

Urban Sprawl, Urban Containment and Land Management. A Reflection on the Concept of Urban Land Supply

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Introduction

The question of urban sprawl is a major issue in terms of sustainable development (European Environment Agency, 2006). It is this theme that we are going to examine in this paper, by developing a line of thought focusing on the concept of urban land supply. Although it would appear to be simple, this concept is in fact difficult to define and tackle. It is likely to refer to a wide variety of contents and is therefore also likely to lead to confusion. As regards urban extension, the land supply constraints are, for instance, often criticised by the construction and real estate sectors; at the same time, the town and country planners concerned diagnose and criticize the extensive zoning of building land. As we shall explain, we can dismiss this type of misunderstanding by clarifying the concept of urban land supply and by specifying why the various categories of players only refer to a partial reality.

To clarify the concept of urban land supply, we must first consider the field of mobility. Although it is often neglected, it is in fact the performance of transport networks that determines whether or not a piece of land is of interest to the developers who are likely to expand towns: providing housing for populations or ensuring the functioning of economic activities requires the ability to physically access the “ground support” of the new buildings. In other words, the transport networks determine the delimitation of the *physical urban land supply*. It is from this perspective that we shall specify how today’s relaxation in terms of mobility determines a considerable extension of the sufficiently accessible perimeters where the “rural” world can be transformed into the “urban” world.

Thanks to improvements in transport technology, the physical urban land supply has become such that the public authorities are now forced to limit it through town and country development systems. Therefore, our analysis, which will focus first on the

field of mobility, shall continue by taking into consideration the field of planning. We shall develop the theme of the *legal urban land supply*, i.e., the supply defined by planning constraints. We shall see that it is essential to consider the legal urban land supply as a *potential supply*, which can differ significantly from the *effective supply*, i.e., the land that is available on the market for immediate construction. Owing to the speculative retention frequently exercised by owners, it is possible to be simultaneously faced with an oversized building area and a request to extend the very same building area. *“The first situation refers to building areas defined in the land-use plans. They constitute a potential supply which can indeed be overabundant. On the other hand, the second one suggests that not all the land situated in the building area is available... As long as there is a possible discrepancy between the allocation and the use of the land, and as long as the means are insufficient to ensure a better coincidence between the various realities to which these notions refer, it would seem necessary to continue to make a distinction between the potential supply and the effective supply”* (Ruegg, 2000).

Our reflection, which focuses on the various ways to understand the concept of the urban land supply, is based on the Belgian context. This is a country where the particularly high level of urban sprawl has certain specificities. Among the production of residential property in Belgium, the construction of single family homes remains predominant (Halleux, 2004). Another characteristic of residential construction in this country is the predominance of self-provided developments: instead of acquiring a house previously built by a construction company or by a developer (as do the vast majority of its Dutch or British equivalents, for instance), Belgian households who wish to live in a new single-family house are generally in charge of bringing about its completion (Duncan and Rowe, 1993; Halleux, 2004). This particular system opposes the property developer system, where project management is not the remit of a private household with a view to occupation, but that of a professional developer with a view to selling. The predominance of private intervention in property development which characterises Belgium strongly influences its residential land markets, as the site to be built upon is often exchanged twice before the construction takes place. Primarily, it can be exchanged between the initial owner and a land developer. In this “primary” market, initial owners represent the supply and the land developers represent the demand (Booth, 1991; Halleux, 2005b). In the “secondary” market of building plots, the land developers become the suppliers and the demand is expressed by private households wishing to develop their own construction project.

Transport/land relationships and the physically accessible land supply

Numerous works on the spatial dynamics of urban regions show that current developments fall within the scope of a process to reconstruct towns as a result of the increase in travel speed, mainly owing to the fact that driving a car has become so

commonplace (Newman and Kenworthy, 1996). To understand this fact, it is necessary to understand why the notion of the town is consubstantial to mobility. From a historical point of view, populations “agglomerate” owing to the need to produce a geometric arrangement that simultaneously maximises interactions and minimises distances. Such is “the city logic” (P. Claval & F. Claval, 1981). For the past few decades, the performance of transport systems has profoundly modified the notion of proximity. Thanks to the speed of travel, it has escaped physical density, resulting in an imbalance between our travel capacities and the urban forms inherited from periods of restricted mobility. It is precisely this imbalance that has led to the spiralling transformation of towns and the gradual emergence of urban forms that are largely shaped by car travel.

