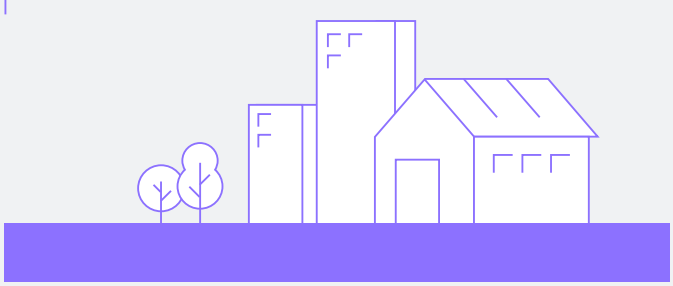
HANDBOOK of CONTEMPORARY PLANNING INSTRUMENTS

Towards Inclusive Urban Growth

Instruments for Compact,
Mixed-Use Urban Development and Affordable Housing



KRIHS
Korea Research Institute for Human Settlements

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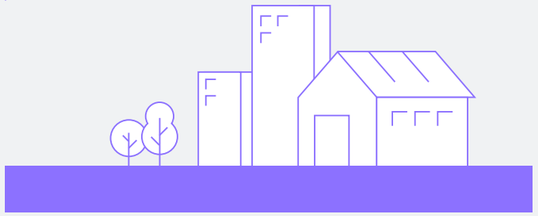

Federal Institute for Research on Building, Urban Affairs and Spatial Development

within the Federal Office for Building and Regional Planning

KRIHS

Korea Research Institute for Human Settlements

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Handbook of Contemporary Planning Instruments: Towards Inclusive Urban Growth – Instruments for Compact, Mixed-Use Urban Development and Affordable Housing
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Authors
Hye Jung PARK (KRIHS) (hjpark@krihs.re.kr)
André MUELLER (BBSR) (andre.mueller@bbr.bund.de)
So Young LEE (KRIHS) (soylee@krihs.re.kr)
Andrea JONAS (BBSR) (andrea.jonas@bbr.bund.de)
Jiin NAM (KRIHS) (jinam@krihs.re.kr)
Iris AMMANN (BBSR) (iris.ammann@bbr.bund.de)

Handbook Reading Guidance
The Handbook of Contemporary Planning Instruments follows a multi-folded strategy: It sketches the essentials of the planning systems of South Korea and Germany in the same way as it draws the reader's attention to the challenges that the development of communities, cities and regions in both countries face – currently and in future. Case studies of Germany and South Korea illustrate possible responses to these challenges by focusing on planning tools for achieving affordable housing, a proximity of jobs, housing and access to amenities as well as compact and mixed-use urban development. Although comparing the planning systems of both countries is a complex task, the handbook drafts similarities and differences of both situations in the same way as it formulates recommendations for respective policies, programmes and planning toolboxes. Its conclusionary chapter addresses both, decision-preparers and decision-takers in South Korea and Germany, and interested parties worldwide. The text incorporates original terminology, marked in italic, for reasons of traceability and accountability.
This handbook builds on the existing "Toolbox. Approaches and planning instruments for more density, mixed-use development and affordable housing" for German and US Cities (TSPA 2024).

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01

Challenges in Urban Development as Background of This Handbook

Challenges in Urban Development as Background of This Handbook

Housing is a critical factor influencing the socio-economic stability of households. Rising housing prices and widening disparities in housing wealth exacerbate social inequality, posing a significant barrier to sustainable growth. Addressing housing instability and asset inequality has become a policy priority worldwide, and South Korea and Germany are no exception.

Figure 1
Central Housing Indicators in South Korea and Germany (OECD 2025 a; OECD 2025 b)

Indicators	South Korea	Germany
Social rental housing stock in % in 2020	8.9	2.7
Overcrowded households among low-income households[1] in % in 2020	5.0	15.0
Households amongst low-income households overburdened by mortgage[2] in % in 2020	21.0	24.0
Share of household owner outright in % in 2020	59.0	26.0
Share of rents at market prices of the private rental market in % in 2020	32.0	47.0
Share of rents at reduced / subsidised prices in % in 2020	5.0	7.0
Ratio of housing prices to rent prices in 2024 (index 2015 = 100)	108.4	115.0
Ratio of housing prices to income in 2024 (Index 2015 = 100)	78.9	108.9
Ratio of housing prices to real housing price indices in 2024 (Index 2015 = 100)	92.1	115.8

1.1 The situation of affordable housing

1.1.1 Characterising the situation in South Korea

Since 2015, South Korean housing policy has shifted from emphasising large-scale development and supply to improving quality of life and expanding housing welfare, as the national housing supply rate surpassed 100% (Lee et al. 2020). However, despite continued provision of housing, vulnerable groups still struggle to secure stable living conditions. This stems from a mismatch between supply and demographic or regional needs, as well as steep rent increases in the private rental market.

In recent years, South Korea's housing market has experienced the combined effects of rapid price escalation, interest rate volatility, and stagnant household incomes. These factors have intensified the burden of homeownership (Kim and Kim 2024; Park et al. 2021). Housing affordability and sustainability cannot be resolved through a single solution. Beyond quantitative supply, qualitative aspects must be considered to accommodate diverse household types, including single-person households, young adults and the elderly. Current housing policies tend to target only young adults or newlyweds, leaving out many other groups that require support (Lee et al. 2020).

1) Share of overcrowded households among low-income households in %; a household is considered to be overcrowded if there is not at its disposal a minimum number of rooms as one room for household activities, one room per adult couple, one room for each single person aged 18 years and more, one room per pair of single persons of the same sex between 12 and 17 years of age, one room for each single person between 12 and 17 years of age not included in the previous category and one room per pair of children under 12 years of age (OECD 2025 a)
2) Share of population in the bottom quintile of the income distribution groups spending more than 40% of their disposable household income on mortgage in %

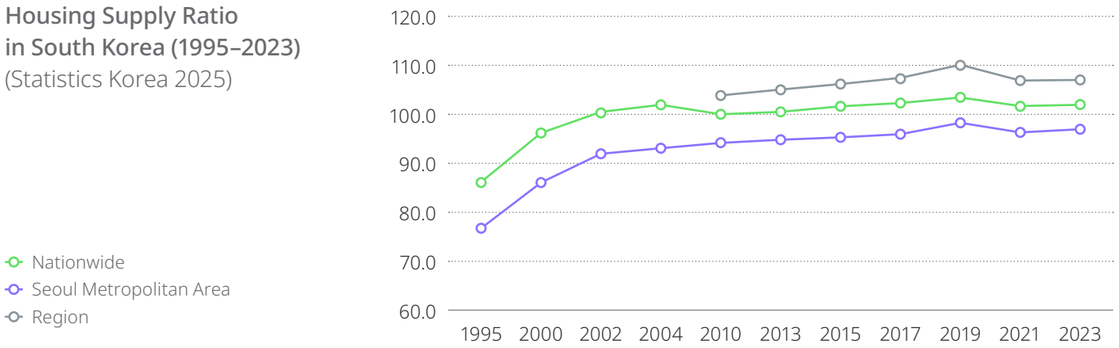
Alongside affordability, regional housing disparity has emerged as a major issue. Demographic shifts – such as population inflows to metropolitan centers and outflows from non-metropolitan regions – create mismatches between demand and supply. This mismatch can drive prices upward in growing cities and downward in shrinking areas, widening the gap between the Seoul Metropolitan Area and the rest of the country (Baek and Noh 2020; Kim and Seo 2022; Kim 2015). If housing policies continue to focus disproportionately on metropolitan areas, regions with declining populations may face worsening housing instability and rising vacancy rates.

Housing supply trends

Aligned with five-year economic development plans, the government constructed a large number of housing units. New town developments and mass apartment construction provided more stable housing opportunities for middle- and lower-income families. However, the government's reduced role in the housing sector – combined with volatile interest rates, fluctuating housing prices and population shifts – has left affordability challenges unresolved (Lee et al. 2020).

The national housing supply rate – the ratio of housing stock to the number of households – has remained slightly above 100% since 2002, indicating that, overall, the number of housing units exceeds the number of households. However, significant regional disparities remain. In the Seoul Metropolitan Area, the supply rate stays below 100%, reflecting a persistent structural shortage, whereas in many non-metropolitan regions it has risen above 110%, indicating relative oversupply (see Figure 2).

Figure 2
Housing Supply Ratio in South Korea (1995–2023)
(Statistics Korea 2025)



	1995	2000	2002	2004	2010	2013	2015	2017	2019	2021	2023
Nationwide	86.0	96.2	100.6	102.2	100.5	101.3	102.3	103.3	104.8	102.2	102.5
Seoul Metropolitan Area	76.7	86.1	91.6	93.9	96.4	97.3	97.9	98.3	99.2	96.8	97.2
Region	–	–	–	–	104.3	105.1	106.5	107.9	110.1	107.4	107.7

Evolution of housing affordability and regional inequality

Housing affordability in South Korea shows stark regional contrasts: While overall housing stock slightly exceeds the number of households, severe shortages and price burdens persist in Seoul and other high-demand cities. Key indicators such as the Housing Affordability Index (HAI) and Rent-to-Income Ratio (RIR) reveal that housing costs remain disproportionately high relative to income, highlighting that adequate housing supply alone does not guarantee affordability.

The Korea Housing Affordability Index (K-HAI)[3] measures the loan repayment burden for a median-income household purchasing a median-priced home with a standard mortgage. A higher K-HAI value indicates greater repayment burden and lower affordability. Values exceeding 100 reflect costs above the affordable threshold. Over the past decade, the national K-HAI has generally ranged between 50 and 80, with the exception of 2022, when it slightly exceeded 80 (see Figure 3). In 2025, regional disparities are particularly pronounced (see Figure 4): While the national K-HAI stands at 62.8, the Seoul Capital Area records 155.7, indicating a severely unaffordable market.

[3] $\text{K-HAI} = \frac{\text{Available Income for Loan Repayment}}{\text{Median Household Income}} \times 100$

Figure 3
Housing Affordability Index in South Korea (2004–2025) (Nationwide)
(Korea Housing Finance Corporation 2025)

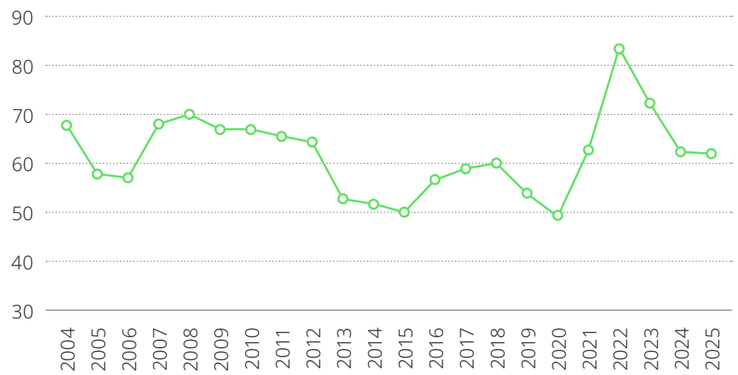
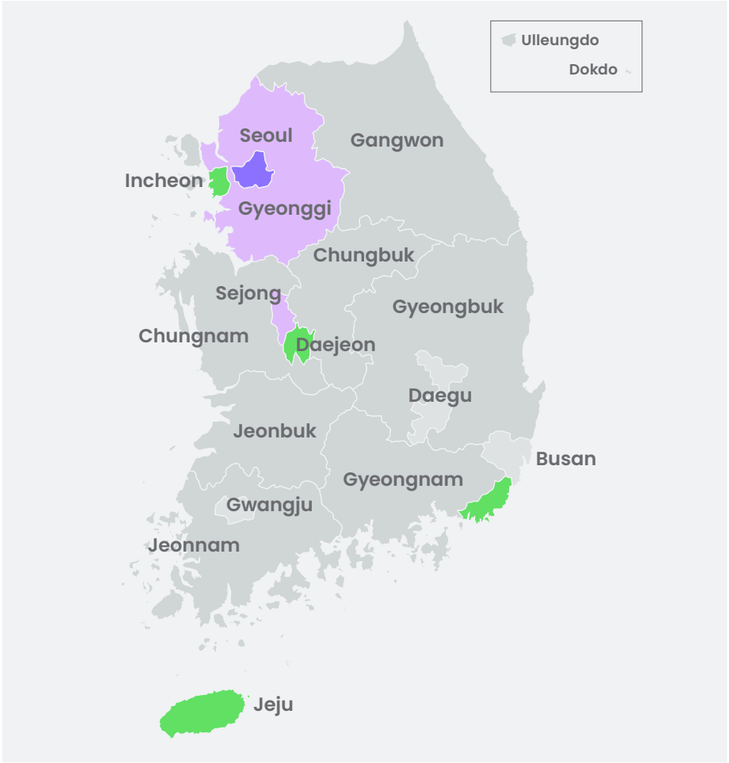


