Managing Urban Expansion in Europe: New Impulses for People-Centred Development in China?

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1. Introduction

Over the last four decades, China has experienced an unprecedented urbanisation process. The rapid growth in the urban population was paralleled by a massive expansion of urbanised land, promoted by policies oriented towards land development. However, with the emergence of "ghost cities" or, more precisely, "ghost neighbourhoods", due to an oversupply of housing and the increasing loss of fertile land vital for food security in the country, the need for a policy shift became evident (Shepard 2015).[1] The National New-Type Urbanisation Plan (NUP, 2014–2020) marks the turnaround from a "land-centred" towards a "people-centred" approach to urbanisation, aimed at slowing down urban expansion in China and putting more emphasis on the human dimension of urbanisation, i.e., people's needs and the improvement of quality of life.

Like China, Europe has a long history of urban development. However, in contrast to China, the number of the urban population in Europe exceeded the rural one in 1950. Over the years, the percentage of urban population slowly grew, e.g., to 70% in 1995, and 75% in 2020. It is expected to further moderately grow to almost 78% in 2030 and around 84% in 2050. Nevertheless, in Europe, urban expansion became a serious issue during the second half of the 20th century. Since the mid-1950s, urbanised areas expanded by 78%, whereas the population grew by only 33% (EEA 2006, p. 11). However, for at least three decades, many efforts have been made to manage urban expansion in a more sustainable way. They may provide useful references for conceptually enriching the "people-centred" urban development in China, although the frameworks and concerns about urban expansion are quite different in both parts of the world.

Against this background, the article looks at urban expansion in China and Europe. The authors understand urban expansion here as the process of extending

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[1] The term "ghost cities" refers to the title of a book published in 2015. In fact, "ghost cities" or, more precisely, "ghost neighbourhoods", in China are new and fully equipped, but under-occupied, urban developments that have yet to receive resident immigration. They have often evolved because of large urban investments by developers, which have not (yet) been able to attract sufficient numbers of residents (Shepard 2015).

the built-up area of a given city beyond its limits (urban extension) or by using idle land inside the urbanised structures (urban infill).[2] This may happen within the administrative boundaries of its own jurisdiction, or it may involve different local governments.

The article has the objectives of reviewing urban expansion processes in China and Europe, and looking at some European approaches oriented towards limiting urban expansion and promoting social integration. The experiences may be relevant and inspiring for shaping people-centred, i.e., socially integrative, urban expansion in China.

Methodologically, the article is based on a mixed-methods approach. The authors conducted analyses of the literature and documents as well as expert interviews, group discussions and site visits during several field trips in Europe and China. The literature regarding urban expansion and urban sprawl in Europe and China was reviewed in a comprehensive way. The analysis was based on an extensive keyword-oriented internet search, including scientific journals and practice reports. Moreover, relevant European and Chinese documents, especially from governments, cities and city associations, were reviewed. Preliminary results were discussed and validated with experts from Europe and China, e.g., with representatives of partner institutions of the TRANS-URBAN-EU-CHINA project,[3] as well as with practitioners from different cities in urban living lab discussions over the course of the project implementation. Group discussions, e.g., on project workshops, conferences and online seminars, were conducted, and cities which provide good practice examples were visited.

The structure of the article is as follows: after the introduction, the second section deals with urban growth in China and its challenges. It looks at China's urbanisation since the economic reforms in 1978. It analyses its pace and spatial distribution, and differentiates the most common types of expansion. Moreover, it refers to the actual debate about new ways to promote people-centred urban development. The third section of this article deals with urban expansion in Europe. It depicts the processes of urban growth and planning policies to manage urban expansion in a more responsible way. The fourth section deals specifically with approaches to

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[2] The authors acknowledge the different notions of a "city" and "municipality" in China and Europe from an administrative point of view. When using the term "city" in the Chinese context, they primarily refer to the "urban area" of the city, a term, which in Europe is used to cover cities, towns and suburbs. When using the term "municipality", they refer to the local administrative unit in the sense of the European Union.

[3] TRANS-URBAN-EU-CHINA is a research and innovation project under Horizon 2020, involving 14 partner institutions of excellence from Europe and China, both from academia and practice. It has received funding from the European Union during the period between 2018 and 2020. For further information and for the detailed steps of the implementation of the project, which are relevant here, please refer to www.transurbaneuchina.eu (accessed on 2 September 2020).

control and limit urban expansion in Europe and to make urban expansion more socially integrative. Finally, conclusions concerning people-centred urbanisation in China are drawn.

2. Urban Expansion in China and the Search for New Growth Models

2.1. China's Urban Expansion Since the Economic Reform in 1978

The introduction of the socialist market economy and the open-door policy in 1978 marked the beginning of "a new era of development" in China (Li 2020). Since then, land and urban expansion have played a crucial role in the overall policy agenda of the country as instruments to achieve national development goals. According to statistical figures, urban built-up areas in China increased sevenfold between 1981 and 2015 (National Bureau of Statistics PRC 2016). Nevertheless, studies based on remote sensing present more conservative estimates. For example, according to Schneider and Mertes, the total urban land extent in Chinese cities more than tripled for all city sizes and locations between 1978 and 2010, and increased four to five times in coastal areas targeted by early modernisation policies (Schneider and Mertes 2014). Additionally, following the results of the World Bank, built-up urban land expanded by 35% during the first decade of the new millennium (World Bank 2015). Although figures may differ in detail, the general trend is the same. This is alarming because the increase in urban land in China was about 1.7 times higher than the urban population increase during the period between 2000 and 2017. [4]

There are many drivers behind this tendency. Since 1978, Chinese leaders have seen economic growth as a paramount priority, and, to a large part, land as its basis and financing policy instrument. However, there was a clear distinction between rural and urban land, as well as between rural and urban residents. The latter was related to the household registration system (*hukou*), introduced in 1958, which divided the population into agricultural (dominant in rural areas) and unon-agricultural (mainly in urban areas), and which became the basis of a sharp urban–rural dichotomy and separation. It was only after first *hukou* system reforms in the 1980s that rural residents were allowed to come to urban areas and to access off-farm employment (Li 2020). Nevertheless, to date, they do not enjoy full citizenship rights and do not have full access to the benefits of urban life.

From the beginning, it was evident that the modernisation of agriculture and industry, as well as the opening-up for foreign direct investment, depended on the availability of land and land-use regulations. Therefore, the government's strategy was twofold. As food security was a common social and political priority,

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[4] https://www.sohu.com/a/342695313_467568 (accessed on 2 September 2020).

China adopted restrictive laws on farmland protection. In parallel, the government introduced a number of reforms to mobilise urban land for speeding up local economic development, and for providing housing to accommodate the necessary workforce.

Modernisation success was primarily measured against growth rates of the gross domestic product (GDP). Van Heijster argues that GDP "appropriated a symbolic function", as Chinese politicians used it as an icon within the political narrative of the country's modernization, and as an "instrument of imagination". They "conceptualised the political goal of achieving modernization in terms of GDP"(van Heijster 2020). For example, one of the national targets in the early 1980s was to quadruple the GDP of 1980 by the year 2000 (van Heijster 2020). Aiming to reach this target, China kicked off its GDP-centred economic rolling ball, and, in fact, it met its target almost five years in advance.

The post-1978 massive industrialisation of the country radically changed China's development path, especially in urban areas. Fiscal decentralisation reforms in the country played an important role in this. With the introduction of fiscal contracting systems between 1978 and 1993, and a new tax sharing system between the national and local governments since 1994 (Shen et al. 2012), cities were able to gain access to direct income through land transfer and land banking appreciation. Revenues from land transfer and land banking were mainly left to local governments as their off-budget resources, which can be used in a less regulated way. Consequently, Chinese local administrations showed high enthusiasm to obtain more and more land through urban expansion and land conversion. Revenues from auctioning and granting long-term land leases to developers became an important pillar and source of urban financing.

The modernisation of the manufacturing industry substantially stimulated urban expansion. The relocation in State-Owned Enterprises (SOEs) from downtown to peri-urban areas consumed a lot of farmland in suburbia. Nevertheless, both SOEs and cities usually benefited greatly from the relocation, for three reasons. Firstly, the manufacturing facilities could be substantially enlarged. Secondly, the SOEs could considerably enhance their technology standards. Thirdly, the leftover land in the urban centre could be redeveloped at a much higher value, providing more job opportunities in the tertiary sector for family members of workers. On the other hand, the attractiveness of new investments in the manufacturing sector, both domestic and international, required more industrial land within the urban administrative boundary. To meet these needs and to avoid the limited land quota restrictions, various economic and high-tech development zones were formally or informally established throughout urban China. Almost every county, and even some small towns in eastern China, had their own development zones, as well as major cities. Consequently, vast farmland was occupied. This speeded up urban expansion in

China despite several rounds of adjustment policies implemented in the late 1990s and 2000s in order to mitigate, to a certain degree, the negative impact of urban expansion.

