
Brownfield Redevelopment Issues in Croatia

PROFESSIONAL PAPER

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Abstract

The aim of this paper is to investigate how brownfield redevelopment, i.e., the redevelopment of derelict, abandoned or underused sites, where a real or perceived problem of contamination exists, might be approached in Croatia. Crucial in such activities is the involvement of many stakeholders, belonging to various institutional arenas, both formal and informal, and dispersed across various government levels. Such locations have emerged in Croatia due to transition and post-war problems, and poor management in state-owned as well as privatised enterprises. The presence of such industrial sites has various adverse effects not only on the environment but also on the economic and social development of the regions and localities. Due to the complexity of initiating brownfield redevelopment processes and specific problems in Croatia, economic development initiatives are directed towards attracting greenfield investments and creating new industrial and entrepreneurial or business zones. Brownfield redevelopment is an issue through which the impacts of existing development policies in Croatia can be analysed. The paper concludes with the identification of possibilities for new modes of governance and participatory initiatives for brownfield redevelopment in Croatia.

Keywords: brownfield, greenfield, local development, governance, coordination, Croatia

JEL classification: H11, O21, R52

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1 Introduction¹

Recent Croatian history has witnessed war, post-war problems, transition and poor management of state-owned as well as privatised companies. As end results of these occurrences, a number of industrial and other sites are underused, partially destroyed or vacant. Such sites are called *brownfields*. In contrast to a brownfield site, defined as an area that has previously been developed, a *greenfield* site is an area previously undeveloped and therefore undisturbed with a predominantly consistent subsurface (Laidler et al., 2002).² The presence of brownfields has various adverse effects not only on the environment but also on the economic and social development of the regions and localities.³

Changes in the ownership structure of the Croatian economy, along with the role and functions of the government, made many newly-created local (i.e., towns and municipalities) and regional (i.e., counties) self-governments incapable to deal with problematic economic entities and properties in multiple ownerships (including property owned or used by different public institutions across various government levels). Inefficient Croatian governance structure reflected in slow procedures and weak enforcement of legislation, especially in bankruptcy and liquidation procedures, is also closely related to brownfield redevelopment processes.

Inadequate land use policy on the local level, unequal access to information, delayed transactions on the land market due to poor cadastre records and outdated land books⁴ lead to significant price distortions on the land market. These factors have been recognised as major administrative barriers

¹ An earlier version of this paper was presented at the Association of European Schools of Planning (AESOP) 2005 Congress “The Dream of a Greater Europe”, July 13-17, 2005 held at Vienna University of Technology, Austria.

² Also, according to Harvey (2000) greenfield sites represent mostly agricultural land, where economies of scale can be achieved and are untroubled by the possibility of contamination. Greenfields can also be described as agricultural or forest land or undeveloped (virgin) sites earmarked for commercial development or industrial projects (Business dictionary, 2009).

³ War operations in one third of the country had additional negative effects on the built environment and infrastructure (Kordej-De Villa et al., 2005).

⁴ “The Real Property Registration and Cadastre Project in Croatia” (Report No. PID10661) financed by the World Bank and other donors (2002-2009) was aimed at building an efficient land administration system and the development of real property markets. However, not all local and regional units were covered by this project.

institutional relations across different government levels. The fourth section describes existing experiences and relations between greenfield and brownfield initiatives on the local level in Croatia. The last, fifth section concludes with policy recommendations and possible issues for further research.

2 Understanding Brownfield Redevelopment

Discussions on brownfield redevelopment in Croatia generally begin with the problem of its definition. This is accompanied by a lack of typology for brownfield sites. Thus, the aim of this section is to provide a starting point for discussions about brownfield redevelopment in Croatia.

While different theories emphasise different concepts such as land market, location, community, use or accessibility, those reviewed here focus on the location concept which is very important in making decisions on revitalising a brownfield site (Land Quality Management Group, 2007: 6). From the land use perspective, a location will determine the price of land that will attract or drive away an investor. Land use theory implies that an investor will opt for a plot of land that gives him the highest return on investment with the minimum risk involved. On the other hand, competitive advantage theory puts an emphasis on strategic location. Since a large number of brownfields cover inner city space, competitive advantage theory stresses the importance of local government support in attracting investors. As in land use theory, a strong emphasis is given to the location as a primary motive to set up businesses, followed by market demand and availability of human resources.

