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Open space

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Contents

Given its diverse functions, open space plays a central role in the development of cities and regions. In times of dynamic transformation processes, the potential of open space and the possibility to shape it in a flexible, multifunctional are of particular interest. Open space planning can draw on a variety of proven instruments. Nevertheless, there are flaws and deficits in planning practice at all levels, hence it remains a challenge going forward.

1 Significance within spatial planning

In the debates surrounding current issues of ▷ *Spatial development*, open spaces play a new role. The social and spatial-structural upheavals of recent decades call for an intensified examination of the potential of open spaces on an urban and regional level. These include demographic change (▷ *Demographic change*), ▷ *Urban redevelopment* in east and west Germany or even climate change (▷ *Climate, Climate Change*) and the energy transition. In addition, the ongoing ▷ *Suburbanisation* in urban surroundings or within the structure of polycentric urban regions (▷ *Urban region*) remains a challenge for ▷ *Spatial planning (Raumordnung)* and ▷ *Urban planning*: the results are land take, the development of brownfield sites (▷ *Brownfield site, derelict/vacant site*), land reuse and temporary uses (▷ *Temporary use*). In the first instance, all of this concerns open spaces.

This increases the attributions and demands for open spaces: they contribute to the ecological (climate) balance and the preservation of cultural heritage, they serve as locations for the expansion of renewable energies, as leisure and public areas, and they form a scenic backdrop for the city (▷ *City, town*). In addition, they provide space for traditional uses such as ▷ *Agriculture* and ▷ *Forestry*, which are also gaining in importance in the urban-regional context.

Open space is finally losing its image as 'the space that is left over' in spatial planning (Anders/Hauber/Pustal 2013: 127; ▷ *Spatial planning (Raumplanung)*). The conservation and planning of open spaces are advancing to become central instruments of targeted urban planning and ▷ *Regional planning* based on the paradigm of ▷ *Sustainability*. Open spaces are under discussion in both qualitative and quantitative terms, not only in the planning practice and in the ▷ *Spatial sciences*, but also in public discussions. This is particularly evident where prosperous cities continue to grow into the surrounding area and at the same time promote internal densification, or where the expansion of renewable energy changes landscapes (▷ *Landscape*) on a large scale.

This can be seen from the ▷ *Guiding principles for spatial development* in Germany, which were first adopted by the federal and state governments in 2006: in the guiding principle of the *conservation of resources, shaping of cultural landscapes*, conserving and developing open spaces are key tasks (*BBR/BMVBS* [Federal Office for Building and Regional Planning/Federal Ministry of Transport, Building and Urban Development] 2006: 52). The guiding principles were further developed in March 2016 (*MKRO* [Conference of Ministers for Spatial Planning] 2016). In the first place, they address federal state and regional planning as an implementation level.

But at the municipal level it is also beginning to transpire that both the competition for increasingly scarce land resources and the handling of the excess of land need to be reconsidered in the context of urban redevelopment. The focus has shifted from the built-up space to a corresponding development of built-up and non-built-up space: open space planning is given a central position in the design of the post-industrial city (Giseke 2004).

2 Term and definition

Compared to the word *landscape*, *open space* is not a sharply defined term. Section 2(2) of the Federal Spatial Planning Act *(Raumordnungsgesetz, ROG)* introduces open space as a central spatial category; it does not provide a definition, but rather ascribes functions, relevance, safeguarding and development requirements.

With regard to the objectives of nature and landscape conservation, section 1(6) of the Federal Nature Conservation Act *(Bundesnaturschutzgesetz, BNatSchG)* refers to 'open spaces in populated areas and areas close to settlements' and lists their 'components' as e.g. parks, forests, brush areas, streams with riparian zones and floodplain areas or areas used for agriculture. Open spaces are amongst others subject to ▷ *Landscape planning*.

The term is not mentioned in the Federal Building Code *(Baugesetzbuch, BauGB).* However, a basic distinction is made here between built-up and non-built-up areas. This suggests that open spaces are not just green spaces: open space can thus be defined through its delimitation from built-up space; it is literally the open space that is not or not significantly occupied by structural works or technical facilities. It was precisely this determination of characteristics that has stimulated critical reflections: this spatial category is thus primarily defined by the absence of high-quality built use and at the same time as open space in anticipation of further (built) development.

