




## Dear Readers,

The COVID-19 pandemic is over, but far from forgotten. It has not only called certainties into question, but has also sharpened our view of challenges in society, the economy and administration. Our Atlas of Urban and Regional Development 2022 shows in which areas the pandemic had a clear impact, where it merely reinforced existing trends and in which fields the crisis was barely noticeable, for example on the housing market. The Atlas shows that crisis events affect regions that are prepared for them in very different ways. They must strengthen their resilience. In the programme Shaping Regions, the Federal Ministry of Housing, Urban Development and Building and the BBSR promote corresponding strategies.

We are also dealing with questions of resilience in research on the Model Projects Smart Cities (MPSC) programme. When do data platforms improve life in the city? And what can municipalities learn from the experiences of others? Current studies answer these and many other questions. They contain collected knowledge about smart cities, address success factors and obstacles and present examples from practice.

Another topic in this issue is a new BBSR study on property acquisition. According to the study, more and more households are acquiring residential property in existing buildings, while the share of new construction in property acquisition has decreased. In view of high land prices in regions with high demand, second-hand properties are the better alternative to new construction for many households.

I hope you will find this interesting.



**Dr Markus Eltges**  
 Director of the Federal Institute for Research on Building,  
 Urban Affairs and Spatial Development (BBSR)

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 Facts about living  
 conditions in town and  
 countryside  
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 Supportive research  
 of Model Projects  
 Smart Cities  
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 More households are  
 choosing second-hand  
 homes  
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# Facts about living conditions in town and countryside

by Antonia Milbert and Dr Fabian Dosch

A new publication by the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) addresses living conditions in German towns, cities, counties and regions against the background of the COVID-19 pandemic. The researchers evaluated comprehensive statistics for 2020 and 2021 and, by creating maps and graphics, produced an atlas. According to the analyses, the pandemic had a significant impact on some of the issues examined, while in other areas it only exacerbated long-term developments or only had a short-term impact.

**Spatial spread of COVID-19:** The settlement density of a region had no impact on the population-weighted number of COVID-19 cases in 2020 and 2021. There were high numbers of cases in both urban and rural areas. However, there was a difference in the dynamics of the development of infections: The population-related numbers of cases increased more quickly in urban areas than in rural areas at the beginning of the waves of infection. It also took longer there for the numbers to fall again.

**Housing:** Rents and purchase prices on the residential real estate markets were stable to rising during the pandemic. They follow longer-term trends. Thus, in the seven largest German cities alone, the purchase prices for single- and two-family houses increased by 78 per cent between 2016 and 2021. Due to high prices and rents in towns and cities, increasing numbers of people, especially families, oriented themselves towards the surrounding area. As a result, counties in the surrounding areas of independent large cities (i.e. not part of a county but equivalent in terms of status and functions) developed into hotspots of construction activity in terms of per capita building permits and building completions.

**Social development:** The pandemic also focused attention on social disparities in Germany. The proportion of the population receiving benefits under the Second Book of the Social Code is an indicator of the social situation. A special evaluation of 50 large cities for the BBSR shows large inner-city differences: Urban districts with a very small portion of people receiving transfer payments under the Second Book of the Social Code contrast with urban districts in which up to 70 per cent of the population receive Social Code II payments. On average in 2020, every fifth child lived in a “community of need” (one person able to participate in gainful employment and eligible for social security payments

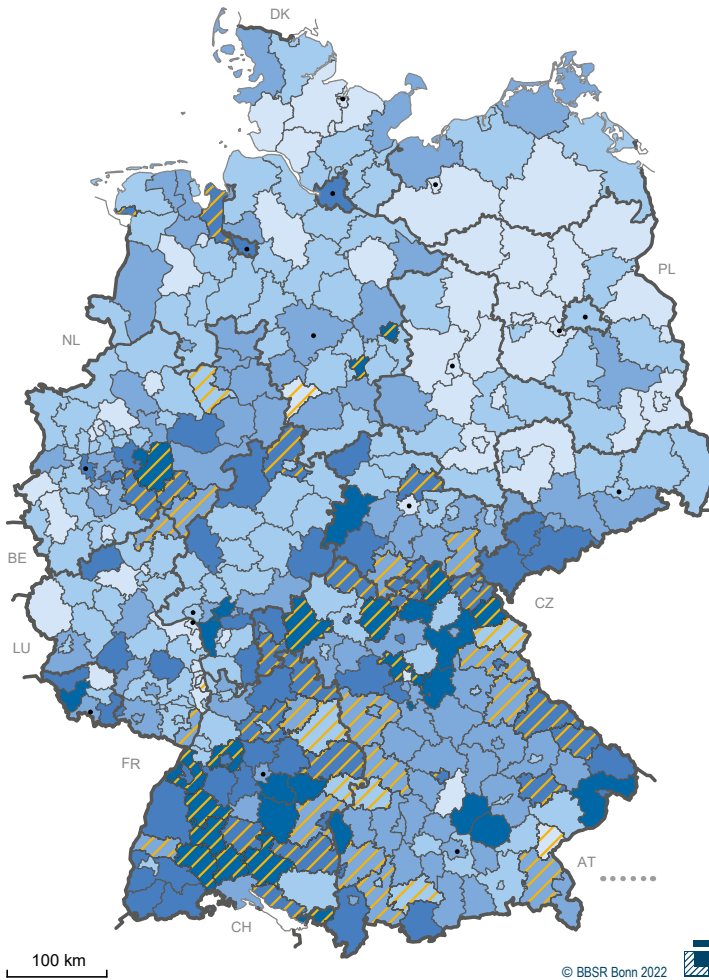
living with a spouse or partner in the same dwelling and economic community and/or with one or more children aged under 25 years without own income).

**Labour market:** In 2020, short-time work was frequently used as an instrument to avoid crisis-related dismissals. The predominant determinant of short-time working due to the economic situation was the regional economic structure. Hardly any differences could be detected between urban and rural areas. With an average short-time working rate of at least 10 per cent, counties in Bavaria and Baden-Württemberg, which are strongly influenced by the manufacturing sector, showed much higher figures than, for example, regions in eastern Germany. Even in regions heavily dependent on tourism and the catering industry, the proportions of short-time working were above average, for example in the North Sea and Baltic Sea regions.

**Home office potential:** Working from home was part of everyday life during the pandemic. The proportion of employees able to work from home depends on the industrial structure of a region. Home office working is particularly popular in industries such as telecommunications and IT, banks and insurance and in the administrative sector. Accordingly, the greatest potential can be found in metropolitan areas. According to BBSR calculations, for employees subject to social security contributions, at least one third of their activities can be carried out at home.

