

PLACE-MAKING AND 'GREEN' REUSES OF BROWNFIELDS IN THE RUHR

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ABSTRACT

Depending on location, size and former use, brownfields in the Ruhr have different potentials. Besides brownfields where viable regeneration projects are possible there are many sites that are not attractive to the market. One type of use for this category is post-industrial nature (e.g. industrial forests). Following the overall concept of sustainable development, these sites offer potentials for creative 'place-making' by local residents. The approach of 'place-making' is embedded in the discussion of establishing local governance in urban districts of the Ruhr. Introducing one best-practice-case (the Rheinelbe industrial forest in Gelsenkirchen), the paper focuses on the discussion of 'place-making' as a strategy for innovative brownfield development and local governance using the example of the former Lohberg colliery in Dinslaken.

Key words: Brownfields, Ruhr, interviews, industrial forests, place-making, local governance

INTRODUCTION

During the last two decades the Ruhr in Germany was often used as an example for structural change of an old industrial region. These cognitions can be drawn for the development over other regions with similar problems. Current experiences in the research of former industrialised regions show that in some cases developments that have taken place in the Ruhr follow, with a time lag, the same development path in other regions, for example in Poland (Domański 2003). Today structural change in the Ruhr takes place under conditions of demographic shrinking accompanied by sub-urbanisation. A loss of 374,000 inhabitants is forecasted between the years 2000 and 2015 (Strohmeier *et al.* 2002a).

The development in the Ruhr tends to result in a weak real estate market and a perforated urban structure, in which not every terminated use of a site can be compensated by a new gainful project. One type of (temporary) use for brownfields¹ is post-industrial nature, for example, industrial forests. Such sites represent new places for recreation and experiencing nature. Following the overall concept of sustainable development² the former industrial sites offer potentials for creative 'place-making' by local residents in the Ruhr. The strategy of 'place-making' (as collective appropriation of the own environment by the residents) has the potential to create new 'places' of identification for the local residents. The concept of 'place-making' (de Magalhães *et al.* 2002) is embedded in the discussion of establishing steady forms of

local governance in the urban districts of the Ruhr. Surveys and workshops with residents in selected urban districts have shown that they want active participation in the planning and realisation of new concepts for the further use of brownfield sites.

The paper is structured into five sections. The second section investigates the actual market situation for brownfields in the Ruhr. At the end of this section is a map that includes locations of projects which are mentioned in the paper (Figure 3). In the third section, the authors analyse one best-practice-example of industrial forests, the former Rheinelbe colliery in Gelsenkirchen. Furthermore, the fourth section focuses on the discussion of future perspectives for 'place-making' as approach for innovative brownfield development. The last section concludes with the emphasis that even with non-viable sites, an integrated and strategic land management is needed.

The paper is based on literature analysis and a number of empirical studies with different methods. It considers results of research projects the authors have been involved in from 2004 to 2006. The unpublished study 'Turkish migrants and nature' which was primarily used was based on a series of part-standardised surveys, expert interviews with stakeholders and workshops with local residents and experts.

STRUCTURAL CHANGE AND MARKET SITUATION IN THE RUHR

The situation for the marketing of properties in the Ruhr has changed dramatically over the last two decades. Sales of land have declined strongly. This happens under conditions of a weak economic environment, suburbanisation and demographic shrinking. An additional factor was the shifting of growth industries, for example, information and communication or biotechnology, into regions which were not occupied by 'old industries' (e.g. steel production) (Häußermann & Siebel 1987).

Structural change in the Ruhr – The structural change in the Ruhr, generated by the decline of 'old industries', has resulted in high rates of unemployment and a shrinking population. Coexistence of growth, stagnation and shrinking leads to a perforation of the urban landscape.

Polarisation and fragmentation accumulate, especially with the concentration of certain population groups (e.g. migrants) in some urban districts. These developments tend to a declining local tax base and the turnover of real estate values. In addition, depreciation leads to a loss of retail in these urban districts (Butzin *et al.* 2006). Examples are the urban districts of Ückendorf in Gelsenkirchen (9; see Figure 3 for notation), Altendorf in Essen (17) or Marxloh in Duisburg (2).

