

Managing brownfield land in stagnant land markets

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Introduction

Problems arising from brownfield land have been one of the major concerns of European policies since the 1980s. The first initiatives were developed in regions of industrialised western European countries and since the 1990s the problem of derelict and surplus land left over from industrial activity became a policy priority in the new central European member states. Comprehensive strategies and programmes for brownfield revitalisation have been developed, particularly in the United Kingdom, France and Germany (Ferber, 1996). The first generation of industrial brownfields resulting from former coal, steel and textile industrial sites was followed by a second generation of military brownfields in the 1990s. Today, a ‘third generation’ of brownfields is being created: accelerated demographic change patterns are causing housing estates, commercial areas and related social and technical infrastructure to become unused or under-utilised (Ferber and Preuss, 2006; Schlappa and Neill, 2013). Additionally the financial crisis has fundamentally changed the environment for private and public interventions. These problems are compounded in shrinking cities where the success of urban renewal strategies is closely related to the ability of public and private stakeholders to revitalise stagnant land markets.

This chapter provides a brief background to the development of initiatives dealing with brownfield land and stagnant land markets before exploring a model to categorise different types of brownfield land. This is followed by a discussion of the major challenges that local actors in public, private and third sectors need to tackle. Suggestions for policy and practice to improve the future management of brownfield land and stagnant land markets in shrinking cities are then made.

Scale, problems and challenges

The management of stagnant land markets needs detailed, accurate and timely information on the scale and nature of urban land beyond current planning categories. In most European cities and regions such accurate and detailed information is missing. Current studies show that the rate at which brownfield and vacant land is created remains at high levels and the economic and financial crisis has led to considerable new problems including new categories of brownfields from commerce, housing, infrastructure and the tourist sector. These new types of surplus land are sometimes called ‘greyfields’ to distinguish them from the traditional spoil heaps from mineral extraction and industrial uses in the periphery of urban settlements (BMVBS, 2013). Several national, regional and local authorities in charge of urban planning and management of such sites are developing and maintaining inventories. However, these are characterised by fragmented approaches in terms of the methodologies used to categorise sites and also in relation to the use of information systems for urban land management. The last overview from CABERNET (Lee, 2003), which only includes those nations where there is some form of national dataset available, shows that the total area of brownfield land varies

considerably between countries. For example, the Netherlands has recorded 11,000 hectares of brownfield land, Germany 128,000 hectares while Poland and Romania have identified 800,000 and 900,000 hectares respectively. The UK National Land Use database, updated in 2008, indicates 32.400 hectares but there are no updated data available for other EU countries. This means that policy as well as practice for dealing with brownfield land in most EU countries is based on data that are more than ten years out of date.

[[Insert Plates 10.1 and 10.2 here]]

Brownfield data are a ‘barometer’ of urban wellbeing and sustainable land policies and are therefore politically delicate. This might in part explain why this issue seems to have been ignored in the EU Urban Atlas, which does not take into consideration the presence of brownfields in its pan-European inventory of land use for 305 Large Urban Zones of the continent. In addition, inventories often focus only on potentially contaminated land and vary in terms of completeness, maturity and resources. For example we find well-developed systems in some parts of Germany and France (BASIAS database) and in the UK (National Land Use Database) but in Poland such data sets are entirely local and there is no national overview of the distribution and scale of the problem. The disparity in approach towards monitoring and also classifying brownfield land is indicative of the current difficulty in comparing brownfield data across Europe inside a common market and an overarching European Structural Policy. However, the long-term trajectories from the UK, Germany and France show that the brownfield stock is stagnating at a high level, despite the regeneration efforts of the last decades This points to the need for better monitoring and the development of adequate instruments to deal with brownfield land.

For shrinking cities in particular the management of brownfield land and stagnant land markets creates new problems as well as opportunities for the redesign and ‘development’ of the city. Underused land and brownfields can have a negative impact on the surrounding area and community, and hinder effective regeneration. Regenerating brownfield and ‘greyfield’ land, on the other hand, can stimulate opportunities at different levels to improve urban quality of life, enhancing urban competitiveness and reducing urban sprawl. Although there are numerous urban challenges, such as identifying solutions for transportation pressures, climate change, etc., the beneficial reuse of land is significant, pervading and impacting on so many other urban issues.