New emerging real estate markets, due to the changing demands of a more affluent population and the housing needs of rural migrant workers, further encouraged cities to expand. In the course of the land marketization reform, cities made land available to large-scale developers for residential use, i.e., new large housing estates, new towns, new urban centres, and modern commercial facilities at the urban fringes and in peri-urban areas. Nearly all cities in China chose land-led urbanisation as their key strategy for urban development.

Fiscal decentralisation was coupled with the national government's performance assessment system, which was introduced in the late 1980s in order to "ensure that local governments adhered to national political priorities". In line with its symbolic function, GDP became one of its important components (van Heijster 2020, p. 64). The system, which was also relevant for the promotion of leaders, proved to drive regional competition for better performance rankings within the national framework. Land became a cornerstone of cities' strategies to attract industrial investments, including those from abroad, and thus the GDP-based performance assessment system accelerated even irrational urban expansion (Yeh and Fu 1996; Yeh et al. 2015; Wu et al. 2006).

Parallel to the changes in the tax-sharing system, the Chinese central government introduced a number of further policy changes to stimulate and accelerate urban growth. Since the early 1990s, SOEs were beginning to be privatised, which led to the displacement of about 15 million workers between 1993 and 1998 (Cai 2002; Solinger 2001). In 1998, a system of leasing land on a long-term basis was established (Lin 2012) in order to incentivise the re-use of areas previously occupied by SOEs. On the one hand, this was supposed to support and accelerate the restructuring of SOEs, and, on the other hand, to improve the living conditions of their workers. As local governments could retain profits from this process, they were enthusiastic to support the policy change. The new land lease system triggered the massive redevelopment of inner urban areas in the sense that large portions of urban land were levelled and prepared for urban re-use.

Urban expansion has mainly taken place in eastern economic powerhouse regions, especially in the city clusters of Beijing–Tianjin–Hebei, the Yangtze River Delta and the Pearl River Delta, and, to a smaller extent, along the Taiwan Strait, while the rest of the country shows much slower urban expansion both in terms of size and pace. Moreover, in many places, especially third-tier cities (Wong 2019) and below, i.e., provincial capitals as well as prefecture and county-level cities, rapid urban sprawl, along with the speculation practices of developers, led to an excessive housing supply outpacing the demand.

In some parts of the country, "ghost cities" have emerged as a result of the "land-centred urbanisation", giving rise to resource waste and societal unrest. The financial risks of the real estate sector have become an increasingly serious issue (Hui and Bao 2013). Moreover, in many regions, booming urban expansion resulted in urban development areas with low quality in terms of urban design and construction (Wei 2019). Besides emblematic and iconic buildings in certain cities, new housing areas often look rather uniform all over the country, and, in many cases, they lack local identity and a sense of place.

2.2. Forms of Urban Expansion in China

Urban expansion in China is bound to strict rules, and cities are not allowed to grow without limits. In general, any type of urban expansion requires the conversion of the type of land use, e.g., from rural to urban.[5] The change in land-use functions is a basic procedure, which precedes any further concrete action and urban development project. The extent to which a city can convert land is determined through the farmland conversion quota system (Zhong et al. 2018).

The quota system was introduced in 1998. Its objective was to limit the loss of farmland due to fast urbanisation, and to safeguard the country's food security. Moreover, the system aimed to encourage or push cities to use their developable urbanised land more efficiently and in a more intensive and compact manner. In fact, the Chinese government has declared that the related land-use planning is "fundamentally a planning system that upholds the strictest arable land protection and the most frugal land use" (Xiao and Zhao 2015, p. 10).

The land quota system works hierarchically in a top-down way, from the national level to the provincial and local levels. The quota, which is allocated to a city or a county town by the province, is determined based on economic performance and local needs, e.g., the extent of the locally available urbanised land and the population forecasts for the local entity.

A city or town has to follow the quota and specify it in its masterplan, e.g., in terms of location, time, and construction purpose. The scope of land-use change in the masterplan needs to be aligned with the land-use plan, which designates the land quota for urban development in a certain planning period. Initially, the land quota was neither transferable nor bankable between provinces (Xiao and Zhao 2015). However, this was relaxed to some extent during the last decade through the introduction of a new strategy oriented towards keeping the balance in the occupation

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[5] In China, there are two kinds of land according to landownership: state-owned land, which is usually urban land, and the land collectively owned by a rural community, which is normally located in rural and sub-urban areas (https://www.chinajusticeobserver.com/a/chinas-legal-framework-on-land-administration, accessed on 27 December 2020).

and replenishment of farmland in urban expansion. It required each province to make sure that the same amount and an equivalent quality of farmland which was lost due to urban expansion would have to be reclaimed, either in its own province or in other provinces, with the possibility of transferring the reclamation cost. Without the official change in land-use functions, any land use and development for urban purposes is considered illegal in China.

In cases where rapid economic development and the vast inflow of rural migrants require additional urban land exceeding the fixed land quota, the designation of new districts and development areas is rather difficult. "The system is inflexible, and thus ignores variance in land resources and land demand across locations and over time"(Xiao and Zhao 2015, p. 2). Nevertheless, it is not impossible to mobilise additional urban land in a fast-growing city. In this case, the city can apply to higher authorities to enlarge its urban area in order to designate a "new area". A "new area" or "new district" is a new urban administrative unit that receives special economic and development support by the national or regional governments. Besides initiatives from the top level, such as, for example, in the cases of Shenzhen, Pudong, Xiong'an and other national-level new districts and new economic zones, a city can propose the designation of a nearby (rural) county as a new urban district, or define an area at the urban fringe as a new urban area or a new economic development zone (Zhuang and Ye 2018). The application needs to be approved by the upper-level government and the people's congress at the same level, i.e., at the state, provincial, or prefectural level.

Experience shows that the designation and approval of a new urban district is usually more time-consuming than the formal establishment of a new economic development zone. While there may be convincing reasons to develop a new area for economic purposes, e.g., the new allocation of enterprises or special requests by industries, the designation of a new urban district for predominantly residential purposes is more comprehensive and requires changes in the administrative framework and scope.

Instead of extending urban areas to the rural hinterland, urban redevelopment and infill can be seen as an effective way to accommodate urban growth and the expansion of built-up areas. It is oriented towards changing or enhancing the functions of existing urban land and tapping the undeveloped land within or in-between built-up land. For example, it refers to cases where large old housing areas are substituted by modern, usually multi-storey urban development projects providing upscale housing and commercial facilities. The relocation of residents, including compensation, and large-scale demolition of old neighbourhoods are characteristic of this form of government action, oriented towards combatting poverty, minority concentration, social disorder and physical neighbourhood decline. However, according to Li, neighbourhood demolition and forced relocation have

been criticised from different perspectives, e.g., for causing various negative impacts on disadvantaged social groups and for dissolving the existing social fabric (Li 2018).

Another example of urban redevelopment is the relocation of large industrial installations and factories. In such instances, sites are usually levelled and new development takes place. In the past, urban redevelopment was very often linked with the relocation of SOEs. When spatial economic restructuring reform encouraged or obliged SOEs to reorganise and relocate their production facilities, e.g., from rather central urban areas to either economic development zones or industrial parks in farther peri-urban areas, the land was obtained and prepared for redevelopment.

In any urban redevelopment, the acquisition of additional new urban land is necessary in order to relocate residents and/or production facilities. Depending on the location of the old sites, e.g., in central urban areas, redevelopment can be a rather lucrative undertaking for local governments and developers.

Urban expansion has often led to the emergence of another phenomenon in Chinese cities, i.e., urban villages (Liu and He 2010). Once located at the urban fringes, villages have been integrated into the urban fabric without losing their status as a rural area. The phenomenon emerges when a city expands, and only the agricultural land, but not the settlement where villagers live, is converted into urban land, e.g., due to high compensation or relocation costs for villagers.

Thus, urban villages are distinct from other parts of a city, physically, socially and administratively (Gao et al. 2020). They form rather independent entities within cities, sometimes close to urban centres and other prime locations, and with good connectivity. In most cases, they are characterised by low-rise constructions, high population densities and poor living conditions. Because of lower real estate prices and rents, they are the preferred location for the transient population, such as rural immigrants, students, or young professionals and start-ups, sometimes causing disruptions to the existing social fabric (Li 2018).

The renovation of urban villages and related shantytowns may, in part, be similar to urban regeneration, e.g., if local governments find means of compensation and if an area is highly attractive for real estate developers. However, in many cases it is more similar to urban renewal activities, such as in situ upgrading the physical environment, providing employment, and strengthening the social fabric. The renovation will usually add more public space and facilities to urban villages and shantytowns. In most cases, it will lower density, and thus more land has to be converted on the urban fringe or in peri-urban areas to accommodate those who have to move out.