The shrinking population leads to high vacancy rates. The loss of quality in local infrastructure (e.g. leisure and cultural amenities like closing of public swimming pools or libraries) leads to a further decline of attractiveness and thus out-migration. However, actors of urban and regional development – both in the private and in the public sector – still use planning instruments and policies which were developed under and for conditions of growth.

Market situation – The large enterprises in the real estate market react very differently in this situation. Under the pressure of globalising markets more and more land owners aim to have a value creation in their real estate portfolio through portfolio-management and corporate real estate management (CREM). Because of the extent of the real estate portfolio, decisions to sell or develop certain areas have a bearing on the spatial development of the regions concerned. The intention is, on the one hand, to reduce the holding costs of the properties and, on the other, to generate a cash-flow for the core business. This is true for both residential and commercial properties and also for brownfield sites owned by private companies (Butzin *et al.* 2006).

In the federal state of North Rhine-Westphalia (NRW), to which the Ruhr belongs, a number of enterprises are active in the marketing of brownfield sites, for example:

- the Landesentwicklungsgesellschaft NRW (LEG NRW), a state-owned development company of NRW,
- the g.e.b.b, a company owned by the Federal Ministry of Defence (BMVg) that sells unused properties of the armed forces, or
- the BahnflächenEntwicklungsGesellschaft NRW mbH (BEG), developer of former railway land.

Together these state-owned companies hold sites of about 3,400 ha in total (Butzin *et al.* 2006). The largest supplier of land in the Ruhr is the Montan-Grundstücksgesellschaft (MGG), a subsidiary of the RAG (in 2007 renamed Deutsche Steinkohle AG (DSK)). The DSK owns all hard coal mines in Germany. The MGG manages 16,000 ha of sites in the Ruhr and in the federal state of Saarland. Approximately 1,100 ha are presently under redevelopment. For another 1,000 ha, the development potentials are currently being evaluated. MGG sites are spread out over the Ruhr in 46 locations and 25 different municipalities (Butzin *et al.* 2006).

The volume of land sales in Germany decreased in the 1990s. While more than 28,000 ha were sold in 1993, only 9,000 ha were sold in 2004. This is a reduction of almost 70 per cent (Statistisches Bundesamt 2006). However, a steady increase of the land supply can be proved.

Furthermore small municipalities at the periphery of the region still follow a greenfield strategy – often with public subsidies. This leads to further reductions in demand for brownfield sites in the urban centres. While 8,544 ha in 2001 – 2 per cent of the whole region – were brownfield sites (Dransfeld *et al.* 2002) the settlement and traffic area grew at the expense of ‘free’ areas by 11,660 ha between 1990 and 2004. This growth was particularly strong in the northern and eastern districts of the Ruhr (Wesel, Recklinghausen and Unna, a, b and c) which are the most important target areas of suburbanisation (RVR 2006).

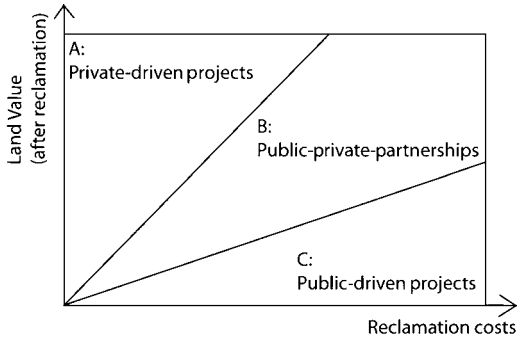
Despite the low demand, expectations of local authorities concerning new developments on brownfield sites were inflated. The large brownfield sites in the Ruhr cities especially, were assumed to be the ‘chance of the century for urban development’ within the last 15 years. It was expected that they have the potential to give new impetus for the economic, social and ecological development of the region. This opportunity was used – sometimes successfully, sometimes less successfully – by the Internationale Bauausstellung (IBA) Emscher Park (International Building Exhibition Emscher Park) and local authorities. The ten-year IBA Emscher Park programme was based on a structural development concept with the objective of providing a strong impulse to the northern part of the Ruhr and ran from 1989 to 1999.