To understand the spiralling transformation of towns and the emergence of “automobile cities”, it is also necessary to consider how daily activities structure urban territories: *“If we associate the notion of town with that of daily life, as is often the case, in the most serious urban theories, then town can be understood as the stretch of land where everyone is able to do what they do every day. The limits of the town seen in this way are determined on a practical level by what an individual has to do within the space of one day, i.e., live somewhere, work, consume and partake in leisure activities, by travelling from one place to another to exercise these activities”* (Chalas, 1997). For each person, these limits determine the area of urban daily life, i.e., the space where daily life takes place and where the choice of residential location is possible. On an aggregate level, it is also this line of thought concerning daily time-space that defines the spatial extension of the housing markets and the contours of the *physical urban land supply*.

Y. Zahavi (1976) formulated a simple paradigm to take into account the transformations in mobility, a paradigm referred to as the *“the law of transport-time-budget constancy”*. This law postulates that, besides strong individual variabilities, population groups seek to maximise their spatial opportunities or, in other words, maximise the distances travelled on a daily basis. The law of transport-time-budget constancy also postulates that the objective of maximising daily distances is limited by time-budgets and by the financial budgets that the populations agree to allocate to transport. The investigations carried out on this subject in terms of mobility converge and observe that the populations do not wish to exceed a daily time-budget of approximately 60-90 minutes and a budgetary share of approximately 15-20 %. It is in fact the constraint which becomes saturated first – monetary or temporal according to the contexts and the populations concerned – that determines the level of mobility (Fouchier, 1997).

Although it is often presented as a universal norm, the law of constancy of budgets and transport times is globally acknowledged (Newman and Kenworthy, 1996; Wiel, 1999). Furthermore, the conjecture formulated by Zahavi has been thoroughly proved over the last few decades, a period during which, following the increase in

speed as a result of car ownership, population massively chose to increase the spatial expansion of areas of everyday life by maintaining the amount of time spent on travel every day at a constant level. They chose to “gain space” rather than “gain time”. The comparison of surveys carried out in France at ten-year intervals between 1981 – 1982 and 1993 – 1994 is particularly enlightening. For an average daily time-budget, which is maintained at around 55 minutes (55.4 in 1981 – 1982 and 54.5 in 1993 – 1994), the increase in speed allowed average distances to rise from 17.5 km in 1981 – 1982 to 22.8 km in 1993 – 1994 (Lusson, 1997). In order to explain why the time gained by the increase in speed is automatically reinvested in distance, it is undoubtedly the global decrease in the time constraint that has to be taken into account. Following the reduction in work time, in particular, it was possible to reinvest the time gained by the increase in speed in additional distance without limiting the increase in the time-budget dedicated to activities concerning relaxation, leisure and social life (Beaucire, 2001).

The history of urban forms shows that the degree of concentration of people has been influenced by two types of relaxation in the constraints of daily mobility (Newman and Kenworthy, 1996). Together with the industrial revolution of the 19th century, the creation of motorised public transport determined an initial increase in speed, thereby authorising the introduction of dedensified urbanisation compared with traditional pedestrian towns. Since the Second World War, there has been another element of relaxation as regards mobility constraints resulting from the fact that cars have become commonplace. With this new increase in the speed of travel, there has been a considerable expansion in the areas concerning everyday life. By allowing us to travel ten times faster, cars also increase a hundredfold our potential choices of location (Lusson, 1997: 52). Nowadays, this increase is such that the spatial possibilities largely exceed the needs of urban functions. In this sense, we can talk of an overabundance of land, i.e. an overabundance of the land supply which is accessible and which can be integrated into the areas of urban everyday life.