The delimitation of terms such as *landscape*, *open area* or *green space* also remains blurred. According to the German Council for Land Conservation *(Deutscher Rat für Landespflege, DRL* 2006: 7), 'the term "open space" [...] has replaced the previously used terms "open area" and "green area" or "green space"', thus integrating the elements in a more comprehensive and understandable way. According to the European Landscape Convention *(Europäischen Landschaftskonvention),* landscape 'means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors' (Council of Europe 2000: article 1(a)). This definition clarifies the relationship between landscape as a perception-based spatial category versus open space as a spatial category under planning law. In this respect, an approach based on functions and qualities is useful for a more in-depth study of open space.

3 Functions and qualities of open space

As a broad planning category, open space takes on a large number of often overlapping functions. The quality and available facilities determine the potential of open spaces and in which form and to what extent they can be used and can fulfil specific functions.

The ecological functions relate to the provision of important basic needs, which decisively determine the efficiency of the ecological balance of the area. These include abiotic factors such as soil, climate/air and water, the flora and fauna as biotic factors and their interrelations within the ecosystem. Soil quality is a key prerequisite for agricultural and forestry use. The regeneration and renaturalisation of rivers after a centuries-long phase of regulation and use for the discharge of wastewater have brought the ecological potential of the watercourses and their banks as well as their contribution to increasing urban quality of life into focus. The flood disasters of the last

few decades have provided the impetus for increased securing and reclamation of retention areas, especially in the context of climate change (German Federal Government [*Bundesregierung*] 2008).

In this context, the environmental and climatic compensation function of open spaces is gaining in importance: as the heat load in urban regions increases, it will be all the more important in the future to ensure or optimise the functionality of the regional urban systems of cold and fresh air production in conjunction with effective channels for ventilation in those regions. For this reason, the identification of the climate relevance of open spaces is currently one of the planning tasks which is being methodically discussed (KlimaExWoSt; cf. *BBSR* [Federal Institute for Building, Urban and Spatial Research], undated). Both the bioclimatic and air hygienic functions of open spaces play an important role in human health.

The historical and cultural function relates to the natural and cultural heritage and its importance, which is reflected in the legal standards of the Federal Nature Conservation Act or the Monument Preservation Act (*Denkmalpflegegesetz*), among others. On the one hand, cultural heritage refers to cultural landscape relics such as old parks, cemeteries, mine shafts, mill streams or semi-arid limestone grassland. On the other hand, it can also include historical cultural landscapes, whose holistic perception is dominated by relic or traditional uses and structures, such as the old wine-growing landscapes with steep terraced slopes. The natural heritage also ranges from individual structures such as raised bogs and rock formations to extensively protected, semi-natural coastal and forest landscapes.

The economic function 'can be broken down into the direct economic function, e.g. as an agricultural production area or as potential building plot, and the indirect economic functions, which includes the contribution to the attractiveness and positive image of a city' (Ziegler-Hennings 2011: 178). Open spaces close to housing can therefore increase property values correspondingly (Kenneweg 2004; Gruehn 2010; BMVBS 2011: 32). According to the German Council for Land Conservation *(Deutscher Rat für Landespflege, DRL)*, the availability of high-quality open spaces is an important soft location factor that has a decisive impact on the perceived attractiveness of a city (*DRL* 2006: 8). The EU 'Green Infrastructure' strategy calls for a stronger weighting of this factor in the development of cities and regions (*BMUB* [Federal Ministry for the Environment, Nature Conservation and Nuclear Safety]/*BMEL* [Federal Ministry of Food and Agriculture] 2015: 34).

The social functions are extremely diverse: open spaces serve as relaxation, leisure and public spaces. They offer places for meeting and communication. They open up an area of experimentation: in many cities, intercultural gardens, pocket parks, urban gardening initiatives (Müller 2011) and other new possibilities for the temporary use of open spaces have emerged. Wherever residents do not have their own gardens, public open spaces in the living environment, their accessibility and interconnectedness are of particular relevance.

