hybrid garden. These gardens bring together individuals and institutions to collaborate in initiating, governing, and managing these spaces. Some hybrid gardens are not regulated and are self-governed by an active group of participants. Other gardens are regulated by a certain level of hierarchy between institutions and individuals. By highlighting the differences of urban commons created through a top-down approach as opposed to a bottom-up approach, and may further expand on the types of governance that arise out of different typologies of urban commons. The institutional framework of urban commons is extremely important to distinguish and categorize, because it determines in the end the usage of the space. This understanding also helps us expand our categorization of the urban commons.

4. Social Commons

Susser and Tonnelat (2013) categorize three types of urban commons according to their own unique social constructs. That said, each category has its own objective, and the differences between each objective are explained thoroughly by the authors. The categories comprise of urban commons set up by traditional social movements in labor and public services, urban commons that arise from new social movements in public spaces, and urban commons with collective urban visions of art and culture. In

the first category it is social movements tied to the mobilization of labor and issues of collective consumption that drive the creation of urban commons. In this case inhabitants or workers collaborate together to pursue a common interest, and this often results in these people having access to spaces that provide a higher quality of life through the utilization of a sustainable social organization. These kinds of movements have existed throughout the 20th century, where labor laws were not sufficient in assuring a healthy work environment during the latter phases of the Industrial Revolution. Today these social movements demand spaces that provide these desirable outcomes to the workers. The second category is based on newer social movements promoting public space as a commons. Such spaces have been argued to appear particularly in public infrastructure, such as streets, squares, train stations, cafes, public gardens, and other forms of space where groups of random urban citizens congregate to obtain social benefits. This category is similar to the first one, but the demand for such urban commons is based on open access rather than specified political social gatherings. The third category is based on the need for cultural awareness through the promotion of art. These art-based spaces provide an individual certain visions that urban inhabitants fabricate both individually and collectively to illustrate the culture of their urban identity. Putting all these three categories together, one can conclude that such social movements devoted to urban commons arise from social movements that demand better living conditions in their neighborhood, as well as more transparent and democratic management of their urban resources. Such urban commons portray the social needs of an urban population, while also providing these needed resources to its urban inhabitants in a sustainable manner.

This paper by Susser and Tonnelat is unique in its methods of categorizing urban commons. Instead of distinguishing physical features and uses of the space, it explores the social constructs that arise from different kinds of urban commons. An emphasis on social movements and art helps us expand our category of social commons, which are both concepts that have not been seen in the former papers. As such, this paper adds a unique dimension on how we can categorize the different types of urban commons. In addition, both authors of this paper are pioneering scholars in the field of the commons,

and they deserve attention when exploring the theoretical framework of commons in an urban context.

In this section of the chapter, we also look for a type of urban commons that focuses on the social aspect of communing specifically in addressing socio-economic and socio-political issues of certain urban areas. Ecological commons have been defined to show objectives guided towards the preservation and rehabilitation of nature. But there is another important side of urban commons, which is the social side. In the literature, we determine social commons as the best label for this type of commons. In Mestrum (2017) social commons are defined as spaces, resources, and collective movements that focus on participatory and democratic decision making by incorporating a collective dimension and the necessary protection of society itself. There are important factors when addressing the benefits social commons have for urban communities. For example, collective action is the method used to achieve collective decision making, redistributing the powers of people's actions and interests equitably. Social commons also offer universal protection to its participants in obtaining basic rights and resources that neoliberal capitalism often undermines. At the same time, collective solidarity is developed, and people are able to realize their collective interests through these social commons. Social commons follow the same framework as ecological commons, only that they give people social rights and resources rather than natural resources. This type of commons focuses on fighting social inequality rather than climate change. However, social commons can be also used to gather people in preparation for dealing with the pressures of climate change. As such, social commons are added into our categorization of the urban commons. Since so much of the former literature has focused on the ecological and physical formation of urban commons, this paper serves a different purpose for our categorization.

Just like Susser and Tonnelat (2013), the Mestrum paper also primarily focuses on the social construct of commons and the different outcomes that can arise from 'social commons'. This paper has allowed us to formulate a key pillar in our

categorization, making it a key contribution to improve our understanding how social commons can help urban populations respond to socio-economic and even ecological inequalities that arise in cities within a capitalistic economic framework.

Just as the last two references – both Susser & Tonnelat (2013) as well as Mestrum (2017) – have helped us grasp the social commons, these have always been discussed in contra-distinction to ecological commons. In his book, *Urban Design, Green Dimensions* Moughtin (2005) categorizes different types of ecological commons that exist within cities. To begin with, the author identifies different types of parks that exist in cities, specifically urban parks, country parks, and formal gardens, including designed landscapes in urban areas. The typology he uses is based on the suitability of urban planning purposes and open space strategies in cities. The next category of typology is the amenity greenspace, particularly in residential areas. This includes informal recreational spaces, housing green spaces, domestic gardens, village greens, and other incidental spaces in urban residential areas. The third category of typology is community-based green spaces, which include allotment gardens, community gardens, and city farms. It is perhaps within this typology where urban commons come to their theoretical fore. The fourth category of typology are the natural and semi-natural urban greenspaces, which include woodlands (which in turn includes coniferous, deciduous, mixed, or scrubbed lands), grassland (which in turn includes down-land and meadow), heath, moor, wetlands (including marsh or fen), open and running water, wastelands (including disturbed ground), and bare rock habitats (including cliffs, quarries, and pits). The last category of typology concerns the green corridors, which include river and canal banks, road and rail corridors, cycling routes within towns and cities, pedestrian paths within towns and cities, permissive paths, and rights of way.