**Transport:** The number of motor vehicles continued to rise during the pandemic – up to 59 million in 2021, of which just under 48.3 million were passenger cars. According to Kraftfahrt-Bundesamt (German Federal Government agency responsible for motor vehicles), more than one million cars with electric drives were registered as of 1 October 2021. They now account for over 25 per cent of new registrations. The proportion of passenger cars with electric drives differs regionally in Germany: In North Rhine-Westphalia alone, almost twice as many electric vehicles were registered in 2021 than in all the eastern German federal states including Berlin. In addition to the locations of car manufacturers, it is mainly the large metropolitan areas in the old federal states where the proportion of electric vehicles is above average.

**Digital infrastructure:** Good digital infrastructure is essential and not only for the home office. In 20 per cent of



**Average short-time work rate 2020**

Realised economic situation-related short-time work in proportion to all employees subject to social security contributions in %

- up to < 6
- 6 up to < 8
- 8 up to < 10
- 10 up to < 12
- 12 and more

Percentage of employees subject to social security contributions in the manufacturing sector 2020

- 34 and more

Data source: Spatial Monitoring System of the BBSR, Federal Employment Agency  
 Geometric basis: VG5000 (counties), 31/12/2021 © GeoBasis-DE/BKG  
 Author: T. Pirsig

all cities, towns and villages, at least 75 per cent of households were connected to broadband at a transmission speed of 1,000 megabits per second in 2021. Despite the previous development in all parts of the country, the gap between large and small municipalities as well as between central and peripheral municipalities is maintained – even at lower bandwidths of 100 and 50 megabits per second.

**Schools:** The Covid-19 pandemic has focused attention on inequalities in the school system. For several years, between 8 and 10 per cent of school leavers have been leaving without a secondary school diploma. By comparison, in 2020, this figure was more than 10 per cent in some counties and less than 2.5 per cent in others.

**E-commerce:** In the first year of the pandemic, online trade strongly increased. Nationwide, people spent an average of 813 euros on their online purchases in 2020. When comparing independent towns or cities with counties, the online retail purchasing power ranged between at least 652 euros and

a maximum of 1,060 euros per inhabitant. Online retail purchasing power was particularly high in economically strong large cities and their hinterlands. However, the figures in structurally weak towns, cities and counties are comparatively low.

With its focus on the COVID-19 pandemic, another perspective is added to the Federal Government's interactive (German-language) "Deutschlandatlas" (Atlas of Germany), which represents the location and living conditions in Germany on a comparative basis. Interested parties can access the (German-language) publication "Atlas der Stadt- und Regionalentwicklung unter besonderer Berücksichtigung der räumlichen Auswirkungen von COVID-19" (atlas of urban and regional development taking the spatial impacts of COVID-19 into account) on the BBSR webpage.

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- [Atlas der Stadt- und Regionalentwicklung 2022 \[in German\]](#)
- [www.deutschlandatlas.bund.de](http://www.deutschlandatlas.bund.de)

## Cross-border spatial development: Franco-German Conference in Strasbourg

by Claire Duvernet

On 14 December 2022, the final conference of the Demonstration Project of Spatial Planning “Strengthening cross-border elements of spatial development and spatial planning: two Franco-German experimental games” took place in Strasbourg. The aim of the project was to show how actors in the Franco-German border area can intensify their cooperation and make it more binding by carrying out two experimental games in the Upper Rhine and SaarMoselle regions. In the SaarMoselle region, the actors played through the idea of a joint agglomeration concept, in the Upper Rhine region, the idea of a commercial area pool.

Dr Peter Jakubowski, Head of Spatial and Urban Development Department at the BBSR, praised the novelty of the project as a successful example of Franco-German cooperation: “For the first time, a Demonstration Project of Spatial Planning had to be planned, financed and supported from the outset on a binational basis. This required an intensive exchange between all parties involved, plus a great deal of commitment and creativity. The participants succeeded in carrying out what was a complex, very exciting and definitely instructive project. That alone is an expression of good Franco-German cooperation. The project results and recommendations for action provide a concrete basis for expanding the cooperation.”

At two round tables, project participants and experts from other regions reflected on the findings from the experimental games: In the SaarMoselle region, there are now many arguments for an agglomeration concept. During the experimental game, the actors developed a manual on priority fields of action (e.g. retail and mobility) and formulated implementation steps. In terms of structure, it became clear that the Eurodistrict SaarMoselle region could play a central coordination role, provided that it receives the necessary financial and human resources.

In the Upper Rhine region, the participants developed requirements and regulatory frameworks for a joint commercial area as well as a procedural structure for further action. The experimental game espouses the goal of realising an industrial region of short distances. In the context of increasing competition and industrial relocation, the added value of such a cross-border commercial area was apparent.



**Dr Peter Jakubowski, Head of Spatial and Urban Development Department at the BBSR**

Photo: BBSR

After the game, the question of who coordinates the process remained open.

Having reflected on the findings, the experts discussed overarching questions and recommendations: How can stakeholders in administrations and committees better coordinate spatial planning instruments? To what extent can binding roadmaps for implementing cross-border concepts and strategies be integrated into formal planning? How can the findings of this project be placed in the context of the Treaty of Aachen?

The conference participants repeatedly expressed the idea of developing a joint vision for the interconnected area on both sides of the Rhine. Such a future concept already exists for the German-Polish interaction area. They also discussed the question to what extent joint objectives should be binding. According to the participants, mutual confidence is a precondition for long-term cooperation, but it is also essential to anchor cross-border cooperation in existing structures.

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# Circular economy as a driver of resource-saving opportunities to create added value in regions

by Sina Redlich and Christina Bredella

The BBSR is carrying out a study on the potential of circular economy for rural development in Germany and Europe. First results show that the approach offers great potential to rural regions in terms of regional resilience, a diversified economic structure and employment of qualified personnel.

The European Green Deal, the Circular Economy Action Plan and the Territorial Agenda 2030 include the circular economy concept as an important element for the transformation towards a “green Europe”.