In the following exploration and discussion we refer to urban land management as a process of controlling and facilitating the use and development of land resources in both urban and rural settings. In an urban context the management of developed land is perceived as being part of a continuous land use cycle that is aimed at facilitating a smooth transition between different types of uses, thereby preventing the emergence of the brownfield problem (HOMBRE, 2014). Brownfields are sites that are derelict or underused, have real or perceived contamination problems, are mainly in developed urban areas and require intervention to bring them back to beneficial use. More detailed ‘terms of reference’ on urban land including brownfield types have been developed by the INTERREG CENTRAL EUROPE project ‘CircUse’ and include the categories as listed in Table 10.1.

[[Insert Table 10.1 here]]

These categories specifically define the range of potentials a certain site may have and highlight their importance for brownfield management.

Current approaches to revitalise brownfield sites

The redevelopment of individual brownfield sites is a complex process. Impacts on the physical environment, the urban fabric and natural ecosystems as well as social and economic impacts need to be analysed and processed through spatial and sectorial policies as well as relevant regulative frameworks. In addition, this integrative complex process requires the joint effort of different stakeholders with different interests, capacities and abilities. In recent years we have developed our understanding of effective practices which bring brownfield sites back into productive use. The growing range of successful projects can be organised into six broad categories:

- **Industrial reuse of abandoned sites:** This type of project includes relatively simple interventions at site level, such as demolition or adapting service infrastructure. However, given the urban location of many brownfield sites this option encounters limitations on development options arising from emission or noise pollution standards, transport and road infrastructure. The projects developed by the Etablissement Public Foncier in Lorraine/France (<http://www.epfl.fr>) illustrate how these challenges play out in practice and what can be done to address them.
- **Development of commercial centres:** There are many examples where private investors are driving forward brownfield redevelopment for retail use. This can be done in a sensitive way, preserving and integrating historical buildings – for example the Silesia Centre in Poland (<http://silesiacitycenter.com.pl/en/>). Also service and office buildings, as illustrated by many successful office developments in industrial buildings, are mainly privately driven brownfield redevelopments and are examples of economically successful transition management from industrial to service sectors. The Custard Factory in Birmingham is an interesting case because this redevelopment of a derelict factory was led by a consortium of third sector organisations and aimed to provide affordable space for social enterprise close to the city centre.
- **Housing redevelopment:** Popular options include the refurbishment of industrial buildings into apartments, such as the fashionable lofts in former industrial districts of cities. Alternatively we also find examples where old structures are demolished and measures are taken to address the real, or at times perceived, contamination problems of former industrial land. Innovative examples are the ecological Quarters, e.g. Quartier VAUBAN in Freiburg in which residential quarters were built upon a former military site to a high ecological and social standard. Due to its previous use as a military base, decontamination activities had to be undertaken to ensure safe living standards in the district (www.vauban.de).
- **Cultural after-uses:** There are many examples where former mills were converted into museums which capture local historical development. Industrial buildings are also used for the purpose of arts projects, for example the ‘Spinnerei’ in Leipzig (<http://www.spinnerei.de/>).
- **Green after-uses:** These are dominant in former mining regions but also in metropolitan areas where brownfield sites offer an important opportunity for the creation of urban green corridors and networks. Demographic change and ageing populations in shrinking cities put a high importance on the recultivation of brownfields sites in ways which support the reorganisation of settlements and infrastructure. The Land Restoration Trust in England shows a wide range of successful projects where recultivation has been used strategically to reshape settlements (<http://www.landrestorationtrust.org.uk/community/>).

- Energy production: The generation of energy from wind or solar, as well as gas from biomass technologies, is a further option for long term or interim use of brownfield sites (<http://www.wald-und-holz.nrw.de/wald-und-holz-nrw/forschung/forschungsprojekte/biomassepark-zeche-hugo.html>).