Moughtin's book offers a vast and expansive understanding of very specific ecological commons that are found and used in cities. Putting all of these typologies together allows us to expand greatly the category of ecological commons into an array of very specific spaces, which surely should be added into our urban-commons

categorization matrix. These types of urban commons based on specific ecological uses further enrich our category of 'ecological commons'.

5. Access Conditions

In the book *Squares: A Public Place Design Guide For Urbanists*, by Mark Childs (2006), definitions are provided for civic commons, neighborhood or community commons, and private or membership commons, a typology that is essential in explaining the different kinds of social and ecological urban spaces that exist within cities. In addition, these definitions explain how different forms of property rights prevailing within the urban commons framework shape how inhabitants see or use the space. Civic commons are defined as spaces or resources that are of open access to everyone, and the rights to use that space or resource are roughly equal. The author explicitly highlights the term *civic* as a representation of the relationship of the commons to the settlement as a whole and to the collective value of the commons. Neighborhood or community commons are shared spaces that contain some form of exclusion for its users, meaning that the users have to abide by some norms that are collectively decided. One can highlight the difference between civic commons and community commons by observing the nature or degree of relationship between their typical users. Whereas civic commons provide rights to the public, community commons provide rights to a specific group of regulars. Private or membership commons are defined as physical spaces shared by a limited group, whose individual members share roughly the same level of rights to use the space. Forms of exclusions are high and often depend on ownership or monetary contribution of nearby properties to use the space. While some private commons are based on nearby ownership of property, other private commons can be based on admission fees, provided that the user adheres to a set of behavioral rules that comes with that admission fee.

Child's book has an equally expansive understanding on which specific civic commons can be defined within the theoretical framework of urban commons. Similar to Moughtin's book, the amount of urban civic commons explained in this book enriches our understanding of 'social commons' and helps us further expand that category in our matrix. Since civic commons are seen as open-access commons, they can be attributed to both 'ecological' and 'social' commons which widens what kind of urban commons may exist within an area of public or open access.

Putting the literature together, one can identify a clear categorization of urban commons that is determined by its specific function and desired outcome. I separate three main different types of urban commons, which are ecological commons, social commons, and immaterial commons. For ecological commons, we use the definition by Vinay Gidwani and Amita Baviskar (2013), referring to urban spaces where natural processes dominate the function and use of the space. For social commons, we use the definition by Mestrum (2017) as spaces used for democratic decision making to resolve local socio-economic issues within a neighborhood. The definition for civic commons found in Vinay Gidwani and Amita Baviskar (2013) can be used for how we wish to categorize social commons here. That definition is based on spaces where human processes dominate the function and use of the space. This definition works, because in this context human processes are precisely focused on citizen participation to solve social issues. For both ecological and social commons, we use the subcategories found in Mark Child's book *Squares: A Public Place Design Guide For Urbanists* to highlight the different forms of property rights and property regimes that exist within urban commons. In other words, the subcategories for ecological and social commons are civic (open access), neighborhood (community oriented framework with some forms of exclusion), and private or membership commons (where rights are defined by ownership or admission fee). For immaterial commons, we use the definition found in Jose Ramos (2016) grouping together non-tangible goods passed on from generation to generation in order to expand collectively on culture and knowledge. But this definition is more complicated than that. There is a fundamental difference between inherited

immaterial commons and created immaterial commons. In this context, inherited immaterial commons consist of languages and culture, while created immaterial commons consist of software, data, and art. Within social and ecological commons, I divide each category into three sub-categories, which are civic, neighborhood, and private commons. For the category of immaterial urban commons, we use the subcategories of inherited and created immaterial commons provided by Juan Pablos (2016). The definitions are provided above. Putting all of this together, the categorization of urban commons can be visually presented through Figure 1