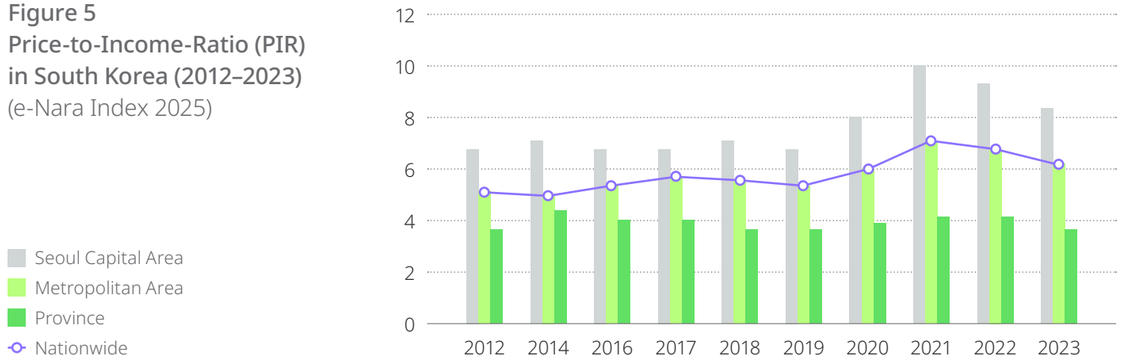
Figure 4
Korea Housing Affordability Index (2025) (Regional)
(created by the authors with reference to Housing Finance Statistics)



The Price-to-Income-Ratio (PIR)[4] measures the ratio of median housing prices to annual household incomes. A PIR above 5–6 is generally considered indicative of high affordability pressure (UN-HABITAT 2021). As shown in Figure 5, the Seoul Capital Area and other metropolitan regions register PIR values exceeding 5. Notably, since 2020, both the Seoul Capital Area and several other metropolitan regions have surpassed the national average, underscoring widespread affordability challenges beyond the capital.

[4] PIR = Median Housing Price / Annual Household Income

Figure 5
Price-to-Income-Ratio (PIR) in South Korea (2012–2023)
(e-Nara Index 2025)



From a nationwide perspective, housing affordability may appear manageable, but significant regional disparities persist. Mismatches between supply and demand – both geographically and across demographic groups – continue to threaten housing stability. Indicators such as the K-HAI and the PIR demonstrate that sufficient housing stock does not guarantee accessibility or affordability, particularly when costs rise faster than household incomes. Addressing these challenges requires moving beyond aggregate supply strategies toward more nuanced and inclusive policies that respond to diverse household needs, mitigate regional imbalances and promote long-term sustainability.

1.1.2 Characterising the situation in Germany

The spatial and urban dimension of affordable housing in Germany and its challenges

Germany is a country of – almost simultaneously – growing and shrinking cities (and regions). Figure 6 shows these growing and shrinking processes in Germany over time from 2017 to 2022 (BBSR 2025 c).

Figure 6
Growing and Shrinking Cities in Germany (2017–2022) (BBSR 2025)

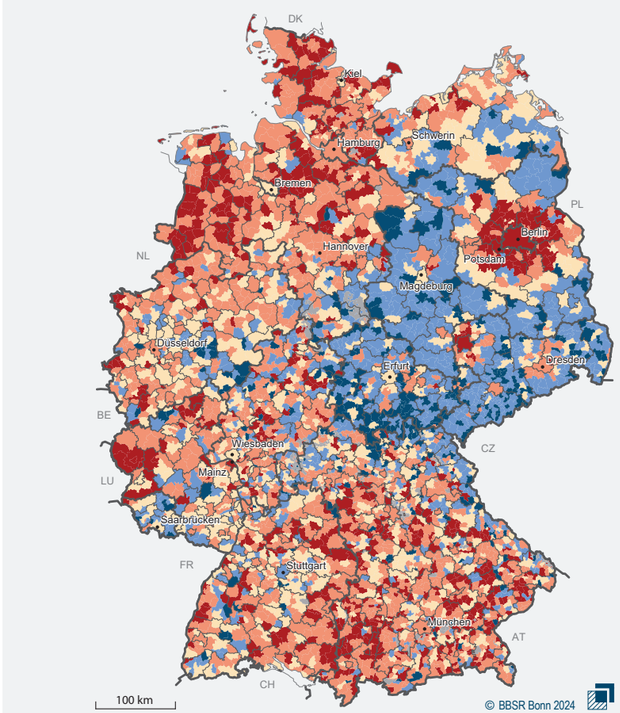
Six development indicators involved:

demographic indicators (double weighting):
- demographic development 2017-2022
- net migration 2017-2022
- development of persons able to participate in gainful employment 2017-2022

economic indicators (simple weighting):
- employment 2017-2022
- change of unemployment rate 2016/17 – 2021/22 (depending on the unemployment figures)
- development of the basic trade tax yield 2016/17 – 2021/22

Classification of development indicators into the lowest (0 points) to the highest quintile (4 points) based on the total number of points
- exceedingly growing: 19 to 24 points
- growing: 14 to 18 points
- no clear development trend: 11 to 13 points
- shrinking: 6 to 10 points
- exceedingly shrinking: 0 to 5 points

Growing and shrinking municipalities 2017–2022
- exceedingly growing
- growing
- no clear development trend
- shrinking
- exceedingly shrinking
- unincorporated areas



Data source: Spatial Monitoring System of the BBSR
Geometric basis: VG5000 (unions of municipalities), as of 31/12/2022 © GeoBasis-DE/BKG
Author: T. Pirsig

In parallel to growing and shrinking cities, Germany is characterised by a constantly increasing demand of housing units. According to BBSR's latest forecast (in German *Wohnungsbedarfsprognose*) and referring to the period from 2023 to 2030 approximately 320,000 housing units will have to be built per year (BBSR 2025 d).

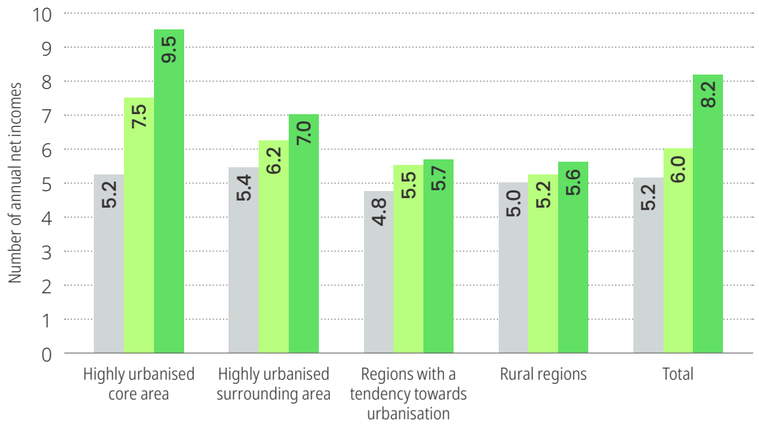
The housing market in Germany

Germany's housing market may be characterised by the fact of a large tenant market (BBSR 2023 b; Deutscher Bundestag 2025). The homeownership rate in 2022 amounts to 41.9%. In cities like Berlin (15.9%) or Hamburg (20.3%) it is much lower (DESTATIS 2025 c). The German homeownership rate is one of the lowest in Europe (OECD 2024). Considering homeownership, the Price-to-Income-Ratio (PIR) in Germany rose, generally speaking, from 5.2 (2008–2011) to 8.2 annual net incomes (2018–2021) (see Figure 7).

In 2022, tenant households in Germany spent 27.8% of their disposable household income on rents. Rents increased from 2010 to 2024 from 6 to 11 EUR per m^2 (BBSR 2025 a).

Another challenge of Germany's housing market is the fact that the number of subsidised housing units constantly declines. Between 2006 and 2024, the number decreased from 2,09 million to 1,04 million units (BMWSB 2025; Fach-kommission Wohnungsbauförderung 2025). Germany's housing market is not only challenged by high – and for many residents nearly unaffordable – costs of housing, but also by vacancies. Apart from growing prosperous metropolitan regions with a shortage of affordable housing, vacancies tend to be problematic in rural areas, particularly in the eastern part of Germany (see Figure 6). In 2022, the general vacancy rate in Germany was 4.3% or 1,9 million housing units (BBSR 2024). Vacancy rates are especially high in shrinking cities.

Figure 7
Development of the Price-to-Income-Ratio in Germany (2008–2021)
(BBSR 2023 b)



* Total house price costs including development costs and incidental costs, refurbishment costs excluded

Data source: Housing Market Monitoring System of the BBSR; Infratest/Kantar: home ownership development in Germany, various surveys between 2008 and 2021 (home ownership development

Non-neglectable vacancies and sky-rocketing land prices obviously create a mismatch in offers of housing units. In addition, the number of subsidised housing units is in retreat. Living expenses increase and the percentage of housing and energy costs of the disposable household income is on the upward move. Construction and energy costs, almost constantly, rise and remain at a high level, due to global framework conditions and particularly those in Europe, in the same way as buffers of building lots melt down. Financing housing projects has become a challenging endeavour, because the European Central Bank raised significantly and at high-speed prime interest rates in order to keep down the inflation rate, increased due to the COVID-19 Pandemic and a war in Europe. Nevertheless, Germany has a high standard in protecting tenants' households and relatively high building quality standards.

Conclusion addressing policies and planning instruments

Growing regions and cities might call for different policies, instruments and solutions addressing the housing situation than cities and regions being characterised by a growing momentum only or even a shrinking one. As the number of subsidised housing units decreases, a demand for subsidised housing units, generally speaking, exists. That goes as well for a more powerful position of municipalities and the public sector in the housing market. Regulations protecting tenants' households and supporting new housing constructions at the same time seem to be required more than ever.

Textbox: Definition of affordable housing in Germany

There is no one-size-fits-all definition of affordable housing in Germany. The National Statistical Office DESTATIS states that the overburdening of housing costs correlates with the disposable income of a household. Accordingly, if a household in Germany spends more than 40% of its available household income, the respective situation might be called overburdening or unaffordable (DESTATIS 2025 b:1). Another aspect relates to those being granted a subsidised housing unit: A group of criteria, e.g. household income, household size, number of children living in the household, determines whether a subsidised housing unit may be assigned or not. According to DESTATIS, around 16% of all tenant households had to spend more than 40% in 2024. Particularly single households (32.7%), households in cities with more than 100,000 inhabitants (28.9%) and households having moved in a new rental unit after 2019 are affected and spend more than the average on rents in Germany. The average percentage of overburdened households in the European Union is at 8.2% (DESTATIS 2025 d).

