

Regional Design: impacts on territorial governance and planning practice

Land take and regional planning: promoting sustainable settlement development in urban regions

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Abstract: In Germany the national goal of reducing land take is opposed to the increasing demand for new spaces for housing and commercial construction, especially in already concentrated urban regions. Many dominating regional centers are not able anymore to satisfy the settlement pressure within their own boundaries. So regional solutions are required. Regional planning is an important player concerning sustainable settlement concepts in Germany with almost fully developed tools to provide land reduced settlement structures. Within this paper success factors as well as obstacles for the realization of the vision of compact and environmentally sustainable settlement structures in urban regions are shown. On the one hand, it provides a presentation of the regional planning tools promoting this spatial vision. In the light of an implementation deficit of the regional requirements on local level caused by a lack of acceptance for compact and space-saving settlement structures, there is, on the other hand, a need for innovative approaches of informal cooperation, participation and awareness raising. For this purpose, two case examples from the German regions of Hannover and Stuttgart are presented.

Keywords: regional planning; space-saving settlement development; participation; process design

Introduction

Many cities in Germany are facing increasing settlement pressure due to high immigration rates (Milbert 2017). Especially centres in concentrated urban regions are not able anymore to satisfy the demand for new spaces for housing and commercial construction within their own boundaries. Regional solutions are required to guarantee an appropriate settlement development. At the same time the national goal of reducing land take has to be pursued. Within the strategy for a sustainable development from 2002 the federal government stated to reduce land take for the purposes of settlement and transport nationwide to 30 hectares per day until 2020 (Die Bundesregierung 2002). In 2016 this was updated to “under 30 hectares per day until 2030” (Die Bundesregierung 2017). The long-term perspective is a net-zero land take objective of a circular land use, in which first-time land take is largely replaced by a reuse of existing settlement and transport areas (BMUB 2007). By this, land take is equally recognised as environmental problem as climate change or decline of biodiversity (Rink and Banzhaf 2011).

Since the second half of the 20th century land take for settlement and transport purposes in Germany increases constantly and decoupled from population growth. This has mainly ecological effects (loss of open space, damage of natural soil functions as well as flora and fauna), but also negative social (loss of recreation areas)

and economic effects (increasing costs for the maintenance of infrastructure and mobility costs). Namely the daily growth rate of land take for settlement and transport purposes declines as a result of versatile activities in land policy since 2002. Nevertheless, the development trend of 62 hectares in the annual mean of four years from 2013 to 2016 is still high above the goal of 30 hectares, as seen in Figure 1.

