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URBAN GREEN AS A FORMATIVE ELEMENT IN CITIES - URBAN DEVELOPMENT BY THE USE OF "GREEN URBAN LABS" USING THE EXAMPLE OF BOCHUM-RIEMKE.

EL VERDE URBANO COMO ELEMENTO DEFINITORIO EN LAS CIUDADES - DESARROLLO URBANO A TRAVÉS DE "GREEN URBAN LABS" UTILIZANDO EL EJEMPLO DE BOCHUM-RIEMKE EN ALEMANIA

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Abstract

Against the background of continuing urban growth, cities are constantly faced with new challenges. Above all, a strong increase in the number of residents must secure the supply of living space. In addition, the attractiveness of a city depends not only on the available living space and its price, but also on the quality of life in the city. The term quality of life usually refers to factors that can have a positive effect on a person's well-being. Quality of life is characterized by aspects such as educational opportunities, health and nature.

As a result, nature is an important criterion in the quality of life and also shapes the appearance of the city. Parks, playgrounds or street trees are just a few of the forms that can be found in cities. In addition, the city green takes over many different functions. These range from economic and urban features to social and ecological purposes. Especially the ecological aspect is becoming more and more important in the course of climatic changes. In this context, a sustainable urban development should be striven for in order to secure urban green spaces, such as the "Leipzig Charter for a Sustainable European City".

The challenges for municipalities in dealing with urban green spaces are manifold. The reason for this is the different usage requirements that affect the urban green space through different user groups. In addition to the changed demands, the financial resources available also play an important role. At present, it is difficult to reconcile the different demands placed on an area with the financial resources available.

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Therefore, this paper examines a new approach to Green Urban Labs in relation to the development and safeguarding of urban greens. In this respect, literature searches are used to shed light on the foundations, goals and problems of urban green. In a further part, the model project "Green Urban Labs" will be examined. In addition to further literature research and expert interviews, the case study "From Hausacker to Urban Green" in the district Riemke of the city Bochum will be used to shed light on the goals and implementation measures of the project.

Recommendations for action are derived from the findings. On the one hand, the recommendations should support the consolidation of the model project after the end of the project period. On the other hand, they should serve as good examples and points of reference for other municipalities that can benefit from the new approach.

Resumen

En el contexto del continuo crecimiento urbano, las ciudades se enfrentan constantemente a nuevos desafíos. Sobre todo, un fuerte aumento en el número de residentes debe asegurar el suministro de espacio habitable. Además, el atractivo de una ciudad depende no solo del espacio habitable disponible y su precio, sino también de la calidad de vida en la ciudad. El término calidad de vida generalmente se refiere a factores que pueden tener un efecto positivo en el bienestar de una persona. La calidad de vida se caracteriza por aspectos como las oportunidades educativas, la salud y la naturaleza.

Como resultado, la naturaleza es un criterio importante en la calidad de vida y también da forma a la apariencia de la ciudad. Parques, parques infantiles o árboles en las calles son solo algunas de las formas que se pueden encontrar en las ciudades. Además, el verde de la ciudad asume muchas funciones diferentes. Estos van desde características económicas y urbanas hasta propósitos sociales y ecológicos. Especialmente el aspecto ecológico se está volviendo cada vez más importante en el curso de los cambios climáticos. En este contexto, se debe luchar por un desarrollo urbano sostenible para asegurar espacios verdes urbanos, como la "Carta de Leipzig para una ciudad europea sostenible".

Los desafíos para los municipios al tratar con los espacios verdes urbanos son múltiples. La razón de esto son los diferentes requisitos de uso que afectan al espacio verde urbano a través de diferentes grupos de usuarios. Además de las demandas modificadas, los recursos financieros disponibles también juegan un papel importante. En la actualidad, es difícil conciliar las diferentes demandas de un territorio con los recursos económicos disponibles.

Por lo tanto, este documento examina un nuevo enfoque de Green Urban Labs en relación con el desarrollo y la protección de los espacios verdes urbanos. En este sentido, las búsquedas bibliográficas se utilizan para arrojar luz sobre los fundamentos, objetivos y problemas del verde urbano. En otra parte, se examinará el proyecto modelo "Green Urban Labs". Además de una mayor investigación bibliográfica y entrevistas con expertos, se utilizará el estudio de caso "De Hausacker a Urban Green" en el distrito Riemke de la ciudad de Bochum para arrojar luz sobre los objetivos y las medidas de implementación del proyecto.

Las recomendaciones para la acción se derivan de los hallazgos. Por un lado, las recomendaciones deben apoyar la consolidación del proyecto modelo después del final del período del proyecto. Por otro lado, deberían servir como buenos ejemplos y puntos de referencia para otros municipios que puedan beneficiarse del nuevo enfoque.

Green Urban Labs

In the course of this paper, a special form of a possible new green space development is explained. This is the form of use "Green Urban Labs". The terminology, background and origin of the GUL as well as its thematic focus are explained below.

Definition of terms

The term "green urban labs" is a form of use that allows one to test new innovative approaches to green and open space development. New forms of leisure behavior and use of space are bringing new types of concepts into the focus of open space use. In addition to the already well-known projects, such as urban gardening, there is now an increasing focus on new projects, such as the repurposing of cemeteries (Bundesministerium für Umwelt, Naturschutz, Bau- und Reaktorsicherheit [BMUB], 2017b, p. 39). The model projects, which are grouped under the abbreviation GUL, are based on an experimental approach. During the project period, new innovative approaches to be tested in the urban laboratories are very welcome (Bundesministerium des Inneren, für Bau und Heimat [BMI], n.d.).

The new form of use forms the basis for a federal policy approach with the focus on "coordinating research and knowledge transfer for qualified urban greenery" (BMUB, 2017b, p. 39). Under this focus, there are two federal policy action approaches that the federal government of Germany will carry out in this context. On the one hand, the already existing platform “Zukunftsstadt” (Future City) will be supplemented by another research field, “Grün in der Stadt” (Green in the City). On the other hand, the approach is used to test new types of model projects on the subject of urban greenery. (BMUB, 2017b, p. 39).

Background and development

In terms of green spaces, municipalities are facing permanent changes. Due to changing forms of work, leisure and living, new demands for use arise and urban residents also change their needs. This change raises the question of how urban green spaces can be developed in the future and how they can be maintained in equal measure. In addition, it must be examined whether the urban green takes on new functions and which partners must cooperate in this regard. In this context the "Green Urban Labs" model project is testing new ways of permanently establishing and strengthening green spaces in cities. The project was officially

launched in September 2017 with a duration of three years (Bundesinstitut für Bau-, Stadt- und Raumforschung [BBSR], n.d.–a).

The project "Green Urban Labs" was commissioned by the German Ministery BMUB and is accompanied by the BBSR with the aim of increasing the importance of green spaces in cities. Due to a lack of funds and a shortage of personnel, it is often not easy for municipalities to adequately maintain urban green spaces. Because of this, concepts that include maintenance and financing are also highly exciting for the three-year project. Other issues of interest include multiple uses of green space, environmental justice issues, and the interconnection of green infrastructure, which will be discussed in more detail in the following section (BMUB, 2017a). The project is intended to test the diverse functions and services that urban green space can provide towards the common good over the course of the project (BBSR Flyer 2017).