Examples from different cities of the region show how these cities tried to give new impetus for their economic, social and ecological development:

- Shopping centres: The CentrO in Oberhausen (7), opened 1996, is the biggest shopping and leisure centre in the Ruhr and includes over 200 national and international shops (Basten 1996).
- Technology cluster: The new MST factory Dortmund (15) on the former Phoenix West steel works site is the starting point of a microsystem technology cluster (MST). This regional cluster currently consists of 33 companies.
- Recreation: The Landschaftspark Duisburg-Nord (Duisburg-Nord Country Park, 3) – a former mining and steelworks site – was opened in 1994 and has since developed into a popular tourist destination for natural, cultural and sports-related leisure pursuits.
- Culture: The world heritage site Zeche Zollverein (Zollverein colliery, 6) shaft 12 in Essen-Katernberg was turned into a centre for culture and design in 1986, aiming to attract creative enterprises.

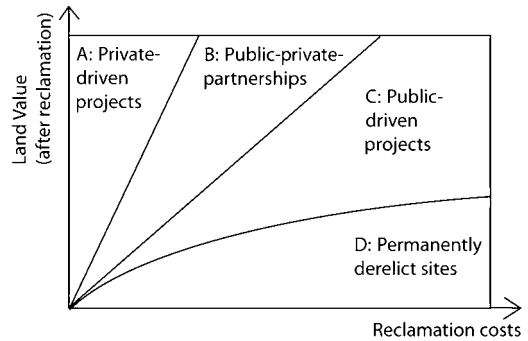
These flagship projects of brownfield redevelopment have one thing in common: all developments were based on significant public subsidies. This leads to the question as to whether such subsidies are needed for all brownfield projects.

In old industrial regions especially, brownfields are often economically marginally viable or even non-viable sites. Compared with greenfield sites they are not competitive without public intervention (Thornton *et al.* 2007a). However, ‘one major engine driving the reclamation of land is obvious – profit’ (Groundwork 1999, p. 8). In many cases in Europe the location and condition of the site and the state of the real estate market make it economically viable to develop a site without public subsidies. But such projects are situated in growth regions and/or at really outstanding locations, which are attractive for international investors (Groundwork 1999). Examples of this can be found in growth regions all over Europe – in London, Munich or Helsinki. In growing metropolitan regions market mechanisms solve the brownfield problem relatively quickly through high or increasing real estate



Source: CABERNET (2005).

Figure 1. ABC model.



Source: Based on Butzin *et al.* (2006).

Figure 2. ABCD model.

prices. But where there is no demand for a site, investing in regeneration will not pay off. What then remains is the intervention of the public sector.

Classification of brownfields – In 2005 the European brownfield network CABERNET published the ABC model (Millar *et al.* 2005) as a typecast of brownfield sites (Figure 1). This model is a further development of a model published by Ferber (1997). The brownfield types are differentiated in relation to their economic status and funding:

- Category A sites represent development projects that are driven by private funding.
- Category B sites are characterised as being on the borderline of profitability. These projects tend to be funded through public-private co-operation or partnerships.
- Category C sites represent mainly public sector or municipality projects driven by public funding or specific legislative instruments (e.g. tax incentives)' (CABERNET 2005).

Under conditions of shrinking a further category can be identified (Figure 2),

- On category D sites no redevelopment takes place, because neither the private sector nor the public sector wants – or is able – to invest in the site (Butzin *et al.* 2006).

Examples for category A in the Ruhr are mostly logistics and retail locations (e.g. IKEA

in Essen, 4). In a number of other projects (e.g. the collieries Ewald in Herten, 20, and Niederberg in Neukirchen-Vluyn, 14) are examples in which only the planning phases were subsidised, but not the implementation of the projects. However, these projects are not properly A sites but borderline A/B sites (Butzin *et al.* 2006).