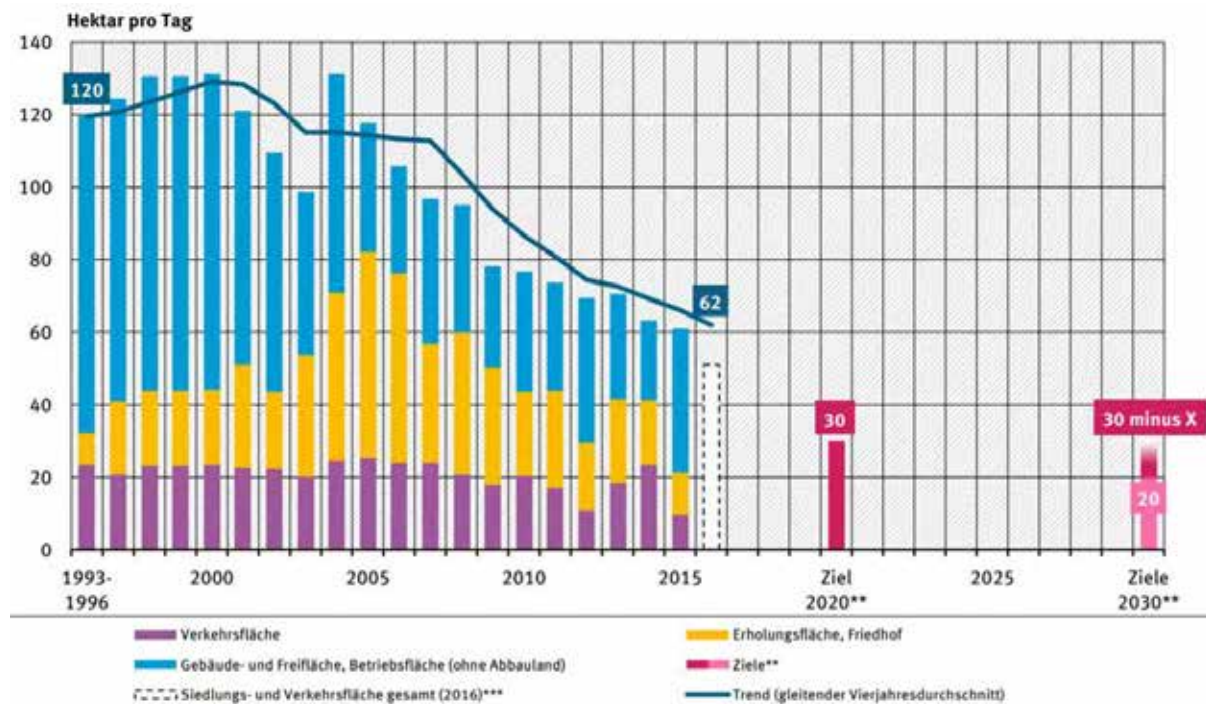


Figure 1: Increase of settlement and transport area in hectare per day (Source: UBA 2017)

Against this background, the development of compact, environmentally sustainable settlement structures in a regional context can contribute to the limitation of negative environmental impacts of land take. Due to cross-border causes and effects a management on local level is no longer adequate. So, regional planning is an important player concerning sustainable settlement concepts in Germany. Based on results from a research project "Compact, environmentally sustainable settlement structures in a regional context" of the Umweltbundesamt (Federal Environment Agency Germany) this paper deals with opportunities and obstacles by implementing this vision. By means of case studies regional planning tools, as well as particularly informal approaches of cooperation, participation and information within the field of action of regional planning, and their management effects were analysed. With regard to latter especially two regions are discussed: the Hannover region and the Stuttgart region. Besides the evaluation of planning documents, it can be relied on intensive expert discussions to conclusively formulate recommendations, how to force space-saving settlement development at regional level.

The definition of compact, environmentally sustainable settlement structures in a regional context

The vision of compact, environmentally sustainable settlement structures in a regional context requires a definition on the basis of qualitative criteria. These rest on the two main negative environmental impacts caused by settlement development: land take and pollution by traffic.

Therefore, settlement structures in a regional context will be compact and environmentally sustainable, if they minimise land take (1), connect new settlement developments to existing settlement structures (2), limit urban sprawl (3) and use land efficiently by developing inner-city areas before greenfield (4). In addition, settlement development should be concentrated on few suitable places, which own an appropriate supply and development

function (5), with accessibility advantages, especially public transport connections (6). The system of public transport therefore serves as base structure of regional settlement development (7) and should be preserved and strengthened (8), so that a reduction of transport related land take and emissions can be achieved (9). At the same time, large open spaces have to be held free from settlement activities (10) and the functions of open spaces to be protected (11). All in all, healthy working and living conditions should be promoted (12).

This definition receives a broad consent among the planning experts of the case studies. It became clear that the aspect of minimising land take is dominant in planning practice, which is why this is focused hereinafter.