Finally, urban expansion also happens in the form of informal settlements. These usually appear at the urban fringe and in peri-urban areas of Chinese cities. These locations are usually rather attractive for accommodating rural immigrants. Moreover, new homes can be built under the collective landownership of a rural area.

However, they are neither formally legal nor part of a planning process by the local governments. Nevertheless, they exist, "consume" land, usually extend the urban areas progressively and accumulatively, and, as future shantytowns, they may turn into problematic areas within the framework of further urban extension. Moreover, informal settlements are more often exposed to environmental and natural hazards than other forms of urban expansion.

2.3. From Land-Centred to People-Centred Urbanisation

In recent decades, rapid urban expansion has led to a number of challenges for sustainable urban development. According to the NUP (2014–2020), this was based in land-led urbanisation which was driven by the property development interests of both local governments and large real estate developers. Urban land became the main off-budget source for city governments, and thus a financial source for urban infrastructure investment. Moreover, urban land was an important means of attracting foreign and local investment for cities, thus enhancing the performance of a city in the national rankings, and, consequently, providing an opportunity to receive a higher land quota for new urban expansion areas from the respective province.

Many rural migrant workers settled in cities or at their urban fringes. However, they had difficulties in obtaining official urban residence and access to urban services. Urban–rural imbalances deepened. Urbanised land grew much faster than the urban population. Ghost cities appeared up in many parts of the country, due to the fact that housing offers exceeded demand, and new apartments were not affordable for many households. Farmland protection was also not fully effective. Despite the careful application of the land quota system, the accelerated urban expansion caused the loss of a substantial portion of high-quality farmland. It even put the "red line" of protected and reserved farmland for China's grain security under risk (World Bank, and DRC 2014).

Moreover, natural areas were destroyed. Patterns of urban expansion were impressive but rather uniform all over the country. Land use was less efficient than intended. Car-oriented urban development with wide roads and broad transportation corridors were established to cope with expected future traffic. However, all this also contributed to losing a "human dimension" in new urban developments, e.g., in terms of compactness, short distances and social cohesion. Almost identical high-rise buildings contributed to making urban development more anonymous, losing the character of the place. Urban population was mainly concentrated in large cities in the eastern parts of the country, while medium-sized and small cities, as well as central and western areas, were left behind in terms of industrial development and population growth. Traffic congestion and environmental problems evolved in many cities and neighbourhoods. Cultural and natural heritage was in danger. Management was seen to be deficient in many cities (Chen et al. 2018).

In acknowledging such challenges, the NUP and the 13th Five-Year-Plan (2016–2020) were turning points in China's urbanisation, propagating a major shift from the previous land-, property- and GDP-centred growth models into a people-centred approach giving prominence to the "human scale" of urbanisation and quality development, as well as to inclusive and environmentally sustainable urban development. The NUP outlined four main goals, i.e., "'promoting the orderly conversion of rural migrants into urban residents,' 'optimizing the patterns of urbanisation,' 'enhancing the sustainability of cities,' and 'promoting urban-rural integration'"(Chu 2020).

For example, reforms to the *hukou* system and land management were to be promoted. More specifically, the aim was to "convert" up to 100 million persons, i.e., about 43%, rural migrants, into urban residents, in order to enhance their quality of life. The plan was to provide them with access to vocational training, the purchase of retirement and urban medical insurance, medical services and subsidised housing. Regarding the task of optimizing the patterns of urbanisation, the NUP proposed the development of small towns, cities and city clusters in the inland and western parts of the country in a coordinated way (Chu 2020). Additionally, within the framework of the concept of "ecological civilization", emphasis was placed on enforcing green space protection, utilising local environmental red lines for urban expansion, and setting urban growth boundaries to restrict cities from growing in an uncoordinated way (Zhang et al. 2019). The possibility of creating compact and mixed-use urban neighbourhoods was explored, as well as the possibility of preserving local culture and historical buildings, expanding public transportation networks and increasing public green spaces in cities. The provision of urban affordable housing was to be improved and accelerated. Environmental protection and ecological preservation were to be strengthened.

In accordance with these objectives, a series of new policies regarding urbanisation and socio-economic development were put forwarded in the following years. For example, the Land Administration Law was amended, aiming at an improvement in land-use patterns, understanding urban and rural areas as one integrated entity and integrated system. Moreover, regulations regarding land-use approval processes and the *hukou* registration system were relaxed in various cities. Nevertheless, top-level reforms need time to be fully implemented and reach the lower levels of government. Thus, China is still in the process of changing its urban face again, and making cities and neighbourhoods more sustainable.

Several authors have assessed the implementation of the NUP in recent years, and confirmed progress (Chu 2020; Chen et al. 2018). However, they have also raised some concerns about the speed of urban development outpacing the achievements of implementation, e.g., regarding rural–urban migration and social benefits for

migrants, or accelerated urban expansion in second- and third-tier cities in inland provinces, promoted by the NUP.

A topic which is examined to a much lesser extent than these issues on the macro-level, is the question of how urban districts and neighbourhoods can be made more sustainable and socially integrative in the future under the conditions of urban expansion and redevelopment. The face of cities is changing dramatically. Greater uniformity and standardisation, with high-rise apartment buildings in urban neighbourhoods with many newcomers from different areas of the city or from the countryside, may lead to more anonymity and anxiety. A new social fabric and social capital are difficult to establish. Institutions which are oriented towards community development, such as Urban Residents Committees (URC) and Street Offices, exist, but they face a number of challenges, such as "participative bureaucratisation" (Audin 2015), and they hardly connect to urban planning and development.

Overall, it is timely to explore further possibilities to control urban expansion and to create socially integrative neighbourhoods in new expansion areas. Although the framework conditions for urban development in China and Europe may differ considerably, it is worthwhile to look at European practice and exchange experiences. This may have positive effects on the improvement in living conditions in new urban areas in China in the post-NUP era.

3. Urban Expansion in Europe

3.1. Types of Urban Expansion

In Europe, there is a long tradition of planned urban expansion. This dates back to the era of industrialisation. Later, new urban areas were developed as a reaction to housing pressures after war devastation and rural-to-urban immigration. More recently, urban expansion has been accelerated due to exploding real-estate housing markets in economic development hubs and in post-socialist countries and regions. Moreover, new demographic trends, e.g., the downsizing of households, and the rise of second home ownership, play a role. The spatial consequences of these trends have resulted in an impressive increase in urban areas all over Europe.

Depending on the scale, location and administrative character, planned urban expansion areas can be categorised into three distinct types (TCPA 2007):

- Urban extension, including the creation of new urban districts, is associated with planned expansions of an already existing city or town at its fringe, with a certain degree of spatial continuity of built-up areas. This may be promoted by private- and/or public-sector interest, on either rural land, which has to be transformed to land for urban use, or on newly reclaimed land (Bjorg 2010; DCLG and TerraQuest 2020). Urban extension is the most common type of urban expansion;

- New towns and settlements are free-standing planned settlements at a certain distance from core cities and with spatial discontinuity in built-up areas, promoted by private- and/or public-sector interest. In Europe, current trends in population development and economic growth do not justify new towns. Nevertheless, there are some cases of this, such Adamstown, built between 1996 and 2016, at the outskirts of Dublin, Ireland, as a reaction to the sprawl of the capital. This is one of the few examples of independent settlements developed after the Second World War. The town is a 10,000 unit housing development for 25,000 people. Fifteen percent of the units are reserved as affordable housing for socially weak groups in the society. The project is characterised in the literature as a sustainable and vibrant example of a new urban development (Gray et al. 2010; URBED 2008);
- Urban infill corresponds to new developments sited on vacant or undeveloped land within an existing urban area and enclosed by other types of development. It also includes the redevelopment of areas which, over time and with changing economic conditions, fell out of use. The strengths of this type of urban expansion, which is conceptually very close to urban regeneration and renewal, are manifold. They include the possibility of accommodating urban growth within the boundaries of already-urbanised areas, the possible joint use of existing infrastructure and services with neighbouring areas, and revitalisation effects, injecting higher attractiveness and new life into existing communities in the vicinity (McConnell and Wiley 2010; Arvola and Pennanen 2014). However, some researchers also stress that if densities are too high, such developments might threaten the amenities of neighbouring areas, negatively affecting the real-estate values of existing properties and the living quality due to the loss of open space, the decrease in privacy and the loss of parking areas (Ahvenniemi et al. 2018; Arvola and Pennanen 2014). Hammarby Sjöstad, a district located in southern Stockholm, Sweden, is often mentioned as a good practice example. It is seen as one of the most prominent cases of converting a rundown industrial area into a modern, sustainable, and mixed-use neighbourhood (Iverot and Brandt 2011; Evliati et al. 2015; Schiappacasse et al. 2019). The new districts of Kronsberg in Hannover, HafenCity in Hamburg, Stockholm Royal Seaport and Bo01 in Malmö are also considered good practices of large urban infill (Modarress-Sadegui and Konstari 2015; Hicks and Kuhndt 2013; URBED 2008).