Focus of the "Green Urban Labs" form of use

A central role in the focus of the model projects is taken up by questions concerning the multiple uses of green spaces, environmental justice and connecting a green infrastructure. "If you think about all the green and open spaces in the community together and understand them as a multifunctional, environmentally sound network that covers the entire city, you will recognize references, opportunities and options" (BBSR, 2018a, p. 2). Broadening the field of vision to include the totality of green and open spaces, their offerings for children or their function as cold air corridors, opens up a variety of options in this case. Recognizing the connections helps to work out arguments for urban green and to strengthen them against other interests of urban development. It is still common for urban green development to experience disadvantageous treatment compared to residential and transportation development. This is particularly evident in densely populated cities, where open space is being turned into building land to meet the demand for housing (BBSR, 2018a). Using the previous quote, the three concepts, multi-roof use, environmental justice, and green infrastructure, are listed in more detail below to reinforce the theme of urban green.

Multidimensionality of green spaces

Urban green spaces are under increasing pressure in our time, as evidenced by climate change, continued population growth in cities, and a need for new housing, especially in metropolitan areas. In addition, urban green spaces are

nowadays still increasingly occupied by events, which leads to an overuse of the areas. First and foremost, quality open spaces are needed in densely populated areas that can cope with the pressure of use. To this end, the federal government has set itself the goal of supporting cities and municipalities in the qualification and redevelopment of green spaces in such a way that they meet the requirements and usage demands in the long term (BMUB, 2017b).

In the future, it will be enormously important for green and open spaces to be able to accommodate multiple uses on one area. One reason for this statement is our society. Due to its diversity, which is characterized by the age structure, cultures and different lifestyles, the requirements also become more special. Humans shape their environment according to their own interests and desires. In order to keep open spaces accessible for all interests and to preserve the diversity of society, open spaces must be designed to be open for use. A marketplace, which combines many functions in one area, is a prime example of an open space that is open to all uses. (Hessisches Ministerium für Wirtschaft, Verkehr und Landesentwicklung, 2012).

Currently, the topic of urban green spaces is considered to be of high necessity, as the spaces are becoming increasingly important for urban development and are expected to meet many future challenges, such as:

- "Offering quality of life,
- provide public image and attractiveness in the competition of cities,
- give new meaning to open space in shrinking regions,
- be a place of communication for an increasingly diversified society,
- not cost much and look good at the same time" (Becker, 2012, p. 95).

In contrast to a one-dimensional mode of operation of the green spaces, several functions or tasks must now be performed in parallel, as described above, with which the green spaces take on a multidimensional structure (BMUB, 2017b). In the further course, based on the multidimensionality, the concept of multicoding is explained. It became clear that a green space can be viewed with different codes. For some people, the urban open space is a sports field, for others it is a place for relaxation and for further people it is a climatic compensation space. By specifying each code, people's interests can be revealed in each case. By skillfully deriving strategies on the basis of the codes mentioned, a new sense of togetherness can emerge instead of a coexistence. Especially in neighborhoods where there is competition for use between urban open spaces, multicoding makes sense. (Becker, 2012).

Environmental justice

Environmental justice is based on the factors of social situation, health and, of course, environmental quality. All three components make up this term in equal parts. People who have a lower income and, in this context, often a low level of education, are comparatively more frequently exposed to environmental burdens than people who are more highly placed. Consequently, the health burdens resulting from environmental problems are unequally distributed throughout Germany. Education and income, grouped under socioeconomic factors, together with other social factors, including migration background and social environment, influence lifestyle. Studies conducted over the past years show that people with a lower social status are more often exposed to negative environmental influences. This assumption is primarily shown by pollution and noise, which are caused by traffic. In addition, in keeping with the theme of urban green spaces, access to open space is reduced for those affected. As a result, opportunities for recreation and exercise are fewer (Umweltbundesamt [UBA], 2018).

In conjunction with the “Soziale Stadt” (Socially Integrative City) urban development program, which has been implemented by the federal government since 1999, action is being taken to strengthen the commitment to environmental justice (BMUB, 2016). Through the many years of implementation of the Socially Integrative City program, interdepartmental cooperation has proven particularly effective. Boundaries of responsibility of one authority do not apply here and a common approach to work for the area is realized. This joint approach of cooperation between the health, environment and planning departments forms the basis for the implementation of environmental justice (BMUB, 2016).

The fields of action of the Socially Integrative City, which are equally important for the goal of environmental justice, are multifaceted.

With a value of almost 60%, green space improvement was named as the most important field of action according to the evaluation of the surveyed countries and coming. With an upgrading or also an installation of new green spaces, the living environment of the residents in the disadvantaged neighborhoods is significantly improved. From a social point of view, the newly created access to a green space improves people's social situation. From a health perspective, people are provided with an opportunity to exercise, and from an environmental quality perspective, urban climate stresses are reduced (BMUB, 2016).

This shows how closely the Socially Integrative City urban development program, and the concept of environmental justice are linked. The Socially Integrative City program provides the perfect framework for implementing and promoting environmental justice.

Green infrastructure

The subject area of green infrastructure is part of a concept of the federal government and is part of a Europe-wide process with the goal of establishing a green infrastructure (Bundesamt für Naturschutz [BfN], 2017a). Similar to a technical infrastructure, which is part of the public infrastructure and includes tasks such as energy, water management, waste management and the transport system (Struktur- und Genehmigungsdirektion Süd, n.d.), the green infrastructure with an improvement of the ecosystem shall be essential for spatial planning in the future (BfN, 2017a).

In general, green infrastructure is a broad network of spaces. The network is composed of both natural and semi-natural areas that provide a range of ecosystem services and are managed according to their benefits to humans (BfN, 2017anach Europäischer Kommission 2013) "Urban green infrastructure encompasses the totality of urban green space and thus includes very different green structures with multiple services and functions" (BMUB, 2017b, p. 93). The network spans the entire terrestrial realm, and consequently equally urban and rural. In addition to the terrestrial ecosystems that occur, it also includes aquatic ecosystems and other physical elements that may occur, for example, in coastal areas (BfN, 2017 and European Commission 2013).

A fundamental goal of the federal "Green Infrastructure" concept is to fully protect natural capital and, consequently, to preserve and restore ecosystem services. The services provided by nature can have both direct and indirect benefits for society (BfN, 2017a). Humans benefit on a daily basis from the services and goods that nature provides for us. The provision of drinking water, food, climate regulation or protection against erosion are just a few examples of ecosystem services. (NABU-Bundesverband, 2010).

The natural capital to be protected is broad and can be classified by size. Thus, green infrastructure elements range from hedgerows and green roofs to large ecosystems such as riparian forests or peatlands. Each of these elements can thus contribute to the promotion of green infrastructure, both in urban and rural areas and in protected areas. In this explanation, however, it must be kept in mind that not all elements can be directly attributed to green infrastructure. Primarily, the environmental elements must form the component of a biotope network and be able to combine several functions. As an example, a city park can be cited, which enables recreational activities, the absorption of rainwater and the function of a fresh air corridor (European Commission, 2014).