As we mentioned in the introduction, urban sprawl is particularly intense in Belgium. The international comparisons carried out in order to explain this situation, reveal that the policy conducted in the domain of transport has largely contributed to this effect. Indeed, it is clear that the choices in terms of transport for people greatly favoured cars during the whole of the second half of the 20th century. In Belgium, there was an under-developed public transport system, especially on an intra-urban level. At the same time, a clear choice in favour of road infrastructures was made (OCDE, 1998). Furthermore, the price comparisons established by the European Union’s Statistics Office indicated that the relative prices of consumption associated with cars, were lower in Belgium compared with the European average. On the other hand, those of collective transport were higher (Bieber and Orfeuil, 1993). These public policies conducted in favour of road mobility can be considered as a community intervention in order to expand the *physical urban land supply*, which, at the same time, satisfies

the mobility demand of the middle classes. It is indeed car mobility that allows access to land and therefore access to the dedensified model of periurban housing. Let us remember that the two limiting factors of the accessible land supply correspond to time-distance and cost-distance. Regarding the infrastructure policy, the first concern is the time-budget limitation. This indeed allows the emergence of very closely integrated capillary networks, allowing an increase in speed in numerous directions. Maintaining car tax at a relatively low level has an influence on the financial constraint, which simultaneously broadens the available land for housing and the available land for economic activities. With car mobility financially accessible to all salaried employees, business owners are no longer obliged to take into account alternatives to cars when choosing their locations.

As regards transport, Denmark is an interesting example. Contrary to Belgium, collective choices have led to a limitation of areas for everyday urban life. In Denmark, the moderate use of cars corresponds to a relatively low rate of car ownership, which can be explained by a tax policy that aims to discourage the purchase and, to a lesser degree, use of cars. This is the result of a social democrat vision which continues to consider that the car is a socially undesirable luxury product. Compared with the European average, Denmark and Belgium are at completely opposite ends of the scale as regards car prices. The comparisons compiled by Bieber and Orfeuil (1993) indicate that for a European average of 100, the cost of buying a car in Denmark is 131 and 84 in Belgium. Financially, the use of collective transport is, however, cheaper in Denmark, and the same intra-European comparison shows a rate of 92 for the Scandinavian country and a rate of 103 for Belgium. The measures adopted by the Danish authorities in the domain of the transport of people are indisputably decisive in the relative limitation of its urban sprawl. Indeed, the result is that a great number of Danish families tend to organise their daily lives around a single vehicle. Owing to the high rate of women in employment, this encourages residential locations close to the work place and collective transport hubs. In other words, the Danish policy in terms of transport limits urban sprawl by strengthening the attractiveness of locations that are physically accessible using alternative modes of transport to individual vehicles.

From the Physical Urban Land Supply to the Effective Supply: the Belgian Case in the Light of Dutch and Scandinavian Contexts

Different operations are necessary to transform the physical urban land supply into an effective supply on the building land markets. The first of these operations is related to the action of the public authorities when they define the zoning and, subsequently, the *legal urban land supply*. Following this legal definition, two conditions must be fulfilled before proceeding with the construction of a building. First of all, the land must be put on the market. Owing to the speculative behaviour of numerous land

owners, this is far from being automatic. A technical production process is also required following legal definition. Indeed, transforming the potential supply into a truly constructible supply often involves technical servicing. The relationships between the physical urban land supply and the effective land supply depends on complex mechanisms, which are highly variable according to the contexts and the degree of involvement of the public authorities. In many countries, as in Belgium, the intervention of the public authorities is limited to defining the zoning, which can be conceived as a "land supply policy". In other contexts, the public authorities may continue to intervene following zoning as, for instance, in the Netherlands, within the framework of a "land production policy", or in Denmark, within the context of a "land tax policy".