These types correspond rather well with the ways in which Chinese cities have expanded, although there are important differences. For example, there is no quota system in Europe. However, the conversion of rural to urban land requires a decision by the local government and a respective delineation in the local land-use plan. Local governments also decide about the handling of short-term additional needs for housing and industry. Urban redevelopment and infill seem to have some common

ground. However, the complete levelling of large old housing or industrial areas is more the exception than the rule in Europe. Finally, the issue of urban villages is also not common in Europe. Once integrated into a local administrative unit, e.g., a municipality, villages come under the full jurisdiction of this entity.

3.2. Urban Development after the Second World War

Urban expansion after the Second World War was highly influenced by the Athens Charter, a manifesto mostly written by Le Corbusier and published in 1943. The document propagated urban expansion and urban development in a new way: "It was essentially a condensed version of the core ideas and principles of modern architecture and urban planning, which called for a total remaking of cities in the industrial world, to make them more efficient, rational, and hygienic." The Athens Charter "became widely circulated after the war, especially among European governments looking to rebuild devastated cities and house millions of homeless citizens. . . . It became a blueprint for the communist world in the 1950s, 60s, 70s and 80s, especially in the USSR and its East European allies, which sought the most rational and efficient way to plan out housing" (Rubin 2009, p. 1).

Thus, all over Europe and in many other parts of the world, large high-rise housing estates, often with pre-fabricated buildings, became a pattern of urban expansion. Within the framework of massive building programmes, including social housing, large housing estates with hundreds of tower blocks were constructed in the UK (New Towns), in France (Banlieues), in Sweden (Million Programme), in The Netherlands (new housing estates) and in other urban expansion areas all over Europe. The early cases were followed by projects constructed on the fringes of the cities. Later, similar projects were built in East Germany and eastern and south-eastern European cities, for often more than 100,000 inhabitants, recognised as "socialist new towns" (Dekker et al. 2005).

Nevertheless, what looked similar from an architectural perspective proved to be rather different regarding context and function. For example, in West Germany, projects were often linked with social housing programmes, while in East Germany, prefabricated panel housing estates were among the most modern and preferred housing facilities. Despite considerable differences between countries, urban extension projects were characterised by a simple architecture that was considered quite revolutionary in its time. The areas were shaped by large medium- to high-rise blocks, open spaces between blocks and the separation of functions. Apartments were functional, though not always spacious. They were often affordable, and many residents were supposed to be involved in organised community activities, a goal which, however, was not always fulfilled (Dekker et al. 2005).

In parallel and in the course of economic recovery, growing wealth and new consumption patterns after the Second World War, more and more people, especially

young families, had the desire to leave central cities or large housing estates and settle closer to nature, with a better and safer environment for their children. As land prices in small towns and at the urban fringes were considerably lower than in inner cities, owning a property in the outskirts of a city than in the core area was cheaper and more probable. Thus, sub-urban areas grew rapidly. New single-home and detached housing developments were often implemented in the jurisdiction of smaller settlements, and even villages neighbouring larger cities, making it rather difficult to control and manage urban sprawl. In the post-socialist era, similar processes massively occurred in cities of countries in central, eastern and south-eastern Europe.

Additionally, almost everywhere in Europe, demographic decline started to be visible. This was accompanied by urban immigration from foreign countries. The working class, lower income groups in society and unemployed persons started to be deliberately allocated to these areas. The formerly highly appreciated housing estates became social hotspots, and ethnic and social spatial segregation became visible.

As a result, urban policy became more cautious in promoting urban expansion and shifted to urban renewal. Nevertheless, there were also many approaches to regenerate the large housing estates, find solutions for the sometimes severe social conflicts, and to enhance local living conditions. For example, in Germany, the programmes "Stadtumbau Ost" (Urban Reconstruction in East Germany), and later "Stadtumbau West" (Urban Reconstruction in West Germany), focused on injecting new life into and raising the attractiveness of these areas.

Additionally, living in old central urban areas had become fashionable, as heritage preservation and the restoration of historic centres and their extensions during the period of promoterism in the wake of industrialisation had created new, attractive, though rather costly, urban areas in the core cities. Thus, urban renewal became a priority of urban planners and policy makers.

Nowadays, there are still strong trends in Europe of leaving the core city and purchasing property or renting a housing facility at the urban fringe, often considerable distance from the city centres and with substantial commuting times. Consequently, urban extension is still taking place at a rapid pace, especially in economically attractive urban agglomerations, such as in almost all capitals and major economic centres in Europe. Sub-urban and peri-urban areas are perceived as attractive solutions for meeting housing needs, providing better homes and living environments, as well as establishing new industries and commercial facilities.

Moreover, various studies have found that there is a lot of supply-driven land-use change. This can be fuelled by policies at national and local levels, e.g., when "the political agenda or local decision-makers in stagnating or economically declining areas ... emphasises the importance of cheap land for residential or commercial uses as a means to attract people and enterprises and thus generate tax revenue. ...

Some scholars have presented evidence that the institutional fragmentation of local authorities could be another important factor explaining the rate and pattern of land consumption" (Nuissl and Siedentop 2021).

As a consequence, unsustainable urban expansion continues to exist across Europe (EEA 2016). The amount of urbanised land and living space used per person has more than doubled during the last 20 years, leading to both "new edge cities around traditional urban centres and scattered residential developments on the urban fringe" (Gómez-Antonio et al. 2016). Urban extension continues to be a major concern for the European Union, as well as national, regional and local governments in Europe, due to its negative impact on financial, environmental and social aspects.

The discussion about urban expansion has been closely connected to the debate about urban sprawl. The European Environmental Agency (EEA), which promotes the use of the term, describes urban sprawl "as the physical pattern of low-density expansion of large urban areas, under market conditions, mainly into the surrounding agricultural areas" (EEA 2006, p. 6). Others have described it as the spreading of a city and its suburbs over rural land at the fringe of an urban area (Patacchini and Zenou 2009; Stan 2013). In fact, urban growth, urban expansion and urban sprawl overlap to a large degree (EEA 2016, p. 24). The results of the most recent EEA report on urban sprawl in Europe indicate that, despite much effort, "economic development has, largely, not been decoupled from increases in urban sprawl" and its negative consequences (EEA 2016, p. 14).

Besides the widespread land conversion, due to a number of reasons, all over Europe (Nuissl and Siedentop 2021), there are two clusters of high-sprawl in Europe. The first is located in north-eastern France, Belgium, The Netherlands and parts of western Germany. The second stretches in the United Kingdom, between London and the Midlands. In general, sprawl is most pronounced in wide rings around city centres, along large transport corridors, and along many coastlines, especially in the Mediterranean region (EEA 2016). This has not only massively encroached on rural areas but is also endangering the European Natura 2000 network, the largest coordinated network of protected areas in the world.[6] In many places, this pattern of development has led to serious consequences such as surface sealing, ecosystem fragmentation, land erosion, arable land loss, traffic congestion, transport emission, and social segregation (Schetke et al. 2012; EEA 2006; EEA 2016; Foley et al. 2005).

3.3. Policies to Manage Urban Expansion in a More Sustainable Way

The search for approaches to limit and control urban expansion is not at all a new topic in Europe. There have been many initiatives on the European level, as well as

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[6] https://ec.europa.eu/environment/nature/natura2000/index_en.htm (accessed on 3 September 2020).

programmes and measures on the level of national, regional and local governments, especially in the wake of the international sustainability discussion in the late 1980s. Thus, there is considerable experience with different approaches to manage urban expansion aiming to foster sustainable urban development, and to make cities more environmentally friendly and socially integrative.

For example, in Germany during the 1990s, the national government launched a programme on "Cities of the future" following the results of the Rio Summit. Approaches to adjusting land management, mobility, environment, housing and the economy to the requirements of sustainable urban development were tested in four model, seven reference and 50 further cities. Successful urban development, in contrast with China, was measured against the ability of local governments to limit the uptake of new areas for settlement and transport purposes, intensify land use, protect open spaces and re-use derelict and wasteland for urban development, among other factors. Moreover, the programme focused on the relation between new urban development areas within and outside of existing built-up areas, as well as local abilities to mobilise new land for development within the existing urbanised areas. Regarding social integration, the programme looked, for example, at the possibility of relocating residents from sub-urban areas to core cities, providing basic housing facilities and financial support to individuals for housing, reducing unemployment, strengthening the local economy, and reducing commuting.

Later, limiting the land uptake for settlement and transportation purposes was included as a goal and an indicator in the German Sustainability Strategy in 2002 (see below). Similar programmes and activities were also initiated in other European countries, e.g., in France, England, The Netherlands and in Scandinavia. For instance in 1994, the UK Government published the "Strategy for Sustainable Development", calling for a more compact urban development that would use less land and enable reduced energy consumption (Couch et al. 2007). In the following years, controlling expansion became a major policy consideration in most European countries (Schiappacasse et al. 2019).