1.1.3 Analysing similarities and differences of both countries

Similarities

- South Korea and Germany both face rising housing costs in prosperous metropolitan areas, resulting in an often overburdening of the disposable household income. Apart from large costs of housing in metropolitan areas, high vacancy rates constitute in both countries a central challenge in depopulated and often rural parts.
- The share of subsidised rents remains relatively low in both countries, with 7% in Germany and 5% in South Korea. The Price-to-Income Ratio (PIR) exceeds in both countries significantly 6 annual net incomes.
- Despite unfavourable global framework conditions, both countries have taken measures to counteract these trends: South Korea concentrates its efforts particularly on the overstressed situation in metropolitan areas while Germany supports an increase of its social rental housing stock in all parts of the country.

Differences

- Whereas Germany is characterised largely by a tenant housing market, South Korea shows a higher amount of housing ownership.
- The national level in South Korea dominates support programmes for subsidising housing units, whereas in Germany basically the 16 Länder carry out those programmes.
- Although both countries concentrate their support programmes on low-income households, Germany addresses the high vacancy rates in shrinking cities and regions with some – predominately growing – cities in Germany applying the planning instrument of socially just land use. South Korea takes respective steps particularly towards low-income youth households.

1.2 The need for a proximity of jobs and housing and access to amenities

1.2.1 Characterising the situation in South Korea

TOD in South Korea and the current situation: Green equity and accessibility

Considering new urban development with access to public transport, the planning tool of Transit-Oriented Development (TOD) was introduced in South Korea as a concept of a connecting plan between Seoul and New Towns within the metropolitan area, as the first subway construction plan was commenced in early 1980s. The first New Towns (1990s) in South Korea were evaluated to meet the TOD criteria (Vongpraseuth and Choi 2020).

In the late 1990s, the concept of TOD that expanded to include bus stops as well as railway (stations), began to be applied in development plans. Along with this change, the importance of green transportation had been increased as well as land use (Park 2010). The demand for a carbon-neutral city along with TOD has occurred considering the energy consumption in the urban area with heavy congestion (Seo 2011).

The guarantee for pedestrian-friendliness and accessibility by walk in TOD projects in Korea was also highlighted as part of restructuring the urban spatial structures (Park 2016). However, there were shortcomings in the effective corporation of reflecting feeder public transportation, walkability and cycling into the actual mobility system (Moon and Rho 2011). Recent TOD projects in Korea place greater value on the connectivity to sustainable transportation modes such as walking and cycling in order to alleviate the traffic congestion caused by gradually increased land use density. In addition to a large-scale TOD project such as the recently implemented East Daegu Station Transit Complex and Surroundings, youth housing projects that prioritise walkability are also being carried out across Seoul.

Future requirements in TOD

As of 2022, the public transportation share in Seoul stood at 65.3%, while subway shared 44.7%. Given this high proportion of public transportation usage, TOD in metropolitan areas is regarded as a necessity over an option. Looking ahead, TOD development in large (metropolitan) cities including Seoul – particularly in metropolitan areas that have undergone an initial development phase and now are processing redevelopment or new land use plans – requires proper integration with redevelopment plans (Seo 2021). In this regard, the importance of 'equitable' TOD needs to be further emphasised. Towards the value of 'equity', sufficient policy support is required to mitigate the expansion of TOD hub, thus, the side effects from high-density development.

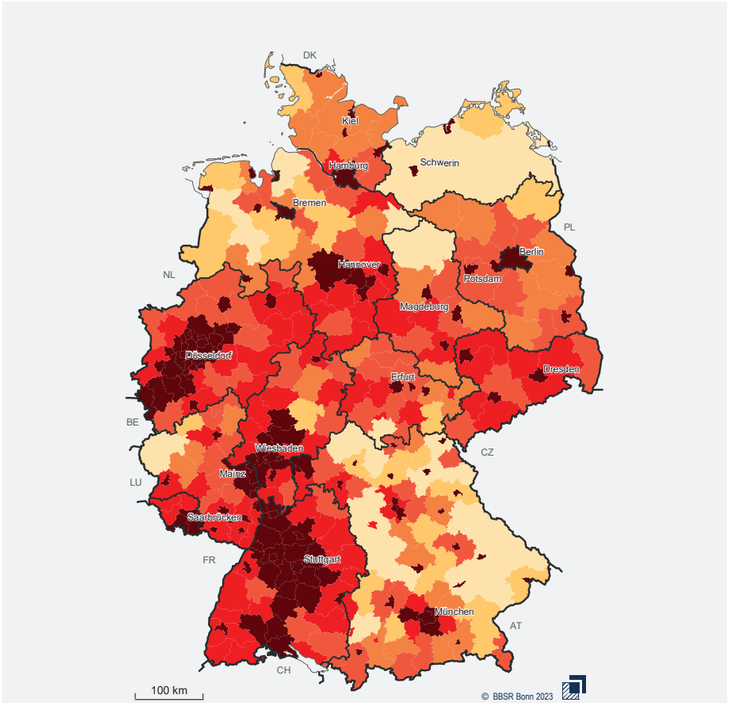
In Seoul, the recently introduced station area revitalisation project (implemented in the form of urban renewal-type redevelopment) has been promoting the revitalisation of relatively underdeveloped or declining areas surrounding subway stations, while also creating additional (affordable) housing. In this way, existing transit-oriented hubs are being reassessed and restructured.

1.2.2 Characterising the situation in Germany

The spatial and urban dimension of job proximity and amenity access in Germany and its challenges

Thanks to the public transport system, cities are relatively well accessible in Germany. The settlement development along public transport train tracks (in German *Siedlungsentwicklung entlang der Schiene*) is inherent part of regional planning processes. As of 2017, the modal split in Germany comprised 57% of motorised individual traffic (single travel and co-travel), whereas public transportation summed up to 10%, cycling to 11% and walking to 22%. In metropolitan areas, the public transportation share is higher (21%, as of 2023) (infas et al. 2025:15). Generally speaking, approximately 90% of the population of Germany have access within walking distance to at least one public transport station with such a daily frequency (see Figure 8a, BBSR 2023 a).

Figure 8a
Population Living in the Neighbourhood of Public Transport Stops
(BBSR 2021)

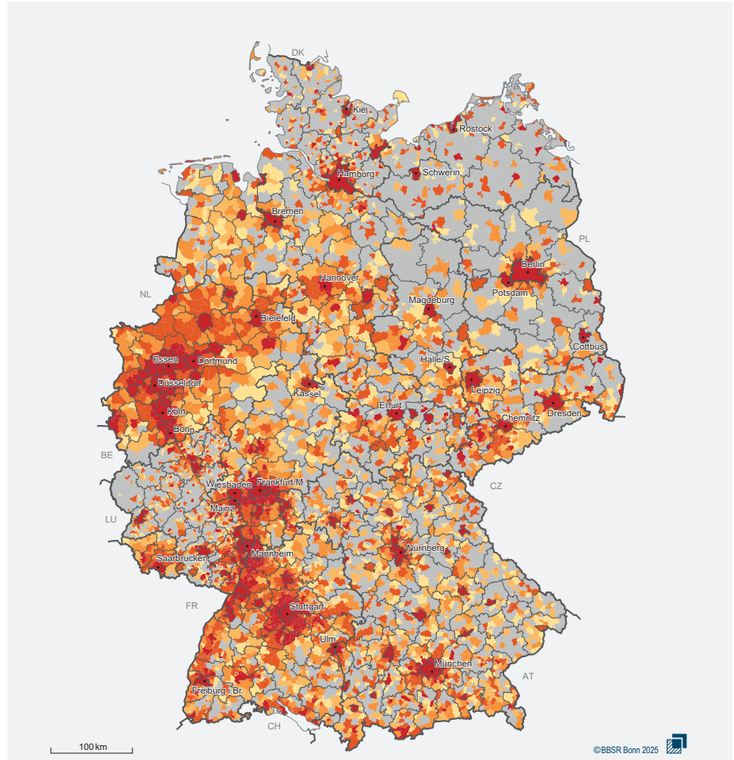


Share of the population living within a straight line distance of 600 metres maximum to a bus stop and 1,200 metres maximum to a train station with at least 20 departures per working day 2022 in %

- under 55
- 55 to under 65
- 65 to under 75
- 75 to under 85
- 85 to under 95
- 95 and over

Database: HaCon Ingenieurgesellschaft mbH, Spatial Monitoring System of the BBSR
Geometrical basis: districts (generalised), 31/12/2021 © GeoBasis-DE/BKG
Author: T. Pütz

Figure 8b
X Minute City
(Population-Weighted)
(S&W Stadt- und Regionalforschung 2025)



X-Minute City(population weighted)

- 10-minute city
- 15-minute city
- 20-minute city
- 25-minute city
- 30-minute city
- other residential location

Data source: S&W 15 MC model, © GeoBasis-DE/BKG 2023 regarding the administrative boundaries

Germany is a polycentrically structured (and organised) country with a comparatively dense railway network. Housing rents generally increase the closer they are connected to transit areas. This fact constitutes a challenge, especially in prospering cities, because lower income households particularly depend on the access to public transport. Pent-up investment in infrastructure obviously contributes to this challenge in the same way as the attitude of NIMBY (Not in My Back Yard) jeopardises new railway and housing construction.

Currently, two-in-one planning instruments seem to be on the table of both, practitioners and academia: TOD and eTOD (Dwight 2016). Whereas TOD stands for Transit-Oriented Development, i.e. the development of urban areas alongside and around transit stations of public (mostly railway-based) stations, eTOD enlarges the terminology to Equitable Transit-Oriented Development. First tested in, amongst others, the City of Chicago and its surrounding region, eTOD aims at counterbalancing the effect (and reality) of rising housing rents and land prices in areas around transit stations as well as the (mostly) constant demixing of initially mixed-use areas (City of Chicago 2025). Whereas TOD (under different technical terms) has been used in Germany for many years, no German city is currently applying eTOD principles.

Conclusion addressing policies and planning instruments

The notion of eTOD seems promising in overcoming the obstacles that TOD unintentionally creates. The planning focus should thus be put on the intersection of transport and housing, counterbalancing the rise of land prices in areas around transit stations and the dissolution of the mix of use in these areas. As there is no one-size-fits-all solution, each transit area might request its own approach to a new mixed-use and dense (re)development. Furthermore, it seems mandatory that planning new transit areas and their housing units shall be communicated with all citizens at the earliest planning stage possible.

1.2.3 Analysing similarities and differences of both countries

Similarities

- Germany and South Korea both look back at a longer planning history of combining transport and settlement development and thus the proximity of jobs, housing and accessible amenities in the sense of TOD. Whereas TOD was introduced explicitly in South Korea as planning instrument to connect the Seoul Metropolitan Region with New Towns in the early 1980s, TOD has been known for many decades in Germany implicitly as part of regional and local planning.
- Both countries are in favour of sustainable transport modes, though the modal split differs significantly.
- Counteracting the unintentionally negative effects of TOD (e.g. increasing land and housing prices, decreasing mixed-use) – by applying equitable planning means, revitalisation projects around transit stations and support programmes – seem to be acknowledged in both countries, though a necessity in South Korea rather than an option in Germany.