In addition to green infrastructure, there is also the more familiar concept of gray infrastructure, which includes roads, high-voltage lines, canals, or even

settlement areas. However, there is a rising trend of the proportion of gray infrastructure increasing and habitats are increasingly being fragmented (BfN, 2017b). In this case, it can be seen that gray infrastructure can usually perform only one function, whereas green infrastructure is multifunctional. The multifunctionality and the ecosystem services provided are the greatest benefits that green infrastructure brings. "For example, a typical multifunctional green infrastructure would be able to combine agriculture and forestry, housing development, tourism and recreation in the same space while keeping drinking water and air clean and protecting fauna and flora" (European Commission, 2014, p. 7).

Forms of participation and cooperation

The possibility of establishing more urban green requires the commitment of many sides. In the “Weißbuch Stadtgrün” (White Paper on Urban Greening), the expansion of a cooperation of different actors is summarized under "Field of action 7: Win actors, involve society". Normally, the management of public green and open spaces is the responsibility of the municipalities. Due to tight budgets, it is often not possible to adequately manage these areas. For this reason, municipalities are already being supported by other players, for example from the real estate industry, from residents, or by associations and foundations (BMUB, 2017b). In order to make these new forms of participation and the involvement of the various actors possible at all, the responsible local government must adopt an open attitude toward the new collaborative work. The initiative and the willingness to take responsibility that comes with it should be accepted and supported by the administration (BBSR, 2018b).

The inclusion of citizens, as well as other private actors, in the process of maintaining and preserving urban green space has positive effects. On the one hand, by involving civil society in the process of planning and maintenance, an identity-forming measure takes place. The citizens come in contact with the green spaces and can shape them according to their own needs. On the other hand, it is hoped that the active participation of citizens in their own managed green spaces will help to curb problems such as vandalism and pollution. Through the cooperation, a responsibility arises towards the green and open spaces, which are to be preserved in their design (BMUB, 2017b). In addition to citizens, the range of private actors also includes civil society organizations and foundations as well as companies and owners of an area. With regard to the GUL model project, it is evident that the 12 different projects each examine different forms of participation and approaches to cooperation (BBSR, 2018b).

Another part of the private actors to be mentioned are the private owners, with whom a new type of cooperation can also be tested. Since urban green spaces can be part of both public and private ownership, it is important to involve those permanently in the process (BBSR, 2018b). Private spaces in particular are often high quality in their design and would add significant value to the community by opening them to the public. Often, however, due to legal uncertainties, green and open spaces are kept private (BMUB, 2017b).

In order to continue to push the commitment to the development of green and open spaces in cities, the new forms of cooperation and participation mentioned are enormously important (BBSR, 2018a). The federal government is also endeavoring to promote the activation and networking of the various actors through additional measures (BMUB, 2017b).

Interim conclusion

The "Green Urban Labs" as a new form of use stand for innovative approaches to test new possibilities of green and open space development. Due to the different demands of residents in the areas of work, living and leisure, the framework conditions are constantly changing. Not only do residents change a city according to their needs, but urban growth or shrinkage, which are generally caused by various factors, also result in change.

Since these changes also affect the green structures in cities, it is important to adapt to the conditions and to develop strategies for how urban green spaces can be maintained, secured and developed in the future. The new form of use of the GUL arises from these constant changes. During its three-year term, the project aims to clarify the issues of maintenance, safeguarding and development, to test new uses and to test different actor and financing structures.

The top priority in the implementation of the GUL is to improve the status of urban green spaces. The importance of urban green spaces should be clearly brought into the focus of urban development and consolidated at this point. In addition, it is enormously important to raise awareness among residents for the topic of green spaces and their diverse effects. The three thematic focal points, multidimensionality of green spaces, environmental justice and green infrastructure, play a central role in the significance of urban green and open spaces. All three concepts are related to the model projects and are put into practice in different ways.

Multi-dimensionality focuses on the multiple use of the area, which allows one to perform several functions in parallel on one area. In the improvement of environmental justice, which is often associated with the urban development support program "Socially Integrative City", the aim is to reduce the negative

environmental influences to which parts of the population are exposed. By improving green and open spaces as the most important field of action of environmental justice, burdens caused by noise and pollutants can be reduced. At the same time, the opportunity for residents to exercise improves as green spaces create a new area for exercise and sports activities. The main focus of green infrastructure is to connect natural and semi-natural areas to safeguard natural capital and improve ecosystem services for sustainable development.

Through the implementation of 12 Green Urban Labs model projects, it is evident that many new measures for green and open space development are being tested during the three-year project period. No two projects are alike, opening up novel opportunities for participating communities to develop and establish green and open spaces. In order to be able to present the new established model project of the "Green Urban Labs" in more detail, one model project will be described in more detail in the following. This is the project from the German city Bochum with the title "Vom Hausacker zum Urban Green". The project plans to fundamentally redesign a disused soccer pitch and to create a multifunctional space in this area. The cooperation of the stakeholders is considered to be extremely important for the implementation of the model project, as they have to work together across different levels (BMUB, 2017a).

Case Study "Vom Hausacker zum Urban Green" - in Bochum-Riemke

In the following, a selected case study for the implementation of GUL is examined in more detail. This is a model project in the Riemke district of Bochum. After a short geographical classification and an explanation of the initial situation, the actor structures and the type of cooperation are specified. Subsequently, the defined goals for the project are presented. This is followed by a description of the events that will take place during the project and how the project will be financed.

The respective chapters are supplemented by the two expert interviews conducted as part of the master's thesis. Two Experts from the city administration could be won over for a written survey via email. Both work for the sports and exercise department of the city of Bochum and have been involved in the project since the beginning. Moreover another Expert from the non-profit association "Die Falken Bochum" was also consulted. In his position as managing director, he supports the project through conceptual planning approaches, which largely concern social issues. Against the background of his more than twelve years of voluntary work for the association, projects for the promotion of general commitment or political education are also enormously important to him.

General classification of the city of Bochum

The city of Bochum is located in the west of Germany in the state of North Rhine-Westphalia. Bochum is located in the middle of the Ruhr region, which is unique in Germany. In addition to Bochum, Dortmund, Duisburg and Essen are the other core cities that make the Ruhr the largest metropolitan area in Germany. Within the area, the individual city boundaries are hardly visible due to their interconnectedness (Tourismus Nordrhein-Westfalen, 2018). About one third of the entire population of North Rhine-Westphalia lives on 13% of the area. In the Metropole Ruhr, the number of inhabitants/km² is 1,140, whereas the comparative value for Germany is 230 inhabitants (Regionalverband Ruhr, n.d.).

The steel and coal production, which was for decades decisive for the region, has been replaced by green spaces and recreational areas and has thus undergone a strong transformation. Art and culture have found a foothold in the former industrial sites and in this context promote the local industrial culture (Tourismus Nordrhein-Westfalen, 2018). The structural change has been significantly guided and supported by both the Federal Republic, the State of North Rhine-Westphalia and the City of Bochum. A prime example and globally recognized example of regional redevelopment was the "Internationale Bauausstellung Emscher Park" (Pallagst et al., 2018). In 1989, the IBA Emscher Park came into being with the aim of creating ideas for structural change throughout the Ruhr region in order to better deal with the decline of coal and steel production. Over a period of ten years, both urban development and land planning projects with cultural, economic, and ecological backgrounds were implemented (Open IBA, n.d.).