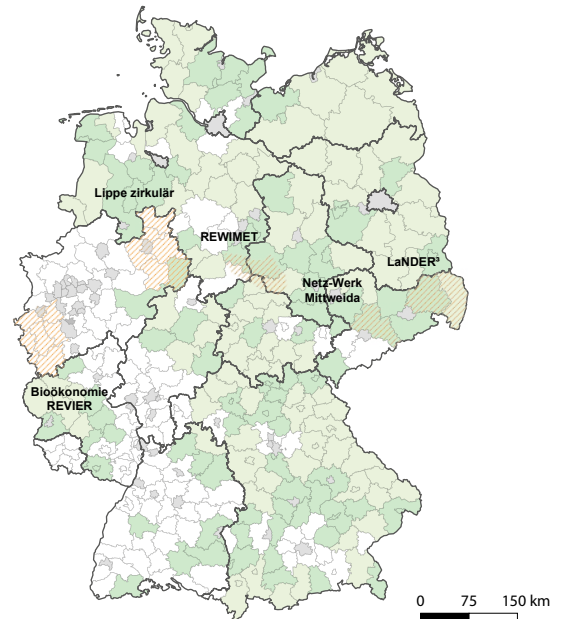
The BBSR study focuses on regions in Germany and Europe that are already successfully implementing systemic circular economy approaches. It enables the research team to draw conclusions about success factors and impact mechanisms of the circular economy and to identify transfer potentials. The following German cases are examined in the study:

- BioökonomieREVIER
- Lippe.zirkulär
- REWIMET in the Harz mountain area
- Netz-Werk e. V. Mittweida in Saxony
- LaNDER<sup>3</sup>

In addition to the German cases, research is taking place on seven European regions in Finland, the Netherlands, Slovenia, Spain, Italy and Greece. The diversity of the case regions provides insight into regional opportunities for strengthening the circular economy and generating stimuli for development.

First results indicate that important factors for the success of regional circular economy initiatives, include among other things, the presence of multistakeholder networks with similar goals and interests, sustainable political support, comprehensive networking and networking bodies. Companies in particular should be given opportunities to form symbiotic relationships and to cooperate. The establishment of permanent networks, however, often remains a challenge.

The interim results also suggest that regional development authorities are the appropriate actors, initiators and coordinators for regional and cross-sectoral approaches to a systemic circular economy. The representatives of regional circular economy initiatives thus consider themselves as



## Case study regions

### Settlement structure

- |   |                   |
|---|-------------------|
| Sparsely populated rural county         | Urbanised county  |
| Rural county with signs of urbanisation | Case study region |
| Independent large city                  |                   |

Based on data of BBSR (2017) & BKG (2020)

Source: IfS und Prognos 2022

promoters and networkers, who disseminate information on available funds. Interaction with companies, associations, chambers of commerce and the civil society is important and should be used in the future. Private-sector and research initiatives should be combined into overall regional strategies. In the course of the further analysis, it will be possible to identify success factors within the various cases and formulate political recommendations for action.

Regional actors interested in the topic are invited to make a note of the research project's final conference in Berlin on 6–7 September 2023. Apart from the presentation of the results, the conference will provide opportunities to talk to representatives of the case study regions.

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# Mining regions are not all the same: The importance of spatial structures for the transformation of lignite areas in Germany

by Dr Juliane Ribbeck-Lampel

Following the establishment of the “Growth, Structural Change and Employment” commission (“Coal Commission”) in June 2018, the number of analyses and investigations on the initial situations in German lignite regions has grown steadily. The Commission’s final report and the published studies focus on issues of energy policy transition, economic stability and transformation as well as social participation in lignite mining regions. These topics also form the focus of financial assistance according to the funding objectives of the “Investitionsgesetz Kohleregionen InvKG” (Coal Regions Investment Act).

In addition to the legislative and administrative definition of “mining region”, a new spatial unit of functional significance has been created, which is confronted with established local and regional structures. However, spatial interdependencies, affiliations and general conditions have hitherto scarcely been taken into account in the discussion about structural change in lignite regions. The spatial structure analysis of lignite regions takes these aspects into account and, through comparative spatial observations of the Rhenish, Central German and Lusatian mining regions, shows the importance of spatial structures in the context of structural change.

The analysis takes the term “lignite regions” as a basis, which suggests that the initial spatial conditions are principally similar. The spatial peculiarities and individual features of the structural change areas are compared with each other. The comparison also aims to extend the existing research on the economic and social conditions and by means of continuous observation, to understand spatial structure-related trends in the course of structural change. The study is carried out along the scales of federal state (Bundesland), region and municipality and serves to spatialise structural change. This will illuminate the individual transformation processes in lignite regions. At the same time, it demonstrates their dependence on spatial structure and location.

In the study, cartographic and textual analyses and comparisons are developed, in which the following spatial structure-related spatial features and definitions are investigated:

- Lignite regions, municipalities and population according to size
- Area structures (e.g. settlement areas and open spaces)
- Infrastructure axes (federal motorways and rail)
- Lignite industry (particularly the location of open-cast mining areas, open-cast mining facilities, power stations)

Overview of German lignite regions according to size



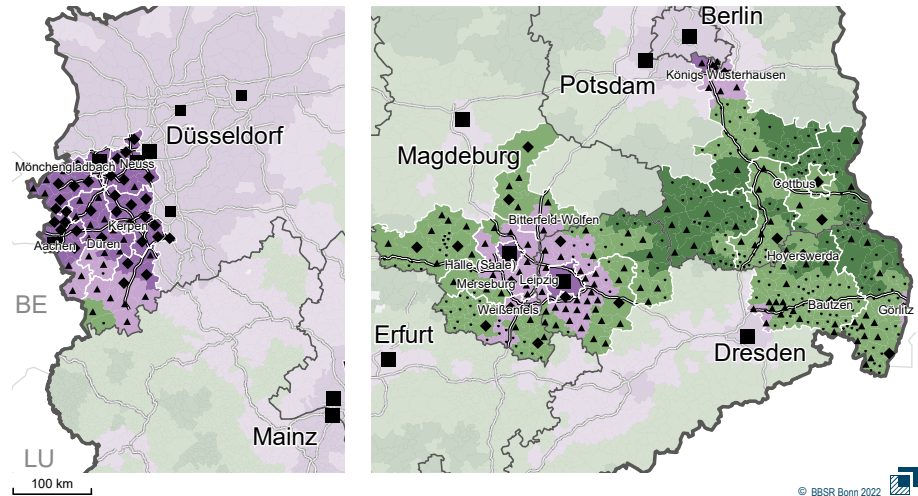
- Types of location according to daily population and settlement typologies
- Spatial typologies

The administrative territorial structures of lignite regions differ considerably. Due to the chosen boundaries, different numbers of federal states, counties, planning regions and municipalities are to be involved in the respective decision-making processes. Only the Rhenish mining region ("Rheinisches Revier") can be assigned to one single federal state (North Rhine-Westphalia). The Lusatian mining region ("Lausitzer Revier") covers parts of Brandenburg and Saxony and the Central German mining region ("Mitteldeutsches Revier") also comprises two federal states – Saxony and Saxony-Anhalt.