Differences

- Whereas the modal split in Germany attributes 57% to motorised individual traffic, 10% to public transport, 11% to cycling and 22% to walking (with a share of 21% in public transport in metropolitan areas), people in South Korea seem to be in favour, at least in the Seoul Metropolitan Region, of using means of public transport (65%).
- Prioritising walkability by implementing particular youth housing projects seems to guide new redevelopment projects in South Korea, whereas some Länder in Germany focus on building new urban development projects close to train stations (e.g. the Land Use along Railways Initiative in North Rhine-Westphalia, in German *Siedlungsentwicklung entlang der Schiene*). The polycentric settlement structure of Germany obviously requires a different approach towards mobility than the settlement structure of South Korea with a focus on the Seoul Metropolitan Region.
- Whereas public participation is an inherent part of transport as well as settlement planning in Germany and thus often prevents respective projects from being implemented (entirely or time-wise), public participation seems to be a catalyst for restructuring former TOD-related projects in South Korea and thus adding an equitable notion.

1.3 The role of compact and mixed-use urban development and integrated urban development

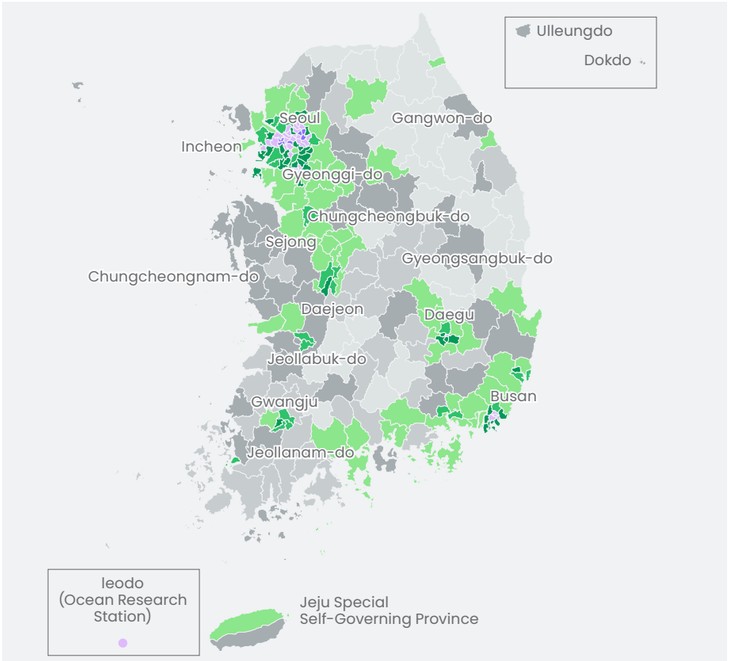
1.3.1 Characterising the situation in South Korea

Land use in South Korea is regulated primarily through the National Land Planning and Utilization Act (in Korean *국토의 계획 및 이용에 관한 법률*) and the Building Act (in Korean *건축법*). Within this framework, land is designated into Special-Purpose Areas (in Korean *용도지역*, use districts), Special-Purpose Districts (in Korean *용도지구*, overlay districts), and Special-Purpose Zones (in Korean *용도구역*, use zones). While these instruments have long provided a comprehensive framework for guiding urban development, their cumulative effect has been to create highly fragmented patterns of land use. The rigid segmentation of land into narrowly defined categories has generated challenges in adapting the urban form to contemporary needs (Kim et al. 2017; Lee and Yoon 2023).

The fundamental limitation lies in the principle of exclusive functional separation. Euclidean zoning, as embedded in South Korea's planning regime, divides land into mutually exclusive residential, commercial, industrial or green space uses. This has reinforced the spatial disconnection between living, working and leisure, leading to an imbalance of jobs and housing, long commutes and transportation congestion. Uniform application of regulations across the country has compounded these difficulties by preventing flexible, site-specific responses. Furthermore, authorities remain concentrated at the central and metropolitan levels, limiting the autonomy of local governments and reducing the scope for community participation. The result has been an urban environment characterised by rigid land use boundaries, uneven distribution of amenities and mounting social and spatial inequalities.

At the same time, South Korea's urban context has been undergoing rapid transformation. The growth of the digital economy and knowledge-intensive industries has increased demand for multifunctional urban cores where housing, commerce and research activities can coexist. Demographic change, such as population ageing and the proliferation of small households, have amplified the need for neighbourhood-based living environments that integrate housing, care, cultural amenities and employment opportunities (Lee and Yoon 2023). Environmental pressure and the experience of the COVID-19 Pandemic have further underscored the necessity of resilient and walkable urban structures enriched with green spaces, public facilities and multifunctional land use. These shifts make clear that the existing fragmented regulatory framework cannot adequately respond to emerging urban realities.
and social infrastructure.

Figure 9
Population Density
in South Korea (2020)
(Statistics Korea 2025)



In response, South Korea has begun to experiment with new forms of mixed-use planning and development. District Unit Plans (in Korean *지구단위계획*), including Special Planning Zones (in Korean *특별계획구역)*, have been applied in regeneration areas and around transit hubs to create denser and more integrated built environments. Combined Special Purpose Zones (in Korean *복합용도구역*), formally introduced into the legal framework, have enabled the planned coexistence of residential and commercial functions in select areas. MinimalAreas under Minimal Siting Restrictions (in Korean *입지규제최소구역*) have been deployed to relax constraints and promote projects that incorporate public services and social infrastructure. At the municipal level, initiatives such as Seoul's 2040 Urban Plan and its Beyond Zoning Vision illustrate attempts to move past rigid Euclidean zoning toward more flexible and form-based approaches. These instruments collectively point to a growing willingness to reconfigure the planning system in order to accommodate multifunctionality and high-density development.

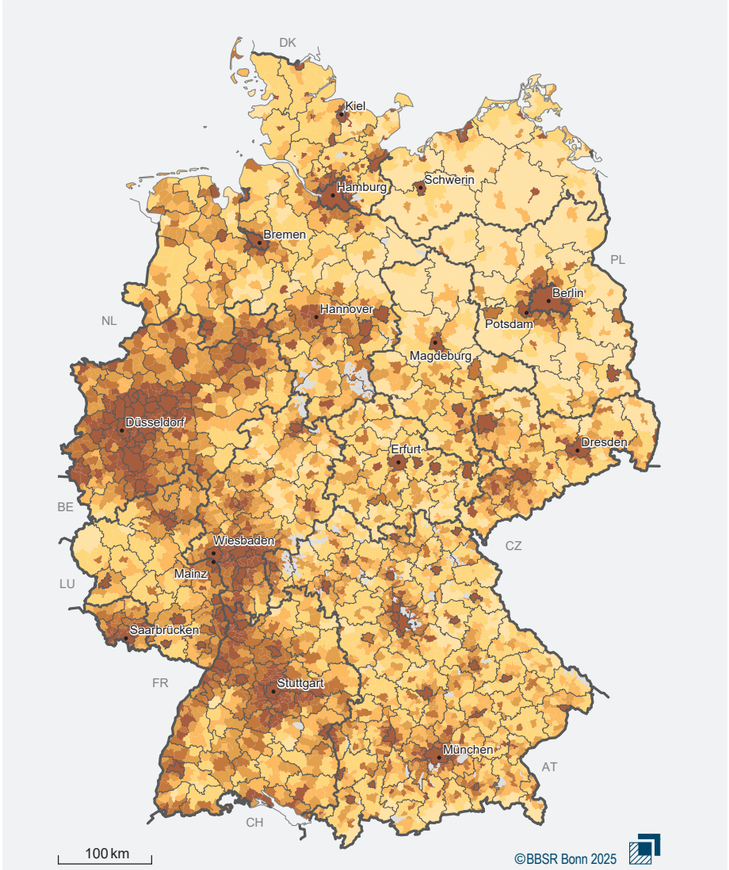
In conclusion, South Korea's land use system has been effective in providing order and predictability, but it has also entrenched fragmented patterns of land utilisation. The interplay of industrial restructuring, demographic change and environmental challenges underscores the urgency of moving beyond exclusive functional zoning. The emerging experiments with mixed-use districts, district unit planning and innovative local approaches mark the beginning of a paradigm shift. If these efforts are strengthened and institutionalised, they can provide the basis for a new urban model that enables more flexible and efficient land use.

1.3.2 Characterising the situation in Germany

The spatial and urban dimension of density and mixed-use urban development in Germany and its challenges

Germany is characterised by a mix of rather high and rather low population densities unevenly spread (see Figure 10). Its average population density amounts to 236 inhabitants per km². The maximum population density may be found in the City of Munich with 4,868 inhabitants per km² (BBSR 2025a; Schwarze et al. 2025).

Figure 10
Population Density
in Germany (2022)
(BBSR 2025a)



Territorial basis: unions of municipalities
Data source: Spatial Monitoring System of the BBSR;
update of the population of Germany and the German federal states

With reference to Europe and Germany, historic cities may be characterised by a compact, dense and mixed-use urban structure. This historically grown urban fabric still shapes many cities in Germany, particularly in the central areas of the cities or inner-city neighbourhoods. Urban development processes of the past, e.g. suburbanisation combined with a vision and concrete actions of preferring automobile-oriented urban development, led to a separation of urban functions and mono-structured neighbourhoods, especially at the city fringe. Nowadays, urban development practices aim at planning more liveable, compact, sustainable and walkable cities. The main planning guideline may be called 'mixed-use urban development'. Referring to the concept of a "15-Minute City" (Moreno 2024:1), a recent study shows that 73% of the population in Germany lives in neighbourhoods to be labelled as such (BBSR 2025 a; Schwarze et al. 2025).

Main strategies of developing more mixed-use and dense cities as well as neighbourhoods thus cover the (re)development of urban brownfields, the densification and infill of existing neighbourhoods as well as the mix of housing types and urban functions. An Integrated Urban Development Concept (in German *Integriertes Stadtentwicklungskonzept [ISEK]*) or Comprehensive Plan would be a respectively powerful (informal) urban planning tool for citywide or neighbourhood planning. This concept or plan integrates all relevant aspects of urban development, i.e. housing, land use, urban economy and environment, as well as all stakeholders concerned, i.e. various governance levels, citizens, NGOs and academia (see Figure 11). This concept is not mandatory for municipalities in Germany, but often required by funding mechanisms of the EU or national institutions to be developed across administrative units and agreed upon by local councils before handing in a funding request.

Figure 11
The Concept of Integrated Urban Development in Germany

Challenges in planning and finally building mixed-use neighbourhoods are manifold: Main aspects focus on a lack of vacant land in central areas of cities suitable for further densification or infill, high land prices in prosperous metropolitan areas which limit the development potentials of multiple urban functions, particularly non-commercial use, art, culture, open spaces and affordable housing. Furthermore, it is development and brownfield (re)development that potentially generates gentrification, including so-called 'green gentrification', and makes living in the city for lower income groups of society and/or larger households unaffordable.

Conclusion addressing policies and planning instruments

Mixed-use urban development projects and a reinforced urban density could be strengthened in newly planned urban neighbourhoods by revitalising existing urban structures and applying a relatively new urban planning tool which allows a larger and more dense mix of use (in German *Urbane Gebiete*). Integrated Urban Development Concepts (see above) are an instrument to be further strengthened by implementing it in all municipalities and linking it closer to municipal budgets in particular and funding mechanisms in general.

A crucial conclusionary aspect refers to the availability of land, especially land owned by the public sector. Supportive policies in that respect could intensify land acquisition and increase the stock of housing units owned by the public sector in providing financial resources and policies easing the access to vacant building lots by systematically gathering information on land capacities in cities in e.g. a Building Land Register (in German *Baulandkataster*).