Much brownfield land has little economic value, particularly shortly after the collapse of an industry, because the costs of reclaiming it are high while its economic value is low. Hence governments in most European countries have established initiatives to deal with brownfield land. These take very different forms and reflect the particular institutional, policy and economic contexts of the countries concerned. Here we have chosen to explore four contrasting approaches towards recycling and managing brownfield land which are different in regard to lead agency and also scale of intervention. The Etablissement Public Foncier in France, is entirely public sector led, the Bilbao Ría 2000 project is led by a publicly controlled not-for-profit agency, the Land Trust in England is an independent charitable organisation and the Bahnentwicklungsgesellschaft is a public–private partnership.

The Etablissement Public Foncier (EPF) supports local authorities in the revitalisation of brownfields in France. Currently there are 32 EPFs in France and they operate on the principle that they focus exclusively on land-based interventions. This includes recultivation, decontamination and simply making land safe and usable until an economically viable opportunity arises, but they do not get involved in land development projects. EPFs aim to generate a positive land use cycle and act as land banks, releasing land when there is a call for economic, industrial or residential development. In this role they can provide important support to private or public landowners in the assembly of development land. During their first ten years EPFs are primarily financed through a regional development-related tax but over time they are expected to expand their capacity by securing resources from the government, municipalities, the European Regional Development Fund (ERDF) and the private sector.

The first EPF was established in the Nord-Pas-de-Calais (EPF-NDPC) region in 1990. Initially the organisation was mainly funded by central government but at present EPF-NDPC is financed through a local tax levy of up to £20 per resident per year and the sale of reclaimed land. Local politicians are represented on the governing body of EPF-NDPC which supports the integration of local and regional land reclamation and land recycling strategy and enhances local accountability. EPF-NDPC releases land in response to requests from municipalities rather than marketing their potential development sites independently. EPF-NDPC perceives itself as a ‘contra-cyclic land operator’ which acquires land when it presents a problem or there is no demand for it and makes it available when economic demand for development sites is emerging. The experience of EPF-NDPC suggests that these cycles take approximately 30 years which requires long range planning and political support. Importantly, EPF-NDPC does not start with a master plan when it engages in the land acquisition and reclamation process. Instead land is purchased and also released incrementally, thus supporting local strategic developments rather than initiating them. EPF is widely seen as an effective model of land cycle management (www.epf-ndpc.fr).

Another example of a public sector led initiative is Bilbao Ría 2000. One of the earliest brownfield land management agencies in Spain, it was established in 1992 with the intention of recovering former industrial land and buildings around and within the city (<http://bilbaoria2000.org>). Bilbao Ría 2000 is a not-for-profit organisation created through a collaboration between the municipality, the regional government, the port authority and agencies responsible for infrastructure development. Unlike the French EPFs, Bilbao Ría

2000 does not purchase and hold land, but coordinates the development and implementation of regeneration projects. These are carried out within a strategic framework provided by an urban development strategy drawn up by the city and regional planning, transportation and environment authorities.

[[Insert Plate 10.3 here]]

A different approach is taken by the Land Trust in England (formerly the Land Restoration Trust) which focuses specifically on green after-use options for brownfield land. This organisation was set up as an independent charitable trust following sustained campaigning to safeguard the experience gained by the Groundwork charities in delivering the Changing Places programme, which succeeded in achieving the community-led restoration of 21 sites (accounting for 1,200 hectares) during the latter part of the 1990s. The Land Trust receives some governmental support but is largely self-financing. It takes responsibility for sites which are deemed unsuitable for hard reuses and focuses on projects that involve local people. The active contribution of local communities is needed to create and also maintain high quality public open spaces such as country parks, wetlands, community woodlands and ecology parks (<http://www.thelandtrust.org.uk>).