With an area of around 4,977 km<sup>2</sup>, the Rhenish mining region is the smallest area, only comprising 15% of the federal state area and 65 municipalities in North Rhine-Westphalia. About twice as large are both the Central German (9,864 km<sup>2</sup>) and the Lusatian mining regions (11,726 km<sup>2</sup>). There, there is an unequal distribution in the proportions of area per state and region and the number of municipalities. While in the Central German mining region, 147 municipalities belong to the lignite region in administrative terms, in the Lusatian mining region it is 235. Of these, 125 municipalities belong to Brandenburg and 110 to Saxony.

The population in the regions also varies considerably according to the selected geographies and the respective population density. The ratio of the lignite region to the federal state area shows how far the area definition generates a social component and at the same time reveals various features and identities. The Rhenish mining region is the most populous with 2.45 million people, followed by the Central German mining region with 1.94 million inhabitants. However, only 1.14 million people live in the largest area, the Lusatian mining region.

The Rhenish mining region has a largely urban character. This favourable situation leads to location quality of between central and very central. The Central German and Lusatian



**Spatial planning type "location" (2010) and type of town/city and municipality**

- very central
- central
- peripheral
- very peripheral
- large city
- medium-sized town
- small town
- rural municipality (towns and villages under 5,000 inhabitants)
- motorway

Data source: Spatial Monitoring System of the BBSR  
 Geometric basis: VG5000 (municipalities),  
 as of 31/12/2020 © GeoBasis-DE/BKG  
 Author: P. Spohr

mining regions are mainly dominated by small-scale urban structures and rural locations. Small towns and rural municipalities are important as they fulfil public functions in a regional context. However, they are also very important in the context of structural change. The location quality in both regions can be described as peripheral and very peripheral.

Due to its administrative definition and location among counties and independent towns/cities (those not part of a county but equivalent in terms of status and functions), the size of a lignite region, in terms of location quality, is not bound to the vicinity of open-cast mining facilities or power plants. This politically justified form of the regions creates subareas, which, in terms of structural change and in spatial and economic-functional terms, do not have the character of a typical mining region. As a consequence, lignite mining regions as a whole face challenges with regard to the transparent distribution of structural funds and equal treatment as well as regional perception and identification.

Spatial perspectives of structural change in lignite regions are one priority area of work in the Regional and Structural Policy division of the newly founded Competence Centre for Regional Development at the BBSR in Cottbus, Germany.

## BBSR supports municipalities in developing Voluntary Local Reviews of the 2030 Agenda

by Dr André Müller, Dr Andrea Jonas and Antonia Milbert

In 2021, the BBSR published the National Progress Report on the implementation of the New Urban Agenda, which had been prepared together with the German Institute of Urban Affairs (Difu). It is based on the Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development and was handed over to the United Nations. With self-analyses of their developments, nine municipalities of different sizes and geographical locations in Germany actively participated in the production of the report. Insights into the methodology of multilevel analysis can be found in IzR issue 1/2021 “Multilevel Analysis of Urban and Spatial Development”.

Since mid-2022, the BBSR has been supporting other counties, cities, towns and villages in Germany, Europe and worldwide in developing their self-analyses, so-called Voluntary Local Reviews (VLRs), as part of a multiyear Experimental Housing and Urban Development (ExWoSt) project. In addition to the contractors EBP Deutschland and Oeko-Institut, the BBSR also involves in the process relevant municipal umbrella organisations, the German Federal Ministry for Housing, Urban Development and Building, the German Federal Ministry for Economic Cooperation and Development as well as Service Agency Communities in One World.

The VLRs are incorporated as voluntary municipal reports into global reports. The latter are periodically published by the United Nations and include an analysis of urban and spatial development. The member states of the United Nations also participate in these reports with Voluntary National Reviews (VNRs).

The municipal reports combine quantitative and qualitative analysis methods and are data-based and oriented towards guiding principles. Moreover, they can be integrated into the global and national reporting formats. Among other things, the BBSR regularly exchanges expertise with the UN-Habitat’s Global Urban Observatory Unit for this purpose.

All counties, cities, towns and villages involved in the project in Germany are signatories of the specimen resolution of the municipal umbrella organisations of Agenda 2030 (see map). At the end of January 2023, the project municipalities

discussed their proposed analytical approaches for the reports, which can be used across different levels. What they all have in common is that they use the explicitly urban SDG 11 (“Sustainable Cities and Communities”) as a basic orientation. According to the Goal, municipalities should be developed in an inclusive, safe, resilient and sustainable manner. To this end, the project municipalities prepare and analyse related data, for example on land use. In addition, they review and adapt current guiding principles of urban development.

For example, Cottbus and Eltville am Rhein intend to work on the entire range of SDG 11, Eisenach primarily on the topics of education and inequalities (SDGs 4 and 10) and Lüdenscheid in particular on energy, consumption and production, and climate action (SDGs 7, 12 and 13). Mannheim, by comparison, increasingly pursues partnerships to achieve the SDGs, the Rhine-Neckar Metropolitan Region is developing a tailor-made monitoring system for all municipalities in the region (both SDG 17) while Niebüll focuses on life below water and on land (SDGs 14 and 15). The City of Munich is addressing the entire range of SDGs.

Municipalities from France, Poland, the United Kingdom, the United States, Brazil, India and Japan take part in the ExWoSt exchange on an ad hoc basis and supplement the methodical project approaches. The project helps the BBSR in promoting a network of different municipalities to increase integration at the local level more intensively in urban and spatial monitoring reports at national and supranational levels – particularly with regard to sustainability and resilience issues.

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📖 BBSR-Online-Publication 03/2021 “National Progress Report on the implementation of the New Urban Agenda”  
IzR issue 1/2021 “Stadtentwicklung beobachten, messen und umsetzen” [in German]





## Supportive research of Model Projects Smart Cities

by Eva Schweitzer



In the "Connected Urban Twins" (CUT) project, Leipzig and Munich are testing the Digital Participation System (DIPAS) of the City of Hamburg

Photo: Angela Pfeiffer

The BBSR coordinates, directs and participates in the research activities of the Coordination and Transfer Office Model Projects Smart Cities (Koordinierungs- und Transferstelle Modellprojekte Smart Cities KTS). With the funding programme "Model Projects Smart Cities (MPSC)", the German Federal Ministry for Housing, Urban Development and Building supports municipalities and regions in developing and implementing smart city strategies and projects with the aim of realising public welfare-oriented and integrated urban development. The programme is based, among other things, on the work of the BBSR in the Smart Cities Research Cluster and on the results of the National Dialogue Platform Smart Cities.