Last but not least, open spaces help to structure space and take on aesthetic functions. They subdivide the settlement area and are central elements of the settlement structure. Topographically, hydrologically or edaphically undeveloped areas such as steep slopes, bodies of water and parts of their floodplains often determine guidelines for settlement structures and thus the appearance of a city. Well-planned 'components of urban building and the provision of local public amenities such as decorative squares, boulevards, gardens, roadside trees' (Schöbel 2007: 13) or buffers between undesirable uses define urban spaces and provide orientation. With the

suburbanisation of the surrounding urbanised area, diverse patterns of open space emerge with fragments of traditional open land uses, residual and brownfield sites, whose spatial structure and aesthetic functions appear unplanned and diffuse. The active design of open spaces continues to concentrate on inner-city areas, and under the motto 'the city is a stage' sometimes leads to an 'over-presentation' of public space (Giseke 2004: 671). In contrast, design deficits arise in suburban areas, often referred to as 'in-between cities' (Sieverts 1997).

This overview of functions provides reference points for the description of open spaces. It should be remembered that monofunctional attributions correspond to the categories of the planning law, but that in reality 'these functions and meanings [coincide] in an orderly and disorderly manner' (Schöbel 2007: 14), and definitely compete with each other. Multifunctionality is therefore one of the essential features of open spaces.

4 Past and current state of open spaces

In comparison with other European countries, Germany has a high population density. A rapid increase in settlement areas began with industrialisation in the 19th century. Much of the land needed for this purpose was taken over from agricultural areas: between 1997 and 2001 agricultural land was reduced by an average of 140 hectares per day; the proportion of settlement and public thoroughfares increased by 129 hectares daily during this period (Schekahn/Grundler 2004: 15). The development of settlements slowed down considerably in the following years: 'In 2010, "only" just under 56 hectares were taken per day in the old federal states' (*BBSR* 2012: 122). The most extensive expansions of settlement primarily affect the catchment areas of the prosperous urban regions, outside the already densely populated agglomerations (*BBSR* 2012: 120). The proportion of settlement areas and public thoroughfares across the entire territory of Germany is currently around 13%, with clear regional differences: in the non-city states from 8.1% in Mecklenburg-Western Pomerania to 22.8% in North Rhine-Westphalia, up to the city states with 70.2% in Berlin and 60% in Hamburg (Destatis 2014: 22).

Land take leads to a loss of areas where the climate is active, such as cold air generation areas in the vicinity of the cities, while the sealing of soils results in a reduction in the rate of groundwater recharge. The increasing structural development of the catchment and flooding areas of rivers creates a considerable flooding risk for downstream riparians. Soil contamination and contaminated sites considerably limit the usability of open spaces and may pose a risk to human health, ▷ *Groundwater* and the ecosystems affected.

The polycentric settlement structure, the extensive ▷ *Provision of local public infrastructure* for traffic, and the expansion of infrastructure layouts (▷ *Infrastructure*) result in a fragmentation of open spaces. Meanwhile, open spaces with little or no fragmentation or low noise have become a rare commodity and represent a specific quality for human health as well as for safeguarding ▷ *Biodiversity*: 'even in the peripheral, rural areas of Germany, large, unfragmented open spaces are increasingly coming under pressure' (*BBR/BMVBS* 2006: 33).

Last but not least, a far-reaching change in the landscape took place in the 20th century due

to the expansion of settlements and infrastructure: in (sub)urban areas, the natural scenery of traditional cultural landscapes (▷ *Cultural landscape*) have been fundamentally changed. Today, it is the energy transition and the expansion of renewable energy that continue to drive this radical change in the landscape of ▷ *Rural areas*.

The development of open spaces is not just about quantities, but also about quality: the stress on open spaces in urban areas through e.g. soil erosion, soil replacement, soil compaction or soil contamination, affects the functions of open spaces in the long term. Similarly, this applies to the intensified use in agriculture and forestry, for example in connection with the increased cultivation of renewable resources.

As the demographic change continues and the population decreases, a contrary trend can be observed at the same time: more and more settlement areas are becoming brownfield sites and are difficult to mobilise for subsequent reuse for building (Koll-Schretzenmayr/Kramp 2009; *BBSR* 2011). The development and planning of open spaces becomes a key factor in the reconstruction of cities when a meaningful reintegration of brownfield sites into the urban structure is desired. As a rule, wide-ranging approaches to shaping open space are required in order to keep the maintenance effort low, from civic initiatives such as communal gardens to the use of the areas for agriculture or forestry, even in an urban context. For example, (sub)urban landscapes with their small-scale and diverse mosaics of use, brownfield sites and border lines have 'numerous niches for a great diversity of species' (*DRL* 2006: 8) and quite a high potential for open space.