Category B includes a number of industrial parks and retail developments in the Ruhr. They have been subsidised with the aim of creating new jobs. Examples are the Science Park Gelsenkirchen (9) and the Business Park Holland in Bochum (21). Not all of these projects have been a success. Some 19 per cent of the industrial parks in the Ruhr are vacant (ILS 2005).

Category C usually consists primarily of leisure projects which remain public property or are managed by the public hand. Examples are:

- urban parks such as the municipal park West in Bochum (11) (City of Bochum/LEG NRW) or the municipal park Prosper III (12) (City of Bottrop, MGG) (Dransfeld *et al.* 2002);
- industrial forests such as the former collieries Rheinelbe (9) and Graf Bismarck (8) in Gelsenkirchen and the coking plants Zollverein (5) in Essen and Hansa (19) in Dortmund as well as the chemical plant Chemische Schalke in Gelsenkirchen (16);
- slagheaps such as Schwerin (10) (City of Castrop-Rauxel) or the Schurenbachhalde



Source: Compiled by the authors, map based on Strohmeier *et al.* (2002b).

Figure 3. The Ruhr cities, urban districts and location of described projects

(18) in Essen (regional agency RVR, RAG AG).

One brownfield site can include different parts of various categories. For example: The Duisburg-Nord Country Park is a C site from which a part of 11 ha (6% of total size) was separated for the development of an IKEA complex. The transformation of a C site (or parts of it) into an A or B site is a process, during which the site becomes more attractive to investors. An example is Rheinelbe where the development into an industrial forest has led to

the later development of parts of the area to a call centre by a private investor.

Such industrial forests were initially planned for temporary use with the option to redevelop these sites later for other uses. Thus, the industrial forests are a classic intermediate use, which are becoming more important under conditions of shrinking regions. However, there are also many sites in which neither the private nor the public sector shows any interest. On such sites nature simply invades and recaptures brownfields. They belong into category D and remain as 'holes in the urban landscape'. Such sites are

often located in urban districts which, due to their former industrialisation are highly affected by the consequences of the structural change, for example, by high rates of unemployment. Examples can be found at the sites of the former Flottmann factory (13) in Herne or the former port Pöppinghausen (22) in Castrop-Rauxel.

INDUSTRIAL FORESTS IN THE RUHR

The industrial forests in category C are widely dispersed in the Ruhr. As 'post-industrial nature' these 'new wild woodlands' (Keil 2005, p. 117) offer a development potential for flora and fauna more than any other type of urban land use in the region. Industrial forests are the result of the spontaneous natural colonisation on brownfields and are characterised by a high diversity of species. The importance of abandoned industrial land as valuable habitat for plants and animals has been shown in several studies (Dettmar & Rebele 1996; Dettmar 2005).

Besides this ecological aspect, the new forests offer great potential for new nature experiences and leisure and recreation activities for local residents. Different to the planned and cultivated urban parks (such as the GRUGA Park in Essen, 6), the new industrial forest visitors get an idea of 'wilderness' without leaving their own residential area.

Project industrial forests Ruhr region – The industrial forests³ are under administration of the 'Projekt Industriewald Ruhrgebiet' (Project Industrial Forests Ruhr Region), jointly run by the LEG NRW and the forestry administration NRW. The project was founded in 2002, after transferring the 'Restflächenprojekt' (Remaining Areas Project) to the forestry administration NRW to become a permanent project. The Remaining Areas Project was initiated by the IBA Emscher Park in 1995. Since 2002, the Forestry Office Recklinghausen has managed and co-ordinated this project. In addition to the main purpose of the project to improve converting further brownfield sites into forests through natural colonisation, one aim of the project is the maintenance of the accessibility, use and appropriation of industrial forests by the local population in the adjoining urban districts (Landesbetrieb Wald und Holz NRW,

Forstamt Recklinghausen 2006). In this respect, industrial forests can be understood as an innovative concept of brownfield management.

Social functions of industrial forests – To realise this aim and to identify the social function of industrial forests for local residents, the forestry administration funded several social geographic field studies, focusing on different age and population groups (children, adolescents, adults and Turkish migrants) (Findel *et al.* 2003; Hohn & Keil 2006; Piniek *et al.* 2007). All studies had a common focus in the analysis of the perception, use and appropriation of industrial forests by local residents.

