

The Potential of Combined Use of Urban Land

Per LARSSON, Sweden

Key words: Combined land use, Multifunctional land use, Storm water, Cloudburst, Climate Change, Externalities, Copenhagen, Malmö

SUMMARY

Due to the fact that urban land is a strictly limited and often contentious resource, this article address the potential of using urban land in a multifunctional way, as well as for the benefit of more than one actor at a time. Through combined use of urban land, it is possible to make space for additional functions that does not compete with the land use of the property owner.

This article is based on a case study of cloudburst adaptation in the cities of Copenhagen and Malmö, with the purpose to find opportunities and obstacles with combined land use.

Besides the opportunity to accommodate urgent functions on land that has long been considered occupied, a major argument for combined use of urban land is the possibility to achieve positive externalities. This may be the effect of an involvement by a greater variety of actors in the city development process. On the other hand, sectorial rationality is found to be an institutional obstacle, as it clings to the narrow perspective of sectorial gain. This rationality stands in opposition to the comprehensive rationality, which has the city as a whole as its perspective, and where municipal gains and costs are balanced more broadly. Through public policy instruments, the local government may be able to create incentives for actors to contribute to common goods through combined use of urban land.

The article is based on a forthcoming licentiate-level dissertation at Malmö University.

SUMMARY IN SWEDISH

Med utgångspunkt i att det råder en svår konkurrens om mark i staden tecknar artikeln möjligheter att nyttja mark för flera funktioner och aktörer åt gången. Genom det flerfunktionella förhållningssätt som samnyttjande av mark ger uttryck för kan det skapas utrymme för sådana ytterligare funktioner som inte konkurrerar med det nyttjande som ägaren har av marken. Artikeln baseras på en fallstudie av skyfallsanpassning i Malmö och Köpenhamn där de båda städerna jämförs utifrån hur deras kommunala institutioner underlättar eller försvårar samnyttjande av mark.

De huvudsakliga argumenten för samnyttjande är dels de möjligheter det ger att rymma fler angelägna funktioner genom att redan ianspråktagen mark ställs till förfogande för kompletterande funktioner, och dels att samnyttjande möjliggör positiva externa effekter, genom att marken nyttjas flerfunktionellt till gagn för ett flertal aktörer och den omgivande staden.

Bland de institutionella hindren syns en sektorsrationalitet som inte förstår sig på ett helhetsperspektiv och som inte kan godta kostnader som bidrar till andra nyttor än den egna verksamhetens. Eftersom det är ett kommunalt ansvar att bevaka helhetsperspektivet för staden kan offentliga styrmedel nyttjas för att skapa incitament för såväl enskilda aktörer som den egna organisationen att bidra till sådana gemensamma nyttor som kan skapas genom att samnyttja mark.

Artikeln bygger på en kommande licentiatavhandling vid Malmö Universitet.

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1. INTRODUCTION

Due to the continuous process of urban densification, urban land is stressed as a strictly limited and often contentious resource. In my forthcoming dissertation, I have recognized the struggle to find space for common functions, e.g. parks, schools utility and public services. In an effort to bring relief to this problematic, the purpose of the research has been to study the potential, as well as the difficulties and obstacles, of combined use of land in a dense urban context.

Combined use of land is described as the multiple functions that land and space are able to hold. This multi-functionality becomes more complex as the different functions may also involve different actors. Let us use the roof of a building as an illustrative example. The roof is meant to protect the building from the forces of weather, but can simultaneously be used as a platform for a rooftop terrace, solar panels, or to arrange a green roof used to handle precipitation. Neither of these added functions exclude the original function of weather protection. Instead, they can be combined to interact with one another on the same space. Furthermore, the solar panels may be owned, or run, by other actors than the property owner.

Now, for the purpose of the dissertation to specifically study institutional difficulties and obstacles, the research has compared how two cities have met the urban challenges of climate change through combined use of land. The study is undertaken as a case study on cloudburst adaptation, where the city of Copenhagen, capital of Denmark, is compared with the nearby city of Malmö, Sweden.

The dissertation is based on case study research where the embedded researcher, well acquainted with physical urban planning in Sweden, has performed interviews, field studies and literature studies of strategic and descriptive municipal documents. This article builds on a part of the analysis that draws on institutional theories (Vedung, 1998; Scott, 2014). The dissertation itself also includes analysis that draws on theories of commons and urban commons (Foster och Iaione, 2018, et.al.).