Programmes such as the Europe-wide system of protected areas, Natura 2000, also explicitly aim to preserve biological diversity and extensively protect the areas concerned, for example from land take for building. The Natura 2000 network mainly includes flora-fauna habitats (Habitats Directive 92/43/EEC): in Germany, over 3.3 million hectares of terrestrial flora-fauna habitats have so far been reported; this corresponds to a proportion of 9.3% of the land area (*Bundesamt für Naturschutz*, *BfN* [Federal Agency for Nature Conservation], undated).

5 Conserving and developing open spaces in the context of sustainable spatial development

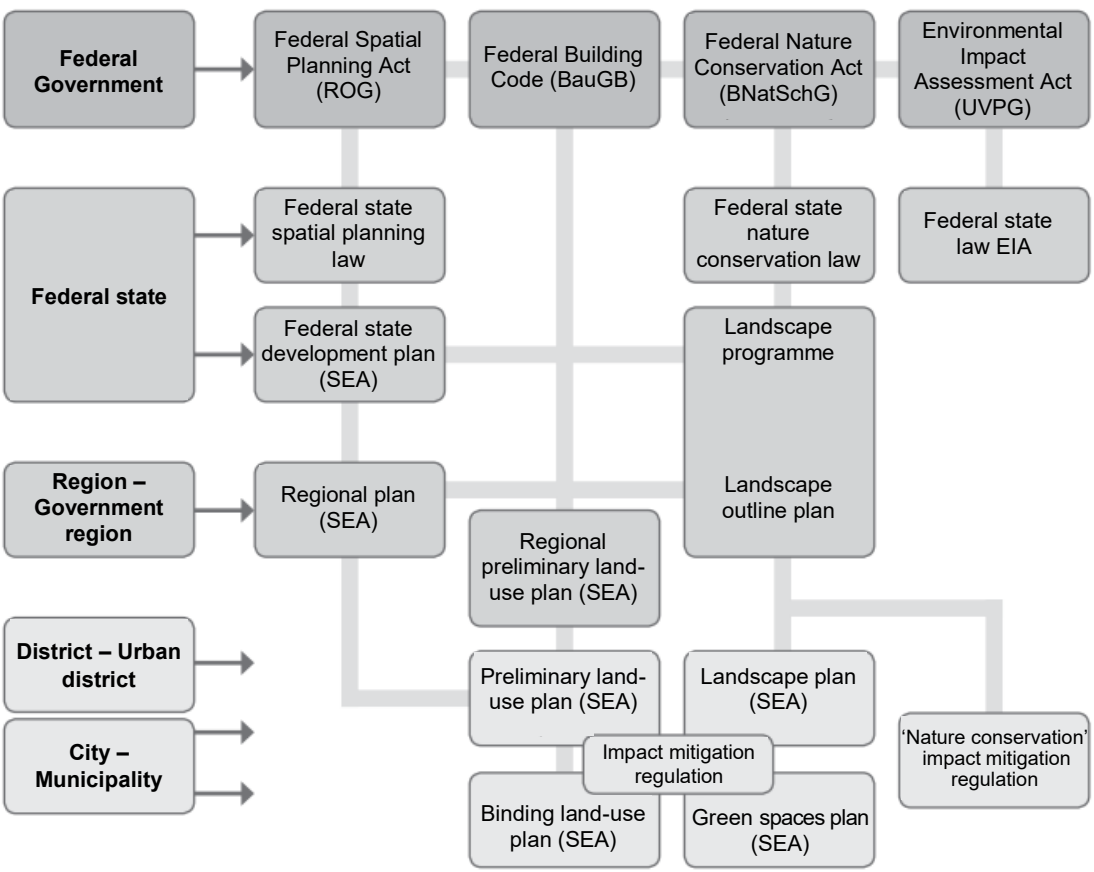
Section 1(2) of the Federal Spatial Planning Act formulates the guiding principle of sustainable spatial development, 'which aligns the social and economic demands on the space with its ecological functions'. The Federal Spatial Planning Act expresses the importance of open spaces in the principles of spatial planning: in accordance with section 2(2) 'a large-scale, ecologically effective system of linked open spaces is to be created', 'further fragmentation of the open landscape and forest areas [...] must be avoided as far as possible' and 'the land take of open space [...] must be limited'.