On the European policy level, major concerns regarding urban expansion and social integration became evident in the late 1980s through the "Green Paper on Urban Environment", published by the European Commission. The document states that "urban growth has spawned vast built-up areas which lack of essential qualities we associate with cities: history, functional differentiation, cultural and other forms of infrastructure . . . . These monotonous areas often harbour poverty, crime and drug abuse, problems subject to increase attention from authorities at all levels" (European-Commission 1990, p. 3).

In the following years, a number of documents at the European level proposed concepts and measures to cope with urban sprawl, promote sustainable land use and make urban development more socially integrative (EEA 2016, pp. 18–19):

- In 1999, the European Spatial Development Perspective formulated the necessity of a policy on the "support for effective methods for reducing uncontrolled urban expansion: reduction of excessive settlement pressure" (Committee on Spatial Development 1999). In more detail, the document proposed planning strategies to minimise further urban sprawl by emphasising compact cities and cities of short distances within a regional context. It was stated that, for this purpose, "co-operation between the city and the surrounding country side must be intensified and new forms of reconciling interest on a partnership basis must be found" (Committee on Spatial Development 1999);
- In 2004, the European Landscape Convention by the Council of Europe focused on the objective of promoting the protection, management and planning of landscapes, and organizing international cooperation on landscape issues. The convention aimed to limit urban sprawl by promoting the vision of a compact and green city (Council of Europe 2012). Unfortunately, the European Landscape Convention has still not been signed by all European governments, including those from Austria and Germany;
- In 2007, the Leipzig Charter on Sustainable European Cities set an important basis for the efficient and sustainable use of resources, highlighting the role of spatial and urban planning in preventing sprawl through the strong control of land supply and speculative development. It also strongly promoted social integration in cities (Council of Ministers Responsible for Spatial Planning and Urban Development 2007);
- The Toledo Declaration in 2010, and the Territorial Agenda in 2011, supported the suitability of urban recycling and compact city planning as strategies to minimise land consumption and to control urban sprawl;
- The Urban Agenda for the EU (Pact of Amsterdam), from 2016, promotes sustainable land use as well as social integration, i.e., reduction in poverty, housing, inclusion of migrants and refugees, and security in public spaces (EU Ministers Responsible for Urban Matters 2016). The agenda is operationalised by the respective action plans;
- The New Leipzig Charter of 2020 is the most recent policy document. It is far more than a mere update of the Charter from 2007 (EU Ministers Responsible for Urban Matters 2020). It summarises the European state of thinking in a comprehensive way. It deals with the transformative power of cities for the common good. Hereby, the document acknowledges cities as places of pluralism, creativity and solidarity, and as laboratories for new forms of problem-solving and test beds for social innovation. It promotes integrated urban development as well as participation and the activation of local commitment.

Despite the European Union's concerns and efforts to tackle urban expansion and sprawl, there is no common policy, as the European Commission has little say in urban affairs. Land-use relationships and the levels of administrative and financial decentralisation differ considerably among European countries. Each country has dealt with sprawl in different ways, such as by fixing specific targets for the middle- and long-term, introducing containment policies and "by either using a strategy of binding legislation (command and control) or applying a market based approach" (Colavitti and Serra 2017, p. 4). What, in general, is perceived as a weakness, may be seen as a strength here: the differences among the European countries provide a universe of distinct approaches and experiences in dealing with urban expansion, which may be useful as a background for shaping new strategies under specific conditions.

4. Approaches to Control Urban Expansion and Promote Social Integration in Urban Expansion Areas in Europe

European countries have established a number of different approaches to control urban expansion, and to promote social integration in new expansion areas. As Figure 1 shows, they can be divided into those addressing urban limits, form and morphology, i.e., by controlling, monitoring, evaluating and limiting urban expansion, and those influencing the internal social fabric of expansion areas, i.e., by promoting social integration. Both are interrelated and relevant for creating socially integrative cities. In the following, both types of approach are discussed. Approaches to promote social integration are of special interest.

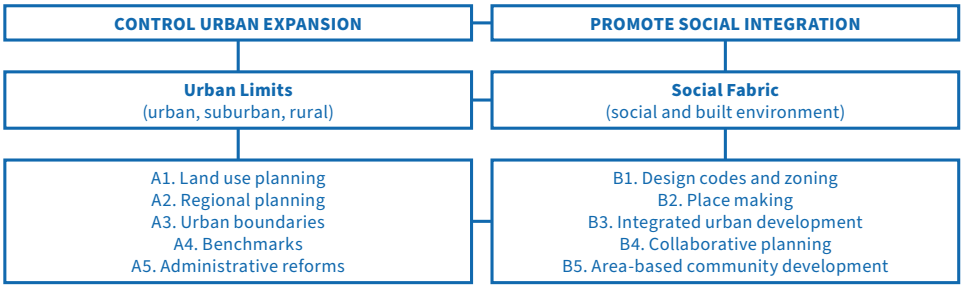

Figure 1. European approaches to control urban expansion and to promote social integration in urban expansion areas. Source: Figure by authors.

4.1. Approaches to Control Urban Expansion

There is a wide variety of approaches to controlling urban expansion. On the one hand, any form of inner-urban development, including urban regeneration, may be interpreted as an approach to limit urban encroachment and sprawl on areas at the urban fringe, as it aims at mobilising new urban development opportunities

within the existing urban fabric, and, thus, diminishing the pressure on a city to physically extend its built-up areas. Public subsidies may help to lower the cost of land conversion, e.g., in cases where polluted soils, e.g., due to former industrial use, have to be exchanged before building can be permitted. Land tax reforms diminishing the role of differences between urban centres and sub-urban municipalities may also have an effect on reducing urban expansion. Although such approaches should not be underestimated, they only have an indirect effect on urban expansion.

On the other hand, there is a diversity of methods to directly control, monitor, evaluate and, thus, limit urban expansion and establish sustainable land-use policies (Nuissl and Siedentop 2021, p. 87). Some of them are well established. Others, such as tradable development rights, are still in an experimental stage, in Europe, e.g., Italy, the Netherlands, Switzerland, Austria and Germany (Proeger et al. 2018), as well as in China (Hou et al. 2018). According to Couch et al., approaches to control urban expansion may (Couch et al. 2007):

- Be regulative, such as spatial planning, restrictions concerning specific land uses, and density controls, e.g., based on monitoring and evaluating urban expansion;
- Be related to institutional change, such as administrative reforms in order to create larger municipalities or to establish new regional authorities;
- Work on the basis of incentives, like the provision of infrastructure and social facilities, subsidies, and taxes, especially in already built-up areas.

In the context of urban expansion and the socially integrative city, five approaches are described below (see Figure 1).

4.1.1. Land-Use Planning

Land-use planning (A1.) plays a crucial role in controlling urban expansion. Depending on the legal stipulations in the different countries, land-use plans generally form the legal basis for any urban expansion, irrespective of the way they are implemented. They define whether land within the jurisdiction of a city or town is rural or urban, and whether it can be taken up for urban extension or not.

For example, German local authorities have powerful instruments to restrict urban expansion, as building is prohibited in areas which are not especially designated for urban development in a land-use plan, i.e., housing, commercial, industrial or mixed-use purposes. Land-use plans define whether and which areas can be taken up for new building activities. They have to be approved by the local parliament, and then have the quality of a local law (Schulze-Baing 2010).

However, planning decisions require majorities in local governments and parliaments, as well as law enforcement and commitment, in order to be effective in controlling urban growth (Fertner et al. 2016). Here, one has to take into account that limiting expansion is often interpreted in the political arena as limiting growth

and development potential. Therefore, it is difficult to achieve. Moreover, what may be seen as detrimental from the perspective of a core city, e.g., growing beyond its own administrative boundaries and losing population and businesses, may be of high interest to a neighbouring smaller municipality, which can profit from urban expansion in terms of inhabitants, employment, infrastructure, services and tax income.

In some countries, landscape-oriented instruments have been used to demarcate urban growth boundaries, such as green corridors or green belts (Nuissl and Siedentop 2021). For example, this planning strategy was part of the post-war approaches in English regional policies to protect farmland and separate conurbations (Horn 2015). Having been discussed since the 1920s, a number of European cities have rather successfully adopted the greenbelt approach, such as London, Copenhagen and Amsterdam, as a component of their local land-use planning, and others as an element of their regional endeavours to limit urban expansion.

4.1.2. Regional Planning

Regional planning (A2.), including the establishment of regional authorities or agencies, is a rather old instrument in some European countries. For example, in Germany, it was introduced in the beginning of the 20th century as the necessity arose to coordinate rapid urban expansion and to safeguard environmental quality in major industrial regions of the country, such as the Ruhr area, in the wake of industrial development.