The fourth example we present here is the Bahnentwicklungsgesellschaft (BEG) Nordrhein-Westfalen in Germany which was established in 2002 by the State of North Rhine-Westphalia and the Deutsche Bahn AG. The aim of the BEG is to manage railway land which is no longer required. This includes the redevelopment of approximately 2,000 hectares of non-operational railway buildings and tracks in 240 municipalities in the State. Projects delivered range from the redevelopment of station buildings, the development of integrated business zones combining industrial, residential and retail uses, to the establishment of cycle networks and ecological or nature conservation areas. Funding is based on a specifically developed 'contract model' where public agencies provide some financing of the physical works, private developers add their resources and the Deutsche Bahn AG adds the non-operational land to the resource pool. The State of North Rhine-Westphalia has allocated € 20.45 million to support municipalities in co-financing regeneration projects and since 2002 a total of 180 complete sales projects have been carried out by the BEG organisation (<http://www.beg-nrw.de>).

The ABC model to develop land management strategies

In situations of urban shrinkage the major driver for the regeneration of brownfield land is the economic value of individual sites for redevelopment, which is determined by indirect as well as direct reclamation costs and by the predicted revenues from the site. But establishing some control over a growing quantity of surplus land and buildings can pose serious problems where the market for these commodities has collapsed. In cases where cities manage to secure government or European finance for the reclamation of land or to enable them to subsidise its redevelopment we find that sites which do not necessarily require such additional financial input are the ones which receive it, because their redevelopment potential is high. We argue here that municipalities should ask private developers to bear the cost of bringing those economically viable sites to market at their own expense while sites which have limited value for redevelopment should be prioritised for public sector subsidies.

The ABC model provides a quick assessment tool to identify different types of sites in terms of their economic viability. It also highlights how the character or status of a site can change

in relation to changes in the location, site treatment costs and economic conditions, which can support policymakers identifying priorities for the reuse of individual brownfield sites. The ABC model uses three categories to indicate the economic viability of the site. While the definitions used here describe ideal types, whereas the reality of assessing brownfield sites is likely to raise debate about which category is most closely related to which site, attempting to classify sites according to these three criteria has been found to be an effective way of supporting the strategic allocation of scarce resources for the management and redevelopment of brownfield land.

- *A sites* are highly economically viable and development opportunities are generated by private capital interests. As the redevelopment of these sites creates a clear increase in site value there is no requirement for public support or intervention. The existing planning and administration system is likely to provide the necessary processes and frameworks to facilitate its development. An example would be former industrial or military sites in dynamic metropolitan locations where reclamation costs are of minor importance compared to the revenues that can be generated from their reuse.
- *B sites* are of local or regional importance with good development potential but also significant risks due to the need for financial support for reclamation works and uncertainties in relation to the final balance between the investment required and revenues generated. These sites are typical of many shrinking cities, occupying a risky location between potential profit or loss. In these cases public–private partnership strategies are most effective. Risk sharing, coordinated planning and shared financing of projects through public–private initiatives are characteristic of many urban regeneration interventions on such sites. The overall development trajectory of shrinking cities increases the threshold towards securing private investment, but this should not result in municipalities taking on the majority of risks and costs involved. B sites offer development potential and as such private investors must take a fair share of the risks involved in developing them.
- *C sites* are not in a condition where regeneration can be profitable – at this particular point in time. Their regeneration relies on public sector led projects with primarily green after-uses, such as simply reclaiming contaminated land or making sites structurally safe before planting woodlands, creating bodies of water or providing land for the grazing of livestock. Public funding and other instruments, for example tax breaks for companies who are reclaiming or decontaminating sites, are required to stimulate regeneration of these sites. This type of land is typical for shrinking cities with low property market prices and low demand on land and the Internationale Bauausstellung in Saxony-Anhalt (IBA, 2010) has demonstrated what can be achieved if landowners and municipalities collaborate in developing new green uses for former industrial and housing land. Chapter 9 in this volume also provides a number of inspiring examples of how strategic planning instruments as well as community initiatives can lead to the transformation of surplus land in shrinking cities.