In this regard, section 8 of the Federal Spatial Planning Act provides the appropriate instruments: national spatial development plans, regional plans and regional preparatory land-use plans will determine the structure, conservation and use of open spaces. From a technical point of view, the specifications can be prepared through landscape outline plans, among others. In accordance with section 9 of the Federal Nature Conservation Act, these should contain information 'on the

preservation and development of open spaces in populated and unpopulated areas'.

The spatial planning stipulations establish the framework for ▷ *Urban land-use planning*, which is also committed to sustainable urban structural development in accordance with section 1(5) of the Federal Building Code. Central open space functions are addressed by the safeguarding of an environment fit for humans, the conservation of nature, ▷ *Climate protection* and the necessity of ▷ *Climate change adaptation* as well as the conservation of the location and landscape. The instruments of planning law offer sound approaches for conserving and developing open spaces. This applies to various planning levels and is based on the best practices (cf. Fig. 1).

Figure 1: Levels and interdependencies of planning and nature conservation law



Source: The author, based on Schekahn/Grundler 2004: 30

Fundamentally, different strategic approaches to conserving and developing open spaces can be distinguished at the spatial planning level (*BMVBS/BBR* 2006; Siedentop/Egermann 2009):

- the functional conservation of open spaces refers explicitly to specific functions of open space, for example ▷ *Nature conservation*, ▷ *Flood protection*, climate protection or the protection of historical cultural landscapes. It is implemented in the spatial development plans in accordance with section 8(7) of the Federal Spatial Planning Act primarily as a priority

area, reserve area or suitable area for development (▷ *Priority area, reserve area and suitable area for development*). The relevant sectoral planning (▷ *Sectoral planning, spatial*) or the landscape outline planning often lay the ground for the substantive and spatial regulations.

- The multifunctional conservation of open spaces integrates a variety of functions that can be specified in accordance with section 8(5) sentence 2 of the Federal Spatial Planning Act in the form of green belts (▷ *Green belt*) and green corridors. The justifications for the green belts and green corridors given in the Federal Spatial Planning Act provide information about the functions to be protected or developed in individual cases.
- The regulations on the use of open space in accordance with section 8(7) of the Federal Spatial Planning Act, such as priority or reserve areas for forestry, agriculture or viticulture, ensure a specific structure of use in open space.
- In addition, allocating areas for settlement expansions or for residential unit quotas at the municipal level can indirectly serve to protect the open space from further land take. 'However, most state legislatures do not provide any positive planning instruments to regulate the quantity of building land to be developed for regional planning'; mandatory targets for urban land-use planning could be anchored here by means of 'more consistent regulation of quantities' (*BBSR* 2012: 125 et seq.).

The stipulations in the spatial development plans have varying legal validity, depending on whether they are formulated as objectives or principles of spatial planning (cf. Table 1).

Even if a comprehensive set of instruments for the conservation of open spaces is at the disposal of federal state and regional planning, its effectiveness in planning practice remains limited, particularly with regard to settlement expansion (Schekahn/Grundler 2004: 31 et seq.). Besides strengthening informal approaches and inter-municipal cooperation, support through economic instruments and financial incentives as well as developing effective organisational forms (as in the case of the Rhine-Main regional park) is recommended (ARL 2000: 115; *DRL* 2006: 26 et seq.).

At the federal level, the guiding principles for spatial development in Germany adopted in 2006 deal with the central challenges in spatial planning. The guiding principle of the *conservation of resources, shaping of cultural landscapes* (cf. Fig. 2) is explicitly dedicated to the conservation and development of open spaces and the functions of open spaces – as a 'supporting element of sustainable spatial development' (*BBR/BMVBS* 2006: 52). The creation of large-scale, ecologically effective networks of open spaces remains a central task in the continued development of the guiding principles (*MKRO* 2016). In this regard, the guiding principle of *managing and sustainably developing land use* states the following (*MKRO* 2016: 23): 'In order to preserve high-quality open spaces with their importance for agriculture, forestry, biodiversity, wildlife corridors, ecology, settlement structures and recreation, state and regional planning authorities are to create large-scale networks of open spaces through conservation measures – even across state borders. In densely populated areas, high-quality open spaces should be integrated into the existing network of open spaces and upgraded. Here, open spaces should also be recovered in order to develop contiguous green corridors, to reduce the potential of damage in areas at risk of flooding or to sustainably protect areas with valuable land.'