Regional planning defines the regional development strategies and priority land uses of a region made up of several lower-level administrative entities, such as counties, cities and towns. In countries where the authority to make planning decisions rests exclusively with municipalities, like in Germany, regional plans often use landscape- and nature-based instruments to limit urban expansion, such as priority areas for nature and landscape protection or development, as well as green corridors.

Regional coordination and cooperation to direct and manage urban growth is necessary when urbanised areas expand beyond administrative boundaries. As municipalities have little influence on the land development in a region as a whole, regional planning institutions may fill the gap (Christiansen and Loftsgarden 2011). To be effective, regional authorities or agencies must have at least three conditions: a legal basis with clear and sufficient regional competences, compliance among different levels of planning, and a consensus on strategies and visions.

However, it has been noted that, in many cases, the legal authority of regional planning institutions does not always go far enough to control sprawl effectively. For example, in the northern German state of Schleswig-Holstein, the population in the so-called central places, i.e., cities and towns, which were supposed to concentrate

the bulk of urban growth, grew only by 6.5% between 1970 and 1997, while in non-central places, the population grew by 20.7% in the same period (Hahne and Rohr 1999).

Moreover, it is vital that regional and local level institutions work hand-in-hand. For example, "several cantons and municipalities in Switzerland implemented rigorous limitations and sometimes the de-zoning of building zones, and achieved a stabilisation or reduction of sprawl." In this way, in the Canton of Geneva, a 33% reduction in sprawl was achieved between 1980 and 2010 (EEA 2016, p. 115).

Well-known European examples for regional approaches to limit urban extension are Haaglanden in the Hague Region in The Netherlands, the Greater Manchester Combined Authority in the United Kingdom, the Montpellier Méditerrannée Metropole in France and different Regional Planning Authorities in Germany (Fertner et al. 2016; Dieleman and Wegener 2004). A prominent example of a successful regional cooperation is found in the Randstad in The Netherlands. There, it has been possible to prevent the rapid development of urban sprawl into highly valued rural areas, an economic powerhouse of the country, despite the fact that land-use planning has to be coordinated among four different regions and more than 150 municipalities (Christiansen and Loftsgarden 2011). Moreover, the regions of Stuttgart, Frankfurt, and Hannover in Germany are also interesting cases to look at because of their rather effective regional planning instruments and innovative intermunicipal cooperation models.

4.1.3. Urban Boundaries

Urban boundaries (A3.) are usually set by local land-use plans. They are used to restrict building activities, which is especially important in countries where private property rights prevail. Their objectives are twofold: to promote compact, contiguous and accessible development, and to preserve open spaces, such as agricultural, forestry and environmentally sensitive areas, that are not suitable for urban development (Nelson and Sanchez 2005). In general, three major forms of urban boundaries are distinguished: green belts, urban growth boundaries and urban service boundaries.

A green belt, is "a zone of land around the city where building development is restricted" (Amati and Yokohari 2006) unless it serves agriculture, forestry or recreation purposes. It constitutes a spatial barrier to urban expansion by means of planning control and physical implementation. Green belts are considered "one of the most restrictive policy instruments of urban containment" (Siedentop et al. 2016) as they support compact development and encourage developers to recycle derelict urban land. For example, "the cantonal master plan of Zurich of 2014 has implemented 73 green belts in which construction is prevented" (EEA 2016, p. 115). However, research findings show that the success of the green belt approach for containing

development is very dependent on the relationship between the government and the market, as well on the prevailing conditions for land development (Horn 2015).

In contrast to green belts, an urban growth boundary is a line drawn around a municipality or a city-region with urban uses accommodated inside and rural uses outside. Limits are not permanent, and they can be reassessed and extended to accommodate expected growth (Zacharoula 2013). In the Netherlands, cities and local authorities apply a system of red and green contours to accommodate future development within a certain time (2030). Local authorities recommend the line's location to the provincial governments, who have the final decision (Horn 2015).

An urban service boundary is defined as an area beyond which no urban services, such as sewer, water and transportation, will be extended (Zacharoula 2013). Urban service boundaries are more flexible than urban growth boundaries, because they are often drawn to be consistent with the planned urban facilities, while urban growth boundaries respond more to policy objectives. While the latter instruments are commonly used in the United States, in Europe, the main instrument to control urban sprawl is spatial planning, including land horizon use and regional planning. Moreover, "there is a broad debate in the US as well as in the UK on whether the definition of a rigid boundary around a settlement is ... the most effective means for curbing urban sprawl and its associated negative impacts" (Nuissl and Siedentop 2021, p. 90).

4.1.4. Benchmarks

Benchmarks (A4.) are an element of persuasive approaches to control urban expansion. They usually aim at limiting urban extension within a given medium- to long-term period. Many European countries have experience in setting benchmarks for limiting sprawl.

In Germany, the National Sustainability Strategy of 2002 introduced the objective that, until 2020, the land "consumption" for settlement and traffic purposes was to be reduced from about 120 to no more than 30 hectares per day. However, it has been noted that the German government has implemented only a few measures to achieve this target (EEA 2016). Nevertheless, many state and regional strategies in Germany broke down the national figures and formulated regionally adapted general objectives in their spatial plans. In some cases, cities were also incentivised to embark on strategies to limit land conversion for urban development, e.g., on the way of urban living labs, i.e., model projects and competitions, which included the exchange of experience among the participants. All this spurred public discussion and changed the mindsets of decision-makers, although the target as such could not be reached. In Switzerland, there were attempts in 2018 to push a regulation according to which no new urban expansion would have been possible.

In general, setting benchmarks is a valuable approach which has the potential to foster public debates about objectives and ways to reach them. Moreover, they are an element of learning systems in societies. This requires the implementation of efficient and up-to-date monitoring which, in many countries, is still in its infancy. However, benchmarks usually do not have legally binding force. Thus, it is not surprising that no European country has been able to establish an effective quantitative limit for sprawl (EEA 2016).

4.1.5. Administrative Reforms

Administrative reforms (A5.) to change the jurisdictions of local governments, including the annexation and amalgamation of local authorities and the creation of new upper-tier regional-metropolitan authorities, are an option to increase the spheres of influence of local entities, to broaden the tax base and to increase planning and implementation capacities. Moreover, the efficiency, effectiveness and equity of inter-municipal action can be improved (Pichler-Milanovic 2007).

It is a shared understanding in Europe that administrative reforms may help to better control and manage urban expansion and to promote compact development. However, they are not easy to implement due to the resistance of smaller municipalities and the political sensitivity of such reforms on higher levels of decision-making, which usually have the final say.

Whether administrative reforms can successfully be implemented or not depends, to a high degree, on the level of sovereignty of municipalities and local governments. Moreover, the decisiveness of upper-level governments to conduct administrative reforms plays a big role. Historical and traditional bonds usually play an important role, as it is often argued that administrative reforms contribute to destroying local culture, social ties and the sense of place. Although experience indicates that metropolitan municipalities have not always contributed to the protection of open spaces and the control of urban sprawl (Razin 1998), administrative reforms lay the foundation for better controlling urban expansion.

4.2. Approaches to Promote Social Integration in Urban Expansion Areas

There are a number of approaches in Europe, which can be and have been successfully applied in order to make urban expansion, once decided on and unavoidable, more socially integrative, as defined in Chapter 2 of this book. They range from opportunities for detailed planning and design to integrated multi-sectorial, as well as communicative and collaborative, approaches. Five of them are described here.

4.2.1. People-Based Design Codes and Zoning

Design codes and zoning (B1.) are planning instruments describing the detailed form and internal structure of future urban development areas (Couch et al. 2007). For example, they may determine the street layout, plot sizes, building limits, building heights, the orientation of buildings, and further details concerning the outer appearance of buildings, even up to the question of which colours are permitted. Moreover, planners decide about the social infrastructure, e.g., schools, community centres, libraries, sports facilities, and green infrastructure as well as commercial areas and office buildings, including potential co-working facilities and maker spaces. Design codes and stipulations for zoning provide basic rules for the detailed design of new urban areas.

These are important tools to promote communication and social interaction, as well as to foster favourable living conditions within a neighbourhood. For example, they may include rules for the design of open spaces and public areas, and the question of which community facilities are to be established. They may provide rules regarding affordable housing, the "human dimension" of the built environment and mixed-use areas, and they may include stipulations regarding internal traffic, connectivity and access to public transport facilities.

Depending on the stipulations, new neighbourhoods become more or less socially integrative, more or less socially mixed, and more or less open and communicative. They may be exclusive if, for example, plot sizes are too large and the design favours large single-family homes. They may be dull and uninspiring if there is no variation in design. Nevertheless, design codes and stipulations for zoning are always a reflection of the preferences of a society, and, more specifically, a local community, and preferences change over time.

Good practice examples have demonstrated that it is advisable to establish the design codes and detailed zoning plans in a collaborative way with, if possible, the engagement of future inhabitants and representatives of local civic groups. This may not guarantee, but raises the probability of, a new neighbourhood becoming socially integrative as a response to customised solutions enhancing local identity.

