

**REVITALIZATION OF INNER-CITY BROWNFIELDS THROUGH URBAN
GARDENING EXEMPLIFIED BY THE KÖLNER NEULAND E.V. IN
GERMANY**

**REVITALIZACIÓN DE TERRENOS BALDÍOS DEL CENTRO DE LA CIUDAD
A TRAVÉS DE LA JARDINERÍA URBANA. EJEMPLIFICADO POR EL
KÖLNER NEULAND E.V. EN ALEMANIA**

Isabel **Müller**; Karina **Pallagst**¹ y Patricia **Hammer**²

Abstract

The depletion of natural resources, the increase in environmental problems and land use - the advancing urbanization brings with it a series of challenges that must be solved by sustainable and innovative approaches. In this context, it is particularly important to make use of existing potential in spatial and environmental planning, in order to guarantee sustainable and socially responsible urban development in the future.

In particular, the revitalization of brownfields as Green Innovation Areas offers potential for the sustainable use of former industrial sites and for strengthening bio-economic management. Urban gardening is to be understood as a form for the use of inner-city brownfields as Green Innovation Areas, which can significantly contribute to a

sustainable urban development. The urban gardening project Kölner Neuland serves as an example to show how a part of a 44,000 m² industrial brownfield in Cologne's Bayenthal district was revitalized by an urban garden.

First, there will be an overview of the basic framework conditions based on the evaluation of existing technical literature. Subsequently, the topic of urban gardening will be treated as a form of Green Innovation Areas. In this context, it is also explained how urban gardening can promote a more sustainable and socially just urban development.

In order to understand and evaluate the background of the urban gardening project Kölner Neuland, a detailed analysis of the project is required. For this reason, the historical course, financial aspects, current marketing measures as well as goals and

¹ Pfaffenbergstraße 95, 03-125, 67663 Kaiserslautern, Tel.: +49 (0)631 205 5155, karina.pallagst@ru.uni-kl.de

² Pfaffenbergstraße 95, 03-111, 67663 Kaiserslautern, Tel.: +49 (0)631 205 4324, patricia.hammer@ru.uni-kl.de

visions of Kölner Neuland are explained after an overall view of the city.

On the basis of the gained and evaluated insights of an expert interview, the urban gardening project Kölner Neuland will be examined for its strengths, weaknesses, opportunities, and threats. It was found that the urban garden Kölner Neuland is to be evaluated quite positively however, some aspects show the need for action.

As a result of this work, recommendations for the future development of the urban gardening project Kölner Neuland are formulated. A distinction can be made between recommendations for action in the areas of financing, public perception, and control. In addition, the central conditions for a successful revitalization of inner-city brownfields through urban gardening are defined.

Resumen

El agotamiento de los recursos naturales, el aumento de los problemas ambientales y del uso de la tierra, el avance de la urbanización trae consigo una serie de desafíos que deben resolverse mediante enfoques sostenibles e innovadores. En este contexto, es particularmente importante aprovechar el potencial existente en la planificación espacial y ambiental, para garantizar un desarrollo urbano sostenible y socialmente responsable en el futuro.

En particular, la revitalización de brownfields como áreas de innovación verde ofrece potencial para el uso sostenible de antiguos sitios industriales y para fortalecer la gestión bioeconómica. La jardinería urbana debe entenderse como una forma de utilizar los terrenos abandonados del centro de la ciudad como Áreas de Innovación Verde, que pueden

contribuir significativamente a un desarrollo urbano sostenible. El proyecto de jardinería urbana Kölner Neuland sirve como ejemplo para mostrar cómo una parte de una zona industrial abandonada de 44 000 m² en el distrito Bayenthal de Colonia fue revitalizada por un jardín urbano.

Primero, habrá una descripción general de las condiciones marco básicas basadas en la evaluación de la literatura técnica existente. Posteriormente, se tratará el tema de la huerta urbana como una forma de Áreas de Innovación Verde. En este contexto, también se explica cómo la jardinería urbana puede promover un desarrollo urbano más sostenible y socialmente justo.

Para comprender y evaluar los antecedentes del proyecto de jardinería urbana Kölner Neuland, se requiere un análisis detallado del proyecto. Por esta razón, el curso histórico, los aspectos financieros, las medidas de marketing actuales, así como los objetivos y visiones de Kölner Neuland se explican después de una visión general de la ciudad.

Sobre la base de los conocimientos adquiridos y evaluados de una entrevista con expertos, se examinará el proyecto de jardinería urbana Kölner Neuland en cuanto a sus fortalezas, debilidades, oportunidades y amenazas. Se encontró que el jardín urbano Kölner Neuland debe ser evaluado bastante positivamente, sin embargo, algunos aspectos muestran la necesidad de acción. Como resultado de este trabajo se formulan recomendaciones para el futuro desarrollo del proyecto de jardinería urbana Kölner Neuland. Se puede hacer una distinción entre recomendaciones para la acción en las áreas de financiamiento, percepción pública y control. Además, se definen las condiciones centrales para una revitalización exitosa de los brownfields del centro de la ciudad a través de la jardinería urbana.

Analysis of the Kölner Neuland e.V.

Description of the project area

The Kölner Neuland site is located in the Bayenthal district of Cologne, on a former brownfield site. The site was previously home to a large brewery with a beer garden as well as other commercial buildings. The approximately 44,000 m² former brownfield site, of which about 9,000 m² is currently occupied by the urban gardening project, borders the streets Koblenzer Straße, Schönhauser Straße and Altenburger Straße (Figure 1) (Rahmann, 2019).



Figure 1. Area of the urban gardening project Kölner Neuland (own representation after Stadt Köln, 2019c).

A large commercial area is located to the north and east of the project site, with the area directly north adjacent to the Kölner Neuland garden currently unused (Rahmann, 2019). The area to the east adjacent to the project site, which is designated as a commercial area in the land use plan, has been home to a refugee shelter since 2015, housing between 80 and 120 refugees (Deininger, 2015). Adjacent to the northeast of the project site is a mixed-use area that houses both residential structures and commercial businesses. Residential development areas are located on the southern and western portions of the project site. In the western area of these areas is a kindergarten as well as a playground. Directly adjacent to the residential development in the southern area is a community needs area, most of which is used by St. Anthony Hospital. To the northwest of the

Kölner Neuland, a green space has been laid out to serve recreation as well as the design of the appearance and landscape of the area (Rahmann, 2019; Stadt Köln, 2019c).

Due to the central location of the project area in the Bayenthal district of Cologne, which directly borders the city center district, the area is very well connected to the transport network. Only 400 meters away is the B 51 (Gustav-Heinemann-Ufer), via which the A 4 and A 555 freeways can be reached in just a few minutes. The garden is also easy to reach by public transport.

On the site of the urban gardening project Kölner Neuland, various elements can be found, which are shown in Figure 2. The entrance is located in the northeastern part of the site, adjacent to Altenburger Straße. Immediately to the right of the entrance to the garden is a small shed used by a sculptor. Next to it, a kind of "arena" has been built, which offers sufficient seating and can be used as a stage. To the south of the arena are several greenhouses of various sizes and to the west is a small equipment storage area. Plant boxes have been placed almost around the entire arena, stretching across the northern and central parts of the area. In the north of the garden there is also a large compost and an insect hotel. Below this, in the western part, a play area has been built, which includes a willow teepee, a playground, a children's hut and a willow tunnel. In close proximity to this is the *Hall of the People*, a large, roofed hut that provides a place for sharing. In the center of the area, there is also a roofed pavilion made of wooden walls, which can be used to store various objects. Adjacent to the pavilion to the east are several containers that are used as a kitchen, food sharing station, and bicycle repair shop. In addition, toilets are located in one of the containers. Next to the kitchen there is a small pergola and directly adjacent to it a large herb field has been planted. In the southern part of the area of the Kölner Neuland, a small Nicaraguan adobe house has been built. Next to it is a beehive that belongs to the Kölner Neuland association (Rahmann, 2019).