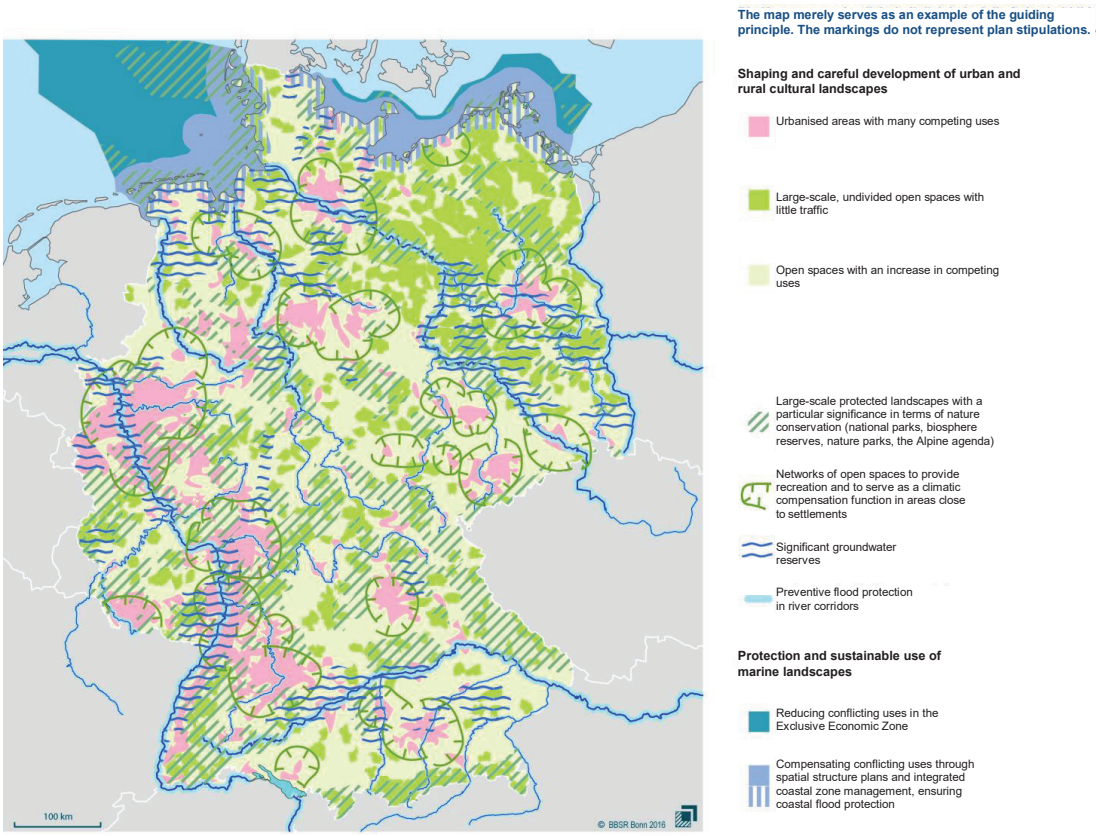
Table 1: Functions of open space and exemplary planning elements in regional plans

Functional areas of open spaces	Plan element examples
Nature and landscape	Priority area for nature and landscape, landscape reserve area, area for the protection and development of nature and landscape, priority area for valuable biotopes
Security of raw materials supply	Priority/reserve area for securing the supply of raw materials, areas requiring protection for the mining of near-surface raw materials, area for securing raw mineral deposits
Leisure and recreation	Reserve area for landscape-related recreation, reserve area for tourism and recreation, regionally significant recreational area, priority area for recreation which is extensively used by the population
Securing ground water and protection of surface water	Priority area for water resources protection, flooding area, priority area for drinking water protection/water management, area for the protection of surface water bodies
Forestry	Priority area for forests, priority/reserve area for forestry, area to expand forests, provision areas for reforestation, area to be kept clear from reforestation
General conservation of open spaces	Green belts, green corridors, priority areas for open space functions
Agriculture	Priority/reserve area for agriculture, priority area for grassland management, cultivation and development, agricultural area requiring protection
Wind energy use	Priority/reserve area for the generation of wind power, suitable area for the development of wind turbines
(Preventive) flood protection	Priority/reserve area for flood protection, flood risk area, securing the runoff of floods
Soil conservation	Priority area for resource protection, removal of soil contamination, erosion protection focus area, conversion of arable land into grassland
(Settlement) climate protection	Reserve area for the generation of cold air, fresh air corridor, area for special climate functions