Upton, an extension area of Northampton in the United Kingdom, can be taken as a good practice example here. After a participatory process of discussing the aspirations and needs of future inhabitants, a design code was elaborated and included in the developer procurement brief for each parcel of land to be released. (Communities and Local Government 2006). Overall, the design code ensured coordination between the different development sites within Upton and provided certainty to developers of the quality and character of adjacent development (TCPA 2007).

Similar results regarding the development of a vibrant and diverse new development area were achieved in Rieselfeld, located in the southwestern German

city of Freiburg, which were zoned based on intensive consultation processes in working groups and local community forums, offering critical support to the city council. For example, the city and the inhabitants agreed that a bigger portion of the plot was to be converted into an urban preservation area while a smaller portion was oriented towards urban development (Schuetze 2019).

4.2.2. Place-Making

Place-making (B2.) is "the set of social, political and material processes by which the people iteratively create and recreate the experienced geographies in which they live" (Pierce et al. 2010, p. 54). According to this approach, social integration is fostered through a collective, consensus-building and decision-making process based on progression through argument and discussion. More than just promoting a better urban design, place-making pays particular attention to the physical, cultural and social identities that define a place and support its ongoing evolution. Based on Healey's ideas of collaborative planning (Healey 1997), Hall and Rowlands (2005, p. 51) propose the following five dimensions of place-making: integration in policy making; collaboration in policy making; stakeholder involvement; local knowledge; building relational resources.

Thus, place-making contributes to the inhabitants' identification with the place they live. It also encourages people to become actively engaged in shaping the future of their living environment through a collective process and in a collaborative way. It provides opportunities to self-actualise. It promotes dialogue and joins action across social barriers. The support of respective local initiatives may be favourable for reaching these goals.

The importance of public space as a base for integrative cities is recognised at the international level, e.g., in the Sustainable Development Goals and the New Urban Agenda of the United Nations, as well as on the European policy level. This is reflected in an increasing number of documents and place-making networks, as well as institutions, which are founded across Europe (Laven and Bradley 2019).

The examples of Upton and Rieselfeld demonstrate that the active engagement of citizens in planning processes can stimulate place-making and the self-identification of inhabitants with their area. In another case, Vathorst, an urban extension of Amersfoort in The Netherlands, difference and variety was expressed in the masterplan, with the title 'A World of Difference'. The detailed plan consisted of different neighbourhoods, each of one with a distinctive character (URBED 2008; Cousins 2009). Eight different builders and around 50 different architects were involved. The individual development areas were quite small, with a maximum of 70 to 80 homes developed by one architect to ensure choice and variety (URBED 2012).

4.2.3. Integrated Urban Development

Integrated urban development (B3.) plays an important role in enhancing social integration. This refers to a comprehensive understanding of developing urban expansion areas, involving stakeholders from multiple sectors. This is a substantial change compared to the approaches followed some decades ago, when area-based planning and interventions in Europe mainly addressed the physical arrangements of urban development (Díaz et al. 2016). There are many European countries, which have introduced comprehensive national programmes for integrated urban development, e.g., Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Sweden, Switzerland and the United Kingdom (Federal Minister of Transport, Building and Urban Development 2012).

According to the German Institute for Urban Studies (Difu), quoted by the German Association of Cities (Deutscher Städtetag 2013, p. 9), urban development planning is "project oriented and implementation oriented, has a city-wide and/or more localised perspective, tends to be oriented towards combining sectoral objectives in an integrated context, and is characterised by a wide range of governance forms." It is "an informal, target-oriented and implementation-oriented strategic control instrument. Increasing uncertainty factors in forecasts and increasingly rapid changes in the framework of global and regional conditions are creating a growing need for adaptable strategies and planning processes. With its cooperative methods, integrated urban development planning broadens the system of ... planning and opens it up not only to civic engagement and participation, but also to market-oriented forms of action (e.g., urban development contracts, PPP, private-public project companies). ... Today, strategic and integrated urban development planning has become an essential precondition for efficient, future-oriented exercise of local authority planning powers" (Deutscher Städtetag 2013, p. 10).

An advantage of integrated urban development planning is that it provides a strategic vision with a long-term planning perspective for a whole city. It identifies specific priority action areas and defines the measures to be implemented. It fosters inter-sectorial collaboration and understanding, which is an appropriate response to planning and development challenges in times of increasingly interconnected and complex urban development processes. Lately, more and more programs have followed an integrated perspective, giving special attention to a combination of physical, environmental, social and economic measures. This has been vital for urban regeneration, but it is increasingly applied in cases where urban expansion is principally questioned for reasons of sustainability. One of the major issues of the approach is to draw all stakeholders together: citizens, public authorities, developers, trade associations, industries and academia. Additionally, a multi-disciplinary collaboration of between political and administrative levels, i.e., EU, national, regional

and local, is seen as crucial to maximise the impact of the interventions and reinforce the mutual benefits of the different projects.

Again, the previously mentioned examples of Upton, Vathorst and Rieselfeld can be taken as good practice examples here. For instance, in Rieselfeld, the local government applied an integrated urban development approach throughout the whole planning and implementation process. The integration of sectoral objectives included multi-modal transportation linkages, low-energy construction, district heating networks fed by a shared heat and power plant, the integration of solar energy, and a concept for ecological storm water management and rainwater use. Mixed land use provided advantageous living and working conditions in a city of short distances. Housing schemes ensured that a wide variety of income and age groups, including low-income groups and elderly persons, had access to housing in the area. The provision of local schools and green areas attracted young families. A variety of shops helped meet the everyday needs of the population. The social and cultural infrastructure encouraged social interaction (City of Freiburg 2012; Hoppe et al. 2008; Fastenrath and Preller 2018). Overall, the integrated urban development helped to create a vibrant and liveable community, with a balanced social mix, good connectivity, high-quality design and a green infrastructure network.

4.2.4. Collaborative Planning

Collaborative Planning (B4.) is an approach to the development of places in an inclusive and participatory manner. Despite already being a common practice in many cities, the approach was academically promoted by Patsy Healey in the 1990s (Healey 1997). Accordingly, planning should be done through face-to-face discussion and collaboration among those who have direct interests in or are directly affected by the planning results, e.g., within the framework of an urban expansion project. Following Innes and Booher, dialogue, networking and institutional capacity are key factors to maximise the effects of collaborative planning (Innes and Booher 2000, pp. 18, 19).

Nevertheless, the approach has also certain weaknesses. Usually, participation and collaboration are long and often complicated processes, which rarely show quick results. Moreover, the unrealistic assumption that conflicts would fade away and all problems could be solved through the exchange of ideas has been criticised (Holvandus 2014, p. 9). Nevertheless, the approach has proven to be a very successful in Europe.

Since the last decades of the 20th century, collaborative planning has become increasing popular, especially in the United Kingdom. For instance, in Upton, the local council and The Prince's Foundation carried out two "Enquiry by Design" processes

in 1999 and 2001.[7] The events allowed participants to articulate their aspirations for the upcoming urban expansion area. The final result of this collaborative planning exercise was a revised, socially integrative urban framework for the area (TCPA 2007; The Scottish Government 2010). Collaborative planning in Rieselfeld included the active involvement of citizens in a design competition. The winning proposals formed the basis for the design of the project, which incorporated the concerns of women and families, as well as of handicapped and elderly people (Siegl 2009).

4.2.5. Area-Based Community Development

Area-based community development (B5.) defines an area, rather than a sector or target group, as an entry point for social integration. Community members are seen as active change agents rather than passive beneficiaries or clients, participating in the decisions that are made to upgrade their places or improve their quality of life. The objective is to create "the conditions for a just, inclusive and sustainable society by supporting communities to engage in collective action" (European Community Development Network 2014, p. 5).

Methods include community meetings, festivals and streets gatherings, conflict resolution, story dialogue, focus groups, future visioning, alliance building, and engaging with public bodies. For example, in Wester Hailes, Scotland, a peripheral housing estate of Edinburgh characterised by high unemployment, low levels of educational attainment and social pathologies, the Wester Hailes Health Agency has a long-standing tradition of working with local people to tackle health and other inequalities. The organisation ensures that the voices of local people are reflected in its strategic work with health services and the local authority (European Community Development Network 2014).