[[Insert Figure 10.1 here]]

Urban development companies are a widely used mechanism to bring underused land and buildings back into the economic cycle, but experience from the UK shows that pressure for quick results creates unnecessary incentives to reclaim sites which, given time, would have

been brought back into the economic cycle by private sector investment alone (category A sites in the model above). On the other hand, sites which are difficult to develop (category C sites in the model above) have remained underused despite the abundance of financial investments by Urban Development Corporations or Regional Development Agencies in the UK. Land management models based on quick economic gain (category A) seem unlikely to respond to the needs of, or the opportunities open to, shrinking cities. Instead of providing large amounts of public sector investment for sites that are not within category A, alternative strategies are needed for category B and C sites.

The ABC model can assist institutions responsible for local or regional development and investment to develop strategies for dealing with different types of brownfield land. By identifying the type of site, both public and private bodies can examine options for intervention and regeneration strategies, which in turn supports the strategic portfolio management of the municipality in relation to its respective land resources. It must be assumed, however, that not all land resources identified by the municipal land management strategy can be dealt with and that the scale and nature of interventions depend on the strength of the local land market and the degree of dynamism of local economic development. This means that brownfield land can only be incrementally reintegrated into the land use cycle and that the municipalities must establish strategic priorities for the implementation of planning and financial resources to pursue the coordinated reuse of land. Over time a site may be subject to re-categorisation, for example from A to B, which might result in the development of site-specific strategies to accelerate redevelopment. Municipalities and landowners could use the ABC model to review their local brownfield strategies and also to produce simple inventories of three different types of land at local and regional levels. The ABC model has been successfully used in a number of EU level projects active in promoting land recycling on the international scale, for example in CircUse (CircUse, 2015).

Key challenges for managing brownfield land in shrinking cities

Dealing with land that has limited economic value has posed problems for governments and municipalities for more than half a century. What is different now is that large amounts of land surplus to requirements for housing, transport and services become available in cities, rather than on the fringes or within large industrial conurbations. While the ABC model set out above can be used as a tool for operational as well as strategic planning, municipalities will continue to encounter significant challenges in managing brownfield land in the context of largely stagnant land markets. The challenges we want to discuss in the context of attempts to categorise and coordinate the management of different types of brownfield sites include:

- information management
- marketing
- statutory spatial planning instruments, and
- financing.

These challenges are now briefly discussed in turn.

Information management

Information on urban land is essential to bring about a coordinated approach to land use management. Not only is such information the basis for planning decisions but it is also the first stepping stone for raising awareness about the economic, social and ecological impacts of brownfield land on the investment decisions by businesses and private households. Yet, as we

have seen, such information systems seem to be poorly developed as far as brownfield land is concerned.

Many municipalities and regions as well as private service providers provide data management tools. The CircUse tool for land use management is available in six languages, is free of charge and can be used by any public agency as a data management tool that is linked to a geographical information system (CircUse, 2015). CircUse is a data management tool which feeds into the information and planning systems of local authorities to help them coordinate and reduce land consumption in a sustainable and environmentally friendly way. The main product is a flexible regional land management tool to classify the types of areas and collect data about specific sites. Importantly, CircUse encourages the collection of data in a consistent way. The collection of data is based on a common 'field data record sheet' developed specifically for this system which has four categories: green fields with development perspectives, vacant and underused land, gaps in built-up areas and brownfields. As such CircUse focuses on land that is unlikely to be the focus of development policies and thus assists local decision-makers in encouraging an integrated and environmentally responsible approach towards land use planning.

Marketing

Quality information provides the basis for effective marketing to support the development of abandoned sites. Such information includes site characteristics, lot size, existing connection to utilities, building coverage allowed on site, ownership of the property, current and potential future uses for the site as well as outline permissions given by planning documents. Web 2.0 offers new opportunities for the compilation of such information. One example is internet-based databases, which not only inform those involved in land use planning but can also serve as a marketing tool by motivating new target groups, for example co-housing communities for families, to consider investing in brownfield sites (Krieger *et al.*, 2003).

In the same way, public authorities and the real estate industry can help make brownfields and gaps between buildings more marketable. Such activities include clarifying property ownership issues, drafting regulations which simplify the redevelopment of brownfield land, preparing sites for construction and resolving environmental contamination issues. The success of real estate marketing for the purposes of land use management depends on the marketability of existing sites in urban areas. Inner development potentials need not be pre-developed for the market in order to be able to compete successfully with greenfield development.