Source: The author, based on BMVBS/BBR 2006: 8

Figure 2: Spatial concept map ‘Land uses’ for the guiding principle of managing and

sustainably developing land use



Source: MKRO 2016: 28

The national sustainability strategy ‘Perspectives for Germany’ calls for land take to be reduced to a maximum of 30 hectares per day (German Federal Government 2002). The guiding principles for spatial development affirm the 30 hectares target, which is to be achieved by making greater use of the development potential of inner city areas in particular (*MKRO* 2016). However, it is assumed that ‘without increased saving efforts [...] this benchmark will not be achieved’ (Hoymann/Dosch/Beckmann 2012: 4). In this context, regional ▷ *Land management* could merge the land requirements and land take regionally (*BBR/BMVBS* 2006: 33) as well as compensate or support a more intensive formal management by means of a set of positive planning instruments that serves to regulate the volume of building land in spatial planning through flexible approaches with regard to land exchange and compensation options (*BBSR* 2012: 125 et seq.).

6 Open space planning at the municipal level

At the municipal level, the issues of open spaces are integrated into urban land-use planning and approval planning through municipal landscape planning, green structures policy or open area plans (see Fig. 1). As with spatial planning, the criticism of formal instruments and the effective conservation of open spaces is aimed at the local practice of planning (Schekahn/Grundler 2004: 41, 45). In particular, the preparatory land-use plan as a preliminary urban land-use plan is completely out of date in many local authorities: it is demand-driven and therefore only updated in a fragmentary way, and is thus unfit for adequately implementing new planning principles, guiding principles and directives. The landscape plan – where such a plan even exists – usually cannot fill these gaps.

As a result, many cities and municipalities are showing increasing interest in informal open space development concepts. This allows specific questions – such as how to design urban open areas, water systems or large-scale conversion areas – as well as current challenges – such as climate change adaptation strategies – to be specifically addressed and embedded in ▷ *Urban development planning* (cf. *Ministerium für Bauen, Wohnen, Stadtentwicklung und Verkehr von Nordrhein-Westfalen, MBWSV NRW* [Ministry for Building, Housing, Urban Development and Transport of the state of North Rhine-Westphalia] 2014; see Table 2). Especially in the context of ▷ *Shrinking cities* and urban redevelopment, 'the formulation of long-term open space planning objectives that take the whole city into account is of particular importance when it comes to demolishing buildings and the subsequent use of abandoned or vacant areas as open space' (Roessler 2010: 113).

On the other hand, in growing cities or neighbourhoods (▷ *Neighbourhood/neighbourhood development*), the focus is on securing an adequate provision of open space. Even though quantitative guideline values and target figures can be helpful here, the focus is shifting: 'firstly, open space planning is using quantitative requirements to a lesser extent, and focuses instead on the quality of the use and design. Secondly, the strategies are aiming less at making the urban space green, but rather at creating urban spaces' (Lohrberg 2007: 1).

Urban shrinking and growth, the expected consequences of climate change and the changing needs of urban societies make it necessary to adapt the urban open space systems. Urban open space planning has thus become more important, as it has the potential to deliver the required adaptations in (sub)urban areas quickly and cost-effectively. It can anchor new qualities in urban spaces, upgrade areas and cityscapes, reintegrate little-used areas, enable new and possibly collective (temporary) uses, connect neighbourhoods with each other, and secure or create large-scale functional relationships. Keeping in mind that public budgets are often tight, however, it becomes apparent that the increasing significance of open space and the associated planning tasks are not usually met with adequate resources from local authorities (*BMVBS/BBR* 2008).