Different qualitative and quantitative methods were used in the studies. While Keil (1997) and Findel *et al.* (2003) used observation methods and compiled maps of the selected study areas, Hohn & Keil (2006) used part-standardised interviews with Turkish migrants and expert interviews with stakeholders (teachers, land owners and migrant organisations) in the studied urban districts as main data source for their study on 'Turkish migrants and urban nature'.⁴ An additional method for getting feedback on the results was workshops with Turkish migrants and experts in all study areas.

Keil (2002, 2005) has pointed out several social functions of the industrial forests in the Ruhr. In many ways they are used:

- as additional inner-urban open space;
- as urban adventure sites for children; and
- as recreational areas for adults.

His studies confirmed that the natural and structural heterogeneity of industrial forests in particular attract children and adolescents and stimulate them to use the areas in different and creative ways. His observations showed that the children were engaged in various play activities (overall 12% of all observed activities in 1997, see Table 1). Besides typical play activities such as hide-and-seek or building tree houses they also played games which were adapted to the particular structure of the area (such as climbing bunkers).

The results of these studies indicate that the use and appropriation of the industrial forests has increased since the beginning of the project in 1995. The first site in the Remaining Areas Project was the Rheinelbe industrial forest in

Table 1. *Activities in the urban-industrial woodland Rheinelbe (Results of observations and mappings carried out in the summers of 1997 and 2003, after Keil 2005).*

Year	1997		2003	
	n = 2,229	%	n = 2,820	%
Activities observed [multiple answers possible]				
Walking the dog	628	28.2	481	17.1
Taking a walk	467	21.0	665	23.6
Lingering	100	4.5	242	8.6
Other leisure activities	104	4.7	20	0.7
Children's play	266	11.9	129	4.6
Adolescents' activities	152	6.8	59	2.1
Passing through quickly	75	3.4	17	0.6
Bycycling	260	11.7	766	27.2
Jogging	14	0.6	229	8.1
Mountain biking	74	3.3	118	4.2
Other sports activities	92	4.1	61	2.2

Gelsenkirchen. This pilot project has become a particularly important leisure and recreation area for local residents and a place for different age and population groups to experience nature (Table 1).

Between 1997 and 2003 leisure activities of adults increased, while children's play and adolescents' activities decreased (Table 1). In 2003, adults used the Rheinelbe area mostly for walking (24% of all activities) and bicycling (27%). These studies show that industrial forests have developed into established and accepted green places and have shaped the post-industrial urban landscape of the Ruhr.

Hohn & Keil (2006) have also shown that Rheinelbe is well accepted by the local residents in Ückendorf. This was reflected in the frequency of visits by the interviewed Turkish migrants. More than 80 per cent of them declared that they visit this area. The two other industrial forests in the study were visited far less frequently, Graf Bismarck in Gelsenkirchen by about 40 per cent and Hansa in Dortmund by just about 20 per cent of the Turkish migrants from surrounding residential areas.

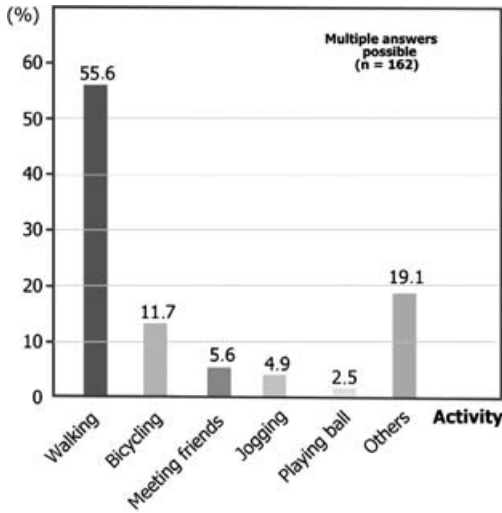
The most popular kind of activity for Turkish migrants in all three study areas was walking, especially on weekends with the family. Other activities were mainly sporting in nature (e.g. bicycling, see Figure 4).