2. THE STUDY

As a result of major floods through heavy cloudbursts in recent years, both Copenhagen and Malmö have designed cloudburst adaptation plans, which they recently have started to implement. The main idea in both plans is to supplement the underground sewer-system with different types of on-ground cloudburst adaptations. Both plans also stress the need to involve both public land and private land in the cloudburst adaptation of the city. The study shows

that the implementation in Copenhagen is taking the issue of combining cloudburst adaptation with existing functions a step further.

2.1 The case of Copenhagen

In 2012, Copenhagen adopted an ambitious cloudburst plan with the goal to eventually prevent further damage to the city. As a result, the urgent need for climate adaptation is now used as a backbone for the city's physical development for years to come. Its proposed resolution takes advantage of the potential to add functions to urban land already in use for other purposes. This means that land that already have other functions needs to be adapted to temporarily be able to host water in case of a cloudburst. Urban environments all over the city is concerned *"The plan involves rebuilding almost every park and square in the city as well as almost half of the streets, so that they form a vast web of 300 interconnected climate adaptation projects that maintain rainwater in the parks and squares and utilise the roads to divert surplus rainwater out of the city and into the harbour."* (City of Copenhagen, 2016:38)

However, the public areas are not sufficient to fill the needs and have therefore to be supplemented with efforts on private land. Owners of workshops, premises and block of flats are encouraged to disconnect their roofs and backyards from the public sewer system by cloudburst adapting their property, e.g. the backyard. Within the pilot neighborhood of Østerbro, Copenhagen has implemented a showcase for climate resilient solutions. There are examples of public squares, streets and parks, as well as privately owned residential backyards, where water has been an added function beside the functions already prevalent. The city has decided to use the investments in cloudburst adaptation for a large scale urban renewal, which at the same time create added value for the residents. In addition to the storm water functions, the investments should result in new urban spaces, enhancing the quality of the existing ones, as well as establishing more urban nature. Moreover, while addressing combined use of the land, a few aspects of livability are emphasized. The renewed public areas will be developed in close dialogue with the local residents, in order to provide public functions that are demanded and esteemed. The renewal is, thus, supposed to increase the sense of security and produce opportunities for people to meet one another, as well as to provide a sense of ownership to the public spaces.

2.2 The case of Malmö

Malmö has since the 1980's been in the forefront of introducing, developing and refining sustainable urban drainage in newly developed areas of the city (Stahre, 2008). This has worked well and greatly decreased the risk of flood in these local areas. The facilities have increasingly been developed to combine storm water storage with functions such as water treatment, biodiversity and recreational values. However, due to lack of available land, the existing inner city has remained vulnerable for flood. This was experienced through a major cloudburst in 2014, a few years after the nearby city of Copenhagen had been rammed by its worst rainfall in living memory. The research shows that the strategies varies

between the cities in how to achieve the common goal to secure the cities from future floods due to cloudbursts. While Malmö focuses on the water issue as a sectoral responsibility, involving other functions and interests only when needed, Copenhagen instead takes advantage of storm water adaptation by renewing urban environments in public areas, as well as supporting multifunctional land use also in private areas.

3. ANALYSIS AND RESULTS

The analysis of the case study shows differences between the cities in how to go about the potential of combined use of land in the specific area of cloudburst adaptation. By using institutional theory, the study focus on how the municipal institutions works to foster or discourage combined use of urban land.

3.1 Opportunities through positive externalities

The city of Copenhagen capitalises on the investments they have decided to make throughout the coming years. By widening the scope of the impact of the investment from the narrow water perspective, the city includes positive externalities in its calculation. Through consciously combined land use, the stormwater issue is addressed in coordination with city goals concerning biodiversity and urban green, as well as mobility, and social issues like inclusion, well-being and security. Thus, positive externalities is intentionally embraced in urban renewal of public space. The research shows that also private land hold a great potential to contribute with positive externalities through combined land use.

3.2 Opportunities through an enabling public actor

It is the local governments responsibility to take on a comprehensive perspective of the city as a whole. Not only for public land, but also for the private properties, the local government can play a central role as an enabling public actor to facilitate positive externalities. The research shows the importance this facilitating service in order to link different actors. In Copenhagen, the municipality has since the 1970s developed tools and methods to interact with the local community. This interaction has been institutionalised in such a way that the residents and businesses nowadays expect to be involved in processes of city development. The city officials not only know how to reach out to them, but also how to make use of their input. There are also actions where the city offers its enabling expertise to help the housing societies and property owners to develop their common backyards. Starting decades ago with the objective to modernize obsolescent residential environments, the project management nowadays includes storm-water management and climate adaptation functions.