Since July 2021, KTS has been the central contact point for knowledge transfer and networking in the field of smart cities in Germany. It provides the Model Projects with

professional support and advice. Various research projects, events, working and development communities aim to translate findings from smart city research and municipal practice into strategies and practical measures. They focus on key digital transformation issues of municipalities and on how to build up digital competences in cities and regions.

One element of KTS's research activities are studies and expert reports. In 2022, the KTS started analyses on the following topics:

- Organisation, management approaches and process design in smart city model projects
- Local data strategies
- Urban data platforms in smart cities
- Open source: software and interfaces in local planning practice

- Smart city ecosystems
- Potentials of digital twins in urban development and urban planning
- Digitally supported resilience strategies in smart cities
- Spatial effects of digital urban development

First results reveal the manifold challenges facing cities and regions when developing and realising smart city strategies and digital projects and how they can meet them.

### Urban data platforms in smart cities (project management: Dr Charlotte Räuchle)

Municipalities use urban data platforms to collect, store and process digital information for the use of urban society. The user groups, purposes and required functions of a data platform are very diverse. With the help of short expert reports, municipalities will be able to decide for or against the introduction of an urban data platform. In addition, local and regional actors can receive recommendations on strategic, organisational and technical aspects. These recommendations refer to the definition of own practical examples and to procurement processes from an invitation to tender, support of project development to software architecture issues.

### Digitally supported resilience strategies in smart cities (Dr Ralf Schüle)

Urban systems operate safely and efficiently provided their underlying conditions can be anticipated and are stable. However, in times of increasing crises and abrupt changes, urban systems are vulnerable. Digital systems, data and applications open up new opportunities to strengthen the resilience of cities, towns and villages. On this basis, the study identifies four key features that strengthen local resilience: feedback loops, modularity, diversity and redundancy. As a result, it is advisable to establish interdisciplinary cooperations and integrate resilience as a cross-cutting issue into all local decision-making processes and procedures. Moreover, the development and implementation of resilience strategies should be based on and underpin existing strategies and concepts. Finally, it is important to use resilience as a means to support desired transformations of sustainability.

### Potentials of digital twins in urban development and urban planning (Dr Vilim Brezina)

Developing and realising a digital twin is a new field of activity for most municipalities in Germany. In some Smart



Photo: Angela Pfeiffer

Cities model projects, digital twins are a key element of local digitisation strategies. In the study, the term is defined, elements, different kinds of IT architecture and versions are outlined and first approaches are presented through case studies. At the same time, it shows, for example, that in many cases the basics of Building Information Modelling (BIM) and geographic information systems (GIS), are available to produce 3D city models, but that the use of digital twins is not yet accepted in urban planning. Detailed analyses, simulations and the use of artificial intelligence are still in their infancy. It is evident that the digital twin can apply its potentials in those cases where many data from different sources must be considered in decision-making. So far, very few municipalities have been able to create the technical and infrastructural prerequisites.

Studies and expert reports will provide intellectually rigorous insights into success factors and obstacles, necessary prerequisites and practical tools for local practice. Detailed information on the concept, methods and structure of the studies can be found on the BBSR website.



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[www.bbsr.bund.de](http://www.bbsr.bund.de) > EN > Topics > Digitalisation

## Active Mobility in urban quarters

by Melanie Schade

The BBSR, together with BMWSB, carried out the ExWoSt research project “Active mobility in urban quarters” as part of their work on sustainable urban development. The interface between urban development and transport planning was a special feature of this interdisciplinary research field. Its aim was to prove that, through integrated action, it is possible to advance multimodality and the coexistence of different forms of mobility in a way that is compatible with urban life.

People's mobility is changing, travelling has become more multimodal and there is a wider range of travel options. Due to increasing requirements for multimodal travel, expectations for public spaces are also changing. This is why four model projects were initiated with the aim of creating more attractive public spaces that are geared to the new mobility requirements. A quarter close to the city centre with a self-chosen focus was selected for this purpose in each of the following four cities:

- Aachen, Suermondt quarter: close to the centre, urban, creative and diverse – an urban quarter on the move
- Kiel, Ellerbeck-Wellingdorf: play street project
- Cologne, Altstadt Süd: active mobility changes space
- Leipzig, Stötteritz: active mobility in Stötteritz

Infrastructure measures were undertaken in all model projects to improve pedestrian and cycle traffic and the quality of public spaces. Car and bike sharing schemes were also created. Overall, there were improvements in active mobility, the quality of stay and in the processes of implementing those measures in all four quarters.

The neighbourhood approach has proven to be helpful in successfully implementing experimental measures in these areas. It was possible to involve residents directly and to quickly achieve visible results. Within each model city, the developed concepts, methods and design standards were also transferred to other districts within the cities.

When implementing the measures, the importance of cooperation with initiatives, associations and residents became apparent when promoting active mobility in urban quarters. By showing the added value at neighbourhood level, it was possible to promote acceptance and to counter resistance, for example against the reorganisation of spaces (e.g. assigning a new use to public parking spaces).



Redesigned traffic island with street furnishings in the City of Kiel

Photo: Melanie Schade

Another result was that early and targeted coordination in planning measures within administrations and with external actors (e.g. utility companies) is a key factor for their successful and timely implementation.

In addition to this ExWoSt model project, the German Environment Agency carried out a supportive evaluation in the project “Modellvorhaben nachhaltige Stadtmobilität unter besonderer Berücksichtigung der Aufteilung des Straßenraums” (Model project sustainable urban mobility project with special regard to the division of road space) (MONASTA). Results showed that, inter alia, after the measures had been implemented, the volume of pedestrian and bicycle traffic rose significantly and that was an increase in the use of public spaces.

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# More households are choosing second-hand homes

by Iris Ammann and Anna Maria Müther

An increasing number of households are deciding to own of existing buildings. The demand for detached single-family houses has increased. Families dominate the home ownership market. This is the result of a study conducted by the BBSR on behalf of the Federal Ministry of Housing, Urban Development and Building (BMWSB), based on a representative survey by the market research institute Kantar.