History of the urban gardening project Kölner Neuland

The idea to revitalize the brownfield site in the Bayenthal district of Cologne was born in 2011 by two journalists from the hyperlocal news portal *meinesuedstadt.de*. They wanted to find out why the large area, which totaled about 44,000 m², had been lying fallow since 2008. At that time, it was planned to use the area as a site for part of the university of applied sciences, the engineering center. However, due to protests by some politicians against this project, the plan was not realized. For this reason, the brownfield site remained unused and no other use of the area was in sight (Kerstan, 2014; Rahmann, 2019).

The two journalists from the news portal called for a so-called smartmob¹. The aim of the smartmob was to draw the attention of as many people as possible to the brownfield site and to encourage them to beautify the large, unused area. As a result, more than 170 people came on July 3, 2011, and planted numerous plants on the wasteland (Kerstan, 2014; Rahmann, 2019).

The smartmob was the cornerstone for a regular meeting of residents and interested parties to discuss the future of the brownfield site. In September 2011, a meeting was arranged with the owner of the area, BLB NRW. At the meeting, the residents presented a concept for the use of the brownfield site as an urban gardening project, which was met with positive approval of the responsible employees of the BLB NRW (Kerstan, 2014; Rahmann, 2019). In order to ensure legal protection, the non-profit association Kölner Neuland was subsequently founded with a total of seven volunteer members.

Due to the previous use of the area as a brewery site, contamination of the soils with harmful chemicals could not be ruled out. Therefore, the Cologne environmental as well as the public health department initiated the requirement that a use of the area as an urban gardening project could only be approved if 15 cm of bulk material was applied to the contaminated soil. In addition, the soil was to be separated from the bulk material by a tarp so that mixing of the contaminated soil with the bulk material could be ruled out. In March 2012, the first raised beds were placed on the site and numbered (Kerstan, 2014; Rahmann, 2019).

Funding

In the early days of the urban gardening project between the end of 2011 and the beginning of 2012, the association Kölner Neuland was barely supported with

¹ A smartmob can be described as a type of political protest in which people who have previously been informed about the smartmob via the Internet meet at a specified location and engage in motivated action for a specific cause (Bundeszentrale für politische Bildung 2013)

financial donations, but rather with material donations (Fuchs, 2013; Kerstan, 2014).

The urban gardening project received its first financial support in 2012 from the non-profit foundation Anstiftung. The association received a one-time financial support of about 1,500 euros from the organization. With this money, the association was able to finance essential purchases, such as shovels, wheelbarrows and soil (Rahmann, 2019). The association received further financial support for a total of two and a half years from mid-2012 from the Klimakreis Köln GmbH foundation with a total sum of 189,030 euros (Rahmann, 2019). The grant from the foundation enabled the association to finance important components of the park. In addition, the grant was also used for events and for the structured development of the association (Kölner NeuLand Gemeinnütziger e. V., 2012a; Rahmann, 2019).

The negotiations of the interim use contract between the Kölner Neuland association and the BLB NRW lasted more than two years. In the end, an agreement was reached on a contract that authorizes the interim use of the area by urban gardening and which can be terminated twice a year, in March and in October, by the BLB NRW. This ensures that the temporary use can only be terminated before the flowering period or after the flowering and harvesting period. In addition, the contract ensures that the Kölner Neuland association can legally use the area. However, the Kölner Neuland association had to enter into a guarantee of 20,000 euros with BLB NRW for the interim use contract. Currently, the GLS Bank guarantees for the association, for which the association has to pay the bank an annual fee totaling 600 euros (Rahmann, 2019).

After the funding of the Klimakreis Köln expired, new ways to financially secure the urban gardening project had to be found. Currently, the costs of the urban garden amount to about 3,500 euros per year. The running costs are financed by income from summer festivals, donations, but also by renting out individual beds for an annual fee of 24 euros (Rahmann, 2019).

Marketing measures

To increase awareness of the urban gardening project Kölner Neuland, the association mainly uses social media channels. These platforms offer the advantage of reaching people of all social classes by being free to use. In addition, users can find out about the Kölner Neuland regardless of their location (Rahmann, 2019). The Kölner Neuland also has its own channel on the video portal YouTube. However, the channel has not been updated since 2015 (YouTube, 2019).

The own homepage of the association Kölner Neuland is of enormous importance for the internet presence of the urban gardening project. The homepage regularly publishes current information about the community garden, about processes of urban development, but also about events and workshops in the garden (Kölner NeuLand Gemeinnütziger e. V., 2019).

Goals and visions of the project

The primary goal of the project was to revitalize part of the 44,000 m² brownfield site in the Bayenthal district of Cologne. The Kölner Neuland association contributes to urban development through various projects and sees the use of the area in the form of an urban garden as a sensible management of otherwise unused urban space. In addition, the association pursues the goal of using the urban gardening project to promote education, environmental protection and nature conservation, social cohesion as well as civic engagement. The project has a strong educational character, numerous educational activities are carried out in the urban garden. A specific group is not targeted in the process (Rahmann, 2019).

The association tries to organize large festivals three times a year on the grounds of the urban gardening project. On the one hand, the festivals serve to strengthen the community and exchange, on the other hand, the festivals are supposed to help increase awareness of the project in the district and beyond the district boundaries (Rahmann, 2019).

The urban gardening project represents a low-threshold offering for anyone interested in becoming a part of the community and getting involved in gardening (Rahmann, 2019). Until the beginning of 2019, the garden was freely accessible to everyone at all times. However, the area of the garden was increasingly used as a dumping ground, components of the garden were destroyed, and items were stolen. For this reason, the association decided to introduce opening hours from mid-January 2019.

Creation of the new Parkstadt Südstadt district

The development concept “southern inner-city extension”, adopted by the city council in 2012, is located south of the inner city and extends south of the railroad ring on the left bank of the Rhine between Luxemburger Straße and the banks of the Rhine (Figure 4). In total, the redevelopment area covers an area of 115 hectares and thus represents Cologne's largest urban development concept for the coming years (Stadt Köln, 2015).