Similarly, in the Rieselfeld expansion area in Freiburg, community development played an important role in guiding the planning process, even before the new urban area was developed. The involvement of the future inhabitants in planning strengthened the sense of ownership of the new urban expansion area, and it contributed to creating a diverse urban district, both physically and socially. For the work within the district, a charitable association, "Quartiersarbeit von K.I.O.S.K", an acronym for Contact, Information, Organisation, Self-Help, Culture, was established. The association became a point of address for the diverse planning stakeholders and simultaneously received residents' suggestions and requirements on diverse issues. The opening of a K.I.O.S.K. shop containing a post office and bakery during the construction stage of Rieselfeld provided a central contact point

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[7] The Prince's Foundation is an educational charity, established in 1986 to improve the life quality of people by teaching and practicing ecological ways of planning, designing and building.

for the new residents. Moreover, third-party funds, e.g., for job creation schemes, employment promotion and research, could be mobilised, and many people could work on the project continuously.[8] In 2003, the new district meeting point "Glashaus" was inaugurated including a media library, a café and youth rooms.[9]

The community development process conducted in Rieselfeld has helped to increase the sense of ownership at an early stage of planning, which contributed to the wide acceptance of the project, both in the political realm and in the city district itself (Mahzouni 2018). K.I.O.S.K. has been an incubator for promoting social integration since its beginnings.

5. Conclusions: New Impulses for Controlling Urban Expansion and Promoting Social Integration in Urban Expansion Areas in China?

As in many parts of the world, urban expansion in Europe and China has mainly been driven by economic factors. Both determinants of urban development, urban land use and economic growth, are closely coupled. However, in recent decades, discussions in Europe have focused on ways to limit urban sprawl for the sake of sustainable development and climate change mitigation. On the contrary, rapid urban growth is still in full speed in China. The Chinese national government has supported urban expansion in order to foster economic growth and modernisation in the country, although recently, concerns regarding housing oversupply and endangered food security due to the loss of fertile farmland have been growing. Local governments have profited a lot from expansion policies, as they have been able to generate large parts of their income through auctioning land-use rights to developers.

With the NUP, the Chinese government has initiated a turnaround, from "high-speed" to "high-quality" and from "land-centred" to "people-centred" urban development. This largely coincides with growing social concerns in European countries and with the focus on people-centred and environmental policies in the European Union. Moreover, many cities have carried out local urban development experiments in this regard, and there is a plethora of experiences to share.

This article has taken a closer look at European socially integrative urban expansion practices. After a thorough analysis of urban expansion processes in China and Europe, types of urban expansion and approaches to limit the encroachment of urbanised area on rural land were identified and discussed. There are many differences in detail, e.g., regarding legal instruments and concrete measures.

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[8] https://www.nationale-stadtentwicklungspolitik.de/NSP/SharedDocs/Projekte/WSProjekte_ENG/Freiburg_Rieselfeld_QuartiersaufbauRieselfeld.html (accessed on 12 July 2020).

[9] http://kiosk.rieselfeld.org/glashaus/ (accessed on 12 July 2020).

However, in general, the approaches to limit urban expansion have proven to be rather similar.

Urban land-use planning plays a big role in Europe and in China. In China, it is a decisive instrument for encouraging and controlling the growth of cities. It goes hand-in-hand with land policies and respective land management instruments to limit the conversion of rural into urban land. Urban masterplans may have to be re-visited in order to strengthen quality-oriented urban development approaches, placing emphasis on urban design principles fostering diversity and local identity, and to link urban planning more closely with more flexible and sustainability-oriented land management practices.

Regional stipulations, e.g., regarding spatial growth limits or land quota, have an influence in many European and Chinese cities. Containment targets may provide a general framework for action. Administrative reforms in Europe have helped to create larger regional entities, which, in China, already largely correspond to the "city" notion as such. Chinese cities usually extend over a rather large territory, which, besides the central urban area, comprises large surrounding rural areas with smaller cities, towns and villages. Administrative reforms may provide better opportunities for land-use control, but they also may encourage local governments to expand even faster and farther, particularly in less dynamic cities.

Finally, other new approaches to limit urban expansion and sprawl, such as tradable development rights, are under discussion or experimental application in both parts of the world. Without going into further detail and discussion here, there are signs that China is rather open to encouraging respective large-scale experiments in some of its cities. For example, the national government has authorised a number of provincial-level governments, among them large-scale cities like Chengdu and Chongqing, with their 18 and more than 40 counties and districts, respectively, to develop their own land quota markets or related systems. In these cases, quotas can be traded across jurisdictions, albeit within certain administrative boundaries, or banked for future use (Xiao and Zhao 2015). However, in such cases, one should be aware of the dimensions of large-scale pilot experiments in China in comparison to European examples. The City of Chengdu stretches over a little less than 15,000 km^2, i.e., precisely 14,335 km^2, which equals almost half of the size of Belgium. The area of the City of Chongqing is more than 82,000 km^2, i.e., precisely 82,402 km^2, is almost equal to the size of Austria. There are also many possibilities and good practice examples in Europe and China of fostering social integration in urban expansion projects. However, in both parts of the world, they are not yet mainstream. As the good practice examples from Europe demonstrate, creative, people-based design codes and zoning plans can help to avoid uniformity of urban expansion areas. Related experiments, involving the local population, have also started to be implemented in Chinese cities at the local level. Such endeavours could be

supported by Urban Planning Exhibition Halls, which exist in all large Chinese cities. Instead of limiting their role to mere, though impressive, showcases, or information and education centres regarding urban development, they could take over supportive functions concerning beginning public debates about future options for urban development and encourage public participation in designing the future of their urban environment.

The division of large development areas into smaller parts, and the respective involvement of multiple planning entities and developers, can raise competition and innovation within one development area. It can also help to avoid or get away from uniform solutions to urban expansion. While there are several good practice examples in Europe, the adaptation of similar approaches may be much more difficult in China. This is, on the one hand, due to centralised planning processes where masterplans for strategic urban development areas and projects are designed by a relatively small number of planning institutions, which seem to apply a limited array of design principles. On the other hand, one has to take the interests of large urban development firms into account, which are used to develop and implement large-scale projects rather than small-scale urban development projects. Nevertheless, ongoing experiences with urban renewal activities of much smaller sizes may have an impact on urban expansion approaches in the future.

The participation of future residents in the design may foster identity and a sense of place. Place-making is of the utmost importance to create quality public areas, which attract inhabitants and foster communication and social interaction. This is a point of special relevance not only in Europe but also in China, where the people-centred urbanisation is geared towards more active involvement of local communities in urban development. However, to date, it has not been clear which level of public participation in urban development, i.e., information, consultation or decision-making, China is looking for.

Integrated urban development planning will draw the attention of authorities and developers from the "construction of" to "living in" an expansion area. Nevertheless, it requires a lot of cooperation and coordination of the different stakeholders involved in urban development, including public authorities, developers and service providers. There is ample experience in Europe and in China in bringing different stakeholders together. Nevertheless, approaches are needed which are strategic and flexible at the same time, i.e., which allow the development of long-term visions, and keep options open to adjust to short-term necessities.

Collaborative planning at an early stage of developing new urban expansion areas, which involves all stakeholders, including residents, lays the foundation for the provision of new opportunities to build up social capital and joint understanding. This is a lesson from related projects in European cities. Wherever citizens were directly involved at an early stage in the design of new urban expansion areas, these

areas became more people-oriented and geared towards satisfying the expressed needs of their future population. In China, there are some attempts to involve residents in urban planning more intensively. However, related model projects are still primarily oriented towards urban renewal. European good practice examples demonstrate that intensive public participation in urban expansion is a worthwhile undertaking, which can contribute to making new expansion areas more socially integrative from the beginning.

Finally, community development, which goes beyond the activities of the existing Street Offices and Urban Residents Committees in China, may foster more interest by residents in urban-development-oriented social interaction, create social capital, help inclusion, and enhance empowerment and self-reliance in new urban expansion areas. However, before tackling the Committees' potential in this regard in China, certain challenges would have to be dealt with (Audin 2015). These include the creation of a fair sharing system in terms of budgeting with upper-level authorities, which is accordingly fitted to their respective responsibilities and services. Moreover, they would have to be appropriately equipped and prepared for the new additional task.

The examples of Rieselfeld in Freiburg (Germany), Vathorst in Amersfoort (The Netherlands), and Upton in Northampton (United Kingdom), and others, which stand for a plethora of many more recent good practice examples in Europe, have demonstrated that approaches to create socially integrative cities are no longer just theory, but also a well-acknowledged practice and reality in many countries. They help to customise new urban areas according to the aspirations and needs of their inhabitants. Overall, they guarantee not only favourable living conditions, but also well-being, liveliness and social interaction in new urban expansion areas, thus substantially contributing to urban sustainability.

Author Contributions: P.S. is the main author. She was responsible for field research and the interpretation of information. She wrote the first draft of the article and commented on the second draft. B.M. participated in fieldwork, commented on the first draft and prepared the second draft of the text. P.S. and B.M. contributed equally to the writing of the final text. J.C. organised and participated in fieldwork activities, and worked on the Chinese part of the article. He commented on the first and second draft of the article and contributed to the final text. E.M. contributed text on the Chinese situation during the whole elaboration process.

Funding: This research was funded by the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 770141.

Acknowledgments: The authors want to thank the editors of the book for their comments and suggestions.

Conflicts of Interest: The authors declare no conflict of interest. The founding sponsors had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, and in the decision to publish the results.

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