Table 2: Open space check in urban design: inspection criteria for assessing the qualities of open spaces

Open space check	
Current situation in urban areas	• Urban structure / Typologies of settlements and buildings • Population and social structure and demographic development • Types and structures of open spaces (private, public, compensation spaces, niches, etc.) • Integration and uses in the surrounding area • Relevant stakeholders and facilitators
Analysis of open space quality (strengths and weaknesses)	• Accessibility, availability, connections • Benefits offered: Quality of use/value of use • Design quality and uniqueness • Atmosphere and identity • Cultural potential • Ecological qualities and sustainability • Climate significance • Side effects: Urban and landscape context • Robustness and adaptability • Sustained guarantee of qualities
Potentials and approaches to action	• for multiple and temporary uses • for networking • for improved standards of maintenance • for ecological (climate) compensation • for spaces for appropriation (e.g. urban gardening) • potential alliances and cooperation
Implementation steps	• Action priorities • Costs and responsibilities

Source: The author, expanding on MBWSV NRW 2014: 30

7 Current fields of action and need for development

Open space planning is based on proven planning practices, instruments and methods. It has a long tradition, especially in urban environments. Still, when it comes to current problems the need for further development becomes particularly evident. This can be explained with a few examples:

Double inner development: Section 1(5) of the Federal Building Code stipulates that ‘urban structural development should primarily take place through measures for inner development’. The priority of ▷ *Inner development* serves to ensure the frugal use of land as well as the conservation of open spaces in the outer zone. Identifying the potential of sites in the inner zone and making

good use of them are prerequisites for this. This is still a major challenge for local authorities. Nevertheless, prosperous cities, where real estate prices are rising sharply and (affordable) living space is becoming increasingly scarce, have been able to drive inner development forward and (re)densify neighbourhoods. Highly densified urban areas not only elicit a pushback on the part of the population whose quality-of-life needs are no longer met; they are also criticised in relation to the need to adapt urban spaces to climate change. Here, nationwide model projects demonstrate the special climate relevance of inner-city open spaces, for example to reduce the thermal load in densely populated neighbourhoods (cf. *BBSR*, undated). With the concept of 'double inner development', structural development is to be linked with maintaining, qualifying or creating inner-city open areas and green spaces (*BfN* 2014). The concept assumes that the 'compact city' and the 'green city' are not mutually exclusive (Fuhrich/Dosch 2005: 61). In this regard, it remains to be seen to what extent the increasing competition for space and the uses of space in growing cities can be reconciled with the requirements a city needs to fulfil to be seen as healthy and worth living in.

Qualifying suburban space: Creative open space planning still focuses on the urban nucleus. However, it is especially the metropolitan areas where the majority of the population lives in the surrounding areas. These large-scale landscapes, with their specific patchwork of urban, suburban and rural structures, are now perceived as a separate planning task. The landscape, regional park and green belt concepts in the Ruhr and Rhine-Main areas have provided key inputs for this. In the past two decades, most metropolitan areas have introduced comparable strategies in order to actively shape their suburban landscapes. The requirements are highly complex and usually inter-municipal in nature: 'New ground is being broken in planning practice, especially in terms of the future development of suburban open spaces and up-to-date qualification goals, as well as with regard to process design and implementation' (Peters 2012: I). The discussion of 'urban' agriculture and forestry alone 'indicates the perception of a new interface in the urban development process' (Giseke 2004: 678). Linking the diverse potential and independent development paths of suburban open spaces with the idea of regional open space design can close the gap between more functionally-oriented landscape (outline) planning and a landscape architecture focused on the specific site.

Expansion of renewable energy: As a result of the energy transition, the use of wind power and photovoltaic systems as well as biomass production is being expanded (▷ *Renewable energies*). In the last few years, new, large-scale energy landscapes have emerged in more rural areas. This raises the issue of how to effectively manage and actively design this change. Even though suitable instruments for the conservation of open spaces are available for regional planning, these are not used or are only insufficiently used in many regions. For example, the consistent safeguarding of the cultural heritage landscape is still in its infancy. Even landscape outline planning often does not do justice to its task of providing the substantive foundation that is needed to clarify objectives and principles for the conservation of open spaces in regional planning. Suitable methods and instruments for actively designing open spaces, which are undergoing a process of change with the expansion of regenerative energy, in an aesthetic sense are largely lacking; there is a need for development here (*BfN*/*BBSR* 2014).

8 Outlook

A differentiated set of instruments is available for open space planning at the regional and municipal level. Thus, formal and informal instruments can be used at all planning levels in order to handle current and future tasks. Nevertheless, planning practice does show many disruptions, for example between the planning levels as well as at the interfaces of the various instruments, such as regional and landscape outline planning. Shortcomings in the aesthetic qualification of open spaces are even more evident at the regional level. Thus, the systematisation of a coherent understanding of tasks and the synchronisation of planning instruments with regard to the 'social relevance and prospects' for open space planning (Kaltenbrunner 2004: 643) are still pending.

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