Textbox: Integrated Urban Development

Integrated Urban Development is a key instrument of urban development policies in Germany. It is defined in the Leipzig Charter: "(...) integrated urban development policy means simultaneous and fair consideration of the concerns and interests which are relevant to urban development. Integrated urban development policy is a process in which the spatial, sectoral and temporal aspects of key areas of urban policy are coordinated. The involvement of economic actors, stakeholders and the general public is essential (BMUB 2007:2)." A central element of Integrated Urban Development is mixed-use urban development. It emphasises a mix of urban functions like housing, working, education and leisure in the same was as it opts for socially and culturally mixed neighbourhoods.

1.3.3 Analysing similarities and differences of both countries

Similarities

- South Korea and Germany both experienced the negative legacy of functional separation, producing monotonous urban forms, in Germany through suburbanisation and car-oriented planning and in South Korea through large-scale apartment complexes.
- Both countries now orient their planning towards compact, sustainable and walkable mixed-use development.
- Both countries face constraints of limited land availability and high land prices.
- Germany and South Korea have introduced institutional tools to promote integration: Germany with Integrated Urban Development Concepts (ISEK), and Korea with its Urban Planning Innovation Strategy (UPIS).

Differences

- Germany's debate focuses on brownfield redevelopment, land scarcity and gentrification risks (including green gentrification), while South Korea's challenges are framed around long commuting distances, the concentration of services in a few centres, a decline in older urban districts and widening inequalities.
- Whereas South Korea maintains a centralised governance model with stronger control by the central and metropolitan governments and a weaker local autonomy, Germany operates within a decentralised planning system where municipalities play a central role under national or EU-induced frameworks.
- While Germany has embedded mixed-use development more firmly into its planning framework, South Korea remains at an exploratory stage in piloting and testing various instruments.

02

The Planning Systems

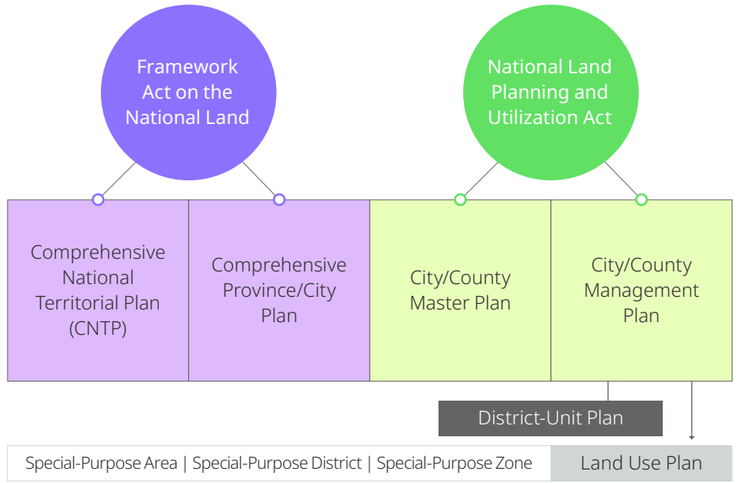
The Planning Systems

2.1 Characterising the situation in South Korea

Basic procedures

South Korea's spatial planning system can be broadly divided into two tiers: the central government and local authorities. The two are closely interrelated. The central government sets out the overarching national framework for territorial planning, while local authorities use this framework as a reference to develop their own master and management plans in accordance with local needs.

Figure 12
The Spatial Planning System of South Korea



South Korea's spatial planning system follows a top-down structure with each tier developing plans under its respective legal framework. The Framework Act on the National Land (in Korean *국토기본법*) serves as the foundation for all laws and acts related to national spatial planning. At the highest level is the Comprehensive National Territorial Plan ([CNTP], in Korean *국토종합계획*), which provides a long-term vision for national land development over a 20-year period (the current plan is the 5th CNTP, covering the period 2020–2040).

Based on this framework, each province establishes its Comprehensive Provincial Plan (in Korean *도종합계획*), which must be approved by the Ministry of Land, Infrastructure and Transport (MOLIT)[5] after review by the National Territorial Policy Committee. This hierarchical process illustrates that provincial level planning operates under the national tier. In addition to the Framework Act, the National Land Planning and Utilization Act (in Korean *국토의 계획 및 이용에 관한 법률*) is the primary law governing South Korea's land use planning system. It regulates the spatial structure and long-term development plans at the local authorities' (province, city, county) levels as well as management plans covering land use, transportation, environment, industry, culture and other related sectors.

[5] A few provinces are exceptions to this rule, as they apply modified planning processes under specific regional circumstances.

Affordable housing

In South Korea, residential rights and the quality of housing are governed by the Framework Act on Residence (in Korean *주거기본법*), which serves as the overarching legal framework for housing and residential matters.

In terms of affordability, the official concept corresponding to affordable housing in Korea is public rental housing. This refers to housing supplied primarily by the public sector – sometimes in partnership with private entities – to promote residential stability across different social groups. The initiative is implemented under the Special Act on Public Housing (in Korean *공공주택 특별법*).

At the national level, the Korea Land and Housing Corporation (LH), a state-owned enterprise, plays the leading role in implementing public rental housing projects. As of 2023, LH accounted for over 80% of all public rental housing supply nationwide (National Statistics 2023). In 2024, MOLIT allocated approximately 3.5 billion USD (equivalent of around 5 trillion KRW) to support public rental housing (MOLIT 2024).

Beyond direct housing provision, the government also provides financial assistance through the Housing and Urban Fund, established under the Housing and Urban Fund Act. This fund supports the construction and purchase of public rental housing as well as individual assistance for low-income renters and homebuyers.

Local governments have also set up municipal housing corporations – such as the Seoul Housing Corporation (SH) – to implement housing welfare policies that respond to their specific regional needs. The share of public rental housing supplied by local governments is particularly high in the Seoul Metropolitan Area. In 2023, for example, Seoul approved 7,404 units of public rental housing through SH, out of 15,920 units approved nationwide by all local authorities (National Statistics 2023). This demonstrates the Seoul Metropolitan Government's strong commitment to housing welfare policies compared with other regions (KRIHS 2020:37).

Within Seoul's broader housing welfare system, a notable case that integrates mixed-use development and actively promotes social inclusiveness through location will be introduced in the following chapter.

Proximity of jobs, housing and access to amenities

Transit-Oriented Development (TOD) requires convenient access to public transportation and coordinated district-level planning. Therefore, both the transportation-related plans and acts as well as city or county management plans are applied in the process. Since TOD is usually introduced in newly developed areas along expanding transportation infrastructure, the concept is particularly relevant for New Towns, where a district-level plan is needed around a transit hub.

In South Korea, the development of a New Town and major transportation projects such as interregional subway lines are planned by the central government, i.e. MOLIT. However, in many New Town District Unit Plans, LH acts as the project implementer on behalf of the government.

The concept of a Transit-Oriented Compact City, which will be presented as an example of how TOD is applied to third-phase New Towns, is strongly influenced by the National Land Planning and Utilization Act (in Korean *국토의 계획 및 이용에 관한 법률*). This law defines building standards such as the Building Coverage Ratio (BCR) and Floor Area Ratio (FAR) for each type of district (residential, commercial, industrial etc.).

Local ordinances also regulate BCR and FAR, which are the key factors for achieving high-density and compact urban forms, reflecting South Korea's current TOD trends. At present, there is an ongoing discussion about raising the maximum FAR for residential districts within a radius of 600 metres around transit stations from 210% to 300% and increasing the average number of housing units from 5,500 to 7,400 (MOLIT 2023:121).

Mixed-use urban development and land use regulation system

South Korea's land use regulation is governed by a hierarchical and integrated framework under the National Land Planning and Utilization Act (KRIHS 2013). The Act provides the legal foundation for coordinating spatial management across national and local levels, ensuring that land use, development and conservation are planned in a balanced and sustainable manner. Within this framework, South Korea's planning hierarchy includes the National Comprehensive Plan, Metropolitan Urban Plan, City Master Plan, City Management Plan and District Unit Plan, which together guide the spatial structure and the land use. The City Master Plan sets the city's long-term spatial structure and development direction, while the City Management Plan provides more detailed strategies on land use, transport, environment, industry and culture (KRIHS 2013).

This multi-level framework is supported by a three-tier land use regulation system, consisting of the planning, regulatory and permits systems (Kim et al. 2017; Lee et al. 2017). The planning system encompasses the hierarchy of plans – from city master plans to urban management and district unit plans – that outline spatial strategies and principles for land allocation. The regulatory system operates through zoning instruments, including the Special-Purpose Areas / Special-Purpose District / Special-Purpose Zone structure, which determines permissible land uses, building types and development densities. Lastly, the review and permit system governs land use activities such as construction, land subdivision, excavation and land use change through administrative review and authorization, ensuring consistency with upper-level plans.

At the core of this regulatory system lies the special-purpose area system, which classifies land according to its designated purpose and regulates the use and intensity of development accordingly. Through this system, the government restricts building uses, coverage ratios, floor area ratios and building heights to promote the economic and efficient use of land and to enhance public welfare (Lee et al. 2017). The system has both guiding and preventive characteristics: It guides desirable spatial development patterns while preventing land use conflicts and protecting the living environment. In other words, land is categorised according to its intended purpose – such as residential, commercial, industrial or green space – and each category is assigned distinct rules regarding development density, building form, and height. However, because the system predetermines land use functions in advance, it often fails to adapt to rapid socioeconomic and technological changes. This rigidity has long been criticised for hindering organic and mixed-use urban development, particularly in declining or transitional urban areas where land use naturally evolves over time (Kim et al. 2017).

To address these limitations, the South Korean Government has progressively introduced more flexible zoning and planning instruments to enable integrated and context-sensitive urban forms (Kim et al. 2017; Park 2022). The Minimum Regulation Zone, introduced in 2015, aims at relaxing rigid zoning and density restrictions to allow mixed-use development that combines housing, employment and public services. The Combined Special-Purpose District (in Korean *복합용도지구*) permits residential, commercial and industrial functions to coexist within the same area without modifying the base zoning. Similarly, the Special Building Zone (in Korean *특별건축구역*) and Special Planning Zones within District Unit Plans permit flexible and innovative urban regeneration by integrating land use, transport and design regulations. These mechanisms together represent a shift from the traditional use-based regulatory model toward a performance-based and place-oriented approach, enabling more dynamic and context-sensitive planning.

This reform trajectory was further institutionalised with the Urban Planning Innovation Plan (in Korean *도시계획 혁신 방안*)announced by MOLIT in 2023. The plan outlines key directions for transforming South Korea's land use regime: a) removing rigid functional boundaries between land use categories for integrated urban functions, b) promoting higher-density and compact development where infrastructure allows, c) expanding planning from administrative jurisdictions to living areas, and d) simplifying procedures to foster participatory and bottom-up urban planning (MOLIT 2023). To implement these objectives, the reform introduced three new types of Urban Innovation Zones (in Korean *도시혁신구역*), which operationalize flexible and mixed-use development principles under the National Land Planning and Utilization Act. The institutional structure and representative cases of these zones are discussed elsewhere (Chapter 5).