The theory of New Urbanism places focus on the importance of community in neighbourhood development. The intention is to describe the behaviour of a neighbourhood affected by the abandoned industry, especially in inner city zones, and to propose solutions for development of such neighbourhoods. New Urbanism is advocated by many authors (Krieger and Lennertz, 1991; Calthorpe, 1993; Duany and Plater-Zyberk, 1993; Kelbaugh

gas stations, vacant warehouses, former dry cleaning establishments, abandoned residential buildings which potentially could contain lead paint or asbestos and sites that contain petroleum products as well as mine scarred land (United States Conference of Mayors, 2008).

Brownfield redevelopment efforts in the US have been directed primarily to heavily contaminated industrial sites, while the sites encompassed by the CABERNET definition, the one most commonly used across Europe, include military sites as well.

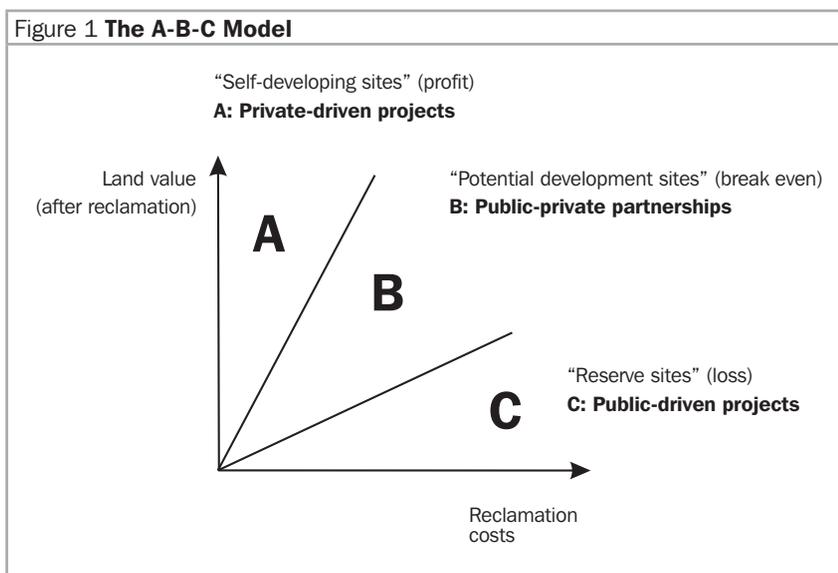
Ferber and Grimski (2001) identify three categories of brownfield sites:

1. *Brownfields in traditional industrial areas* - as a result of the massive employment decline in the coal, steel and textile industries at the beginning of the 1980s;
2. *Brownfields in metropolitan areas* - as a result of persisting displacement pressures on peripheral areas during the urban sprawl process; and
3. *Brownfields in rural areas* - as a result of abandonment of sites related to primary economic activities in agriculture, forestry, mining, etc.

When analysed in the Croatian context, the first category relates to remainders of the transition process and a shift towards a market-oriented economy during the 1990s. Brownfield sites in the centre of the capital city of Zagreb, as the only Croatian metropolitan area, are only randomly addressed during electoral campaigns, while industrial zones and shopping malls are growing at the periphery of the city. In the last few years, a number of brownfield redevelopment projects have emerged in the city of Zagreb, resulting in the creation of new business and commercial zones on former industry locations. There are also numerous examples of brownfields in rural parts of the country, reflecting economic difficulties in the agriculture and food industry. In addition, as a remainder of the socialist industrialisation period, even smaller predominantly rural towns and municipalities are facing leftovers of the broken industrial base and inability to cope with the transitory process and privatisation difficulties.

This A-B-C model is generally easy to understand and helps different stakeholders to take into consideration various elements that characterise each site. The model explains three types of sites, each represented by location, previous use, contamination costs and economic conditions. Economic profitability is the main trigger for redevelopment and can be influenced by:

- (in)direct redevelopment costs,
- expected incomes (returns) from redevelopment,
- financing type and related financial risks,
- perceived risks of national and local tax fluctuations, and
- existing agreement(s) between land owners and/or local (regional) self-government units and investors.