PLACE-MAKING AS APPROACH FOR INNOVATIVE BROWNFIELD DEVELOPMENT

Participation in brownfield development – For a sustainable and innovative development of brownfields a greater integration of the interests and wishes of all local population groups is necessary. This is also important for the embedding of these areas in the life spaces of the local residents. The integration of different interests should consider age, gender and the migration background of all local residents.

The population in the vicinity of the analysed industrial forests has shown an interest in realising their ideas creatively and actively (Hohn & Keil 2006). Therefore, open spaces for such an active appropriation of all local residents should be created. The brownfields of the categories C and particularly D offer the possibility to counteract the lack of open spaces in the neighbouring urban districts. If there is no interest from any side to invest in this areas and they are free from any economic pressure and located appropriately, than they should be opened for the continuous or temporary use by the local population.

This decision must include a risk-based approach concerning potential contamination on the site. A risk-based approach in this context



Source: Hohn & Keil (2006).

Figure 4. Activities of Turkish migrants in urban-industrial woodlands.

means that regulatory action is only required when unacceptable risks to human health and the environment have to be prevented. For this, future land use has to be taken into account. For the social acceptance of a site, the trust in public places by the actors and the procedure is essential. This is strongly related to the manner in which the risk is presented and interpreted (Rescue 2004). Opening of a site to the public should not only be accompanied by a transparent risk communication but also a strategy of 'place-making' as a concept of collective appropriation.

Place, production of place and place-making – 'Place-making' was brought in by Healey (2000) to the European planning discussion. According to Healey, place-making is based on the difference between 'space' and 'place'. While 'space' refers to the functional 'physical space' 'place' conceptualises 'space' in a relational sense as the localisation of social practices of different stakeholders. In this relation, behaviour-leading images and attitudes become the subject of planning (Raco 2003). Therefore, Fürst *et al.* (2004) explain 'place-making' as a collective process of space arrangement with the aim to advance the usage and living quality of a

space and to appropriate the space in a socio-emotional way.

To deepen the understanding for place-making it is necessary to highlight that place is the result of a production process. 'Spaces become places because they are acknowledged as such by those living there, doing business there' (de Magalhães *et al.* 2002, p. 53). Places are not only localisation of social practices; they are also made by specific (social) production processes. 'Particular places have specific and contingent influence upon the historical evolution, character and form of local social relations and processes' (Beynon & Hudson 1993). According to Lefèbvre (1991) the production of space is a collective social process.⁵ Contemporary social conditions produce their own place, or in the terminology of Lefèbvre, their social space. He has developed a conceptual triad: spatial practice (material dimension), representations of space (semiotic dimension) and spaces of representation (social dimension). 'Space is viewed in three ways, as perceived, conceived and lived: l'espace perçu, conçu, vécu. The Lefebvrian schema sees a unity between physical, mental and social space' (Elden 2002). The physical space is the real space that is used and generated. The mental space is the imagined space, the space of maps, urban plans and semiotics. The social space is the produced place, the place that is formed over time by meanings, attitudes and symbolisms. It is both together: real and imagined (Elden 2002).

Place-making is a process of place production. In this context it is important to consider that different stakeholders have different 'conceptions of place' (Healey 2001). Their images and attitudes in relation to one specific place are often different. This can generate conflicts in the image to produce one certain place, for example, conflicts between Muslim migrants and old-established inhabitants in the case of new mosques such as in Cologne or conflicting interests between the stakeholders in the reuse of brownfields. Place-making as a component of participation in urban planning should bring these different interests together. Decisive for successful place-making are:

- the space effects of the collaborative activities of the residents their personal engagement;
- their participation in planning and realisation of projects; and

- particularly their motivation to improve the quality of life in their surrounding 'space' to create their own 'place'.

Place-making processes (de Magalhães *et al.* 2002) as active appropriation processes open up the chance for a stronger identification with one's own living place.