Management of compact, environmentally sustainable settlement development by regional planning in Germany

Regional planning in the German spatial planning system is the intermediate level between the both superior levels of national and federal-state spatial planning, and land-use planning on local level. Under the guiding principle of a sustainable spatial development (§ 1 (2) Federal Planning Act (Raumordnungsgesetz des Bundes, ROG)) regional planning concretises the aims and principles of spatial planning, made on national and federal-state level, for the regional level and makes specifications in a regional plan in accordance to § 8 ROG, especially to manage the development of settlement and open space as well as transport, supply and disposal infrastructure. The practical implementation of these requirements on local level occurs by land-use planning. Latter has to adapt the binding aims of spatial planning (§ 1 (4) Federal Building Code (Baugesetzbuch, BauGB)).

The case studies show, that the vision of compact, environmentally sustainable settlement structures in a regional context is embedded in every examined regional plan. Various regional planning tools are used to manage a sustainable, space-saving settlement development. Besides a large-scale location-management (decentralised concentration) and site securing, there are restrictive specifications, which should prevent settlement in unsuitable places and in a not appropriate extent. The single planning tools are designed in accordance to the specific regional conditions in each case.

Basically, the large-scale location-management takes place by defining areas for the concentration of settlement activities; if necessary differentiated for housing and commercial construction. “Central locations” (in Germany defined as municipalities with a determined supra-local supply and development function) generally form such points of concentration for construction. “Development- or settlement-axes” function as regional backbone for settlement development. Public transport stops or stations also often are determined as focal points. This concentration promotes the use and utilization of existing transport infrastructures, whereby simultaneous land take for new ones is avoided. The principle of primacy of inner-city development is also a specification of large-scale location-management. It contributes to the minimization of land take, prevention of urban sprawl as well as keeping and protection of open space.

Another regional planning tool is a small-scale site securing of (preferably regional significant) areas for housing and commercial construction by designated clearly defined priority areas. These prove the connection of new settlement developments to existing settlement structures, the limitation of urban sprawl and focal points of settlement with accessibility advantages.

Besides these prioritised areas for settlement activities, some regions count on a quantitative limitation of spatial development by an obligatory proof of demand for land take. Municipalities have to state their demand for settlement activities on the basis of the expected future population development. The aim is to give them an understanding of strategical consideration of their settlement activities and to prevent open municipal tender planning resulting in land take.

Further limitation of settlement activities occurs by restricting the development framework of certain communes to the extent of their endogenous development (as the reverse of decentralised concentration). This involves the municipalities without supra-local supply and development function. By benchmarking it receives a quantitative dimension. The approaches to determine the local requirement differ in terms of the benchmarks and the related time period. They can refer to a percentage rise of settlement area, but values in relation to population or housing development are more proper, because of their direct reference to the actual needs.

The determination of gross settlement densities for different settlement types to be applied to new housing settlements are another form of quantity management. This contributes to the minimization of land take by using space efficiently. Open spaces and their functions are protected against being built on and damaged.

“Priority areas” and “reservation areas” protecting open spaces work as negative-planning location-management keeping large open spaces free from settlement, and preserving habitats and biodiversity. “Settlement breaks” and “green belts” should, for example, hamper the merging of settlements. Mono- and multi-functional regional planning protected areas complement the open space conversation.

According to an integrated development of settlement and transport regional specifications in terms of securing routes for roads and railways have relevance for compact, environmentally sustainable settlement structures by saving existing lines as well as areas for expansion and new construction. Preservation and strengthening of existing networks prevent land take for transport purposes. Especially routes for new railways are promoting an environmentally sustainable mobility.

Opportunities and obstacles in the implementation of compact, environmentally sustainable settlement structures in a regional context

Opportunities

Objectives and use of instruments in the regional plans in Germany are oriented to the implementation of the vision of compact, environmentally sustainable settlement structures in a large extent. The almost fully developed regional planning tools for this purpose constitutes one of the greatest potential benefits. Regional planning makes use of its regulation and management function in all areas, which are relevant to a sustainable, space-saving settlement development, and influences the development of settlements, open spaces and transport according to the spatial vision. In this respect, it relies on a mix of instruments, which is both qualitative and quantitative, and positive and negative in term of planning. Additional supporting instruments beside the regional plans are systematic monitoring systems for settlement areas on regional level recording factual land take and its change. With steady maintenance these could serve as implementation control of regional specifications.