Source: Land Quality Management Group (2007).

Depending on variations in location, costs of clean-up and other economic conditions, the status of a site can be changed from C to B or B to A. In this respect, policymakers can identify the strategies for improvement of economic viability and status of the site. However, the main prerequisite

for categorisation of sites, according to the A-B-C typology, is to have a list of brownfields in the first place and clear criteria for categorisation of sites. This (or an adjusted) model is used in many units of local and regional self-government in Europe. It is still missing in Croatia and can be a helpful strategic development tool for any region, city, town or municipality.

Enabling brownfield sites to become productive can bring improvements to the social structure of urban communities. However, successful redevelopment policies and strategies need a combination of environmental restoration policies, spatial and urban planning approaches and economic policies. Consequently, dealing with brownfield redevelopment is a complex multi-stakeholder and interdisciplinary issue. An integral, balanced and structural approach to brownfield redevelopment has to be considered within the concept of sustainable development, and this includes issues such as spatial planning, economic development, environment, community involvement, accessibility, financing and recreation.

At the same time, complex brownfield redevelopment initiatives require significant engagement of human as well as financial resources, which is in many cases lacking on the local level in Croatia. Local governments could be losing billions of dollars each year in local tax receipts resulting from their failure to restore brownfields to economic viability (Davis, 2002). Therefore, support from higher levels of government is needed and an adequate legal and institutional framework is essential.

3 The Current Conditions for Brownfield Investments in Croatia

3.1 Governance Structure in Croatia

The Republic of Croatia as a unitary state is divided into three levels – national, regional and local. The legislative framework of the local and regional self-government in Croatia was established in 1992 with the introduction of the local government system. In subsequent years, different

reforms of the territorial and institutional framework have occurred. Consequently, in 2001 a new Act on Local and Regional Self-government⁸ was adopted, where counties were defined as the units of regional self-government, while cities and municipalities remained units of local self-government. Today, there are 20 counties (regional self-governments) and the capital city of Zagreb, which has county and city status. The local self-government level comprises 127 towns and 429 municipalities (CBS, 2009). Apart from the major cities in Croatia such as Zagreb, Split, Rijeka or Osijek, most of the cities are actually small towns.

The Croatian government structure is by constitution divided into three parts: legislative (the parliament – elected representatives), executive (the government – ministers elected by the parliamentary representatives) and judicial branch (independent judges). This general division is accompanied by three, often overlapping, modes of governance: (1) *political*; (2) *executive* (political part of the public administration, i.e., state secretaries, directors of other public institutions); and (3) *operational* mode (public administration, i.e., public service officials with standard work contracts). Consequently, public policy areas are managed by public institutions divided into sectors (e.g., economy, environment, defence). On the national level there are ministries and other government institutions (i.e., institutes, agencies, funds, companies), which are governed by elected politicians, while the implementation of public policies rests on the engagement of the permanently employed public service officials. On lower levels of government, the local or county governments' public administration is usually organised in several administrative departments divided by sectors. On the county level, separate spatial planning institutes are established. At the same time, local self-governments have to take care of spatial planning tasks and have to comply with the hierarchy of higher level spatial plans, as well as all planning and building regulations set on the national level. On the local level, separately managed local public utility companies are

⁸ After the adoption of the new Act on Local and Regional Self-government in 2001, several changes were approved by the parliament (Official Gazette, No. 33/01, 60/01, 129/05). Amendments from October 2005 (Official Gazette, No. 129/05) introduced important changes - the category of big towns, i.e., towns with more than 35,000 inhabitants, was introduced, and all county centres took over two new functions from the counties: maintenance of public roads and issuing building and location permits.