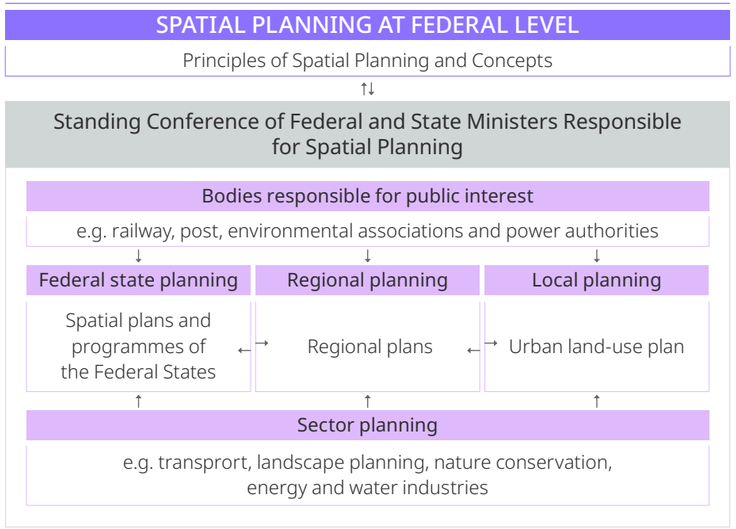
2.2 Characterising the situation in Germany

Basic procedures

Germany is a federal state in which four levels – the local, regional, state (in German *Bundesland*) and the federal level – cooperate on the basis of shared responsibilities constituted by law. Under the umbrella of the Constitution of Germany (in German *Grundgesetz*), the country's constituent states are endowed with legislative power. The federal level (in German *Bund*) exercises legislative power only in areas explicitly assigned to it by the constitution. The federal level thus is assigned with planning-related legislative power in spatial planning, land reallocation, landlord / landlady and tenant law, housing benefit law and parts of the tax law. The federal level specifies the conditions, tasks and guidelines for spatial planning with the Federal Spatial Planning Act (in German *Raumordnungsgesetz [ROG]*). The Federal Building Code (in German *Baugesetzbuch [BauGB]*) and the Federal Land Utilisation Ordinance (in German *Baunutzungsverordnung [BauNVO]*), in which the planning law and the building law are codified, regulates the guidelines and instruments of planning and building as well as urban regeneration. The states may enact laws detailing these guidelines and instruments.

Based on the subsidiarity principle, the Federal Government (in German *Bundesregierung*) and the states may only assume responsibilities that cannot be provided or dealt with at the local level, i.e. by communities, cities and counties. Article 28 of the Constitution of Germany guarantees municipalities the right to regulate all local affairs in their own sphere of responsibility and within the limits prescribed by law (that means partial fiscal autonomy) and subject to consultations of a democratically elected local council (that means local authority autonomy). Local authorities determine how communities, cities and counties are to be developed by designing and agreeing upon preparatory and legally binding land use plans that are subject to reciprocal consideration of superordinate planning levels. These interactions follow the Principle of Countervailing Actions (in German *Gegenstromprinzip*). Germany's planning system thus combines top-down and bottom-up elements (see Figure 13).

Figure 13
The Principle of Countervailing Actions in the Planning System of Germany
(BBSR 2006)



Affordable housing

Housing policies in Germany are based on two principles: funding of objects (buildings) and funding of subjects (persons). Respective aspects of management are laid down in legal frameworks, policies, plans and projects. Differentiating between a) new construction and b) rental housing acquisition as well as lease, there are a couple of characteristics to be accounted while taking a closer look at Germany. Considering new construction (a), the Federal Government provides – in close cooperation with municipalities and states – from 2022 to 2028 approximately 21 billion EUR of funding for constructing and maintaining subsidised rental housing in the same way as it supports via legislative procedures Housing Cooperatives (in German *Wohnungsgenossenschaften*) and model projects fostering the homeownership of families, the housing of young people in the sense of 'young purchases old' and the conversion of office buildings into buildings of affordable housing units. In order to address current challenges of the housing market, the Federal Government has increased the funding in social housing by around 1 billion EUR per year, compared to former legislative periods. With regard to rental housing acquisition and lease in Germany (b), a rent control (in German *Mietpreisbremse*) is in place, currently till 2029, in the same way as housing benefits (in German *Wohngeld*), a federal subsidy for rent or charges addressing (sub) tenants of an entire apartment or a single room, and subsidies are granted to those in need like social housing eligibility certificate holders. Housing Cooperatives as non-profit organisations also provide adequate and affordable housing units, often supported by public funding (TSPA 2024). In addition, an action plan against homelessness exists and respective model projects are supported by public funds. Achieving affordable housing in Germany may best be illustrated by a case study, i.e. the one on Munich (see Chapter 3).

Proximity of jobs, housing and access to amenities

Achieving a proximity of jobs, housing and access to amenities – Transit-Oriented Development (TOD) – in Germany may best be illustrated by a case study, i.e. the one on Hanover (see Chapter 4). Respective aspects of management are also there laid down in legal frameworks, policies / plans and projects.

Mixed-use urban development

Respective aspects of management are also laid down in legal frameworks, policies, plans and projects. Differentiating between a) new development and b) urban regeneration, there are also a couple of characteristics to be accounted while taking a closer look at Germany. With regard to the category of new development (a), there are planning instruments, like an Urban Development Measure (in German *Städtebauliche Entwicklungsmaßnahme*), an instrument dedicated to special urban development and redevelopment tasks. The Urban Development Measure aims at building new mixed-use neighbourhoods in previously unbuilt, vacant or underused areas of a city. Mixed-use means that the respective neighbourhood is composed of residential, commercial and public-service-related units (TSPA 2024). Another legal planning prescription of the Federal Building Code and the Federal Land Utilisation Ordinance is the 2018 introduced instrument of an Urban Area Type (in German *Urbanes Gebiet*). By reducing requirements for noise and air pollution, it fosters mixed-use urban development that does not substantially interfere with the residential use. The mix of types of use does not need to be balanced in the same way as commercial purposes may dominate residential ones or vice versa (TSPA 2024). Concept Awards (in German *Konzeptvergabe*) support mixed-use urban development via urban planning competitions related to a new neighbourhood that local authorities may explicitly request to design the mixed-use of this specific neighbourhood (TSPA 2024). The Integrated Urban Development Concept (in German *Integriertes Stadtentwicklungskonzept [ISEK]*) is a specific informal instrument of this category, because it serves at the same time as an evaluation basis, approved by the respective local council, when applying for public funds.

Urban regeneration

Considering the category of urban regeneration (b), also planning instruments exist, like the Urban Redevelopment Measure (in German *Städtebauliche Sanierungsmaßnahme*). This instrument aims at modernising and renewing an entire urban neighbourhood. It is meant to adjust urban development deficiencies and improving the living conditions in the respective neighbourhood in close cooperation with the local community (TSPA 2024). Another legal planning prescription of the Federal Building Code and the Federal Land Utilisation Ordinance is the Social Preservation Ordinance (in German *Soziale Erhaltungssatzung / Milieuschutzsatzung*). By applying this instrument, the risk of displacement may be reduced, the neighbourhood building and social structure may be protected and housing units may be prevented from speculation and profit-driven investment or ownership respectively (TSPA 2024). Specific policies and funding programmes and plans are the Urban Development Promotion Programme (in German *Städtebauförderung*) and its article promoting innovation as well specific regeneration programmes oriented towards climate change. This programme combines funds of federal and state sources. Local authorities applying for these funds have to bring in their own funds. The programme is an essential tool for urban regeneration of distressed neighbourhoods. Being in place since the mid-1970s, the Federal Government aims at doubling the federal funding part in the legislative period of 2025–2029 and allocates at the moment (as of 2025) 790 million EUR. In addition, the federal level provides experimental funds for model projects in order to test on the ground new approaches to urban regeneration and urban development, e.g., amongst others, Future-Proof Inner-City Areas and Centers (in German *Zukunftsfähige Innenstädte und Zentren [ZiZ]*), the National Urban Development Policy (in German *Nationale Stadtentwicklungs-politik [NSP]*) and National Urban Development Projects (in German *Nationale Projekte des Städtebaus [NPS]*).

Textbox: Green and social bonds

A short excursion to sustainable finance as a topic of increasing relevance for communities, cities, counties and states in Germany and also elsewhere in the field of urban planning, urban development and urban regeneration (KfW 2021; komuno 2025; Levin-Keitel and Behrend 2023; Pojani 2022; Zimper Media 2024; ISO 2012; ISO 2018): A growing number of local, regional and state authorities issues Green Bonds and Social Bonds, e.g. Cologne (Stadt Köln no date; Stadt Köln 2024), Munich (Landeshauptstadt München 2024 b; Landeshauptstadt München 2025 a; Landeshauptstadt München 2025 b), Münster (Münster no date; Münster 2024 a; Münster 2024 b; Rat für nachhaltige Entwicklung 2024), Offenbach (Stadt Offenbach 2025) as well as the Land of Baden-Württemberg (Baden-Württemberg no date) and Hesse (Finanzen Hessen no date). These bonds are meant to carry out housing, building, transport and landscape projects with a clear and retraceable as well as accountable focus on aspects of sustainability.

2.3 Analysing similarities and differences of both countries

Similarities

- Germany and South Korea both rely on a complex planning system that aims at minimising the use of land and maximising the quality of life of the people.
- Generally speaking, both countries currently address the necessity of affordable housing, a proximity of jobs, housing and access to amenities as well as mixed-use urban development in the same way as they have introduced measures to adapt their planning system – yet their approaches vary.

Differences

- Whereas the planning system of South Korea is characterised by a two-tier-structure (national, local), the one of Germany covers four tiers (local, regional, state, federal).
- Whereas Guiding Principles and Concepts of Spatial Planning (in German *Leitbilder und Konzepte der Raumordnung*) guide spatial as well as regional and local land use planning in Germany, South Korea is dominated by the Comprehensive National Territorial Plan (in Korean 국토종합계획) as mandatory basis for local land use planning.

03

Case Studies for Achieving Affordable Housing

Case studies for Achieving Affordable Housing

One case study of South Korea and one case study of Germany may illustrate tools for achieving affordable housing respectively:

Case study of South Korea (Seoul Metropolitan Government)
Youth Safe Housing (in Korean *청년안심주택*), one of the housing policies implemented by the Seoul Metropolitan Government (SMG), aims at providing well-located affordable housing for the youth (of age 19–39 years) and newly-weds (registered within 7 years).

Key feature of this programme and policy is location: apartments neighbouring subway stations and arterial roads to secure public transport accessibility as well as a safe and sound residential environment at a reasonable price. The Ordinance on Supporting the Supply of Youth Safe Housing in Seoul Metropolitan (in Korean *서울특별시 청년안심주택 공급 지원에 관한 조례*), issued by SMG, highlights the efficient development of the main area of public transportation against a detailed definition (within a boundary of 250 metres from subway stations).

In the past, areas around subway stations were regarded as among the most expensive housing markets. As a result, young people, who are the most frequent users of public transportation, were often unable to afford housing there. Even when they were able to secure housing near station areas, the living environment of such units was often inferior compared to dwellings of the same price in other locations. This policy therefore addresses not only affordability in terms of rent levels but also promotes social integration by enabling low-income youth – considered a disadvantaged group due to migration driven by labour market opportunities – to reside in station-area neighbourhoods. In this context, the Youth Safe Housing Policies specifically aims at providing station-area housing that is not only affordable but also designed to meet the residential needs of one-person households and newly married couples.

The system is running in corporation with SMG and private developers: Planning and constructing apartment buildings and clusters are implemented by private developers who got a trust contract with SMG for supplying public rental housing by relaxing regulation (e.g. tax incentives, 1.2 times floor area ratio) for developing a building or cluster. SMG either buys apartments from developers to secure public supply ratio. With these features, each building and cluster has a mix of public rental housing, private rental housing and public-supported private rental housing. As of 2025, the total number of 27,786 units in 87 buildings and clusters are supplied (26.6% by public, 73.3% by private). SMG targets to supply the total amount of 120,000 units by 2030.