Place-making and local governance – The approach of place-making is embedded in current debates on governance. Governance at the urban and local scale (as [new] urban governance and local governance respectively) is thus, a function of the collective and institutionally anchored regulation of urban development processes. Therefore, different stakeholders, such as business unions, public authorities and non-profit organisations (NPOs) are all involved in urban development in formal and informal, flexible and enduring networks. 'In this context, (new urban) governance is a constitutive element of a changing planning culture, characterised by stronger cooperative, communicative, dialogical and competitive components in regulation and control processes' (Hohn & Neuer 2006, p. 293). The role of the local state has changed in this view. The local state is no longer the main stakeholder of urban planning (Healey 2002). In the planning for new places it has to deal with other stakeholders (e.g. private companies or NPOs). If it has the required power, it can force its interests but in many cases it has to make compromises with other stakeholders (primarily private companies) to push the local development, for example, by subsidising flagship projects such as the brownfield developments in the Ruhr described above.

For solving the multiple problems of urban districts in an old-industrial region such as the Ruhr, co-operative forms of urban development are required which integrate the interests and capacities of the local residents as stakeholders of civil society.⁶ The aim is to develop institutional capacity and create an engaged civil society in these urban districts so that the residents actively participate in the development processes. Place-making can then be one activating strategy to develop and advance new forms of local governance in the local community. Healey emphasises the importance of such place-related approaches in contemporary strategic

governance and planning systems in her work (Healey 2006).

Place-making and innovative brownfield development – To realise this aim a research team from the Ruhr-University Bochum has developed a model project for the urban district of Lohberg in Dinslaken (1). In this project, residents will be given the opportunity to develop plans for parts of the area of the former Lohberg colliery (closed in 2005). The main aims of the project are the creative redesigning and self-determined appropriation of these parts by the local residents.

As a disadvantaged urban district with multiple problems, Lohberg has been a project area of the federal state programme 'Soziale Stadt' (Socially Integrative City) since 1999. The programme is based on an integrated development concept and intends to establish sustainable forms of local governance in the participating project areas. The planned approach follows up this process of local governance in Lohberg.

The planning and realisation processes will be accompanied and moderated by the project team. Cultural backgrounds and different accesses to power, knowledge and capital can limit the possibilities of different stakeholders. Moderation is necessary to mediate in this situation, to arbitrate in conflicts between different 'conceptions of place' of different user groups (e.g. ethnic or social groups) and to promote a collective place-making that brings the different interests together.

For the realisation of the project the researchers have developed three place-making modules: 'Forest of Cultures', 'Forest of Generations' and the 'Neighbourhood Forest' – the latter being a modern variant of traditional 'common land'. These modules take up the problems in the urban district development in Lohberg and should contribute as activities of place-making to the establishment of stable forms of local governance.

It is important to name some other essential possible limitations of the strategy, such as the finance of the project ideas of the local residents and the motivation of the owners to provide their brownfields for temporarily and permanent appropriation by the residents.

In terms of limited public finances, new ways of finance are required. One possibility is that by foundations. The foundation Nordrhein-

Westfalen-Stiftung Naturschutz, Heimat- und Kulturpflege (Nature Conservation and Country and Culture Maintenance of NRW) supports with the programme 'Industry → Nature' projects, in which brownfields in inner-city areas are provided for self-determined nature experiences.

The concept of corporate social responsibility (CSR) can help to motivate brownfield owners into providing for their areas. CSR describes entrepreneurial action which is connected with social responsibility as a contribution for sustainable development (Porter & Kramer 2006). The owners have to be assured that their provision has several benefits:

- It is an important contribution for the integrated development of the 'urban districts of poor'.
- It helps to reduce the costs of regeneration.
- It promotes the image of their company.

CONCLUSIONS

This paper has pointed out that there are many brownfield sites in the Ruhr in categories C and D which are not viable for the market. Most of the brownfields belonging to categories A or B have found a new economic use. The supply of brownfields is much larger than the demand; hence the real estate market in the Ruhr is weak. This tends to result in a perforated urban landscape.