3.2 The Institutional Context for Brownfield Redevelopment in Croatia

The term “brownfield” has been recently introduced in Croatia¹⁰ and is often related to the process of privatisation of state-owned firms. Since political, economic and societal transition is a long-term process that started in Croatia at the beginning of the 1990s, continuous changes and reforms have occurred. The first transitory impacts resulted in bankruptcies of many state-owned firms, privatisation of the better ones and a significant list of properties and enterprises that are still fully or partially owned by the Croatian government. The strategic importance of the remaining state property and shares in enterprises is not transparent and is subject to continuous political and public debates. The existing state property is used by various government institutions, primarily at the national level, while some, of less strategic importance, are also periodically given to local governments to be used and managed for local development purposes. In addition, there are no specific programmes, measures or activities specifically aimed at brownfield redevelopment.¹¹ The main reasons are, on one hand, related to the low awareness and understanding concerning problems that usually come along with brownfields and a prevailing misperception of space as an unlimited resource. On the other hand, the legal and institutional framework is not adequately set up to provide support for such initiatives on a local level. Also, the capacity to adequately formulate policies, programmes and measures necessary for successful brownfield redevelopment is still low. To get a better insight into brownfield redevelopment related institutional structures in Croatia, the main participants on the national level and their main functions and responsibilities are presented in Table 1.

¹⁰ See also Sutlović and Spoja (2007).

¹¹ An exception might be the Fund for Reconstruction and Development of the Town of Vukovar, established upon adoption of the Act on Reconstruction and Development of the Town of Vukovar (Official Gazette, No. 44/01) by the Croatian government. Its operations, mainly focussed on reconstruction, revitalisation, renovation and similar activities and projects, are based on a five-year plan and programme. A small number of brownfields redevelopment activities in Croatia is also supported through grant schemes, financed by EU pre-accession funds (e.g., through the Ministry of Regional Development, Forestry and Water Management).

Table 1 The Institutional Context for Brownfield Redevelopment in Croatia

Institution	Functions and Responsibilities
Central State Office for Management of State Property (CSOMSP)	<ul style="list-style-type: none"> • This office was established in 2001¹² and is in charge of registration and maintenance of state-owned property and the preparation and implementation of government decisions, including the decisions of the Government's Committee for Property Management. • State property is used by different governmental and public institutions, while the sole owner of state property is the Republic of Croatia. • State property refers to immovable properties such as land (building plots and agricultural land) and buildings (residential, business and other buildings), other constructions (e.g., roads, bridges, garages) and movable properties including vehicles, works of art, etc. • In February 2005, Croatia had 1,284 mainly unused state properties that could be used for economic development purposes and reduction of current costs related to maintenance of such property ("Državne nekretnine za poduzetnike", 2005).¹³ • The majority of such property is managed by the Ministry of Defence, Ministry of the Interior, Ministry of Finance and Croatian Privatization Fund. • CSOMSP is supposed to take over the management of such unused properties but the development of an adequate model for the reuse and marketing of such properties lasts for years.
Ministry of Economy, Labour and Entrepreneurship (MELE)	<ul style="list-style-type: none"> • Relevant areas of responsibility, among others, include: <ul style="list-style-type: none"> – economic policies in industries such as energy, shipbuilding, mining and trade, trade policy and protection of domestic industry as well as international economic cooperation and activities related to European integration and WTO; – export promotion and foreign direct investments (FDI), establishment and operation of free zones and entrepreneurial incentives; – privatisation of shares, stocks, items and rights owned by the Republic of Croatia and restructuring of legal entities; control over regulatory framework in which the Croatian Privatization Fund operates. • MELE stimulates domestic production and exports, promotes investments, facilitates in restructuring of large business entities to faster adjust to international market requirements and undertakes measures to create an administration that will serve more efficiently entrepreneurs and the economy. • EU pre-accession and structural funds – MELE is responsible for the implementation of certain components of the Integrated Pre-accession Assistance Programme (IPA) and the National Strategic Reference Framework (NSRF) for future structural funding. The implementation of both programmes should include specific measures aimed at brownfield redevelopment, e.g., clean-up programmes/projects, elaboration of different strategies, programmes, specific regeneration projects.
Croatian Privatization Fund (CPF)	<ul style="list-style-type: none"> • The CPF was established in 1992¹⁴ to implement and complete the privatisation of former socially-owned enterprises and to manage assets and legal entities in its portfolio including state institutions. • It manages and sells shares and interests in accordance with the Privatisation Act and the Transformation Act. • In 2002, the government approved an operational plan for the privatisation of the state portfolio, comprising shares and stakes in 1,112 companies, which is currently under revision. Most state-owned shareholder interests (a number of companies and equity) are in the processing industry, trade, tourism, agriculture and transport and communications sectors. • CPF offers potential investors more than a thousand properties (land and facilities); while other properties will be offered for sale as either real estate or development projects once problematic legal and property issues are resolved; there are a number of cases where the facilities do not operate to their full extent¹⁵. In that context, partially operating entities that do not use all accompanying plants are of interest for brownfield redevelopment.