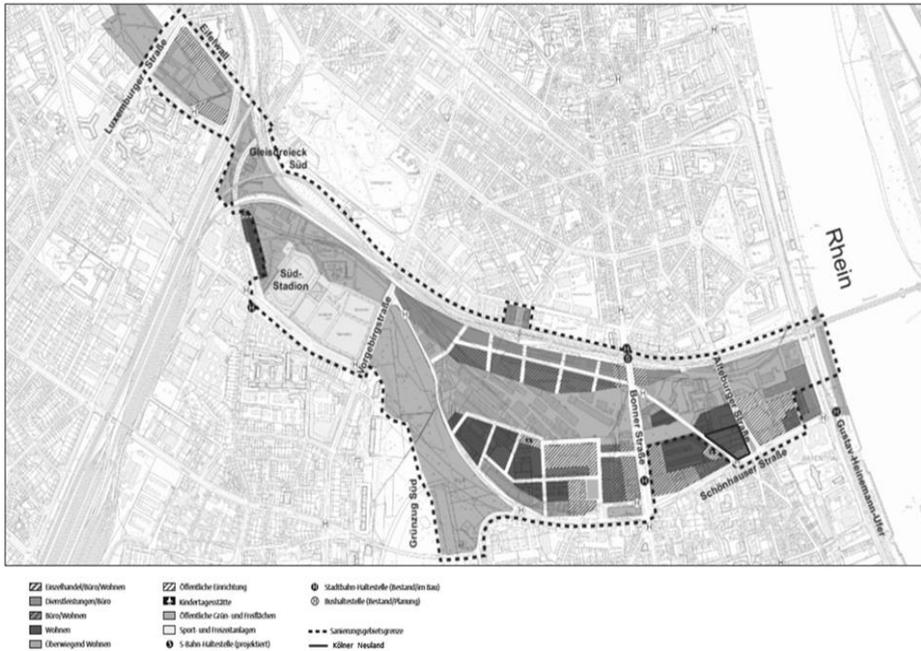


Figure 3. Parkstadt Süd redevelopment area (own representation based on Amt für Stadtentwicklung und Statistik, Amt für Presse- und Öffentlichkeitsarbeit).

The integrated planning for the future urban quarter Parkstadt Süd proposes a zoning of the area into four quarters. The area used by the Kölner Neuland as an urban garden is located in the eastern part of the redevelopment area and is to belong to the Quartier Bildungslandschaft in the future (Ortner und Ortner Baukunst, 2018).

This neighborhood will include a secondary comprehensive school with a gymnasium, an elementary school, a daycare center, and a residential block for seniors and students. An elementary school will be built on the site of the urban gardening project Kölner Neuland in the next 10 to 15 years (Ortner und Ortner Baukunst, 2018; Rahmann, 2019).

In the course of planning the new Parkstadt Süd urban quarter, the participation processes in particular have been heavily criticized. Although the city repeatedly offered citizen participation events as part of the redevelopment project, the ideas of citizens collected during the event were not incorporated into further planning processes. In addition, participation events were held at very irregular intervals; for example, very few such events were held prior to the creation of the framework plan (Rahmann, 2018a, 2019).

In several citizen workshops, the desire for the continued existence of the urban community garden was expressed by the citizens. Nevertheless, this request has not yet been addressed in depth in any of the citizen participation events, which means that the future of the community garden is uncertain at this point in time (Dezernat für Stadtentwicklung, Planen und Bauen, 2018; Rahmann, 2019).

Criteria grid

The following criteria grid (Table 1) was designed as part of the GIAGEM research project and is intended to facilitate project classification according to a fixed scheme. A total of ten criteria are differentiated, which will be discussed in more detail. With the help of the criteria grid, a SWOT analysis is subsequently carried out, which forms the basis for the development of recommendations for action.

Table 1. Tabular analysis of the urban gardening project Kölner Neuland (own representation)

Sector	
<i>What?</i>	Urban Gardening
<i>Which sector? (Food, Energy or Other?)</i>	Food and education
<i>Suitable for the bioeconomy?</i>	Yes: relies on renewable raw materials as the basis for foodstuffs
Goal/Vision/Idea	
<i>Idea?</i>	Sustainable use of part of the total 44,000 m ² brownfield site in Cologne Bayenthal in the form of urban gardening
<i>Target?</i>	Revitalization of inner-city wasteland through urban gardening Environmental education by means of various environmental education offers such as workshops, working groups or also through cooperation with educational institutions Promotion of environmental protection and nature conservation Strengthening the social cohesion of all social groups

	Promotion of civic engagement
<i>Vision?</i>	Community garden is to be given an area in the future Parkstadt Süd district in the future (as soon as the current area can no longer be used due to the conversion measures) and thus continue to exist More say in urban development processes Greater public awareness
Time	
<i>When? Lead time?</i>	2011: Planting of the fallow area during a smartmob
<i>Construction phase? How long is the production phase?</i>	2011: Foundation of the non-profit association Kölner Neuland 2012: Installation of the first raised beds on the fallow area 2013: Negotiation of an interim use contract
Actor	
<i>Who?</i>	Cologne New Territory Association
<i>What competence?</i>	Verein Kölner Neuland: Makes important decisions about the urban gardening project Kölner Neuland, manages the finances, organizes events, does public relations work
Governance	
<i>Development, monitoring & controlling, corruption?</i>	Association Board Association members
Personal	
<i>Personnel required for implementation</i>	Association members Volunteers
Finance	
<i>Current costs</i>	About 3,500 euros running costs per year (for electricity and water supply, guarantee between the association and SU NRW, seeds, garden tools, etc.).

<i>Equity</i>	Income of equity through: Association membership Income at events from the sale of products and foodstuffs Donations Renting beds
<i>Subsidies</i>	Nonprofit Foundation Anstiftung: one-time donation in the amount of 1,500 euros (2012) Klimakreis Köln GmbH Donation totaling 189,030 euros over a period of two and a half years (2012-2015).
<i>Loans</i>	Credit with GLS Bank in the amount of 600 euros per year for the guarantee of the interim use contract in the amount of 20,000 euros, which is assumed by the bank

Area

<i>Where? Market proximity?</i>	Located on the former brownfield site of a brewery Area is owned by the BLB NRW Central location in Cologne with good accessibility by public transport
<i>Location requirements?</i>	Open space with sufficient sunlight Right to use the area

Results

<i>Product, product, output</i>	Revitalization of the fallow land Strengthening the neighborly community sustainable cultivation of food Promotion of sustainable urban development Creation of environmental education programs
---------------------------------	--

Public perception

External effect, effects

Many volunteer supporters

Great familiarity in the direct neighborhood

Positive perception on the part of the population and great acceptance

Due to the new district Parkstadt Süd, which will be built in the next 10- 15 years, the urban gardening project will become more known, as the current area of the community garden is located in the redevelopment area and will have to leave this area in the near future.

Many supporters advocate, for example, through citizen participation processes, that the community garden be preserved in the new urban district.

Interim summary

The total area of 9,000 m² of the urban community garden Kölner Neuland is located on a former industrial wasteland, which was planted by more than 170 people during a smart mob in 2011. This action laid the foundation for the urban gardening project, which has since pursued the goals of promoting education, environmental protection and nature conservation, social cohesion, and civic engagement.

The project is largely financed by grants and donations, but the rental of beds and the membership fee for the association also ensure regular income, which is necessary to offset the annual costs, for example to finance the interim use contract between the association and the BLB NRW. For the current marketing measures of the association, mainly social media channels are used, which can be accessed free of charge. However, the association's own homepage and the Kölner Neuland newsletter are also used significantly for public relations work.

In the area currently occupied by the urban gardening project, the new Parkstadt Süd district will be built in the coming years. The framework plan, which was published in November 2018, envisages the establishment of the Bildungslandschaft neighborhood in the area of the Kölner Neuland. Accordingly, a school complex is to be built in the foreseeable future on the site, which is currently used in the form of urban gardening. An alternative area for the Kölner Neuland is not provided for in the framework plan. The Kölner Neuland association, but also numerous citizens, criticize that citizen participation processes have been severely neglected as part of the planning for the new Parkstadt Süd district.

SWOT analysis

The following SWOT matrix tabulates the strengths and weaknesses as well as the opportunities and threats of the urban gardening project based on the findings obtained so far. The individual aspects were derived from expert interviews, a detailed literature analysis and own observations during site visits. The SWOT matrix is followed by a more precise elaboration of the individual aspects.