Individuals with an income below 100% of the average monthly income of employees in Seoul can apply for Youth Safe Housing. Total assets should not exceed approximately 184,000 USD as well as the age of 39 years. The policy also provides interest-free deposit loans and monthly rents, depending on the circumstances of the individuals applying.

Case study of Germany (City of Munich)

The City of Munich (in German *Landeshauptstadt München*) in the southern part of Germany with around 1,500,000 inhabitants (as of 2024) has faced not only the highest house prices in Germany in recent years, but also (1) a lack of vacant land to build more new housing unity and (2) a continuous population growth. The City Council reacts on these challenges in different ways: Among others, a strategic concept (see also the case study of the City of Chemnitz) entitled Munich – A Balanced City (in German *München – Stadt im Gleichgewicht*) is in place. This integrated urban development concept includes a guideline for housing policies in Munich: "Munich strives for a balanced housing market pursuing the principle of a blend of social contexts in a socially integrated city. Under consideration of the increasingly differentiated demand, the city creates the preconditions required by planning and building laws for a qualitatively and quantitatively adequate housing supply (Stadt München 2015:11)." Additionally, a new urban development plan (in German *Stadtentwicklungsplan – STEP*) (Munich STEP 2040) plans for more new affordable housing. This includes new towns and / or new neighborhoods of larger scale, both as infill and at the city fridge (Landeshauptstadt München 2024 a). Three central strategies of this plan ask for developing so far un- or underused land, infill and densification of existing neighborhoods as well as brownfield development. Priority is given to areas in the city with access to public transportation. New neighbourhoods are supposed to be designed in a mixed-use and dense manner, thus offering a variety of housing options.

The urban development plan is linked to instruments related to affordable housing, e.g. the instrument of socially just land use (in German *Sozialgerechte Bodennutzung – SoBoN*). This instrument binds private developers of new and larger housing projects to build per project 60% affordable housing units, 20% rental apartments and 20% condominiums. This instrument – also applied in other cities in Germany – looks back at a long history in Munich. Since its introduction in 1994, the instrument has helped building so far 59,000 new housing units in the city (Stadt München 2025), but it also faces budgetary constraints (Süddeutsche Zeitung 2025). Furthermore, the City of Munich works with the financial tool of Social Bonds in order to, among other social initiatives, construct more affordable housing units. Social Bonds of 90 million EUR have been applied by now for new land acquisition (in German *Vorkaufsrecht*) to achieve around 300 new affordable housing units for more than 500 inhabitants (Landeshauptstadt München 2020). Nevertheless, the housing market in Munich remains, for the time being, the most expensive one in Germany.

04

Case studies for Achieving a Proximity of Jobs, Housing and Access to Amenities

Case studies for Achieving a Proximity of Jobs, Housing and Access to Amenities

One case study of South Korea and one case study of Germany may illustrate tools for achieving a proximity of jobs, housing and access to amenities – Transit-Oriented Development (TOD) – respectively:

Case study of South Korea (Second and Third New Towns)

The origins of TOD in Korea may be traced back to the 1980s, when Seoul introduced its subway system and initiated station-area development plans, although implementation faced significant challenges (Seong and Choi 2017). The First New Towns also placed great importance on transportation, however, it is difficult to regard them as examples of TOD since the cities were located along the outer ring road surrounding Seoul and connected to the city centre through subway line extensions afterwards.

From the First New Towns onwards, transport-oriented planning began to be more fully introduced. In developments such as Hwaseong and Dongtan 2, part of the Second New Towns, the TOD concept was applied to establish public transit hubs and to formulate high-density, mixed-use land use plans (Jeong and Lee 2014); however, it was not actively utilised in practice (MOLIT 2023).

More recently, in planning the Third New Towns, MOLIT has introduced the concept of the Transit-Oriented Compact City and has incorporated TOD more actively into urban planning. In that it seeks to promote social equity and accessibility around transit-oriented urban centres, this concept may be regarded as aiming towards eTOD. Whereas in the Second New Towns with TOD elements, large-sized housing units and central business districts were heavily concentrated around station areas, while station squares were a void, the Third New Towns pursue a social mix through district-level and housing plans that consider the age groups and social strata with higher public transit usage.

The concept of the Transit-Oriented Compact City may be understood as a convergence of the traditional Compact City and TOD. It is defined as "establishing a high-density, compact and mixed-use urban spatial structure centred on transit hubs (station areas) to concentrate urban functions and build interregional networks (MOLIT 2023:21)." The planning keywords of this concept include high-density, compact and mixed-use development, alongside a more diversified approach to transport integration. In addition to metropolitan lines such as the Great Train eXpress (GTX), the newest high-speed subway in capital region, it incorporates pedestrian and Personal Mobility (PM) linkages to enhance user accessibility. Its most distinctive feature lies in considering not only the horizontal but also the vertical movement of pedestrians, as well as introducing classifications within pedestrian pathways in response to the adoption of PM. To facilitate active transport integration, the Ministry has enacted the Special Act on Undergrounding of Railways and Integrated Development of Railway Sites (in Korean *철도지하화 및 철도부지 통합개발에 관한 특별법*), thereby advancing high-density, mixed-use development in station areas more strongly than in previous phases.

Case study of Germany (Region of Hanover)

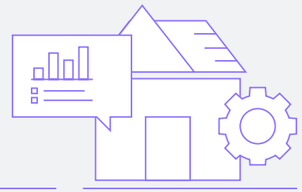
Settlement development along public transport lines looks back, in some cases, at a longer history of planning in Germany. The Region of Hanover (in German *Region Hannover*), located in the central northern part of the country and home to around 1,141,000 people (as of 2024), may serve as an example, amongst others, for combining regional and urban planning with transport planning while safeguarding ecological and social standards in terms of building and urban neighbourhood design (Landeshauptstadt Hannover no date a; Landeshauptstadt Hannover no date b).

A particular district of the City of Hanover (in German *Landeshauptstadt Hannover*) as part of the Region of Hanover will be looked at herewith: Kronsberg. Although first regional and urban development sketches, including public transport services, date back to the 1950s and a first planning decision was taken by the Council of the City of Hanover in the 1980s (Landeshauptstadt Hannover 2019), it was in fact the EXPO 2000 as part of the series of World Expositions and its motto Humanity, Nature and Technology – A New World is Created (in German *Mensch, Natur und Technik – Eine neue Welt entsteht*) as well as emphatic voices of board members of the Hanover Fair (in German *Hannover Messe*) that pushed the planning sketches and council decisions towards implementation under real-life conditions (Mueller 1997). The backbone of the settlement development is the light rail system line 6 (in German *Stadtbahnlinie 6*) – a line which links the inner city of Hanover with the fairground and the newly developed district of Kronsberg. Due to the emphatic voices of board members of the Hanover Fair, EXPO 2000 was also seen as an instrument to renew the slightly outdated fairground itself. Consequently, line 6 as spatial merger of fairground and Kronsberg, was equipped with a couple of stations – EXPO-Plaza / Hannover Messe Ost and Kronsberg – with EXPO Plaza as the central meeting point of the EXPO 2000. The public social services accessible there have remained in service after the EXPO 2000 was closed.

How does Kronsberg look like in terms of social and ecological standards? The City of Hanover published an inspiring handbook on the planning and implementation process of 'creating' Kronsberg. Altogether 6,000 housing units in buildings of different density are being built for around 15,000 people, out of which 75% have been built already. 10% of these housing units are privately owned row houses, which were built at the beginning in order to stabilise the entire social structure of Kronsberg. Around 3,000 working places have been established meanwhile. Around 20% of all housing units are subsidised, including housing units which are managed by the City of Hanover (in German *Belegungsrecht*). More than 40 different architecture and landscape planning offices designed the housing units as well as the different parts of the neighbourhood. Kronsberg offers 1 elementary school with a sports hall, 3 day-care facilities for children, 17 playgrounds and so-called activity areas, 1 cultural and social centre (in German *Soziales und Kulturelles Stadtteilzentrum [KroKus]*), 1 religious centre, 1 health centre and a couple of local amenities. The local infrastructure was financed on the basis of property sales by the local authority. The landscape design respects the geomorphological structure of Kronsberg, which used to an unbuilt hill before, and restores (more or less artificially and wherever possible) the formerly unbuilt environment (Landeshauptstadt Hannover 2019). In that respect, Planning Kronsberg in the Region of Hanover seems to have anticipated what TOD and eTOD in particular strive for, equitable urban development alongside public (rail) transport lines.

05

Case Studies for Achieving **Compact and Mixed-use Urban Development**



Case studies for Achieving Compact and Mixed-use Urban Development

One case study of South Korea and one case study of Germany may illustrate tools for achieving compact and mixed-use urban development respectively:

Case study of South Korea (Urban Innovation Zones and Seoul Master Plan 2040)

In response to the structural limitations of South Korea's rigid, function-segregated planning regime, MOLIT introduced the Urban Planning Innovation Plan in 2023. This policy marked a strategic shift from a regulation-oriented framework towards a more flexible and integrated land use management system capable of accommodating social, economic and environmental change (MOLIT 2023). The reform emphasised the promotion of mixed land use, the adjustment of development density within the infrastructure capacity, the establishment of living-area-based planning and institutional flexibility and adoption of private-initiative procedures to support creative and adaptive urban development.

Building on this institutional foundation, the Urban Innovation Zone (UIZ) system was established through amendments to the National Land Planning and Utilization Act, which came into force in August 2024. The system relaxes land use restrictions such as permissible use, floor-area ratio, building coverage and building height to enable creative and mixed-use redevelopment of underutilised urban areas (MOLIT 2024).

The Spatial Innovation Zones (in Korean *공간혁신구역*) classified into three main categories reflecting differentiated spatial functions (MOLIT 2023). The Urban Innovation Zone (in Korean *도시혁신구역*) supports the redevelopment of deteriorated or idle urban areas and allows high autonomy in land use and density decisions, often initiated by private actors. The Combined Special-Purpose Zone facilitates the integration of residential, commercial and cultural activities to foster functional convergence and urban vitality. The Multi-level Complex Zone (in Korean *도시계획시설 입체복합구역*) allows vertical mixed-use above or below existing public facilities – such as railways, roads or parking structures – to enhance spatial efficiency. Collectively, these types represent a transition from fixed land-use regulation to adaptive and mixed-function urbanism.

To implement and refine the framework, MOLIT designated sixteen pilot sites in July 2024. The pilot areas include transit-oriented hubs (e.g. Seoul's Yangjae and Cheongnyangni Stations), industrial transition zones (e.g. Busan Yeongdo / Incheon), and facility-based redevelopment sites (e.g. Tongyeong Shipyard / Gunsan) (MOLIT 2024). These pilot projects demonstrate the national strategy to promote innovative, high-density and mixed-use redevelopment while maintaining consistency with upper-level spatial plans.