As regards Belgium, let us first examine the importance of the documents known as "sector plans". These are the most influential Belgian planning documents (Albrechts, 1999). They cover the entire country and differentiate aedificandi land and non aedificandi land. Drawn up between 1964 and 1987, the sector plans have not been reviewed on a global scale since then. With regard to residential urbanisation, this is land that lies within the "residential zones" of the sector plans that can accommodate new housing projects. The planners that have worked on the elaboration of the sector plans have provided these housing areas with a very "generous" delimitation. On a global level, it is indeed recognised that they are systematically oversized in relation to demographic needs (Halleux, 2005a). In other words, the legal urban land supply is abundant.

Continuing with Belgium, we already know that residential construction is dominated here by private individuals assuming the role of developer: it is private individuals rather than professional developers who develop the majority of housing operations. Prior to such operations undertaken by private households, the transformation of the potential legal supply into an effective supply is ensured by land developers. As regards the Belgian context, the generally accepted conception is that it is up to private actors to intervene in this matter. The role of the public organisations is minimal as regards residential land production and the local authorities do not deem it necessary to channel and contain new developments by ensuring that a potential legal supply is made available. Concerning the technically constructible supply, the role of the public authorities is generally limited to the control of servicing and plot division, essentially via the legal division procedure. As a result of the minimal involvement of the public authorities, there is a lack of adequacy between the potential legal supply and the effective supply, which is accompanied by a consumption of the land resource often in contradiction with the fundamental planning objectives.

As regards the inefficient use of residential land in Belgium, new developments can be approached by discerning two geometric means: their positioning and their consumption in space. The speculative retention practised by numerous owners,

especially for land situated within or right next to traditional agglomerations, inevitably causes a problem as regards the positioning of new urbanisations. Because the land often becomes available at random, according to the owners will, the most structuring sites for urbanisation are not systematically available on the market, thus contributing to the dispersal of building sites and reinforcing urban sprawl. As well as leading to the bad positioning of new developed sites, the minimal role of public authorities in terms of land production is also the source of a high level of space consumption. Indeed, since urbanisation programmes are defined by private developers in competition, the commercial risk of not selling forces these land producers to provide the market with large plots (Halleux, 2005b). Inevitably, this production of a dedensified urban space will generate collective costs, especially in terms of mobility and the management of infrastructures.

The supply policy practised in Belgium, which consists of opening vast areas of land to private operators, has turned out to be highly inefficient both in terms of urban containment and in terms of financial accessibility to the land market. Indeed, the preponderance of private operators in the production of building land explains why local purchasing power corresponds to the primary factor explaining price levels (Dubois *et al.*, 2002). Rather than the planning constraints (dependant on the surfaces available in the sector plans), it is in fact the spatial distribution of the incomes which determines the variability of the land prices. To be more precise, it is in fact the financial capacity of the most favoured social segments that dictates the land and property levels. Despite the abundance of potential supply that fall under the scope of numerous Belgian residential basins, the pre-eminence of demand on price formation has contributed to the formation of price levels which, within the first periurban belt in particular, limit the financial accessibility of the land market to the most affluent proportion of the population (Dubois and Halleux, 2003). In other words, *the financial urban land supply* of the communes of earlier urban sprawl is seriously limited, thus accentuating urban sprawl and reinforcing the population growth of the outer periurban belts. As regards the strategic objectives of sustainable development, it is important to highlight the fact that these constrained choices of location and the accompanying accentuated sprawl lead to a useless increase in transport needs and, subsequently, an increase in mobility costs (both private and public) which is just as useless.

In the past, the confusion between the effective supply and the potential supply undoubtedly played a part in the unfortunate orientation towards an opening of the land policy in favour of the potential supply. Today, this confusion is still the source of many problems. It does indeed explain the number of misunderstandings between the “parsimonious” and the “expansionists”: when the actors whose role it is to ensure the protection of the natural and built environment (for instance, the public services in charge of town and country planning) assess land availability, they generally refer to all the potentialities of the legal urban land supply; on the other hand, when the land

or property developers have to remove the land obstacle in order to implement urbanisation projects, they are only limited to the effective supply. And yet, there are numerous land contexts in Belgium where there is both an overabundance of potential legal supplies and a shortage of effective supplies (Halleux, 2005a).