Off the legally binding possibilities of managing settlement development, currently occasional and regional specific informal approaches in the form of integrated or sectoral concepts, or formats for information, participation and cooperation offer important opportunities for the mediation of the issues and the promotion of the implementation of compact, environmentally sustainable settlement structures in a regional context. Meanwhile mandatory on local level, the use of such informal approaches on regional level is limited yet.

A significant success factor of the vision’s implementation is the awareness of its necessity and the commitment among the regional planners. Expert discussions as well as the design of the regional plan can state this. As addressees and finally responsible authority for the implementation of regional specifications the local level of land use planning and its actors is another important factor. Thus, it is beneficial that awareness and commitment for compact, environmentally sustainable settlement structures is existing among the local planners as well. Formats for exchange between the regional and local level are mentioned as very helpful.

Also, a “strong” status of the regional planning, appearing in consistent assertiveness, has occasionally been stated as an advantage in the implementation of the vision. In connection with inter-community conflicts it is even demanded in the sense of a clampdown. The significance of the regional level for the management of sustainable settlement development is illustrated by this.

Obstacles

Although the regional planning management instruments, characterised by a restrictive locational management approach, constitutes one of the greatest benefit potentials for the development of compact, environmentally sustainable settlement structures, occasionally there are deficits in the implementation of the vision within the regional concept of settlement structure and use of regional planning tools. In particular, wiggle room appears in the limitation of land take and acceleration of a compact settlement structure due to increased densities. Quantified specifications derived from the 30 hectares-goal are hardly made yet.

The regional provisions need to be implemented by the land use planning on local level in accordance with the planning sovereignty derived from the guarantee of municipal self-administration. Therefore, the decision-making as well as their influencing actors on local level constitute central factors. The major obstacle in this context is the citizens’, the business community’s and politicians’ lack of acceptance or awareness of compact, environmentally sustainable settlement structures in a regional context.

Residents influence the shape of new residential areas through their residential preferences, predominant home ownership of single- or two-family house with garden. At the same time, more concentrated structures in their own environment are rejected, caused by stigmatization of clients of multi-floor residential buildings and concerns about traffic-referred exposure or negative effects on city- and landscape. In addition, there is an increased willingness to oppose construction projects. The “Not in my backyard (nimby)”-effect especially occurs, if denser areas of (housing) construction are to be built. Thus, an efficient use of space with reduced land take is hampered and planning processes become increasingly complicated and longer.

Accordingly, a less dense settlement structure is often pursued by political actors as well. Especially in less dynamically developing regions space is even seen as an economic factor, by which the aforementioned residential preferences can be satisfied and residents be gained. This political self-interest at local level is based on financial considerations within inter-municipality competitions, for example for affluent citizens, jobs or income tax. It constitutes an obstacle to the implementation of compact, environmentally sustainable settlement structures and causes excessive land take. Furthermore, the lack of long-term strategic considerations around settlement development at the local level has a negative effect in this context, hampering a needs-based and efficient land use.

Despite an increasing regional way of living, where living, working, shopping etc. take place in different locations, the politicians’ and citizens’ perspective is strongly marked by the local and with regard to a sustainable, space-saving settlement development sparsely beneficial. This is also apparent in the low level of intermunicipal cooperation, especially in the development of commercial areas, which hampers efficient cross-border land use and exploiting locational advantages.

Within the case-study regions, concentrated structures play no role for companies, whereby potentials to save space cannot be taken to advantage. Instead, still space-intensive hall buildings with large parking areas are dominating. Retail mostly is organised single-story as well. Consequently, the accompanying space requirement for industry and commerce regularly is realized on greenfield, followed by a loss of open space and their natural functions.