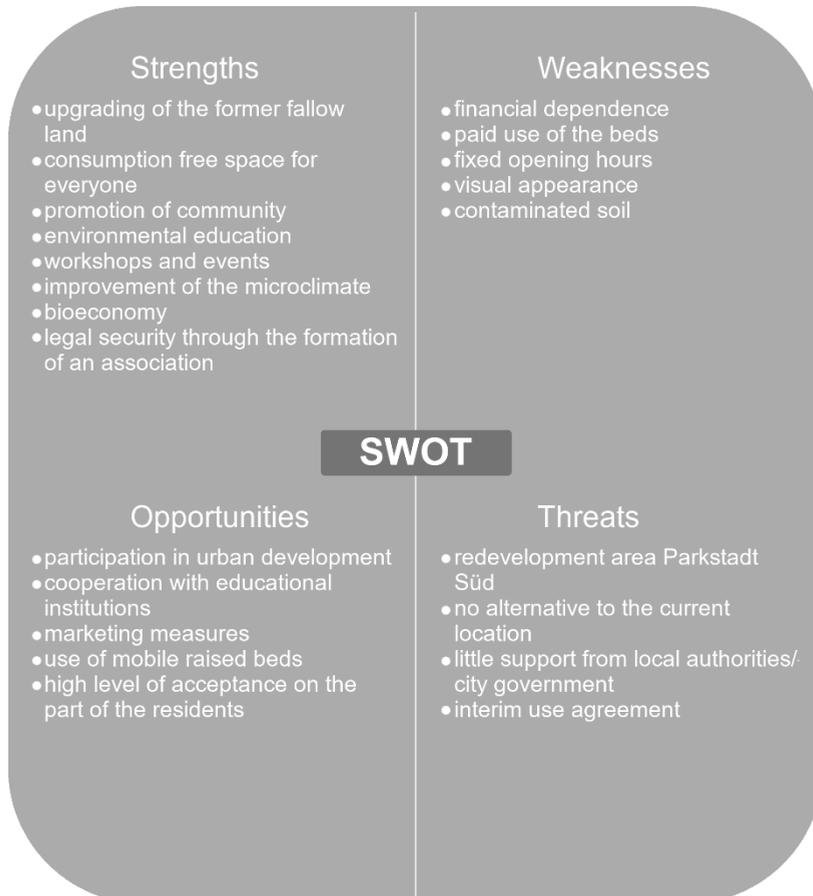


Figure 4. SWOT analysis of the urban gardening project Kölner Neuland (own representation).

Strengths

The urban gardening project Kölner Neuland revitalized the former industrial wasteland and thus upgraded unused urban space. Due to the upgrading of the area by the community garden, the attractiveness of the neighborhood increased, which met with an extremely positive response, especially from the residents in the direct neighborhood of the garden.

Furthermore, the urban gardening project offers a consumption-free public space as a meeting place for people of all ages, nationalities, and social classes. The community garden is an alternative for people who cannot afford their own garden due to a low income or who do not have enough space for it due to the high building density of the city of Cologne. But above all, the urban gardening project offers the opportunity to bring different people together, to enable a broad exchange of knowledge and experience, and to form a community. In this way, the Kölner Neuland strengthens the community even beyond the directly adjacent neighborhood.

Another strength of the project is the educational aspect. The Kölner Neuland association offers numerous environmental education programs in various forms. In addition, schools and kindergartens can also make use of the educational offerings of the community garden. In this way, knowledge about sustainability, healthy nutrition and gardening is passed on to younger generations, and children as well as young people are thus also taught the added value of the urban gardening project.

Likewise, a strength of the project can be seen in the bioeconomic economy. The Kölner Neuland uses exclusively renewable and regional raw materials as the basis for food. But also, the sustainable cultivation and short transport routes of the food contribute to the fact that this project contributes to the establishment of a bio-economically oriented economy. In addition, the urban garden contributes to the improvement of the microclimate. Besides the aesthetic value of the garden, it also contributes to improving air quality by filtering the air and generating oxygen.

In addition, the foundation of the non-profit association Kölner Neuland offers numerous advantages. By founding the association, Kölner Neuland benefits from tax relief. Without the legal capacity of the association, subsidies, or grants from private or public supporters could not have been claimed. Only the establishment of the association made it possible to implement the interim use agreement with BLB NRW. But also, the reduction of liability risks for the executive board as well as the membership through the foundation of the association speaks clearly for the strength of this aspect.

Weaknesses

The main weakness of the urban gardening project is its financial dependence. Due to the annual costs of about 3,500 euros, the community garden is dependent on financial support in the form of donations, grants or even income from events. The highest income comes from donations and grants. The annual running costs are comparatively low, but the association must also consider unforeseeable costs and also the costs that arise when the community garden moves.

Although the paid use of the individual beds offers the possibility to increase the financial income of the garden, this aspect is to be evaluated negatively. The association itself sees the urban garden as a consumption-free place for everyone, but this is contradicted by the fee-based use of the beds. With the exception of cooperation partners, such as schools or kindergartens, this fee applies to every person who wants to plant an individual bed.

At the beginning of 2019, the Kölner Neuland Association introduced opening hours due to increased damage to components of the garden as well as the use of the garden as a garbage dump. Since then, the entrance to the garden has been blocked by a gate, which is why the area is only accessible to everyone during opening hours. By limiting the opening hours to four days a week, access is very limited. The newly introduced opening hours probably also have a negative effect on attracting new gardeners and association members.

In addition, the visual appearance of the community garden, especially during the winter months, can be considered a weakness. Some residents criticize the design of the garden, especially during the periods when the garden is little used (Rahmann, 2019). During this time, cleanup is sporadic, so the aesthetics of the community garden declines.

Another weakness is the contamination of the soil due to the past use of the site as an industrial area. This is because the exact contamination levels of the soil are currently unknown. Although the Cologne environmental and the health authorities imposed the condition that the area may only be used in the form of a community garden if certain precautions are taken, there is still a residual risk, as surrounding areas directly adjacent to the garden could also be contaminated. For this reason, it cannot be assumed with complete certainty that the area of the Kölner Neuland is free of harmful substances.

Opportunities

The Kölner Neuland association is increasingly working for more citizen participation, especially for the Parkstadt Süd redevelopment project currently in

the planning stage. The Urban Development AG, for example, offers every citizen the chance to represent common interests together with other residents. In this way, the Kölner Neuland can make a significant contribution to ensuring that citizens' interests are represented in future plans for Parkstadt Süd.

In addition, the currently existing cooperations with schools and kindergartens show the potential of the community garden to inspire other educational institutions for the urban gardening project. By establishing further cooperations, the Kölner Neuland can expand its existing network and introduce younger generations to important topics covered by the urban gardening project.

Currently, the Kölner Neuland mainly uses online media to market the community garden. Due to the comparatively high number of subscribers to the pages operated by Kölner Neuland on these two platforms, a broad mass of people can be reached. In addition, the homepage of the Kölner Neuland association serves as an essential source of information.

By using mobile raised beds, there is also the chance to be able to transport the beds in case of a possible move of the garden. The construction of the raised beds on pallets enables uncomplicated transport, so that the entire beds of the community garden can be placed in a different location. The mobile raised beds are of enormous importance, especially against the background of the newly developing Parkstadt Süd district. Since the area of the urban gardening project is located in the middle of the redevelopment area, it is highly likely that this will have to move to another location in the next five to ten years.