Figure 14
Types and Characteristics of Spatial Innovation Zones in South Korea (MOLIT 2023)

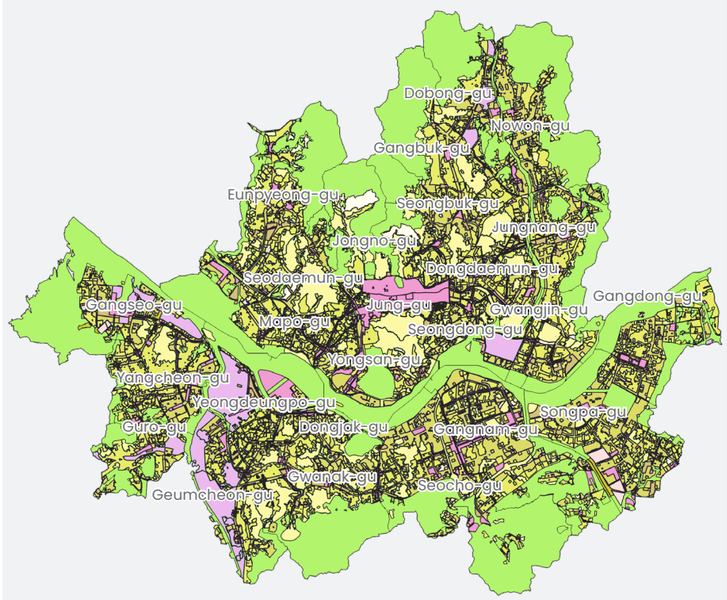
Type	Key Regulatory Features	Main Characteristics
Urban Innovation Zone	Allows flexible development without restrictions on land use or density; relaxes regulations on building coverage, floor area ratio and height	Also referred to as a White Zone; encourages multifunctional urban renewal and private-led development
Combined Special-Purpose Zone	Permits diverse uses – such as residential, commercial and cultural – without changing underlying zoning designations	Enhances urban vitality by creating mixed-use hubs within daily living areas
Multi-Level Complex Zone	Enables development above or below existing public facilities and infrastructures; allows relaxation of floor area ratio and building coverage up to 1.5–2 times	Improves spatial efficiency through vertical land use and the integration of public and private functions

The Seoul Master Plan 2040 (in Korean *2040 서울도시기본계획*) articulates a paradigmatic transition from regulatory, land-use-based planning towards a flexible, human-centered and sustainability-oriented urban management framework. The plan's core principle, Beyond Zoning, represents a gradual shift from the conventional functional segregation of land use towards a more integrated and form-oriented planning model. This approach allows residential, commercial and cultural functions to coexist within the same urban fabric according to local conditions, promoting adaptive, mixed-use development and neighborhood vitality.

Figure 15
Special-Purpose Areas in Seoul
(UPIS 2021)

- Class I exclusive residential area
- Class II exclusive residential area
- Class I general residential area
- Class II general residential area
- Class III general residential area
- Quasi-residential area
- Central commercial area
- General commercial area
- Neighboring commercial area
- Circulative commercial area
- Quasi-industrial area
- Green conservation area
- Green production area
- Green natural area

* Source : Seoul Metropolitan Government, Urban Planning Information System (UPIS), 2021



Special-purpose Areas in Seoul, Korea

Complementing this shift, the Living-Area Planning System redefines Seoul's spatial hierarchy by focusing on functional living territories rather than administrative boundaries. The city is structured into three tiers – metropolitan, regional, and neighborhood living areas – reflecting citizens' everyday mobility and patterns of service use. Each level pursues distinct objectives: metropolitan living areas strengthening inter-city connectivity and large-scale infrastructure, regional living areas promoting a balanced distribution of employment and amenities, neighborhood living areas focusing on the accessibility to daily services, cultural facilities and open spaces within a range of 15–30 minutes. This system contextualises the global paradigm of a "15-Minute City" (Moreno 2024:1) within Seoul's polycentric and high-density urban form, emphasising proximity and self-containment.

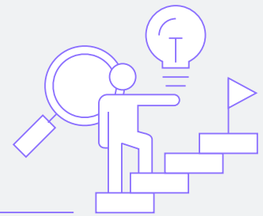
Collectively, these initiatives mark a decisive transition in South Korea's urban planning – from a zoning-based regulatory system to an adaptive and integrated spatial governance model. The Urban Innovation Zone framework establishes the institutional basis for compact and multifunctional development, while the Seoul Master Plan 2040 advances this transformation through its Beyond Zoning and living-area-based planning approach. Together, they reflect an evolving direction towards flexible, mixed-use and human-centered urban development.

Case study of Germany (City of Chemnitz)

The Integrated Urban Development Concept Chemnitz 2035 sets for the next 10 to 15 years a crucial guideline for urban planning and urban development in the City of Chemnitz (in German *Stadt Chemnitz Kulturhauptstadt Europas 2025*) in the eastern part of Germany, home to a population of around 246,000 people (as of 2024). It serves as a principal guideline for administrative and interdisciplinary decisions for the City of Chemnitz, constitutes an important basis for acquiring funds of state (in German *Land*), federal / national or EU origin or additional sources, and supports as a strategic instrument the communication towards policy-takers and civil society.

The ISEK is connected with the European Initiative of a European Cultural Capital City, a title awarded to the City of Chemnitz in 2025. This European Initiative aims at strengthening cultural diversity and commonalities of cultures in Europe. The City of Chemnitz valorises this impulse for urban transformation, urban development, culture and social innovation by applying the motto C the Unseen. The ISEK integrates 41 different sectoral planning concepts, e.g. housing, transportation, economic development, commerce, climate, culture, elementary education, and 6 district planning concepts into one framework. It is based on population projections, an intense analytical analysis of multiple aspects of urban development, e.g. demographics, economic developments, education, culture, open and green spaces. One central part of the ISEK is a strategic spatial plan for the future urban development, including e.g. potential land for new housing units or for innovative districts related to the University of Technology Chemnitz. The ISEK defines citywide development goals, e.g. promoting sustainable mobility, improving open and green spaces as well as diverse housing units for all citizens. It also includes an implementation plan for achieving these goals, equipped with a controlling, monitoring and evaluation system. The ISEK had been developed within a period of 2 years and is based on a broad participation process, including a variety of city offices and authorities, decision-takers, citizens and the civil society of the entire city (Stadt Chemnitz 2024).

06
Conclusion



Conclusion

South Korea and Germany face almost the same challenges with a quality of life for all citizens as central anchor point and affordable housing as crucial point-of-interest. The housing question becomes even a global issue. Planning instruments addressing this urgency are manifold and usually require a combination of instruments and tools – while respecting the similar and/or different aspects of a given constitutional and cultural framework.

Germany and South Korea share this dichotomy of similarities and differences that run in short as follows: Both countries look back at a longer planning history of combining transport and settlement development. Although their modal split differs, South Korea and Germany are certainly in favour of sustainable transport modes, including the walkability in cities and communities. Urban and regional development alongside public transport lines and close to train stations is a matter of fact for a more polycentric Germany as well as for more monocentric South Korea. The planning instrument of Transit-Oriented Development (TOD) is seen as a necessity in South Korea and an option in Germany. Ways to integrate citizens in planning processes differ, yet they aim at making citizens become integral parts of creating a quality of life for all.

Both countries are still dominated by the legacy of a functional separation, in South Korea by large-scale apartment complexes and in Germany by sub-urbanisation and car-oriented urban and spatial planning. Germany and South Korea are countries with limited land availability and high land prices. In order to counteract this situation, South Korea employs Urban Planning Innovation Strategies in the same way as Germany calls for Integrated Urban Development Concepts. Nevertheless, their respective orientation differs in detail: The focus in Germany is on brownfield redevelopment, land scarcity and gentrification while the one in South Korea targets long commuting distances, the traditional concentration of public services in a few centres and the decline in older urban districts as well as also widening inequalities. Both planning systems are characterised by innovative elements with South Korea piloting and testing various planning instruments and tools and Germany embedding mixed-use urban development as planning category in its planning system. Speaking of which, Germany relies on a decentralised planning system with municipalities taking a central role under national and EU regulations while South Korea is governed by a strong central government where the autonomy of the local level is weaker.

Considering compact and mixed-use urban development as well as respective planning instruments and tools, both countries pursue the planning ideal of minimising the use of land while maximising the quality of life for all citizens. South Korea's planning system is a two-tier one (national and local level) and Germany's a four-tier one (local, regional, state and federal level). In Germany, there are Guiding Principles and Concepts of Spatial Planning as national notes framing planning processes in a structure that follows the Principle of Countervailing Actions. In South Korea, the Comprehensive National Territorial Plan constitutes the mandatory basis for local land use planning in a structure that is primarily oriented in a top-down way incorporating some bottom-up elements.

Interested parties worldwide are invited to observe the fact that responding to the needs of affordable housing, a proximity of jobs, housing and access to amenities as well as compact, mixed-use urban development obviously requires in communities, cities and regions (but also nations) both, an integrative way of planning and room of manoeuvre for innovative actions. In that respect, sustainability seems to be a must in, walkability a wish of and the integration of all citizens a precondition for planning towards inclusive urban growth.

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09 List of Abbreviations

Abbreviations	Full name
BauGB	Baugesetzbuch (Federal Building Code)
BauNVO	Baunutzungsverordnung (Federal Land Utilisation Ordinance)
BBSR	Bundesinstitut für Bau-, Stadt- und Raumforschung (Federal Institute for Research on Building, Urban Affairs and Spatial Development)
BCR	Building Coverage Ratio
BMUB	Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit (Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety)
CNTP	Comprehensive National Territorial Plan
DESTATIS	Statistisches Bundesamt (Federal Statistical Office)
DLR	Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Center)
eTOD	Equitable Transit-Oriented Development
EUR	Euro
FAR	Floor Area Ratio
GTX	Great Train xPress
HAI	Housing Affordability Index
HOI	Housing Opportunity Index
Infas	Institut für angewandte Sozialforschung 360
ISEK	Integriertes Stadtentwicklungskonzept (Integrated Urban Development Concept)
IVT	IVT Verkehrsforschung
KfW	Kreditanstalt für Wiederaufbau (Credit Institute for Reconstruction)
K-HAI	Korea Housing Affordability Index
K-HOI	Korea Housing Opportunity Index
KRIHS	Korea Research Institute for Human Settlements
KRW	South Korean Won
LH	Korea Land and Housing Corporation
MOLIT	Ministry of Land, Infrastructure and Transportation
NIMBY	Not in My Back Yard
NPS	Nationale Projekte des Städtebaus (National Projects of Urban Development)
NSP	Nationale Stadtentwicklungspolitik (National Urban Development Policy)
OECD	Organisation for Economic Co-operation and Development
PIR	Price-to-Income Ratio
RIR	Rent-to-Income Ratio
PM	Personal Mobility
ROG	Raumordnungsgesetz (Federal Spatial Planning Act)
SH	Seoul Housing Corporation
SMG	Seoul Metropolitan Government
TOD	Transit-Oriented Development
UBA	Umweltbundesamt (Federal Environment Agency)
UIZ	Urban Innovation Zone
UPIS	Urban Planning Information System
USD	United States Dollar
ZiZ	Zukunftsfähige Innenstädte und Zentren (Future-Proof Inner-City Areas and Centres)

10 List of Case Studies

South Korea

Category of case study	Case study	Reference / Source
Affordable housing	Youth Safe Housing	https://housing.seoul.go.kr/site/main/content/sh01_060508 https://www.seoul.go.kr/main/index.jsp
Proximity of jobs and housing & access to amenities (Transit-Oriented Development, TOD)	Dongtan	https://dongtan.lh.or.kr/
Compact and mixed-use urban development	Urban Innovation Zone (Seoul Master Plan 2040)	https://urban.seoul.go.kr/view/html/PMNU3030000001

Germany

Focus of case study	Case study	Reference / Source
Affordable housing	City of Munich	https://stadt.muenchen.de
Proximity of jobs and housing & access to amenities (Transit-Oriented Development, TOD)	Region of Hanover	https://www.serviceportal.region-hannover.de
Compact and mixed-use urban development	City of Chemnitz	https://www.chemnitz.de/de

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