Figure 1: The Urban-Commons Categorization Matrix and Description of the Matrix

Type of Commons and Focus	Ecological: <i>focused on natural processes and natural resource production</i>	Social: <i>focused on human process for equitability and human well-being</i>	Immaterial: <i>focused on connectivity, communication, and human development</i>
Civic: <i>inherited for/by all urban citizens</i>	<ul style="list-style-type: none"> - Urban Parks - Natural/Semi-natural urban greenspaces - Urban Ecosystems - Green Corridors (river/canal banks and natural tree trails) 	<ul style="list-style-type: none"> - Public Infrastructure (including transportation) - Squares and Plazas - Streets and Sidewalks - Green Corridors (park trails, bike baths, recreational spaces) 	<ul style="list-style-type: none"> - Language - Culture - Internet/Big Data - Art (?)
Community: <i>Created for a collective use</i>	<ul style="list-style-type: none"> - Community Gardens - Subsistence Allotments - Urban Farms - Brownsfield Sites 	<ul style="list-style-type: none"> - Community Land Trusts - Occupational Allotments - Guerilla Gardens/Spaces - Business Improvement Districts 	<ul style="list-style-type: none"> - Open Source Technologies - Internet Forums - Peer-2-Peer processes - Urban Cultural Initiatives - Social/Political Movements
Private: <i>Created for personal use/profit</i>	<ul style="list-style-type: none"> - Backyards - Roof Gardens - Amenity Greenspaces - Gated Community Greenspaces 	<ul style="list-style-type: none"> - Shopping Malls - Attractions - Other spaces with admission fees 	<ul style="list-style-type: none"> - Websites with 'premium' membership fees - Software with usage fees - Services

The matrix shows the differences of urban commons through a civic, collectively shared, or private property regimes. Civic urban commons are public, owned by a municipality, and therefore maintained by that municipality. These commons are non-rivalrous and non-exclusive, meaning they are open access commons. Community urban commons have some form of exclusion, but the maintenance and use of those commons are shared by a group of urban inhabitants that make up a community. Private urban commons are used and managed by the owner of that space, and it is he or she who has full authority to decide who uses the space. Private urban commons have the highest form of exclusivity between the three categories. My thesis primarily focuses on the community-based urban commons, because the collective management of the space follows the principles of the solidarity economy, and has the strongest ability to prepare urban communities against the pressures of climate change. The collective use of the space, as shown by Ostrom (2008), is what incentivizes urban inhabitants to follow the rules and norms decided together by the community using the space. Following these norms leads to the sustainable practices that allow inhabitants to reap the benefits of the commons and at the same time preserve the resources that are produced in community-based urban commons. The thesis will touch upon all three types of community urban commons, which are ecological, social, and immaterial urban commons, but will stay focused mainly on the community-based property regimes within the urban commons.

Bibliography

- Gidwani, V., & Baviskar, A. (2011). Urban commons. *Economic and Political Weekly*, 46(50), 42-43.
- Ramos, J. M. (2016). The city as commons: A policy reader. *Commons Transition Coalition: Melbourne*.
- Bauwens M. (2017). Peer to peer and the Commons: A path towards transition. *P2P Foundation: web version 1.4. - 2017*.
- Boydell S., & Searle G. (2014) Understanding Property Rights in the Contemporary Urban Commons, *Urban Policy and Research*, 32:3, 323-340.
- Barchetta, L., & Chiodelli, F. (2015). The variety of urban green spaces and their diverse accessibility. *Gran Sasso Science Institute*.
- Moughtin, C., & Shirley, P. (2005). *Urban design: green dimensions*. Routledge.

Rogge, N., Frey, U., & Theesfeld, I. (2015). Categorizing Urban Commons: Collective Action in Urban Gardens. In *1st IASC Thematic Conference on Urban Commons, Bologna, Italy, November* (pp. 6-7).

Rodrigues, F. M., Silva, B., Costa, S., Fernandes, L., Sousa, M., & Silva, M. (2014). Towards the classification of urban allotment gardens. *Landscape: a place of cultivation*, 197-200.

Vagneron, I. (2007). Economic appraisal of profitability and sustainability of peri-urban agriculture in Bangkok. *Ecological economics*, 61(2-3), 516-529.

Baudry, S. (2012). Reclaiming urban space as resistance: The infrapolitics of gardening. *Revue Française d'études Américaines*, (1), 32-48.

Bródy, L. S. (2014) Cultivating citizens? Urban gardens in a neoliberalizing city. *Sociology Graduate School of Social Sciences at the University of Amsterdam*

Susser, I., & Tonnelat, S. (2013). Transformative cities: The Three Urban Commons, *Focaal*, 2013(66), 105-121.

Williams, F. (2016). Critical thinking in social policy: The challenges of past, present and future. *Social Policy & Administration*, 50(6), 628-647.

Mestrum, F. (2006). Global Poverty Reduction: A new social paradigm?. *Development*, 49(2), 62-66.

Mestrum, F. (2014) Los comunes sociales: reconciliando la protección social con la renta básica universal. *Jornadas de Economía Crítica*

Németh, J. (2012). Controlling the commons: how public is public space?. *Urban Affairs Review*, 48(6), 811-835.

Łapniewska, Z (2015) (Re)claiming Space by Urban Commons. *Review of Radical Political Economics*.

Childs, M. (2006) Squares: A Public Space Design Guide for Urbanists. *University of New Mexico Press*.

Ostrom, E. (2008). Design principles of robust property-rights institutions: what have we learned. *Bloomington School of Political Economy*

Buijs, A., Elands, B., Havik, G., Ambrose-Oji, B., Geróházi, E., van der Jagt, A., ... & Vierikko, K. H. (2016). Innovative governance of urban green spaces.

Poklembová, V., Kluvánková-Oravská, T., & Finkaiii, M. (2012). Challenge of New Commons—Urban