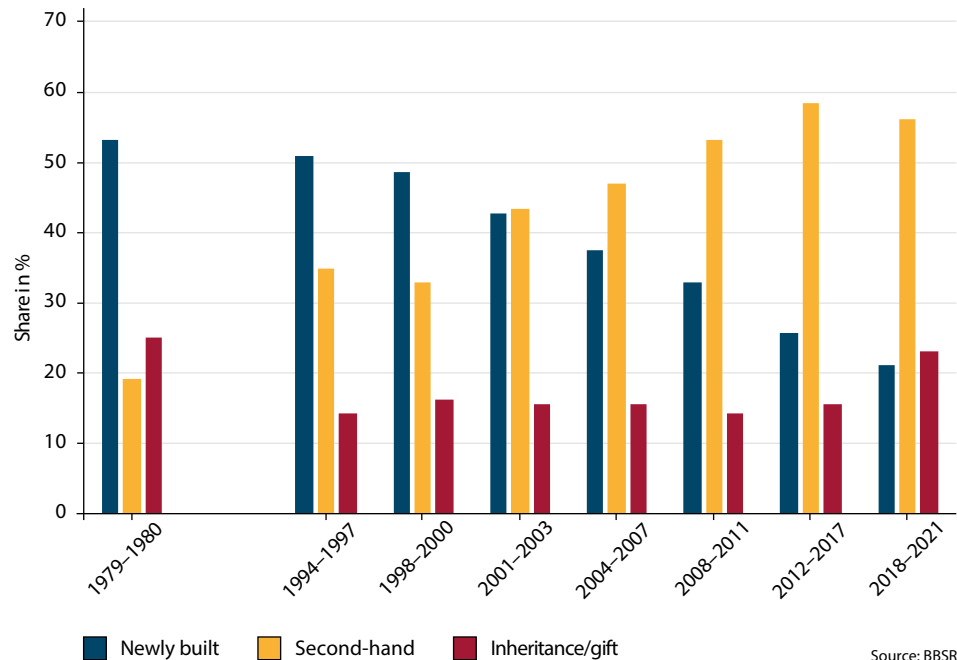
Of the households entering into home ownership from 2018 to 2021, 79 per cent bought already existing houses, while 21 per cent built new homes. Of these,

56 per cent bought property, while 23 per cent acquired it through inheritance or as a gift. “The trend towards second-hand properties has increased substantially in the past few years, and the share of newly built homes has decreased”, says BBSR housing market expert Iris Ammann. “Given the increasing land prices, for many households second-hand housing is often the better alternative to building new houses.”

According to the survey, detached single-family housing dominates the home ownership market. Of the households surveyed, 45 per cent have recently bought homes in this segment – significantly more than in the early 1990s (25 per cent). According to the current survey, 19 per cent of first-time homeowners started in a semi-detached house, 13 per cent in a terraced house and 17 per cent in an apartment. “The proportion of apartments in owner-occupied housing has decreased over the past few years, although an increasing number of these apartments have been completed. The segment seems to play a bigger role in rental housing construction”, as Ammann explains.

Of the owner-occupied households surveyed by Kantar, 55 per cent were families, and most of these had bought houses.

Type of acquisition 1979–2021



“The survey shows that the more people living in a household, the more likely they are to buy or build houses and the lower the share of apartments”, says BBSR expert Ammann. “There is also a clear trend towards existing single-family houses.”

Study design: Kantar (formerly Infratest) has been conducting two-stage surveys on home ownership in regular three- to four-year cycles since the 1970s. In a first research step, structural surveys take place in telephone interviews to determine basic data. Basically, approximately 20,000 households are included in the survey.

In a second step, Kantar conducts personal interviews with about 500 first-time homeowners per year about the financing and acquisition process. Unlike other studies, the surveys also include cash purchasers, as well as those acquiring homes through inheritance or gifts.

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📖 BBSR-Analysen KOMPAKT 14/2022 [in German]



Participants of the ImmoTALK Symposium on 9 September 2022 in Berlin

Photo: DVW e. V.

## Property markets need to become more transparent

by Eva Katharina Neubrand and Alexander Schürt

The transparency of property markets in terms of ownership structures, prices and building stock has been disputed for many years. Compared to other countries like the Netherlands or the United States, in Germany there is a lack of knowledge about markets and players. While there has been a lot of progress over the past 20 years, there is still a long way to go to achieve real transparency in markets. This was demonstrated on 9 September 2022 at the “ImmoTALK-Symposium” in Berlin, hosted by the German Association for Geodesy, Geoinformation and Land Management (DVW e. V.) and BBSR.

“We need more than just prices. We want to know something about the quality of the properties”, demanded Sabine Georgi (Urban Land Institute). The ownership relationships are of interest to the municipalities and the project development, in order to get players in the real estate markets on board for new concepts and planning. According to building land and tax expert Professor Dr Dirk Löhr (Trier University of Applied Sciences), the Federal Government, already has a variety of isolated information about the property stock from tax authorities and land registry offices. However, the data are not yet allowed to be merged or to be used for property market monitoring, housing policy and planning.

Professor Dr Thomas Beyerle (Catella Property Valuation GmbH) only sees the imposition of obligations as the only way of improving data availability. In his view, voluntary data deliveries have so far failed to work on a permanent basis.

Peter Ache, head of the DVW Real Estate Valuation working group, emphasised that, in addition to institutional providers, official committees of experts for property values should provide standard data nationwide. The legal framework for this was provided by the Federal Building Code, but further development was required to achieve transparency in real estate markets on a national basis.

In addition to their demand for more transparent real estate markets, the experts discussed the question: “Covid-19, inflation, crises – what is the current state of the real estate market?”. After over ten years of real estate boom in Germany and enormous increases in real estate prices, some participants predicted a turnaround as a result of the current crises. In the opinion of researcher Dr Reiner Braun (empirica ag), the current transition period in the real estate markets is characterised by a “tug-of-war between rising interest rates and persistent shortages”. However, the direction of development was clear: According to Dr Braun, prices will fall and price differentials will continue to increase.

The participants of the symposium agreed that there was a great need to present the real estate markets via clearly defined and high-quality data and information. These data must be digital, network-capable, accessible, continuously available and up-to-date.

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# Building permits: attractive rural counties

by Alexander Schürt

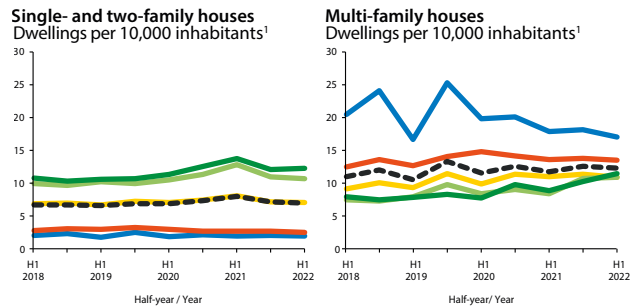
An evaluation of the BBSR concerning counties and independent towns/cities (not part of a county but equivalent in terms of status and functions) shows the distribution of building permits for dwellings in Germany issued in the first half of 2022. In total, approvals were granted for the construction of just under 186,000 dwellings in the first half of 2022.