Furthermore, another opportunity is the great acceptance of the urban gardening project on the part of local residents. Both local residents and citizens beyond the district boundaries rarely criticize the urban community garden. Some only criticize the external appearance of the garden during the winter months, but the concept as such is predominantly positively perceived (Rahmann, 2019). Thus, there is a chance that residents and citizens are committed to the continued preservation of the urban gardening project in the future Parkstadt Süd district.

Threats

The greatest uncertainty, and therefore a threat, is due to the redevelopment area of the future Parkstadt Süd district. The area where the urban gardening project is currently located is designated for an elementary school in the framework plan. An alternative or future location for the community garden is not integrated in the framework plan. At this point in time, therefore, there is no alternative area that could serve as a location for the community garden in the future from the Kölner Neuland.

In addition, the low level of support for the urban gardening project on the part of the authorities, especially those responsible for the redevelopment of the district, represents a high risk. Despite numerous participations in citizen participation processes as part of the planning of the Parkstadt Süd district and discussions with stakeholders, the wishes of the association to remain part of the district have not been considered in the current planning processes.

The negotiated interim use contract between the Kölner Neuland association and the BLB NRW is also risky. Although the interim use contract secures the legal use of the area in the form of urban gardening, the contract can nevertheless be terminated every six months. Considering the size and number of components of the urban gardening project, moving the entire garden within half a year is only possible with the support of numerous volunteers. In addition, a replacement area for the community garden of the Kölner Neuland must be found within this short period of time.

Recommendations for action

Based on the central findings of the literature analysis, the expert interview and the SWOT analysis conducted, recommendations for action are derived below, which are directed at the association members and the community of the urban gardening project Kölner Neuland.

Subsequently, the urban gardening projects Kölner Neuland and Parque Agroecológico de Zapopan² are compared and the central conditions for a successful revitalization of inner-city brownfields through urban gardening are noted.

Recommendations for action Kölner Neuland

The recommendations for action represent suggestions for improvement that can be implemented by the stakeholders involved. The recommendations for action are divided into short-, medium- and long-term implementation periods. A short-term recommendation for action can be implemented within the next six months, a medium-term recommendation for action can be implemented within one year, and long-term recommendations for action include all those that require a longer implementation period than one year.

² Translated from Spanish: Zapopan Agroecological Park.

Table 2. Overview of recommendations for action (own representation)

Recommendation for action	Implementation period
Funding	
Increase in sales of own products	short-term
Secure long-term funding	medium-term
Public Perception	
Expand marketing measures	short to medium term
Greater involvement of the neighborhood	short-term
Expand cooperation with educational institutions	medium-term
Persuasion/image campaign	medium to long-term
Control	
Establishment of a framework planning advisory board	short to medium-term
Secure alternative area	long-term

Increase in sales of own products

Currently, the Kölner Neuland uses the sale of homegrown food or produced products only sporadically as another source of financial income. But by regularly selling harvested fruits, vegetables, herbs, or homegrown products, the association can ensure an independent source of funding. The food and produce from the community garden could be offered for sale at regularly scheduled events. For example, a product logo could be designed to better market the products made in the garden, such as beeswax or even vases. A simple branding through a catchy logo as well as a brand name (for example NeuWare), which is directly associated with the Kölner Neuland, contribute to a better marketing of the products.

Secure long-term funding

Long-term support is also needed to ensure financial security. For example, about 200 meters west of the community garden is an organic market that could act as a potential supporter of the community garden. In addition, the Cologne Oval Offices are located about 400 meters northeast of the Kölner Neuland. This office complex is home to numerous companies that could financially support the community garden (Google Maps, 2019). In return, the Kölner Neuland could provide the supporters with "after-work beds" for employees. This could not only increase the community of the urban gardening project, but at the same time improve the collegial cohesion of the companies through communal gardening.

Expand marketing measures

The recommendations for action to expand the marketing measures are to be seen as complementary to the already existing measures. By realizing these recommendations for action, even more people can be made aware of the urban gardening project, which at the same time can also achieve an increase in the community of the garden. This aspect is of enormous importance, especially with regard to the redevelopment plans of the city of Cologne in the current area of the community garden. After all, the more supporters there are for the urban gardening project, the greater the likelihood that the garden will also become a part of the future Parkstadt Süd district.

The social media platforms Facebook and Twitter are already regularly used to market the community garden. The association's own channel on the video portal YouTube, on the other hand, was last updated in 2015. This channel could continue to be used regularly by Kölner Neuland so that users of this platform also become aware of the community garden. So-called aftermovies, which are published after the conclusion of the event and which are a summary of the event in length of about three to five minutes, can be used as marketing for future events. In addition to the social media channels currently in use, Instagram could also serve as a marketing platform. The use of various social media channels enables a broad reach of quite a few users of these platforms.

The association could also call for another Smartmob via the aforementioned social networks as well as via the Kölner Neuland's own homepage. The smartmob could, for example, be carried out under the motto "Platz für NeuLand". With the help of the smartmob, attention can be drawn to the displacement of the urban gardening project and at the same time more people can be convinced to preserve the garden in the future Parkstadt Süd district.

Since there are some journalists among the members of the association, an own magazine of the Kölner Neuland could be developed, for example with the name NeuAnzeiger. By distributing the newspaper in various public places, people can be made aware of the project who were previously unaware of the community garden. In addition to the print version of the newspaper, an online version can also be published on the homepage of the association. If there are not enough funds to print the newspaper, it can also be published only on the homepage of the Kölner Neuland.

In order for people who are in the immediate vicinity of the urban community garden to be directly informed about the concept, information posters can be hung on the fence surrounding the area of the garden. Currently, information about the urban gardening project is only located at the entrance to the garden. However, due to the size of the area where the garden is located, posters should also be placed on the other fences bordering Koblenzer Straße as well as Schönhauser Straße.

Greater involvement of the neighborhood

By increasing the involvement of residents in the immediate vicinity of the community garden, a large community can be developed that can become more involved in future decision-making processes as part of the planning of the Parkstadt Süd district to ensure the continued existence of the urban gardening project.

The garden of the Kölner Neuland is known by almost all adjacent residents due to its unmissable size. However, in the opinion of the board, the percentage of the neighborhood engaged in the urban gardening project is too small. For this reason, residents should be specifically made aware of the urban community garden, because most residents lack more detailed information about the concept and goals of the Kölner Neuland (Rahmann, 2019).

To provide residents with more detailed information about the urban gardening project, flyers could be distributed to residential parties directly adjacent to the garden. The flyers should include the following information:

- definition of Urban Gardening
- the goals of the project
- upcoming events
- offered work groups or workshops as well as
- opening hours of the community garden.

In addition, a neighborhood festival held on the grounds of the Kölner Neuland can be used to inform residents about the concept of the community garden and also to encourage them to get involved. At this festival, for example,

workshops could be offered to residents, products could be sold, or presentations about the community garden could be given.

Expand cooperation with educational institutions

Currently, there are already a few cooperations between the Kölner Neuland and schools as well as kindergartens, which are located in the immediate vicinity of the garden (Rahmann, 2019). By expanding further cooperations with schools, kindergartens, but also universities, the Kölner Neuland can succeed in convincing people across generations of urban gardening and strengthen the educational character of the community garden. Within a radius of about one kilometer around the garden there are five kindergartens, six schools and one university (Google Maps, 2019). Through the development of environmental education programs tailored to the respective educational institutions, or simply the provision of a few beds for the nearby kindergartens, schools and the university, cooperation can be established and strengthened. For example, biology lessons of some classes could take place regularly in the community garden, as it is already practiced in other community gardens (Oberhansl, 2014). Students from the Cologne University of Applied Sciences, which is only a few minutes' walk from the Kölner Neuland, could also carry out various study projects in the community garden and present the results at events. With the expansion of the cooperation between the Kölner Neuland and various educational institutions, both sides can benefit from several aspects. On the one hand, knowledge about sustainable consumption, bioeconomy as well as the cultivation of different foods will be passed on. On the other hand, the community of the urban gardening project will be enlarged through cooperations.