Another obstacle are speculations by land owners of undeveloped real estate as potential areas for construction or compensation in outer-city areas as well as potential sites in inner-city areas. Therefore, on the one hand development areas, saved by regional planning and suitable in accordance to a sustainable settlement development, on the other hand inner-city development potentials cannot be activated. Efficient land use through inner-city development and simultaneous reduction of land take becomes more difficult, and opportunities for developing suitable sites limited. At the same time, the resulting alternative land take of available open space favours urban sprawl and fragmentation.

Complementary, increased use of informal approaches of cooperation, participation, awareness rising and sensitisation in terms of a space-saving settlement development

The sophisticated regional planning tools indicate, that compact, environmentally sustainable settlement structures in a regional context accompanying reduced land take occurred, if settlement development would follow the strategies of regional planning. But, the regional planning is lacking incentive and executive instruments to strengthen implementation of the vision. Though, within the existing legal framework there are various possibilities to support the regional objective of saving space by increased use of informal approaches and measures. Two good examples of innovative informal participation serve the German regions of Hannover and Stuttgart.

Save space together by regional cooperation and spatial development concepts

Local perspective and motivation of decisions partly differ significantly from regional. Furthermore, a cooperative, intercommunal development of settlement is hardly existing in Germany. So, efficient organisational structures for a more intensive intercommunal or regional cooperation have to be created as a framework for multi-level and multi-actor discussion of this topic. The aim is, at least, to curb local competition for residential populations and enterprise (UBA 2018), to promote a sustainable land use, and to protect open spaces. The basis for collaboration is informal cooperative approaches rested on voluntariness, consensus-building and self-commitment. Building confidence is essential. Within horizontal, network-like cooperation and dialogue, small-spatial as well as thematic aspects can come to the fore. One instrument for showing the results of these processes, and for fixation of objectives and strategies, are regional development concepts (UBA 2018).

Informal cooperation regarding the minimization of land take particularly provides itself in the specific fields around the development of residential and commercial spaces, to come to a fair mutual handling and a win-win-solution for all. Thereby, quantity goals for land take should be discussed and preferably be agreed, and perspectival an equalization of benefits and burden be established. In these more conflict-ridden area, intercommunal cooperation has to be understood as a learning process, which is sometimes suffers backwards steps, before a breakthrough can be achieved. Functioning informal approaches often represent a preliminary stage to official cooperation with long-term impact (UBA 2018).

New elements of process design to convince local decision-makers

As cities and municipalities, as bearers of the planning sovereignty, implement the regional specifications, acceptance for the regional space-saving strategies has to be won among political decision-makers at local level. As a result, inclusion of these in regional negotiation processes is significant to realize compact, environmentally sustainable settlement structures. It is important to put the topic onto the political agenda, to convey the regional-planning vision of settlement development, and to encourage understanding.

A first step is to prematurely involve politicians in the regional plan preparation procedure. Herein regional needs around settlement development, in particular the generation of compact, environmentally sustainable

settlement structures in a regional context, should be clarified and appropriate cooperative goals be identified. By using simulation games, impacts of different development strategies are shown. Results, such as cooperative developed goals, absolutely have to be made visible within the regional plan specifications. A transparent mediation of backgrounds influencing the design of regional planning and of underlying strategies for the regional settlement concept, pursued by the regional plan, contributes to the implementation in local level. The role of regional planning is to initiate, organise and accompany the discussion process as well as show and communicate the results.

Exchange between regional and local level should occur regularly and continuously in order to discuss the themes of sustainable, space-saving settlement. Therefore, an example are mayors' meetings joined by regional planners to convey the regional planning ideas. Further possibilities of awareness rising and required action illustrating are excursions and training events for political decision-makers. By showing best-practice examples for concentrated construction and settlement a positive image is created. Efficient and space-saving land take can be supported by showing or even providing information- and monitoring tools for inner-city development.

Sensitisation of citizens and companies of compact, space-saving settlement structures

Regarding the lack of awareness and even defensive reactions concerning concentrated, space-saving settlement structures among citizens there is a significant need to create macrosocial awareness for compact, environmentally sustainable settlement structures. Thus, the efforts of conveying this vision have to be addressed to citizens and companies as the end users of land as well.