In independent large cities, the construction departments of city councils approved 49,900 dwellings – which is a slight decrease in building permits of two per cent compared to the previous year. Rural areas in the surrounding area of fast-growing metropolises are increasingly becoming centres of construction activity. Compared with all independent towns/cities and counties, local construction departments approved most dwellings in Berlin (8,300 flats), Munich (4,700) and Hamburg (3,900) followed by the Hanover region (2,500) and the cities of Nuremberg (2,500) and Cologne (1,900).

The highest population-related values could be found in the counties of Dahme-Spreewald (83 dwellings approved per 10,000 inhabitants) and Havelland (61) in areas surrounding Berlin, followed by the Bavarian counties of Kehlheim (61), Deggendorf (59), Dingolfing-Landau (58) and the independent town of Straubing (60). “Numerous rural counties in the surrounding area of fast-growing metropolises recorded an increase compared to the previous year. They are attractive for willing builders because more building land can be mobilised there in the short term and property prices are lower than in large cities,” says BBSR housing market expert, Alexander Schürt. “Forms of mobile working also open up new possibilities in choosing a place of residence. Attractive tourist areas on the North Sea and Baltic Sea as well as areas bordering the Benelux countries stand out with high population-related values,” according to Schürt.

In recent years, the share of dwellings in multistorey residential buildings as a proportion of all approved dwellings has continuously increased – to 64 per cent in the first half of 2022 (102,800 dwellings including halls of residence). In independent large cities, the proportion was even higher, at 88 per cent. In rural counties the proportion of approved dwellings in multi-storey buildings has also increased – now accounting for 50 per cent of permits for residential buildings.

## Building permits of dwellings by type of building and county 2018 to 2022



### Differentiated settlement structure-related types of counties

- major independent<sup>2</sup> large cities
- medium-sized and small independent<sup>2</sup> large cities
- urbanised counties
- rural counties with signs of urbanisation
- sparsely populated rural counties
- nationwide

Note: major independent<sup>2</sup> large cities: at least 500,000 inhabitants

<sup>1</sup> The indicators for 2021 and 2022 were calculated based on the 2020 population.

<sup>2</sup> independent towns/cities = towns/cities not part of a county but equivalent in terms of status and functions

Data source: Housing Market Monitoring System of the BBSR, building permit statistics of the German Federal Government and the federal states, population update by the German Federal Government and the federal states

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While most approvals are for dwellings in multi-storey buildings, most buildings are single-family houses: 69 per cent of the approved residential buildings were single-family houses followed by multifamily houses (17 per cent) and two-family houses (14 per cent).

The building permit data are based on the building activity statistics of the German Federal Government and the federal states. The statistics cover building permits, completed building activities, unfinished building projects and demolished buildings. The data is collected by the federal states and then compiled by the Federal Statistical Office.

# Crisis experience may strengthen the construction industry for the challenges ahead

by Stefan Rein and Christian Schmidt



Photo: bannafarsai – stock.adobe.com

The economic consequences of the Russian war of aggression against Ukraine and the energy price crisis are currently seriously affecting the construction industry. The construction industry has previously had to cope with few crises of such a dimension. According to a study published by the BBSR, the limited experience of dealing with crises may have a negative impact on the resilience of entrepreneurs. Those who are rarely confronted with crises are inexperienced in preventing and strategically preparing for them. Entrepreneurs in the construction industry, which had already experienced situations similar to crises, are now being helped by measures already established before the current crisis.

In addition to the experience with crises, the research work of the scientists of Oxford Economics and the “Institut für Mittelstandsforschung (IfM) Bonn” (Institute for Research on Medium-Sized Businesses IfM Bonn) identifies other important factors that can influence the resilience of companies in the construction industry. They include, for example, strategic liquidity management by controlling accounts receivable and orders on hand, measures that help reduce structural dependencies, maintain strategic

relationships and reputation management and, if necessary, accepting external advice.

In view of future trends in the construction industry, the authors warn of neglecting trends like digitalisation, climate change and their resulting risks. However, according to the results of the study results only a few entrepreneurs in the construction industry are aware of these challenges and adapt their actions accordingly.

“The current crisis is hitting the construction industry hard. High levels of public investment in infrastructure, climate protection, and also housing, create reliability. In case of doubt, it is necessary to fall back upon proven state support measures such as short-time allowances in order to retain the limited staff in the construction sector. In addition, companies should not lose sight of strategic adjustments to future transformation trends – times of crisis are times of adaptation,” says BBSR Director Dr Markus Eltges.

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📖 [BBSR-Online-Publication 34/2022 \[in German\]](#)



# Practical ventilation concepts

by Bahar Saeb Gilani



Photo: Gina Sanders – stock.adobe.com

Good indoor air quality promotes human health, performance and comfort. This is why a well-thought-out ventilation concept is important – especially for densely occupied rooms such as classrooms and open-plan offices. The German-language brochure “Handlungsempfehlungen für praxisgerechte Lüftungskonzepte” (Recommendations for action for practical ventilation concepts) provides information and suggestions in the context of ventilation in buildings. The information provided is helpful not only for planners, architects and other parties involved in construction, but also for building users.

An adequate ventilation concept specifies the requirements on air quality, the suitable method of ventilation and other measures that are necessary to achieve and maintain the desired indoor air quality. The carbon dioxide (CO<sub>2</sub>) concentration of indoor air is considered to be an indicator of the air pollution caused by the presence of people. A concentration of up to 1,000 parts per million (ppm) of CO<sub>2</sub> is a guideline value rated safe by the German Environment Agency. For assessments in the brochure, the average value is considered over a period of ventilation.

The brochure investigates the influence of several parameters on the effectiveness of ventilation. Natural ventilation, mechanical ventilation and their combination (hybrid ventilation) are compared with a greater focus on natural ventilation. The effect of parameters such as window type and area, user behaviour, occupation rate, etc. on the CO<sub>2</sub> concentration of a reference classroom is presented. Moreover, the necessary window opening duration is investigated and summarised for several office configurations.

The results cannot be completely applied to every real case. However, the brochure provides useful information about the development of practical and effective ventilation concepts that can be used as a basis for design.