The expansion of the community and the increased educational aspect would set a clear signal for the continued existence of the urban gardening projects. This is because the area of the community garden is located in the future Bildungslandschaft quarter, which is to be created in the course of the Parkstadt Süd redevelopment measures. Schools and daycare centers are to be established in this neighborhood in the coming years. It would therefore also be conceivable for cooperation to take place between the Kölner Neuland and the future schools that are to be located in the quarter. In this way, it could be achieved that the Kölner Neuland remains an essential part of the new quarter and that the responsible authorities are above all made aware of the significance of the urban gardening project in terms of its educational character. Another option would be to place some of the mobile raised beds in the courtyards or schoolyards.

Efforts at persuasion/ image campaign

Since the future of the urban gardening project is currently uncertain, citizens, politicians and especially the city administration must be convinced of the continued preservation of the community garden. For this purpose, it is important to communicate the central goals of the urban gardening project; education, environmental and nature protection, social cohesion, promotion of civic engagement, to the outside world in a way that is effective as publicity. The already described recommendations for action "Expand marketing measures" can contribute significantly to the efforts at persuasion. With the help of marketing, the advantages of maintaining the community garden for the desired target group (e.g., residents and citizens, but also authorities) must be clearly communicated. After successful implementation of the marketing measures, a signature campaign could follow in which supporters of the project campaign for the preservation of the Kölner Neuland in the Parkstadt Süd district. The result of this campaign can eventually be presented to the city administration and all key stakeholders. The signatures thereby serve as proof of the relevance of the urban gardening project for the citizens. At the same time, this action will increase the pressure on the administration to take the citizens' wishes into account in further planning processes.

Establishment of a framework planning advisory board

Due to the low level of citizen participation processes during the preparation of the framework plan for the Parkstadt Süd district, which will be developed in the next few years, citizens are increasingly critical of the city administration.

Although the framework plan is to be classified as an informal planning instrument, which precludes it becoming legally binding, it nevertheless serves as a basis for future land use and development plans. The establishment of a framework planning advisory board could make a significant contribution to expanding and improving citizen participation processes during further planning for Parkstadt Süd.

Similar advisory boards, which could serve as a model, have already been successfully implemented in Braunsfeld/ Müngersdorf/ Ehrenfeld. The task of this advisory board is to advise the Lindenthal and Ehrenfeld district councils on all planning matters relating to Braunsfeld, Müngersdorf and Ehrenfeld (Stadt Köln, 2019a). A framework planning advisory board for Parkstadt Süd could take over these tasks in the further course of planning. In addition, the framework planning advisory board should be composed of members from various institutions to ensure that the concerns of diverse social groups are represented.

The composition of the framework planning advisory board could be based on that of the Braunsfeld/ Müngersdorf/ Ehrenfeld advisory board. Accordingly, the advisory board could consist of residents, members of civic associations, landowners, project developers and employees of resident companies.

In addition to voting members, the advisory board can also include advisory voices, such as the respective district mayor (Stadt Köln, 2019a). The members of the Braunsfeld/ Müngersdorf/ Ehrenfeld framework planning advisory board are elected by the relevant district councils. The task of the advisory board is to forward resolution recommendations on the above-mentioned areas to the district council. Ideally, the council's recommended resolutions form the basis for decisions by the urban development committee (Interessengemeinschaft Braunsfelder Bürger, 2007). A framework planning advisory council for the area of the future Parkstadt Süd district could therefore be based on the concept of the existing Braunsfeld/ Müngersdorf/ Ehrenfeld advisory council. After all, this example shows that the early involvement of stakeholders from diverse social groups in planning processes can significantly reduce the potential for conflict.

Secure alternative area

Currently, the Kölner Neuland has no alternative area if a school is built on the current site of the urban community garden. For this reason, an alternative area must be found as quickly as possible that the Kölner Neuland can legally use in the near future.

All of the recommendations for action already described provide the basis for securing an alternative site for the urban gardening project. There would be sufficient space for the urban gardening project in the extension area of the inner greenbelt. According to current plans, parts of the planned green belt extension border the current area of the community garden by only a few hundred meters. A relocation of the Kölner Neuland to this area of the inner greenbelt would have an advantageous effect on the urban gardening project. Since a large number of the association members or gardeners are located in the immediate vicinity, so that the community could continue to exist even in the event of a relocation. The integration of the Kölner Neuland into parts of the green belt would also have advantages for the city administration. For example, considerable costs could be saved because planting would not have to be done in this area. From the very beginning, the components of the urban community garden Kölner Neuland were designed with a possible relocation in mind.

Another possibility for maintaining the urban gardening project Kölner Neuland is to distribute the mobile raised beds over several locations in the newly developing Parkstadt Süd district. For example, some raised beds could be placed

in courtyards or schoolyards. By dividing the garden, only several small areas would be needed instead of one large one. However, there would still need to be a central meeting place for the community, as this measure may have a negative impact on the community of the garden anyway.

Significant aspects for the revitalization of inner-city brownfields through urban gardening

By filtering out strengths and deriving recommendations for action from the urban gardening project Kölner Neuland and the community garden PAZ, which was analyzed by the author as part of the master's project and visited during a research trip to Guadalajara (Mexico) in 2018, significant aspects of revitalizing inner-city brownfields through urban gardening are presented below.

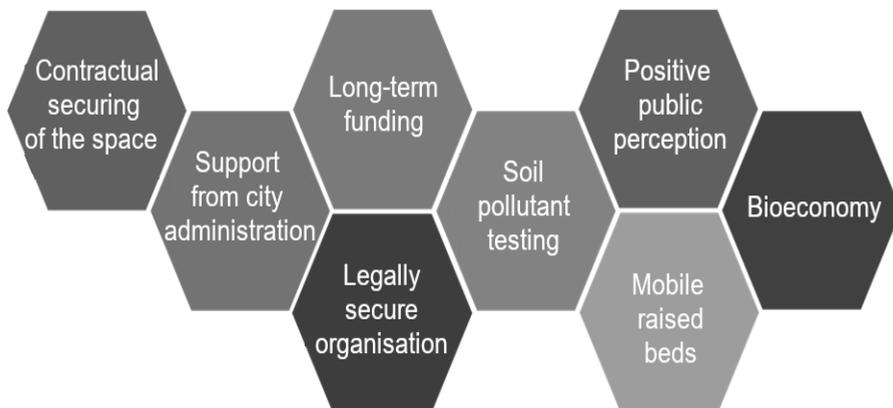


Figure 8. Significant aspects for brownfield revitalization through urban gardening (own representation).

In the case of inner-city brownfield revitalization through urban gardening, particular care must be taken to ensure that the area used is contractually secured. In most cases, urban gardening projects are initiated through bottom-up processes and use brownfield sites that are owned by the public sector. A contract between urban gardening Initiative and the owner of the space is crucial for a secure future of such projects. Through the interim use contract between the Kölner Neuland and the owner of the area BLB NRW, for example, there is at least the security for the association that a termination can only take place every six months. Furthermore, this contract confirms the legal use of the area by the urban gardening project.