3.3 Institutional difficulties: rationality, legitimacy and practical issues

The ideas of combined land use and sharing of space align with comprehensive rationalities and institutional positions that favour transdisciplinary perspectives on urban development. On the other hand, it challenges regulative institutional

positions that are deeply rooted in disciplinary organisational structures. The case study shows that combined use of land challenges much of the municipal sectorial ways of organising its activities. Especially is this the case within the municipal organisation itself, where regulative institutional logic, e.g. through sectorial goals and budgets, prevents cooperation that does not meet the narrow sectorial interests.

In order to apply sharing and combined use of land for the purpose of storm water management at a larger scale than single pilot projects, the research found that it is necessary to implement institutional change among the involved actors. This is needed in order to develop and streamline procedures and ways of working together. Institutional procedures needs to be built up in order to secure mutual trust and commitment to the cooperation.

The study underlines the importance of understanding the difficulties of changing normative institutions, e.g. methods, habits and ways of working that has been well-established since long time. Institutional change requires processes of legitimacy and diffusion in order to create acceptance and lasting change.

Combined land use initially creates obstacles in how to deal with a lot of practical issues. The study found difficulties in how to manage new types of common facilities. As the involved parties were not institutionally prepared for the task, the operation and maintenance of the common facility was handed over to each other. From the example, it is clear that the management issue is easily overlooked in the early planning phase.

3.4 The importance of public policy instruments

With public policy instruments, the city can create incentives for both public and private actors to help achieve positive externalities. The research shows that the economic policy instrument that is available for Copenhagen, gives clear benefits in comparison to information, which is a weaker policy instrument used in Malmö. This observation conforms with the different emphasis that is given to positive externalities in the two cities. Indeed, the legal preconditions between Sweden and Denmark are different, but it doesn't remove the opportunity for Malmö to also make use of stronger policy instruments, if considered useful. However, as the process of implementing the cloudburst plans has only recently

started, the cities might later on make other considerations regarding their use of policy instruments.

4. CONCLUSIONS

Leaving the cloudburst theme of the case study, a few conclusions can be made regarding institutional opportunities and obstacles of combined use of land.

4.1 The opportunities of positive externalities

A major argument for combined use of urban land is the possibility to achieve positive externalities, which may be the effect of an involvement by a greater variety of actors in the city development process. Not only are vacant areas able to be used for added functions, but also land and space already occupied. The urgent need of land for cloudburst adaptation clearly illustrates this potential, but similar positive externalities can be achieved through many different combinations of functions and land use. It is the responsibility of the local government to embrace a comprehensive view of the city. This perspective gives an opportunity to reach out as an enabling public actor in order to connect actors and facilitate positive externalities in the interests of the city as a whole.

4.2 The obstacle of a narrow rationality

An obvious obstacle within the municipal organization, is a rationality that opts for the narrow sectorial perspective and, thus, miss out the value of using, or letting others use, land for necessary complementary functions. Not only do the city miss out the potential that is hidden within combined use of urban land, but also the development of functions and utilities that may occur when actors are put together to find out ways to efficiently share limited resources.

4.3 The importance of public policy instruments

Public policy instruments are the strongest tools available for local governments to guide desired behavior. Although there may be legal factors influencing which policy instruments to use, it is possible to create efficient incentives to make actors, both within and outside the municipal organization, align with a less sectorial logic in order to enable positive externalities through combined use of land.

Looking at the need of institutional change among local governments and other actors, it may be seen as a long way to go before sharing and combined use of land will become a common practice. The case study indicated, however, not only an urgent need to find solutions to the limitations that comes with single-function use of urban land, but also a readiness for experimentalism.

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BIOGRAPHICAL NOTES

- Professional adviser in the area of cadaster, surveying and land law since 2005.
 - Employed by the National Land Survey of Sweden, 2005-2010*
 - Employed by the Municipal Land Survey, City of Malmö, 2014-cont.*
- Project manager at Sweco Management 2010-2014
- Project consultant (Short commission 2007) *Evaluation of the Swedish Support to the Global Land Tool Network*, Commissioned by SIDA (the Swedish International Development Cooperation Agency)

Publications

- Master's thesis (2005) on *the Implementation of the Village Land Act in Tanzania*
- The forthcoming dissertation at licentiate level is to be defended in September 2020.

Memberships

Membership in the Swedish Public Works Association, SPWA.

CONTACTS

PhD/Land Surveyor Per Larsson
Municipal Land Survey, Malmö stad
205 08 Malmö
Sweden
Tel. +46 40343459
Email: per.k.larsson@malmo.se
Web site: <https://malmo.se/english> and <https://mau.se/en/>