Civil dialogues at local level increased and were specifically planned in the past years, neither did regional coordination and planning processes. Therefore, regional planning should contribute to a public debate and a sensitisation for the vision by using formats of information, communication and participation. Also, persons not directly concerned by construction projects could be introduced to the topic in this way. Especially impacts of behaviour patterns, for example the choice of residential location in relation to working location or the choice of a certain form of housing, have to be discussed. It is important to show regional coherences and effects, which currently increase in everyday live. By including civil and commercial actors in regional planning and development processes their increased need for participation will be met. As already stated, cooperative developed guiding principles serve as legitimation for regional planning action and objectives' implementation.

The demonstration of positive examples of dense residential and commercial areas, and inner-city development projects, have significant potential to generate acceptance for compact, environmentally sustainable settlement structures in a regional context.

Regional participation process "Vision of the future for the Hannover region 2025" within the preparation of the regional plan

In the run-up to the preparation procedure for its regional plan, the Hannover Region, as a regional planning agency, in 2012 and 2013 carried out a comprehensive new informal participation process in Germany, involving experts and specific stakeholders as well as citizens in order to create a vision of the future for the region. In the following, this served as the basis for the further concrete design of the regional plan.

Through various events for different target groups, two public dialogues as a kick-off and closing event, the internet platform "Dialogue: Future Region Hannover", which offered information but also the possibility of an interactive dialogue for discussion, as well as an accompanying positive dissemination in the media a broad social discourse was created. A total of eight expert workshops and a joint expert dialogue were held for the regional specialist administration teams, the representatives of municipal planning and external experts. An innovative aspect was the early involvement of citizens in the context of regional planning, which was promoted

by the Federal Ministry of Transport, Building and Urban Development as a model project of national urban development policy. Around 12,000 inhabitants participated in five dialogue forums on five core topics and via the internet platform. Regional politics was integrated and informed during the process. In addition, a workshop took place with the regional committee members to discuss the draft of the future vision.

The results of the process are seven “visions of the future” on the topics of equal opportunities in demographic change (1), economic development (2), equal and healthy living conditions (with less space consumed) (3), open space and recreation (4), energy and climate protection (5), mobility (6) and cooperation (7). For each of them, target statements were formulated for the period up to the year 2025, concrete ways of implementation were pointed out and vividly presented via collages. Fixing the seven “visions of the future”, represents the consensual setting of objectives for regional development and serves as a basis for legitimising further regional planning action (Region Hannover 2014). This has created awareness and acceptance among local decision-makers, citizens and companies about the challenges and approaches of regional development. The necessity of a compact, space-saving settlement development with an adequate supply of open space to the cities and municipalities was communicated.

Participation and model process “International Building Exhibition 2027 CityRegion Stuttgart”

An International Building Exhibition (Internationale Bauausstellung, IBA) is an instrument of urban and regional development. It serves the development, testing and presentation of innovative constructing and planning solutions. Under a specific theme, exemplary and forward-looking processes and model projects are carried out in a district, city or region within a limited period of time and space. Current tasks and developments in architecture, urban planning and regional planning should be demonstrated and discussed in and with the international public (Open IBA 2019, Spektrum 2001).