Furthermore, the support of the responsible city administration is a decisive factor for the revitalization of inner-city wastelands through Urban Gardening. The urban gardening project Kölner Neuland, which was analyzed in the context of this thesis, has shown that due to the lack of support from the city administration, the garden will have to make way for other plans in the near future and that no alternative areas have been made available so far. The situation is different in the PAZ, where urban gardening was initiated by the responsible city administration and a main coordinator was hired whose task is to act as a liaison between the city administration and the PAZ. In doing so, he does not take a leading role in the community of the park, but rather assumes the role of mediator between the PAZ and the city administration (Baumann et al., 2018).

Long-term secured financial support is also an important component for urban gardening projects that are to contribute to the revitalization of a brownfield site. In most cases, only financial support, such as donations or funding programs, can ensure the continued existence of urban gardening projects and thus the revitalization of brownfields. Financial support from sustainably oriented companies located in the vicinity of the urban gardening project has proven to be particularly profitable (Baumann et al., 2018).

An association of the urban gardening community to a legally secured organization is also one of the essential aspects that should be considered when the establishment of an urban community garden on a brownfield site is contemplated. Donations, grants, and subsidies can generally only be awarded to legally responsible entities such as associations. In addition, the establishment of an association offers legal protection in many respects, and it is also possible to benefit from numerous tax advantages.

Soils contaminated with pollutants are often found on fallow land. The contamination of the soils is usually due to previous use of the area. For this reason, it is particularly important to conduct sufficient soil tests to rule out possible contamination or to be able to take appropriate measures in the event of contamination. If the soil is found to be contaminated, raised beds, for example, can be used to prevent direct contact between the contaminated soil and the plants. This prevents the plants, which may be processed as food after harvesting, from absorbing harmful substances through the soil.

In addition, the use of mobile raised beds offers the advantage that, for example, in the case of displacement of the urban gardening project from the used area, relocation is considerably simplified. Often, a permanent use of former fallow land by urban gardening is not possible due to a lack of long-term contractual ties with the owner of the area, as was made clear by the urban gardening project Kölner Neuland considered in the context of this work. By

using mobile raised beds, it can be ensured that the beds can also be placed on other brownfield sites.

Positive public perception also plays an important role in the revitalization of brownfield sites through urban gardening projects. This is because an urban gardening project can only survive in the long term with the support of various stakeholders. Volunteers are needed, for example, to set up the garden or to plant and harvest. In addition, financial supporters must also be found. Support for the project from the responsible authorities, especially the respective city planning office, is also of great advantage. As a rule, the various stakeholders will only support an urban gardening project if they are convinced of its merits. A positive public perception can be achieved, for example, by offering various educational programs or workshops for all interested parties in addition to gardening.

The bioeconomy is also important for brownfield revitalization in the form of Urban Gardening. Thus, urban gardening projects can make a significant contribution to the sustainable and healthy nutrition of the population.

Interim summary

On the basis of the SWOT analysis, it became clear that the urban gardening project Kölner Neuland can be assessed quite positively. Nevertheless, it also became apparent that there is a need for action with regard to some aspects. The recommendations for action derived from the SWOT analysis can be assigned to the following headings: Financing, public perception and controlling.

Since the largest source of income for the Kölner Neuland association is currently donations, further opportunities for financial security should be exploited. The association could become more financially independent by increasing sales of the food harvested in the garden as well as the products made there and securing long-term funding.

A positive public perception of the urban gardening project is of enormous importance. Only with the support of numerous important players can the association succeed in securing the continued existence of the urban gardening project in the newly developing Parkstadt Süd district. To this end, existing marketing measures must be expanded and supplemented by new ones. For example, the association's own magazine could be developed and published at regular intervals. In addition, the increased involvement of local residents is of central importance. A neighborhood festival could be used to get more residents excited about the urban gardening project and, at the same time, expand the association's community. Likewise, cooperation with educational institutions must be expanded, because in addition to schools and kindergartens, universities could also function as possible cooperation partners.

As a central instrument of citizen participation in the further planning process for Parkstadt Süd, a framework planning advisory board could make a significant contribution to expanding participation processes and thus taking citizens' wishes into account in future planning. In addition, the association Kölner Neuland can, for example, convince decision-makers to maintain the community garden with a signature campaign.

The totality of these recommendations for action forms the basis for securing an alternative area for the urban community garden. Optimally, the garden could be relocated to the future extension of the inner green belt, which, according to the current state of planning, is to be located only a few 100 meters from the current site of the Kölner Neuland. This area also currently lies fallow and could be revitalized by the urban gardening project.

CONCLUSION

Advancing urbanization entails a number of challenges, such as increasing environmental problems or the depletion of natural resources. Therefore, it is particularly important in spatial and environmental planning to develop sustainable approaches to meet these challenges, considering social, ecological and economic aspects in equal measure. Above all, the revitalization of inner-city brownfield sites is of considerable relevance in this context.

One possibility for the temporary or permanent revitalization of inner-city brownfield sites is the so-called Green Innovation Areas. It should be noted that the bioeconomy is to be seen as an essential element in the social transformation towards a more sustainable economy. This is because the establishment of a bioeconomy is intended to gradually replace the traditional economic concept, which is currently strongly focused on fossil raw materials and energy sources, with a biomass-based economy based on renewable raw materials.

Urban gardening projects represent an example of the innovative use of inner-city brownfields as Green Innovation Areas. The revitalization of brownfields in the form of urban gardening can be ensured by sustainable urban development. This is because urban community gardens promote social cohesion, rely on ecological cultivation methods, and strengthen a bio-economic economy, thus combining the three pillars of sustainability.

With the help of the analysis of the urban gardening project Kölner Neuland, which was considered in this chapter, it was shown how a former inner-city industrial wasteland was revitalized by means of the urban community garden and which strengths and weaknesses as well as challenges the project shows. It is

noted that the urban gardening project Kölner Neuland can be evaluated quite positively. Especially against the backdrop of increasing settlement pressure in Cologne, which is due to the growing population, the urban community garden proves to be a popular place for the consumption-free use of green spaces for everyone. In addition, the Kölner Neuland is committed to environmental education, environmental and nature protection, and civic engagement.

Nevertheless, despite the predominantly positive evaluation, recommendations for action emerge, which are based on the one hand on the central findings of the literature and document analysis as well as the expert interview and on the other hand on the SWOT analysis carried out. Of enormous relevance is the further strengthening of the positive public perception of the urban gardening project Kölner Neuland: Only with the support of numerous stakeholders, such as residents and authorities, can it be possible for the urban community garden to also become a component of the newly emerging Parkstadt Süd district.

In this context, it was found that the revitalization of inner-city brownfields through urban gardening often takes place temporarily as an interim use. Thus, the future of many urban gardening projects is uncertain, making long-term planning difficult. The reason for this is usually the lack of property rights or contractual arrangements between the owner of the land and the urban gardening community.

Through the analysis of the Kölner Neuland as well as the PAZ already examined in a previous work, it became clear that certain aspects play a central role in a successful brownfield revitalization through Urban Gardening. For example, a long-term use contract between the owner of the area and the urban gardening community is crucial for a long-term use of the creek by urban gardening. In addition, a contaminant analysis of the soil, especially of previously industrially used brownfields, is essential for the reuse of the area as an urban community garden.