As of 12/31/2017, the population of Bochum was 371,582. This corresponds to a density of 2,551 inhabitants/km² with an area of about 145 km². Looking at the natural population development, it can be seen that the death rate (4,510) is significantly higher than the birth rate (3,257), resulting in a natural balance of -1,253 (Stadt Bochum, n.d.–f). From an economic point of view, companies from the logistics, services and healthcare sectors are important for the city nowadays. In addition, large corporations such as ARAL AG or Vonovia SE have their headquarters in Bochum. (Stadt Bochum, n.d.–c). Until 2009, Bochum was also an important production site for the Nokia company and an important site for the Opel car manufacturer. (Pallagst et al., 2018).

As of the reporting date in December 2016, 126,470 employees were in a relationship subject to social security contributions, with the average income per capita in the same year being 19,620 euros (Stadt Bochum, n.d.–d). Furthermore, based on more recent figures, 17,514 people were registered as unemployed in Bochum in August 2018, resulting in a percentage value of 9.1%. Compared to the other large cities in the Ruhr region, such as Dortmund (10.4%), Duisburg (11.3%) and Essen (10.5%), the percentage value in Bochum is the lowest (Stadt

Bochum, n.d.–a). In addition, Bochum is a university city. The Ruhr University, as the first post-war university in Germany, is a knowledge center for currently 43,015 students. (Ruhr Universität Bochum, 2018). Its foundation between 1965 and 1969 is still an important factor for the development of the city. With many projects between university and city, the opening of a health campus and a possible planned expansion, the university continues the positive trend of Bochum's development (Pallagst et al., 2018). With the help of numerous projects such as the model project of the GUL, a further upward trend for the city can be followed.

Initial situation of the Bochum-Riemke district

The city of Bochum is divided into six districts covering an area of about 145 km². These are Bochum-Mitte, -Wattenscheid, -Nord, -Ost, -Süd and -Südwest. (Stadt Bochum, n.d.–b). The district Bochum-Riemke, which is the location of the model project "Green Urban Labs", is part of the district Bochum - Mitte together with six other districts, Hordel, Hofstede, Hamme, Grumm and Altenbochum. (Stadt Bochum, n.d.–e).

Bochum-Riemke covers an area of 3.83 km². As of December 2017, 7,604 people live in the district, which accounts for 7.3% of the total population of the Bochum-Mitte district. The number of people with a migration background in Bochum-Riemke is 21.1%, which is similar to the overall figure for Bochum of 20.7%. The unemployment rate in Riemke, however, is 7.8%, which is below the Bochum average of 9.1% (Westdeutsche Allgemeine Zeitung [WAZ], 2017).

In addition to the data listed, the Riemke district is primarily characterized by the four-lane Herner Straße from an urban development perspective. It dominates the center of the district and forms a physical barrier due to its size and course (BBSR, n.d.–b). Due to the road's location between the A43 and A40 autobahn junctions, this section is also used by many motorists as a shortcut to save a few minutes of time. In addition, according to the Westdeutsche Allgemeine Zeitung (WAZ), 30,000 vehicles are on the road in both directions on weekdays (Schmitt, 2018, p. 1). Accordingly, the urban area is significantly characterized by the Herner Straße. In addition, the urban space is characterized in particular by the lack of an appropriate neighborhood center, in the sense of a meeting place for the neighborhood, as well as by the existence of an attractive local shopping area. The model project "Green Urban Labs" is intended to counteract this lack and to create a new adequate center on the former sports facility "Am Hausacker" in order to upgrade the district from both a spatial and a social point of view (BBSR, n.d.–b).

“The disused Tennen - soccer field "Am Hausacker" in Bochum-Riemke is to be converted into a multifunctional and natural sports, leisure and exercise area" (Referat für Kommunikation der Stadt Bochum, 2017b, p. 1), so the data of the city of Bochum. The place should serve as a green oasis for the young and old generation and represent an area for movement as well as meeting (Referat für Kommunikation der Stadt Bochum, 2017b).

Already at the end of the season in 2015/2016, the sports ground was abandoned as part of the sports facility development planning, leaving a 20,000m² site available for a new development. In time with the abandonment of the sports ground, site assessments were commissioned by politicians. Due to the sufficiently large area and the good location of the former sports facility in the immediate vicinity of a children's and youth recreation center, the requirements of the policy could be met. As a result of the good foundations, the Department for Sport and Exercise of the City of Bochum, as the owner of the site, sought to apply for the federal government's "Green Urban Labs" funding program. Based on the developed project outline, the project was accepted for funding along with 11 other projects (Feinweber & Neumann, 2018).

Actors and cooperation

Leading the way for the interdisciplinary project in the Riemke district of Bochum is the German Ministery BMUB, which is supporting the project under the federal funding program "Experimental Housing and Urban Development," or ExWoSt for short (Referat für Kommunikation der Stadt Bochum, 2017c). The sports and baths department of the city of Bochum is acting as the lead partner on site. In cooperation with other project partners from the immediate and extended surroundings, as well as through the active participation of citizens in the planning process, a broad network of actors has emerged. The project partners in the immediate vicinity include the associations based in Riemke, such as the Kleingärtnerverein Bochum-Riemke e.V., the Allgemeine Bürger-Schützenverein Hofstede-Riemke e.V., sports clubs and "Die Falken Bochum". The extended circle includes schools, day-care centers, an integration center and the church located in the district (BBSR, n.d.–b). Institutions that are spatially directly adjacent to the area are also consulted as experts in order to evaluate content-related questions and considerations and thus make a significant contribution to the implementation. In addition to the project partners already mentioned, all other social institutions will be involved in a social space conference (Pattmann, 2018).

Through the network described above, many areas such as sports and health as well as children and young people are covered by the respective participating

associations. Die Falken, for example, represent a non-profit children's and youth association whose mission it is to strengthen and consolidate the participants' self-confidence and critical faculties. The courses offered by the association can be taken in kindergartens, elementary schools and also in secondary schools (Comp@ss, n.d.). Furthermore, soccer clubs and the Allgemeine Bürger Schützenverein Hofstede - Riemke e.V. are active in the area of sports, organizing numerous sporting events (Referat für Kommunikation der Stadt Bochum, 2017d).

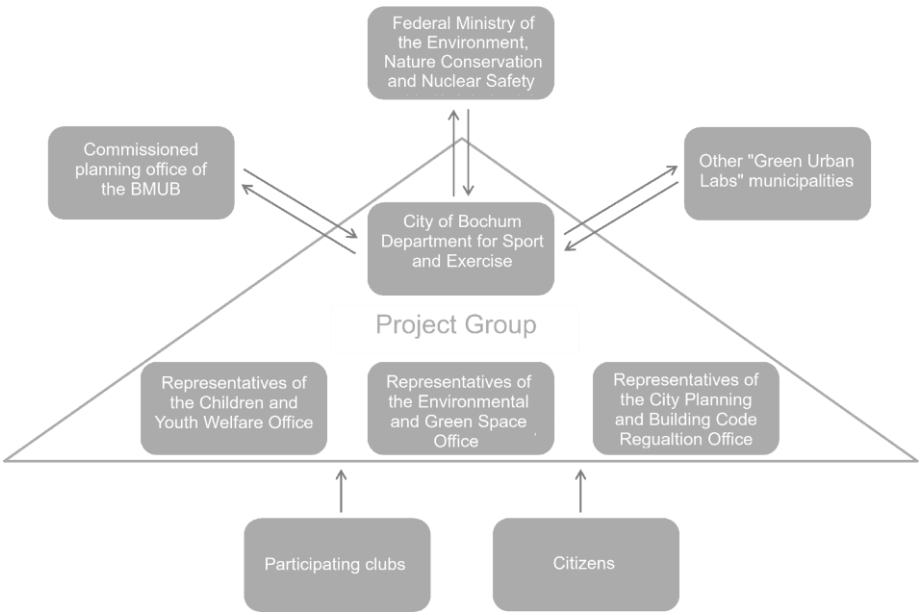

Figure 1. Structure of actor network.