One successfully tested (temporary) use for C and D brownfields are different forms of post-industrial nature, for example, industrial forests. The 'Industrial Forest Ruhr Region' project has developed a way to give brownfields a new use accepted by local residents. They use such forests as new places for experiencing nature, for leisure and recreation. The Rheinelbe industrial forest has developed especially into an area which not only has ecological functions but which also fulfils social functions for the local residents. It is advisable to learn from this example and to transform more brownfields into areas of post-industrial nature to prevent the urban landscape from perforation.

It is to be expected that in the context of structural change, demographic and economic shrinking and heavily indebted municipalities the number of sites falling into categories C and

D will increase in the future, not only in the Ruhr but also in other old industrial regions in Europe. One task of future approaches to strategic land management should be to direct possible land uses to such sites. Strategic land management combines planning instruments, applicable at particular spatial scales (local-urban-regional). It is obvious that such a system of strategic land management should be implemented at the level of the regional development agency. This management system should connect a sound conceptual basis for regional development with regional co-operation and translate them into action. It should follow a strategy of regionalisation, inter-municipal co-operation and the concentration of activities of the public hand at the level of the region. Whenever a decision is taken to leave a site for a 'green brownfield development', this can be embedded in a place-making process. The realisation of place-making projects at the local level and the monitoring of this development can support the development of overall strategies at the regional level. Place-making as a local strategy can possibly be one of the modules for a new future strategy to handle the perforated spatial structure of the urban landscape of the Ruhr. It should be part of an extended strategic land management system, for which Butzin *et al.* (2006) have named in reference to the perforated urban landscape 'patchwork-management'.

As a strategy for establishing local governance, place-making can gain new confidence in the creating of the social capacities of local residents. The empirical surveys and workshops with the residents have shown that they want active participation in the planning and realisation of concepts for the further use of brownfield sites. Therefore, in the absence of economic pressure, brownfields of categories C and D should be turned into open spaces for an active adoption by the residents to develop them for new public and non-commercial uses.

Notes

1. In Germany the term 'brownfield' is not fixed in federal law. The German Federal Building Code mentions brownfields only in the section that allows the municipality to designate an area in which urban development measures are to be implemented as an urban development zone

(§ 165 Abs. 3 Nr. 2 BauGB). One codification can be found in the Law for conservation and landscape development of the state of North-Rhine Westphalia (NRW): 'Lots of land are considered to be brownfields, if the cultivation has been abandoned or this land has not been used for more than three years, unless a use is assigned' (§ 24 Abs. 2 LG NRW). This definition acts on the assumption that the site had a former use and has been now abandoned. In contrast to the American understanding, the German understanding of brownfields is that the area must not be contaminated.

2. For a transfer of the concept of sustainability to the field of brownfield regeneration see Franz *et al.* (2006) and Thornton *et al.* (2007b).
3. For a detailed overview on industrial forests in the Ruhr see Detmar (2005) and Landesbetrieb Wald und Holz NRW & Forstamt Recklinghausen (2006).
4. The study 'Turkish migrants and urban nature' ran from October 2004 to December 2005 and was realised with the participation of two of the authors of this paper, Orhan Güles and Gisela Prey. The researchers investigated Turkish migrants because they constitute a higher than average proportion of the residential population in the vicinity of urban-industrial forests. Both earlier studies did not consider this specific user group.
5. Lefebvre postulates that 'the spatial practice of a society secretes that society's space; it propounds and presupposed it, in a dialectical interaction; it produces it slowly and surely as it masters and appropriates it' (Lefebvre 1991, p. 38). Although Lefebvre's understanding of space is in a Marxist perspective a society-related concept, it is nevertheless applicable for individual stakeholders. Important aspects are the production aspect and the collective character of the production of space or place respectively.
6. Such place-related strategies are also embedded in the overall concept of sustainable district and urban development (Deakin *et al.* 2002). To prevent the cities that are burdened by social, economic and ecological problems for future generations as living space, it is essential to establish an ecological way of urban living. This is true especially for former industrial regions such as the Ruhr. This way of living should consider economical aspects as well as ecological and social aspects. The approach of moderated place-making projects offers the possibility to develop brownfields in a way which connects the aspects ecology, economy, social stability and culture.

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