In conclusion, it can be said that the revitalization of inner-city brownfield sites through urban gardening makes a significant contribution to sustainable and social urban development, especially against the backdrop of advancing urbanization and the associated settlement pressure. This is because, in addition to urbanization, there are other challenges, such as resource scarcity and increasing environmental problems, which can only be overcome with innovative and sustainable approaches.

REFERENCES

- Anstiftung. (2014). *Das Urban-Gardening-Manifest*. Retrieved from (28.02.2019) <https://anstiftung.de/urbane-gaerten/aktuell/58-das-urban-gardening-manifest>
- Anstiftung. (2019). *Programm*. Retrieved from (28.02.2019) <https://anstiftung.de/die-stiftung>.
- Baumann, R., Diehl, A., Ermtraud, L., Graul, D., & Müller, I. (2018). *Collaborative Gardening zur Revitalisierung von Städten am Beispiel von Guadalajara, Mexiko*.
- Bundeszentrale für politische Bildung. (2013). *Was ist ein Smartmob?* Retrieved from (12.02.2019) <http://www.bpb.de/lernen/grafstat/partizipation-20/165851/info-03-08-smartmob>
- Deining, D. (2015). *NeuLand Köln jetzt mit Privatbeeten und Urban Gardening-Manifest*. Retrieved from (24.02.2019) www.report-k.de/Panorama/Panorama-Koeln/NeuLand-Koeln-jetzt-mit-Privatbeeten-und-Urban-Gardening-Manifest-41559
- Dezernat für Stadtentwicklung, Planen und Bauen (2018). *Parkstadt Süd geht weiter*. Retrieved from (28.02.2019) www.stadt-koeln.de/politik-und-verwaltung/stadtentwicklung/parkstadt-sued/zum-stand-der-planungen
- Dezernat für Stadtentwicklung, Planen, Bauen und Verkehr. (2016). *Parkstadt Süd*. Retrieved from (28.02.2019) http://www.masterplan-koeln.de/fileadmin/Content/PDF/parkstadt-sued_broschuere_projektentwicklung.pdf
- Facebook. (2019). *NeuLand*. Retrieved from (27.02.2019) Facebook. www.facebook.com/KoelnerNeuLand/
- Follmann, A., & Viehoff, V. (2017). *Das Politische eines Gemeinschaftsgartens – NeuLand in Köln als Experimentierort für urban commoning?*. In S. Kumnig, M. Rosol, & A. Exner (Eds.), *Umkämpfte Grün. Zwischen neoliberaler Stadtentwicklung und Stadtgestaltung von unten* (pp. 233–262). transcript Verlag.
- Fuchs, M. (2013). *Gemeinschaftsgarten Neuland "Wir möchten Teil des Grüngürtels werden"*. Retrieved from (28.02.2019) www.rundschau-online.de/region/koeln/gemeinschaftsgarten--neuland---wir-moechten-teil-des-gruenguertels-werden--2909470
- Google Maps. (2019). *Kölner Neuland*. Retrieved from (3.03.2019) www.google.de/maps/place/NeuLand+K%C3%B6ln/@50.9131137,6.9

635652,16.5z/data=!4m5!3m4!1s0x47bf243ee2075973:0x3578f880165bb827!8m2!3d50.9128986!4d6.9673169

- Interessengemeinschaft Braunsfelder Bürger. (2007). *Zwei Jahre Rahmenplanungsbeirat - eine erste Bilanz*. Retrieved from (8.03.2019) <http://braunsfeld.info/beirat.html>
- Kerstan, D. (2014). *Interview Dirk Kerstan – NeuLand*. Retrieved from (28.02.2019) http://www.sunpod.de/2014/08/139-sunpod_interview-dirk-kerstan-neuland/
- Kölner NeuLand Gemeinnütziger e. V. (2012a). *Klimakreis fördert NeuLand-Aufbau*. Retrieved from (28.02.2019) <http://www.neuland-koeln.de/klimakreis-foerdert-neuland-aufbau/>
- Kölner NeuLand Gemeinnütziger e. V. (2012b). *Kölner NeuLand e.V. Satzung*. Retrieved from (28.02.2019) www.neuland-koeln.de/wp-content/uploads/2014/02/NeuLandSatzung_2013.pdf
- Kölner NeuLand Gemeinnütziger e. V. (2014). *Arbeitsgruppen*. Retrieved from (28.02.2019) <http://www.neuland-koeln.de/mitmachen/arbeitsgruppen/>
- Kölner NeuLand Gemeinnütziger e. V. (2018). *Wir alle sind endlich wieder gefragt*. Retrieved from (28.02.2019) <http://www.neuland-koeln.de/wir-alle-sind-endlich-wieder-gefragt/>
- Kölner NeuLand Gemeinnütziger e. V. (2019). *Kölner Neuland*. Retrieved from (28.02.2019) <http://www.neuland-koeln.de/#nav-mobile>
- Oberhansl, V. (2014). Gemeinschaftsgarten in Frankfurt: Mit Schaufel, Reissack und dem grünen Daumen. *Frankfurter Allgemeine*. Retrieved from (4.03.2019) www.faz.net/aktuell/rhein-main/urban-gardening-im-frankfurter-garten-12996602.html
- Ortner und Ortner Baukunst. (2018). *Köln Parkstadt Süd*. Retrieved from (28.02.2019) www.stadt-koeln.de/politik-und-verwaltung/stadtentwicklung/parkstadt-sued/zum-stand-der-planungen
- Rahmann, S. (2018a). Dezernent gibt Autonomem Zentrum bis auf weiteres Bestandsgarantie. Retrieved from (28.02.2019) www.meinesuedstadt.de/dezernent-gibt-autonomem-zentrum-bis-auf-weiteres-bestandsgarantie/
- Rahmann, S. (2018b). Exklusiv! Rahmenplan für Parkstadt Süd: Vom Laster vor unsere Füße gefallen. Retrieved from (28.02.2019) www.meinesuedstadt.de/exklusiv-rahmenplan-fuer-parkstadt-sued/
- Rahmann, S. (2019, February 7). Interview by I. Müller.

- Stadt Köln. (2015). *Zum Hintergrund*. Retrieved from (27.02.2019) www.stadt-koeln.de/politik-und-verwaltung/stadtentwicklung/parkstadt-sued/zum-hintergrund
- Stadt Köln. (2019a). *Rahmenplanungsbeirat Braunsfeld/Müngersdorf/Ehrenfeld*. Retrieved from (26.02.2019) www.stadt-koeln.de/politik-und-verwaltung/ausschuesse-und-gremien/rahmenplanungsbeirat-braunsfeldmuengersdorfehrenfeld
- Stadt Köln. (2019b). *Stadtplan*. Retrieved from (8.03.2019) www.stadt-koeln.de/service/stadtplan
- Stadt Köln. (2019c). *Suche im Flächennutzungsplan*. Retrieved from (27.02.2019) www.stadt-koeln.de/leben-in-koeln/planen-bauen/suche-im-flaechennutzungsplan?kontrast=weissS
- Twitter. (2019). *NeuLand* [Tweet]. Retrieved from (26.02.2019) Twitter. <https://twitter.com/koelnerneuland?lang=de>.
- Voll, J. (2014). *NeuLand Köln – Urban Gardening schafft Gemeinschaft und sorgt für Teilhabe*. Retrieved from (28.02.2019) <https://opentransfer.de/neuland-koln-urban-gardening-schafft-gemeinschaft-und-sorgt-fur-teilhabe/>.
- YouTube. (2019). *NeulandKoeln*. Retrieved from (28.02.2019) www.youtube.com/channel/UCzdymDRRwexv4IYPqLLlxmA