Unlike Belgium, some countries have more active land policies, which aim to put in adequacy the potential supply defined by statutory planning and the effective supply, thus making it possible to contain urban sprawl and limit the waste of land resources. An effective way for the community to ensure the balance between potential supplies and effective supplies is to take care of technical servicing itself, through a "land production" policy (Comby and Renard, 1996). New urban developments are frequently managed in this way in countries where care is taken not to waste virgin land, for instance, in Sweden and in the Netherlands, via long-term land reserves in towns in Sweden and through the almost complete de facto monopoly of municipalities over the production of building plots in the Netherlands (Renard, 1999). In Sweden and the Netherlands, land policies are based on the principle according to which the land market cannot simply be left to private operators (as in sectors such as teaching, health, culture or collective transport). *"Sweden and the Netherlands present two different versions of public intervention on the markets, but they have a basic premise in common: you can't get rich in the land trade. They are both market economies. Property developers, who are trading companies under private law, compete against each other to earn a living. But while they compete in terms of the quality of their product, the raw materials are supplied by the public authorities at a given, known and low price"* (Comby and Renard, 1996). In other words, Swedish and Dutch property developers are in competition regarding the legitimate margin of property development, but not for the illegitimate land rent.

In Denmark, another country where they endeavour not to waste land, the balance between the potential supply and the effective supply operates in a general context of private property, compared with the Netherlands or neighbouring Sweden. Instead of massive public land production, Denmark has a "land tax policy", which encourages the realisation of potential urban areas through the use of two tools in particular: the urbanisation tax (*Frigørelsesafgift*) and the tax on the value of the site (*Grundskyld*) (Renard, 1995). *Grundskyld* is a land tax whose originality lies in the taxable amount. Its tax base does not depend on constructions and is only determined according to location and the relevant town planning laws. Of course, this land tax, according to the "best possible use", is a powerful source of encouragement to reduce speculative behaviour. To reduce retention on the potential urban supply, the urbanisation tax (*Frigørelsesafgift*) is another essential element in the Danish system. It can represent 60 % of the increase in value and the owner must pay it as soon as a piece of land changes from the status of farmland to urban land in the land-use plan. Of course, this directly feeds the building land market. If the owner cannot pay this tax owing to his financial capacities, the local authority is obliged to buy the property. As well as

being a sophisticated land assessment system, the operational use of this tax mechanism obliges the Danish local authorities to have precise knowledge of land demand and be able to accurately forecast the real need for new housing.

Conclusion: Towards a Land Production Policy?

Made obligatory by the low performance levels of the transport networks in the past, it is now the costs of anarchic dispersal that reminds people that their agglomeration in space remains a necessity. After centuries of urban history marked by serious mobility constraints and, subsequently, by a real lack of physical urban land, the comfort generated by the increase in travel speed now confronts us with the opposite problem: an overabundance of land. In order to better reconcile urban development with the strategic principles of sustainability, this abundance of land must now be taken care of and managed, which forces us, in particular, to better define the characteristics of the different types of land supplies.

In order to better ensure the coherence between the development of urbanisation and the objectives of sustainability, the challenge is, among others, urbanistic. It consists of implementing territorial configurations, allowing the collective additional cost of uncontrolled urbanisation to be limited while continuing to meet the individual expectations of families. The watchword "*qualitative compactness*" sums up the challenge town and country planners must face. This challenge consists of producing quality residential environments to meet new housing needs in the short term, but which must also be located and configured according to criteria that take into account the interests of the community in the long term.

Successfully meeting the challenge of qualitative compactness will unquestionably require the implementation of active land resource management. Within the contexts characterised by a land policy that does not allow an adequacy of the potential supply with the effective supply, we must ensure that we redirect the legacy of the supply policy towards a production policy, in order to produce plots that are likely to meet the needs of private individuals in the short term, but that are also located and configured according to criteria that best take into consideration the long-term interests.

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