The “IBA 2027 CityRegion Stuttgart” takes place between 2017 and 2027. It is intended to turn the region into a field of urban planning and development by experimenting with exemplary innovative solutions for sustainable urban development. The framework of the “IBA 2027 CityRegion Stuttgart” is built by four different thematic complexes. Within the thematic complex “Building culture of a new modern age” a new urban development and planning model (“Charter of Stuttgart”) should be developed, which in particular addresses the problems of housing shortage and the aspects of mixed use, density, sustainable mobility and urban landscape integration. The second complex “Integrated neighbourhoods” aims at the creation of a mix of urban spatial functions, in which affordable living space is provided and current needs such as intergenerational housing forms and open spaces close to residential areas are addressed. Innovative, space-saving solutions are to be developed against the background of the high regional settlement pressure. The complex “New technologies for the urban region worth living in” refers to resource- and energy-efficient construction and digitisation in urban and regional development. “Region is city and city is region” describes the fourth complex. It deals with bundling regional forces in order to cooperatively manage the current spatial change under the influence of growth, the contrast between building and landscape, city, nature and river (Wirtschaftsförderung Region Stuttgart GmbH 2016). Within the framework of the “IBA 2027 CityRegion Stuttgart” several so-called IBA districts are to be created with model character for other regions and municipalities. The individual projects then form an IBA network: on the one hand, virtually through knowledge transfer and research work in urban and regional development, and on the other hand, in reality through construction and infrastructure measures. Until the final festival of the IBA in the year 2027 further IBA festivals in the years 2023 and 2025 are planned. These are understood as “exhibitions for temporary experimental buildings”. After completion of the IBA, all exhibition projects will be integrated into the region and reused (IBA 2027 StadtRegion Stuttgart GmbH 2018).

Before the start of the “IBA 2027 CityRegion Stuttgart”, a participatory platform process was carried out in 2016. Around 500 people from civil society, politics, planning, architecture, arts and industry took part in various workshops and forums. The results, consisting of the thematic complexes, were recorded in the

"Memorandum IBA 2027 CityRegion Stuttgart" and presented at a closing event (IBA 2027 StadtRegion Stuttgart GmbH 2019). The IBA is managed by the company "Internationale Bauausstellung 2027 StadtRegion Stuttgart GmbH iG" founded in September 2017. Its main shareholder is the state capital Stuttgart. "Verband Region Stuttgart", inter alia responsible for regional planning in the Stuttgart region, and the regional business development are participated as well. Further the Baden-Württemberg Chamber of Architects and the University of Stuttgart have little shares each. An artistic director takes over the artistic and content direction (VRS 2019).

Understood as a field of experimentation, the IBA offers the opportunity to involve a broad spectrum of actors in the themes and challenges of regional development. On the one hand, aspects such as settlement densities in particular can be brought closer to the relevant actors through knowledge transfer and exchange in the IBA networks. On the other hand, IBA projects and neighbourhoods make it possible to experience high-quality, space-efficient settlement structures in a regional context. In this way, they contribute to raising awareness and increasing acceptance of sustainable settlement development. Special interest on the part of regional planning applies to the experimental testing of a greater mixture of spatial functions, the review of regional planning action in view of the lack of implementation instruments as well as innovative approaches of new building law (Region Stuttgart 2018 verbal). By involving planning actors, politicians, companies and citizens in this open-ended framework, new impulses for innovative approaches and implementation instruments for integrated planning as well as awareness rising and acceptance for sustainable, space-saving settlement structures are possible.

Conclusion

The reduction of land take and the realisation of sustainable settlement development are central aspects of the German spatial planning practice. As central interface between federal-state and municipality and equipped with a sophisticated tool box, thereby, regional planning has great importance to the implementation of compact and environmentally sustainable settlement structures in a regional context. Efficient use of space by concentrated settlement structures and active minimization of land take on local level often comes across with acceptance deficits and even resistance among citizens and companies followed by politicians. Informal approaches promoting sustainable, space-saving settlement structures in a regional context can help to rise awareness and commitment. Though, these preparatory and accompanying steps besides legally binding regional planning specifications require additional human, financial and temporal resources. Especially, the increasing need and demand for participation and information, such as rising legal requirements for planning procedures claim manpower and working time of regional planners and create costs. So, there is a need to increase human and financial resources in accordance with the new regional planners' and developers' profile of requirements for an appropriate fulfilment of existing tasks as well as newly arriving ones, like a more intensive participation, communication and awareness rising.

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