Source: Own representation.

For a smooth cooperation of all actors, it is important to define a main actor at the beginning of the project. In the case of the model project "Vom Hausacker zum Urban Green" it is the city of Bochum with the Department for Sport and Exercise, as they are the owner of the area on the one hand and the initiator of the project on the other. They are the driving force behind the project group and are also in constant exchange with representatives of the BMUB, the planning office commissioned by the BMUB and other municipalities participating in the GUL project. In addition, a continuous exchange between the participating stakeholders is an important component in terms of cooperation. In order to be able to guarantee regular communication with the participants, a project group

was additionally established, which has come together for fixed working group meetings. In addition to the Department of Sports and Exercise, the project group includes representatives from three other departments: the Children's and Youth Welfare Office, the Environment and Green Spaces Office, and representatives from the City Planning and Building Regulations Office. Depending on the particular topic that needs to be discussed at the time, representatives from other departments are invited to join the existing project group. Due to the continuous interaction, the influence on the model project is equally distributed for all actors. The possibility of continuous influence also leads to the fact that not only the individual needs for action of the departments are taken up, but also take into account creative aspects in the process (Feinweber & Neumann, 2018). As shown in the figure above, citizens and other participating associations, facilities and institutions in the Riemke district are also offered the opportunity to contribute to the process through broad-based participation procedures.

Objectives of the model project

According to the two asked administrative experts, who both work for the sports and baths department of the city of Bochum and are also the initiators of the model project "Vom Hausacker zum Urban Green", there is a fixed overarching goal. "In the project, the city pursues [...] to transform the no longer used sports area "Am Hausacker" into a multifunctional and multisocial green, exercise and leisure area, into a green neighborhood center for the district of Riemke." (Feinweber & Neumann, 2018).

Due to the described initial situation, such as the lack of an adequate neighborhood center, in connection with the fragmentation of the district by the federal highway, the project offers a new opportunity for the Riemke district. Green spaces or bicycle paths are currently only available to a limited extent in the district, and the existing playgrounds are not considered very attractive. Due to an increased demand for spaces close to home that can be used for sports and exercise, a conversion of the sports facility "Am Hausacker" is an ideal solution. Green and open spaces that are open to the public promote well-being, increase self-determined sports activities and thus have a positive effect on health (Feinweber & Neumann, 2018). In order not to neglect the social aspect of the project, topics such as the promotion of local volunteerism and various forms of educational work are also extremely important. The project offers positive approaches for such content-related aspects (Pattmann, 2018). Due to the approved implementation of the project on the basis of an integrated urban development planning, climate-relevant measures have to be considered in addition to a classical design of a sports area. Climate-relevant aspects include further greening and planting in the area of the settlement structure for the

regulation of urban heat islands or also the unsealing of surfaces (Feinweber & Neumann, 2018). In addition to the requirements of integrated urban development planning, municipal concepts must also be considered for the transformation into a multifunctional and social area. These include the municipal "Bochum 2030 energy and climate protection concept", the "Spielleitplanung Stadt Bochum" and the "Sports facility requirements 2017-2020 as part of a sports facility development plan - soccer sports" (Feinweber & Neumann, 2018) listed municipal concepts also form goals to be pursued and implemented as part of the project.

Events within the framework of the project duration

In order to be able to implement the project "Vom Hausacker zum Urban Green" in the best possible way over the three-year project period, the immediate project environment is to be involved in the implementation. As previously mentioned in the section "Actors and Cooperation", associations and institutions will be involved in the implementation. In addition to the participating associations, the citizens of the district are also to be included in the process through activities that take place. For this purpose, various individual events are planned, which are to cover different topics for young and old, big and small (Referat für Kommunikation der Stadt Bochum, 2017a).

On October 30, 2017, a first soccer tournament took place on the former sports field. In the following days, a total of three consultation sessions with a duration of two hours were held, each of which dealt with one topic. At the first appointment on November 3, 2017, the focus was on the topic of "Sport and Health". (Referat für Kommunikation der Stadt Bochum, 2017c). The sports festival "Sport and Fun - Biathlon at Hausacker", which took place on the same day, attracted many interested people with a variety of ideas. The dialogue showed that the citizens would particularly like to see a large green area offering space for games, fun and picnics. In addition, according to the citizens, a playground for children and another area with exercise facilities, for example, with fitness equipment would also be useful. A few days later on November 07, the second consultation hour took place, which dealt with the concerns of children and teenagers. The aim of the event was to find out how the new urban open space could benefit the young generation. For the children, a playground is of particular importance, whereas the teenagers are in favor of a meeting place that serves for relaxation. In addition, a wide range of sports activities is important for both age groups. The last subsequent consultation hour on November 9 took place under the topic "Nature and Environment". The climate- and environment-friendly design of the Hausacker was the focus. In order to be able to discuss the topic

professionally, representatives of different associations were present, for example those of the Naturschutzbund (nature protection federation), members of the resident allotment garden associations as well as persons of the environment and green space office. It is important to them to coordinate future events and workshops with environmentally friendly topics. In this regard, the construction of bird houses and insect hotels was mentioned, as well as the establishment of a nature trail, which deals with animals and plants (Referat für Kommunikation der Stadt Bochum, 2017d).

In the course of the consultation hours that took place, temporary uses in the area of the former sports field were also discussed. An annual Christmas bazaar and a medieval festival, as well as concerts or an open-air cinema, should find a place on the site (Referat für Kommunikation der Stadt Bochum, 2017d).

Project financing

The inclusion of the Bochum project entitled "Vom Hausacker zum Urban Green" in the federal government's model project "Green Urban Labs" generated funding of 158,000 euros. The support provided by the funding relates to an implementation period of three years in total. Project start was in September 2017, the duration is set until September 2019. The funding is to be applied in various areas, first and foremost in the areas of citizen participation, urban land use planning, evaluation and reporting. In order to be able to implement the project from a construction point of view, third-party funds are to be raised for this purpose (Referat für Kommunikation der Stadt Bochum, 2017e). From a technical point of view, third-party funding is defined as funds that can be obtained in addition to the basic funding, i.e. regular funding, from bodies in the private and public sectors (Statistische Bundesamt [Destatis], 2018).