Statutory spatial planning instruments

National planning legislation is an important framework because it sets the regulatory instruments under which regional and local action on land management can take place. Nevertheless most frameworks have been developed for conditions of urban growth and then adjusted to include elements of urban regeneration. In consequence shrinking cities need to adapt planning instruments to their local conditions, drawing on formal as well as informal instruments.

Today land management is a distinctive cross-sectoral issue that needs to involve a wide range of stakeholders in the process. To reach an effective level of land use, a wide variety of instruments, including fiscal, economic, regulatory and planning tools must be used in combination with one another. Also frameworks concerning environmental protection issues (e.g. soil quality, soil productivity, rarity) need to be considered to promote spatial and settlement development that utilises brownfield land.

Formal land use plans are still the key instrument to regulate the type and amount of land use in relation to the demand for development and demographic needs at the scale of urban and peri-urban locations. Their legally binding character provides the framework to steer the scope, location or nature of land uses at different spatial scales ranging from entire regions to neighbourhoods to individual development sites, as for example the ‘*projets d’agglomération*’ in Switzerland (Bundesamt für Raumentwicklung, 2013). One key element to steer land use in shrinking cities could be the inclusion of quantitative limits on new land consumption coupled with qualitative standards such as minimum density requirements for new residential or commercial developments within regional or local plans for land development as foreseen in the Region of Frankfurt (Main), targeting zero new land consumption (<http://www.region-frankfurt.de/Regional-Authority>). Here a regional approach to the implementation of land use management is supported by the adoption of a land use plan agreed upon by the various municipalities involved (inter-municipal planning). Using these instruments in an effective way could reduce the amount of brownfield sites in sectors B and C.

Future planning instruments for urban renewal and redevelopment need to consider the specific context of sector B and C sites by being proactive towards landowners, integrative, implementation oriented and open to participation with the local population. Informal plans can also add important new momentum for interim uses, for example biomass or other renewable energy production. More formal sectorial plans, for example from Environment Agencies or Heritage Councils, need to be integrated into broader land management strategies.

Financing

The major challenge to a proactive approach to the management of stagnant land markets is the lack of adequate funding for inventories, management activities and brownfield redevelopment. Even under the difficult financial situations of shrinking cities, the financial and personal resources of municipalities are crucial for coherent land management activities and also for instilling confidence into private investors and managers of governmental or European funds. At first glance activating brownfields seems generally more expensive than developing greenfield sites. One way to overcome this problem is by developing public funds for developing such sites. Public programmes to fund investment in development opportunities such as brownfields, unused or underdeveloped lots are important in guiding private investors towards more sustainable investment choices. Such funds already exist in some municipalities where the city or an affiliated land development organisation purchases problematic sites and invests in the site clearing, soil remediation and/or marketing of these plots.

Often cities or regions do not have adequate funds to set up such funding programmes, in some cases in conjunction with agencies (see chapter 6). Therefore European, national or sub-national funding plays an important role. At the European level the main funding instrument used for the revitalisation of derelict industrial sites is the *European Regional Development Fund (ERDF)*. Many European regions integrated aspects of land management, urban renewal and brownfield revitalisation in their regional EU Operational Programmes 2007–2014. The European Audit court recently provided an overview of an evaluation of European brownfield funding projects and criticised the missing strategic approach and market potential analysis (European Court of Auditors, 2012).