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📖 [Handlungsempfehlungen für praxisgerechte Lüftungskonzepte \[in German\]](#)

# InData special forum at the Sustainable Built Environment Conference – SBE 2022 in Berlin

by Dr Tanja Brockmann

This year, the "Sustainable Built Environment – SBE 2022" regional conference took place as a face-to-face event from 20 to 23 September 2022 at the Technische Universität Berlin (Berlin University of Technology). The D-A-CH (Germany - Austria - Switzerland) conference was organised by the Natural Building Lab of Technische Universität Berlin, Karlsruhe Institute of Technology, Graz University of Technology and ETH Zurich (Swiss University of Technology Zurich). Under the tagline "Mission 2050 – Built Environment inside Planetary Boundaries", the conference focused on how we can shape living, working, doing business and building in a post-fossil-fuel world.

A substantial objective of the conference was to define the role of the built environment with regard to the UN Sustainable Development Goals (SDGs) and to discuss its contribution towards achieving the 2030 and 2050 goals respectively. Against this thematic background, the BBSR organised the special forum "Digital EPDs in a unique common structure for all stakeholders in the value chain" in its function as the leader of the initiative "International Open Database Network Structure for Sustainable Construction (InData)". The forum was moderated by Dr Tanja Brockmann (BBSR).

To date, experts from twelve European countries have been participating in the InData initiative, which had been initiated by the BBSR in 2015. The network emerged from the growing interest in structuring and using information from environmental product declarations (EPDs) for the life cycle assessments (LCAs) of buildings. An environmental product declaration provides information about the environmentally relevant properties of a building product, which are required, for example, to determine the CO<sub>2</sub> emissions, the embodied energy and the resource consumption of a building. The special forum was intended to take stock of the initiative: Results and successes were presented and the strategies and tasks for a possible reorientation were discussed. The main objectives of the InData initiative were:

1. To establish an internationally harmonised digital format for a broad use of life cycle assessment data from EPDs, in particular for the life cycle assessment of buildings.



# InData

InData has defined a data format for EPD, following international standards, and formulated requirements for the quality of the data as well as the work processes. They enable a harmonised data transfer from the creation of the data to the application tools. The InData network uses the ILCD+EPD digital data format initially developed for the ÖKOBAUDAT database operated by the BBSR.

2. To build up an international database network.

The main idea of the InData initiative is that everyone who provides life cycle assessment data should continue to be responsible for their databases. One goal is therefore to agree on a standard data format with a fixed core of information as well as on suitable digital means of transfer. The quality-checked data can be retrieved from various international providers of EPDs in machine-readable form through an interface. Each data supplier publishes the data according to standard criteria via its own network node. On a central user interface, users can then search for and filter the related life cycle assessment data in all the data pools involved or selected by them and make use of them via suitable programme interfaces.

The work of InData can, with good justification, be regarded as a success story. Within five years, it has been able to establish and implement its essential goals. In 2020, the InData network was published, in which five databases were actively involved (IBU.data and ÖKOBAUDAT Germany, EPD-Norway, EPD International Sweden and EPD Italy). InData has succeeded in having machine-readable EPDs managed in databases that are networked internationally and digitally and provide harmonised and consistent life cycle assessment data for other applications such as the life cycle assessment of buildings.

Within a short time, the data format was accepted worldwide. Apart from the providers already mentioned, Spain, UK, France and Turkey have also taken the data format. Some actors (Sweden) have integrated secondary information into the format, others use the format in a reduced form (Finland). The user-friendly applicability of the data has led, inter alia, Denmark and Luxembourg to use the life cycle assessment data in their sustainability assessment systems for buildings (LCAbyg, Lenoz). Furthermore, the ILCD+EPD format has been taken into account in international standards for the use of EPDs in building information modelling (BIM). One example is ISO 22057: “Sustainability in buildings and civil engineering works – Data templates for the use of Environmental Product Declarations (EPDs) for construction products in building information modelling (BIM)”.

An important milestone was that ECO Platform, the European association of programme operators for EPDs, adopted the format and, in particular, following intensive exchange with InData, the idea of networked databases for EPDs. With their ECO Portal, ECO Platform offers a central access point that coordinates a database network based on the InData concept. The published transparent, consistent and comparable data support a comprehensive use for the life cycle assessment of buildings as an essential component of sustainability.

At the special forum, the milestones of InData were presented. Thanks were expressed to the InData members, who committed themselves with deep conviction and a high level of personal commitment. The future orientation of the group, in particular, was discussed. InData would like to continue to play a central role in advancing the digitalisation of EPD and LCA data for the construction sector. It has a central function in terms of further spreading and advancing the ILCD+ EPD format and of publishing versions adapted to current standards and trends. To this end, partnerships will be formulated with appropriate actors. According to InData, other priorities should be to develop an interface and to harmonise both the life cycle assessment data in EPDs provided by the construction industry, and the generic



data, often provided by the public sector. In addition, the data should be used for life cycle assessments of buildings in the context of assessment systems, national funding or legislation.

In order to give broad access to its activities, since June 2019, InData has been presenting itself with its own web portal: [www.indata.network](http://www.indata.network). The next world conference of the Sustainable Built Environment conference series will be held in 2024 in Montreal, Canada.

Supported by the architecture firm, *sol-id-ar planungswerkstatt* Berlin, the BBSR also developed an exhibition stand where, through posters and presentations, the conference participants could gain an overview of current sustainable construction trends in Germany. These included: the German Guideline for Sustainable Building and the German Assessment System for Sustainable Building; supportive tools like WECOBIS (a web-based information system for the selection of sustainable building materials); ÖKOBAUDAT, eLCA (both databases supporting the life cycle assessment of buildings) and eBNB (an electronic assessment system for sustainable building) and sustainable construction activities implemented by the German Federal Government. The BBSR participated in more sessions with lectures and contributions to discussions.

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## 1st Federal Congress "Day of the Regions"

On 14 June 2023, the Federal Minister for Housing, Urban Development and Building, Klara Geywitz, will open the three-day Federal Congress "Day of the Regions" in Cottbus. The new event format is intended to strengthen the public perception of spatial planning and regional policy and to promote the networking of regions.

The congress is dedicated to the topic "The changing world - how to make the transformation in the region a success". Guests from politics, administration, science and practice will be offered a varied programme with lectures and

discussion panels in different thematic arenas. In addition, further formats for exchange and networking are planned. These include a marketplace for projects and initiatives as well as exciting excursions in the Cottbus area and the Lusatian mining region.



**More information can be found at:**  
[www.bmwbsb.bund.de](http://www.bmwbsb.bund.de) [in German]