A large part of the available funding goes to the area of planning. A landscape architecture firm from Essen was commissioned with the planning design, using funding from the German Ministry BMUB. The structural implementation, in turn, is divided into two separate construction phases, which are financed elsewhere. In August 2018, a funding application for the first construction phase was drafted. The funding application, with a construction volume of approx. 1.78 million euros, is based on the specialist planning of the commissioned landscape architecture firm and was submitted and approved in connection with the "Investment Pact for Social Integration in the Neighborhood" (Feinweber & Neumann, 2018). The investment pact is a funding program of the Federal Ministry of the Interior, Building and Community and supports construction measures that provide a contribution to social infrastructure facilities. (BMI, 2018). With the approval of the application, the city will receive 90 percent of the

funding, which amounts to 1.608 million euros. The remaining 10 percent will be generated from the city of Bochum's own funds.

Furthermore, an application for funding was also submitted for the second construction phase in September 2018. This application relates to the funding program "Redevelopment of municipal facilities in the areas of sports, youth and culture" with a volume of 1.15 million euros (Feinweber & Neumann, 2018). This program is also an investment program of the federal government, with the intention of minimizing the investment backlog that has arisen in relation to social infrastructure. Funding is provided primarily for projects that have a far-reaching integrative and social effect (BBSR, n.d.–c). Since the application was received only recently as of time of writing, no decision could be communicated yet (Feinweber & Neumann, 2018).

In addition to the two federal funding programs, financial success was also achieved at the regional level. Subsidies were generated for a decoupling of rainwater from the sewer system, which applies to the entire area of the Hausacker (Feinweber & Neumann, 2018). The implementation is led by the "Zukunftsvereinbarung Regenwasser" (Future Agreement on Rainwater), which was already adopted in 2005. This is an association of the Emschergenossenschaft, the cities located in the Emscher area and the Ministry of the Environment responsible for the state of North Rhine-Westphalia. Through the agreement, the partners involved want to ensure that clean rainwater is not discharged into the sewage system but into the natural water cycle (Emschergenossenschaft, n.d.).

Summary assessment

In the following section, a summary evaluation of the GUL project "Vom Hausacker zum Urban Green" in Bochum is listed. The evaluation refers to the current project period since its start in September 2017 until the time of writing and provides information about the current state of work and how the further course of the project will look like.

According to the two administrative experts, initiators of the project and employees at the Department for Sport and Exercise of the City of Bochum, the current state of work can be rated as positive. Especially due to the constant close consultation between the participating actors and users, a sustainable use of the former sports grounds can be assumed even after the end of the program. The continuous meetings of the project group have created a good basis for the exchange of interests between the respective groups, so that all interests can be taken into account in the planning and implementation of the project (Feinweber & Neumann, 2018). After completion, the project character of the project "Vom

Hausacker zum Urban Green" should in the best case be transferred to other planning projects in other Bochum districts. The character of the project is characterized above all by the active intersectoral cooperation of the respective departments, which promotes joint cooperation between the departments and means that official boundaries do not apply. The "Neuer Hausacker" is intended to serve as an exemplary model both for Bochum and for other municipalities and to show how a project can be implemented with promising success even with limited financial and personnel resources (Feinweber & Neumann, 2018).

The only exception that can currently be considered unfavorable is the funding for the second phase of construction, which includes the renovation of the existing building, the redesign of the parking lot and the creation of a multifunctional area of the children's and youth recreation center, which is located in the immediate vicinity. Since the funding application for the aforementioned second phase was not submitted until September 2018, no decision has been made yet (Feinweber & Neumann, 2018).

The third expert, employee at "Die Falken Bochum" and mainly responsible for conceptual planning and educational work, is satisfied with the current state of work. According to his assessment, the current work status is appropriate for such an extensive project. If even half of the current planning status is realized, he sees this as a significant gain for the Riemke district. In addition, for him, as for the two others administrative experts, the financial aspect represents a challenge. Because the financing is linked to funding applications, these projects stand and fall with it. In the case of the Hausacker, at least the initial financing by the federal government is guaranteed (Pattmann, 2018).

It should be noted that urban green space can be characterized first and foremost by its diverse functions. The ecological, social, urban and economic functions overlap on the one hand, but are also interdependent on the other. As a result of the functions, which are partly performed in parallel, a multidimensionality of green spaces arises, which is enormously important for the future development of these areas. Multi-dimensionality allows green and open spaces to improve their position vis-à-vis uses in the same location. This generally has a positive impact on urban green spaces, reinforcing their status and supporting future development. The multiple functions and benefits that can be realized through urban green spaces are also increasingly becoming a focus of policy and are being managed as an important urban development policy tool and incorporated into future federal, state, and even local planning. Thus, it can be concluded that the benefits that people derive from the functions of green and open spaces are related to their new development, or improvement in the existing ones.

It is clear that the importance of green and open spaces has increased considerably. Especially due to the increased focus on climatic changes in cities,

the importance of urban green spaces and their temperature regulating effect is strikingly increasing. The new approach of the GUL offers municipalities many new opportunities to try out new open space development in different ways and to test various forms of participation and financing models. The 12 participating project municipalities are pursuing the common goal of developing new strategies for green and open spaces, as evidenced by the requalification of existing spaces or the acquisition of new urban green spaces, in a variety of ways. After the end of the project, other municipalities can benefit from the newly tested approaches through a joint listing and evaluation of the model projects.

Following the summary evaluation, which is supported by the expert statements obtained, a SWOT analysis is performed, which once again highlights the most important points in order to be able to derive recommendations for action on the basis of this. A SWOT analysis is generally used to analyze a complex project, listing its strengths, weaknesses, opportunities, and threats. The abbreviation SWOT is composed of the terms strengths, weaknesses, opportunities and threats (Gabler Wirtschaftslexikon, n.d.).

Strengths

One of the most important strengths of the program are the forms of participation and cooperation. Due to the broad range of actors involved, the interests of all sides can be included. With regard to the case study from Bochum, representatives on the federal, municipal, and non-profit levels are involved in the planning. On the federal level, the BMUB is involved, while the municipal level is represented by the “Referat für Sport und Bewegung” (Department for Sport and Exercise), the “Umwelt- und Grünflächenamt” (Environmental and Green Spaces Office), the “Bauordnungs- und Stadtplanungsamt” (Building Regulations and Urban Planning Office), and the “Kinder- und Jugendamt” (Children and Youth Office). The non-profit level is formed by the participating associations in the immediate vicinity of the planning project, and citizens can also get involved. As a result of the wide-ranging stakeholder structure, a say is equally distributed, so that long-term use of the area can also be guaranteed.

Another strength that becomes apparent after a closer look at the form of use GUL is the general openness of the project regarding its implementation. There are no precise instructions on how to implement the research field GUL. Rather, the BMUB, in cooperation with the BBSR, hopes for an open elaboration of the possibilities for permanent green space enhancement. In accordance with the current problems of green space development and its upgrading due to too high costs and too few personnel, alternative concepts for further financing and maintenance models will be tested. Furthermore, action models for an

improvement of environmental justice, a strengthening of the green infrastructure and the possibility of multiple use of green spaces will be considered in the implementation (BMUB, 2017a). The broad spectrum of issues to be addressed in the three years of the project shows that the participating model projects have many options open to them, which they can implement on their own. This is also reflected in the individual projects, as no two are alike. Due to this initial situation, the openness of the research field is to be considered positive, as they are not restricted in their implementation.