One exception is the successful example of the EU–ERDF programme in the State of Saxony, which since 2001 has had a particular focus on the development of inner-city brownfield sites

in category C of our model above (www.brachflächenrevitalisierung-sachsen.de). The overall objectives here are the strengthening of the inner cities and the reduction of land use and urban sprawl in the wider regions of cities. In this programme the municipalities have the option to fund the elimination of brownfields without the requirement of subsequent use and 90 per cent of interventions result in green after-uses. The funding is based on the administrative regulations of the Saxon State Ministry of the Interior for the implementation and promotion of projects for sustainable urban development and revitalisation of brownfield sites (VwV Stadtentwicklung). In the period 2007 to 2013 over 220 projects in 118 municipalities were supported with 56.3 million Euro. This included various projects, ranging from commercial revitalisation to new municipal facilities such as parks and recreational facilities. Only about half of the existing commercial space could be reused for new services, which created 367 new jobs. The restructuring of old industrial areas created a further 1,379 jobs. About 265 hectares of brownfield land were regenerated for interim use and renaturalisation. In addition to these ‘lighthouse’ projects, which included the redevelopment of industrial heritage sites, a large amount of physical structures had to be demolished because of the dilapidated state of the buildings. Nevertheless, despite the proactive approach of the Saxon State Ministry, models such as this or the EPS in France depend on EU funding.

Implications for policy and practice

Poorly integrated and unsystematic land use together with development policies that lead to a high level of land take increases land-related conflicts and remains a challenge for all cities and regions in Central Europe, including shrinking cities. Therefore future EU and national policies and funding schemes need to support a recycling of land use patterns at regional as well as local level. At the European level the importance of reducing urban sprawl and promoting a model of compact urban development has been highlighted in the ‘Cities of tomorrow’ strategy paper (European Commission, 2011). It refers to reducing urban sprawl by recycling land and implementing compact city planning strategies as one of the main challenges for policy and practice in relation to the ERDF priorities in the period 2014–2020.

One of the targets of the EU Strategy 2020 is to decouple economic growth from the use of resources. Therefore one of the EU Commission’s policy priorities should be the promotion of a strategic research agenda focused on land management that explicitly targets brownfield land in stagnant land markets. The Roadmap to a Resource Efficient Europe sets a specific policy target to reduce the future land take in the European Union with ‘no net land take by 2050’, and a reduction of annual land take to an average of 800 square kilometres per year in the period 2000–2020. Policy goals such as this represent a very important step towards a considerable reduction of future land take and prior reuse of brownfield land. The new targets and strategies now need to be turned into practice through the European structural funding policies from 2014–2020, for example by including the development of effective data collection and the development of integrated land management programmes in the ‘Urban dimension’ of structural policies. Furthermore regional operational programmes could be based on the ABC model shown above. This would immediately support the development of a consistent and reliable data base which would support investment decisions that facilitate brownfield redevelopment, as shown by the Saxonian practice referred to earlier in this chapter.

The effective management of stagnant land markets can contribute to an integrated approach towards urban development. At national and regional level governments should take further steps towards creating a sustainable cyclical land use pattern paying special attention to the

situation in shrinking cities. Even if national frameworks are different from those of the other EU member states, they should be encouraged to revise traditional planning systems by including the principles of land cycle management (Schlappa and Ferber, 2013). Regional policy would play an important role in integrating European and national policies, and also reduce conflicts between shrinking cities which are competing for diminishing resources.

With regard to national, regional and local land management frameworks the experience in Europe so far suggests that one of the major obstacles is the complexity and multitude of competing forces that are influencing the decision-making process. Planning and permission procedures are often long and complex, many stakeholders have to participate in the process who often lack cooperation and poor coordination among different statutory authorities is slowing down the planning process significantly. This has a negative impact on the image of brownfield redevelopment and drives many developers towards greenfield sites. For sustainable land management it is essential to improve this decision-making process in order to make brownfield redevelopment more competitive than greenfield development (Zanon and Marcinczak, 2011). This would include the simplification of relevant planning and permission procedures, better cooperation and coordination between the different statutory authorities and a proactive attitude from public agencies in order to attract investors and developers to brownfield sites.

Finally the transnational exchange of experiences and cooperation on these topics needs to be strongly supported in the future. European interregional programmes in 2014–2020 are highly relevant in this regard. Specifically URBACT III, INTERREG EUROPE and CENTRAL EUROPE can support initiatives on sustainable land management. Transnational cooperation through knowledge exchange programmes such as URBACT in particular can create important synergies in the exchange of good practices between actors who operate in very different institutional, policy and economic contexts.

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