Weaknesses

One weakness that has emerged during the study of the project is the issue of funding. After the model cities were selected by the "Bundesministerium für Umwelt, Bau und Reaktorsicherheit" (German Federal Ministry for the Environment, Building and Nuclear Safety), each project was able to generate an amount of 158,000 euros in funding at the beginning. This amount is earmarked for use in specific areas, such as planning or evaluation. Funds needed for the actual conversion of the area must be obtained from third-party donors.

According to the DFG, the German Research Foundation, competition for funding is becoming increasingly important. Grants provide the financial basis for research projects at universities or even at non-university institutions (Deutsche Forschungsgemeinschaft, 2012). In connection with the GUL, third-party funds form the financial basis necessary for the implementation of the project.

Funding from a third-party donor is usually linked to various requirements and is limited in time (Wegweiser Bürgergesellschaft, n.d.). In order not to be too dependent on the duration and the amount of funding, it is advisable to look for other funding opportunities in order to be more broadly positioned.

Opportunities

The implementation of the Neuer Hausacker offers both the district of Riemke and the city of Bochum an enormous development opportunity. The model project "Vom Hausacker zum Urban Green" represents a positive change for the district, since the described initial situation with regard to a missing neighborhood center and the fragmentation of the district by the Herner Landstraße are to be regarded as negative points. The realization of the new Hausacker creates a new meeting place for the residents and considerably upgrades this part of Bochum. This change can provide an impetus for further development processes in the

district. For example, other areas can be given multiple uses retroactively to the new Hausacker, as a multifunctional green and open space. In addition, it is possible that the accessibility to the Hausacker as a new meeting place in the neighborhood will be improved and that an expansion of the path network, also with regard to pedestrians and cyclists, can take place.

In addition, the temporary uses that are to be found on the area of the old Tennen soccer field offer a further opportunity. Planned events, such as a Christmas bazaar or an open-air cinema, increase the awareness of the Hausacker and can thus make it known beyond the district and establish this form of multiple use of an area.

After a possibly successful implementation of the project after the end of the term in September 2019, the project can also have a positive impact on the image of the city of Bochum. Other comparable projects implemented, for example, as part of the designation of the European Green Capitals have also had a positive effect on the respective city. They have contributed to an improvement of the environment and the quality of life of the people and are cited as good examples in the planning. In addition to enhancing the image of the district with an impact on the city, the newly created green or open space can also serve as a soft location factor. The green space supply as well as the green accessibility are improved with the new qualification of the area and thus strengthen the district Riemke as a potential residential location.

In addition to the multiple use of an area, the aspect of green infrastructure can also be improved by linking the Hausacker with other areas. Like the multiple use, the improvement of the green infrastructure is also an important factor.

Risks

After intensive work on the topic of urban green plus the case study on the model project of the GUL based on the project "Vom Hausacker zum Urban Green" in Bochum-Riemke, no relevant risks could be identified.

Recommendations for action to improve the management of urban green and open spaces using the example of "Green Urban Labs"

Due to the strengths and opportunities that clearly outweigh the weaknesses of the model project in Bochum-Riemke, transferability of the project makes sense. A transfer to other districts in Bochum as well as to the federal state of North Rhine-Westphalia or other municipalities in Germany is possible. Due to the fact that the project has not yet officially ended, and no complete evaluation could be carried out, no exact conclusions can yet be drawn about the implementation as well as the permanent establishment of the project in Bochum and the other

eleven projects. Thus, it is also not yet possible to state exactly which findings the BMUB and the BBSR can draw from the GUL research field and whether these correspond to the ideas of upgrading and securing green spaces.

Derived from the previous chapter, this chapter now contains recommendations for action, which are presented in more detail. For a better understanding and clearer presentation of the recommendations for action, they are divided into chronological sections. Since the twelve model projects differ fundamentally from one another, it was not possible to make any generally applicable recommendations, so these refer to the case study in Bochum-Riemke. Consequently, in the following chapters, there are short-, medium- and long-term time frames in which the different recommendations for action are incorporated. The short-term recommendations can be implemented within six months, the medium-term recommendations within a period of up to one year and the long-term recommendations within a period of up to two years, whereby the long-term recommendations for action represent a continuous process that can also extend beyond the time frame mentioned.

Short-term recommendations for action

In the area of short-term recommendations, two points could be identified that can be implemented in a time frame of up to half a year. Here, the area of public relations plays an important role in order to find a basis to make the population aware of the benefits and the enormous importance of green spaces. Information about the project, its planning, implementation and future use can be made known via flyers, information booths at various festivals in the city and via various social media channels. For example, the planned temporary uses of the Hausacker, such as a Christmas bazaar or other short-term events, are suitable for important announcements concerning the Neuer Hausacker.

An understanding of the planning, implementation and use towards the population is extremely important. The promotion of private commitment on the part of citizens is also an important component of the GUL model project in order to strengthen the urban green as such. In principle, urban green is perceived positively by everyone, but not everyone knows exactly what functions the urban green performs and what expenses exist with regard to care and maintenance. By raising awareness for the thematic area around urban green and consequently anchoring it in people's minds, the project will be perceived as such and may receive support from citizens. In addition to the temporary uses mentioned, such as a bazaar that serves to exchange information, other uses can also be important for raising awareness, such as temporary green seating areas that draw attention to urban greenery in the city (BBSR, 2018b).

In addition, various action days can also take place at intervals, which deal with the implementation and use of the Neuer Hausacker. These serve to make the Hausacker better understood in its form and its benefits for the Riemke district. As an example of an action day, a maintenance day could be introduced to keep the Hausacker clean and consequently maintain the quality of the area. After the expiration of the funding period, the maintenance intensity of areas, especially intensively used areas, decreases because the financial expenses for maintenance are usually very high and can no longer be borne by the responsible municipality. The introduction of such a day can on the one hand save maintenance costs and on the other hand create an awareness among the population for the maintenance of urban green spaces. A changed understanding in relation to urban green can contribute to an improved development on the one hand, and on the other hand, the area at the Hausacker will be handled better in terms of maintenance.

Medium-term recommendations for action

A medium-term recommendation for action, which can be implemented with a duration of up to one year, is the establishment, but in the case of the Neuer Hausacker the maintenance of the actor network. In the section Actors and Cooperation, the structure as well as the interaction of the actors of different institutions and levels is presented. Due to the good basic structure, which has already been in place since the beginning of the project, the actor network can be counted among the medium-term recommendations. There is no need to explicitly establish a new network, but only to maintain or partially improve the existing structures. The participating institutions and organizations provide an essential framework. However, it is important to maintain their work, such as the exchange between the different actors. In this context, it is also important to resume the consultation hours held at the beginning of the project. The consultation hours proved to be very useful at the beginning, as they were held according to specific topics such as sport and health or nature and environment. By means of the thematic focus, other important topics are not neglected and the ideas and implementation possibilities for the respective currently discussed topics can be precisely concretized and elaborated.

Another medium-term recommendation for action is the activation of various teaching institutions. In the section "Events during the project period", some ideas regarding the cooperation of teaching institutions have already been mentioned in the course of a consultation. First and foremost, the non-profit organization "Die Falken Bochum" is interested in such work. In cooperation with surrounding school classes workshops can be accomplished, which concern themselves for

instance with the building of bird and insect houses or contain instruction meetings, in order to develop an important connection and also an understanding between humans and environment. In addition to Die Falken, the allotment garden association Bochum-Riemke and the nature conservation association can also imagine such a cooperation. According to their ideas a nature trail, which deals with plants and animals, would be recommendable (Referat für Kommunikation der Stadt Bochum, 2017d).

Similar to the action days described in the short-term recommendations, the aim is to improve awareness of urban greenery in teaching institutions. The difference to the action days is the duration of the implementation because action days usually run only one day or over the duration of an event, whereas the cooperation with the teaching and educational institutions should take place over a longer period of time. Furthermore, it is important to inform the institutions to be activated about the course offers so that they can also take advantage of these offers. Information can be passed on by displaying brochures in kindergartens and schools, or employees of NABU or Die Falken are active in the institutions on site to present their courses and offers. As a result of an early involvement of children of school or even kindergarten age, important values can be conveyed regarding the effect and benefits of green spaces in cities. With the cooperation of the educational institutions with the Neuer Hausacker, further awareness is created, which brings children closer to the topic of urban green and open spaces as well as their value at an early age.

Through the two aforementioned processes, volunteers can be acquired through the consultation hours and other meetings of various groups as well as through the workshops and courses. The acquisition is a result of the previous processes and is therefore passive. Depending on how many helpers can be recruited, an active process can also be considered.

Long-term recommendations for action

Long-term recommendations persist over a longer period of time. These are potential implementation measures that require a longer implementation period and a number of preceding consultations. The time frame provides for two years for the given recommendations, although the process may take longer.

As a first recommendation, a transfer of the project to other districts in Bochum or also to other municipalities in North Rhine-Westphalia is suggested. The city together with other cities in the Ruhr region, forms a conurbation with a population of 5.05 million and a population density of 1,140 persons/km². A large number of people are affected by structural change in the conurbation. However, in the course of the IBA Emscher Park, far-reaching projects have already been

implemented to make the region, which is affected by structural change, fit for the future again. With regard to the topic and the current significance of green and open spaces, the redesign of the Duisburg-Nord Landscape Park can be cited as a very good example (Open IBA, n.d.). In addition to such large-scale changes, it is now also important to redesign smaller-scale structures, as can be seen in the example of the Neuer Hausacker. A first transfer to other districts in Bochum is possible due to the already existing network of actors, consisting of representatives of different municipal offices. The acquired know-how can be applied to the redesign of an urban open space.

The creation of the Neuer Hausacker can result in further synergies that represent an additional benefit for the district. If the Hausacker is well received as a new exercise and leisure area in the neighborhood, the connections leading to the Hausacker should also be improved. This could include an expansion of the bicycle and pedestrian trail network. As discussed, bicycle routes in the neighborhood are sparse. On the one hand, an expansion of the bicycle lanes would improve the connection to the Neuer Hausacker. On the other hand, additional path connections to facilities such as a school or kindergarten can be created in this context.

In addition to third-party funding through the federal government, an expansion to other funding options is advantageous for the continued existence of the Neuer Hausacker. In the case of project funding by a funding entity, financial support is always linked to certain requirements. Specifically, funding is only available for a limited time frame. Furthermore, various milestones in the implementation of the project must be identifiable, leading to a defined project goal. Due to the time limit, applicants are always faced with the question of how to continue financially after the end of the project period. (Wegweiser Bürgergesellschaft, n.d.). In order to circumvent the aspect of the predefined guideline, financial citizen participation is an option. This can be done directly or indirectly. In the case of indirect participation, citizens actively participate in the project and thus reduce the cost of any expenses. In addition, citizens can also be rewarded for their participation with material items. Active participation describes the provision of funds from one's own pocket, which can be used to carry out tasks (Lenk et al., 2014). The financial participation of citizens cannot, of course, finance a rebuild. However, their participation can support smaller implementation measures.

CONCLUSION

In this concluding chapter, the central findings are presented and critically reflected. The first section provides a summary of the key findings obtained. In addition, an outlook on the continuation of the model projects is given. The second section is based on self-reflection, which reflects own findings and experiences during the processing time.

Key findings and outlook

At currently 62 hectares per day in Germany, the nationwide land consumption for new transport and settlement areas is unsustainable. The 30-hectare target set by the German government for 2020 cannot be achieved as things stand today. However, in order to curb the use of new land, there are two concrete implementation measures that are currently being applied. On the one hand, development is to take place in existing areas and on the other hand, brownfield sites can be revitalized in order to prevent new land being taken up. Areas worthy of protection, such as nature reserves, are still to be excluded from planning.

It is not only important to protect the spaces in undeveloped areas. The preservation of near-natural spaces is also of central importance within built-up structures. The diverse functions performed by green spaces within cities are far-reaching. From an economic point of view, green spaces have a positive effect on the choice of location of companies and thus increase the economic attractiveness of a city. From an urban space perspective, urban green serves to structure public space and thus shapes the appearance of the city. Urban greenery also forms an important component for the social sector and in its role fulfills the function of a place for recreation and leisure. Cities with green spaces increase the quality of life and the well-being of the inhabitants. In view of the current climatic changes, the preservation of green spaces is of fundamental importance due to their ecological function. Green spaces can filter air pollutants, reduce the temperature of urban heat islands and increase the supply of fresh air in cities.

The functions shown reflect the importance of urban green spaces. The areas should be preserved in their structures in order to be able to avoid impacts on urban, economic, social and ecological areas. However, the preservation of the areas is in permanent competition with other forms of use. In some German cities, the demand for new housing has increased immensely due to its scarcity. In order to protect existing green structures from new planning, it is important to pay more attention to them. For both humans and nature, the added value gained from urban green spaces is extremely high. In order for green spaces to continue to exist in relation to other uses, a better awareness must be created.

In the course of the model project "Green Urban Labs", new approaches to green and open space development are being tested. The intention of the project is to sustainably improve the significance of urban green spaces. To this end, the project will test ways of permanently establishing urban green and open spaces in cities and strengthening the function of existing areas. The twelve selected model projects are flexible in the design of their projects and can set their priorities as they see fit. In addition to the general goal of improving the importance of urban green spaces, other points are also important. For example, factors of maintenance, financing, stakeholder structure and securing the area are to be examined. How and to what extent the individual model municipalities deal with this can be determined independently. In order to improve the aforementioned awareness-raising, it is important to involve stakeholders in processes. In this regard, it is advisable to enable new forms of participation within the framework of the implementation of the "Green Urban Labs" in order to integrate people from different sectors (private, public, non-profit). As a result of the active participation, the perception of urban green is improved and the awareness of the benefits of urban green spaces is raised.

The derived recommendations for action refer to implementation possibilities of the model project "Vom Hausacker zum Urban Green" in Bochum-Riemke mentioned here. The recommendations are intended to provide an impetus for how the project can be consolidated in its structure. Due to the diverse range of projects, it was not possible to formulate general recommendations that apply to all model projects.

The model project in combination with the derived recommendations for action should help other municipalities to imply similar projects. Due to the different areas, which were worked on by the participating municipalities, an extensive scope of action results, in which many application areas are covered.

Overall, it can be stated that the model project "Green Urban Labs" represents a new important approach in the development of urban green spaces in cities. The knowledge gained to date can be applied to future projects. For further green space development within the framework of the "Green Urban Labs", it is important to use the impulses gained and to build on the structures created as well as to continue to deepen them.

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