¹² Act on Changes and Amendments of Act on Government of the Republic of Croatia (Official Gazette, No. 199/03, Article 21.a).

¹³ According to CSOMSP (July 2009) the exact number of such properties is still unknown pending a complete inventory, without which further reuse of such property is hindered.

¹⁴ Act on Croatian Privatization Fund (Official Gazette, No. 84/92).

¹⁵ State-owned property encompasses portfolios managed by the following institutions: Croatian Privatization Fund, State Agency for Deposit Insurance and Bank Rehabilitation, Croatian Pension Insurance Institute, Croatian Institute for Health Insurance, Croatian Forests, Croatian Waters, Croatian Railways, Croatian Motorways, Croatian Power Company (HEP), Croatian Oil Industry (INA), Croatian Insurance (CO), Ministry of Agriculture, MELE, etc.

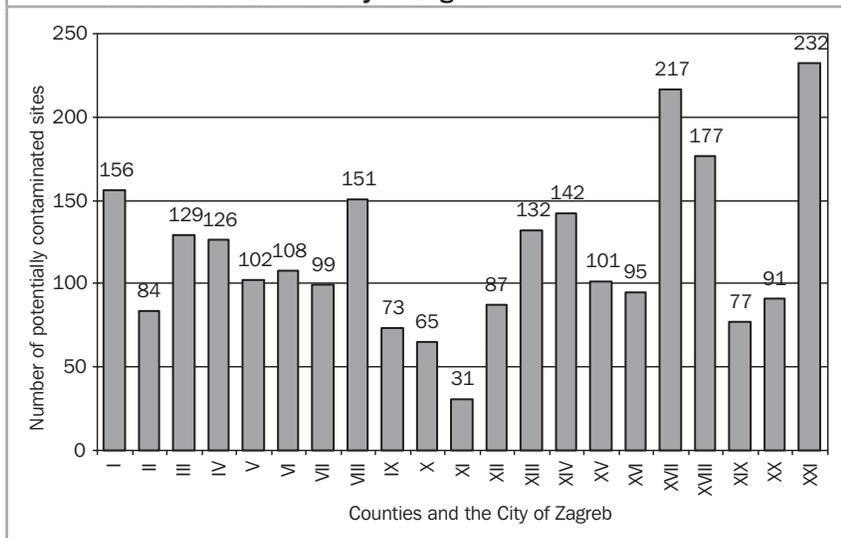
Table 1 Continued	
Institution	Functions and Responsibilities
Croatian Bank for Reconstruction and Development (CBRD)	<ul style="list-style-type: none"> • CBRD was established in 1992¹⁶ and is an export credit agency and an economic development organisation that finances infrastructure, reconstruction, and small and medium sized enterprise promotion projects. • It grants loans for specific purposes only according to specific loan programmes. Loans are intended for investments in fixed and current assets. Priority is given to investments aimed at restructuring business entities and modernising production facilities through the purchase of new equipment, introduction of new technologies and new products, etc. • It also promotes investments aimed at repairing direct war damage, if such investments enable business entities to continue successful operation.
Croatian Chamber of Economy (CCE)	<ul style="list-style-type: none"> • CCE represents all economic entities in Croatia in accordance with European tradition¹⁷ and has subsidiaries in all counties. • Main services are promotion of the Croatian economy abroad, networking between domestic and foreign businesses, business opportunities exchange, information exchange and networking with institutions in Croatia and abroad.
Commercial Court (CC)	<ul style="list-style-type: none"> • Judiciary activities are carried out through municipal, county, military, commercial, high commercial and public administration courts. The highest court is the Supreme Court of the Republic of Croatia. • Commercial courts are established on the territory of one or more local government units. They conduct liquidation procedures of legal entities, trials in which legal entities appear as subjects to liquidation and trials generated by conflicts caused by liquidation. • Since the judiciary system is independent, there is reluctance towards communication with other institutions. This is an obstacle for initiating collaborative approaches in resolving brownfield related initiatives.
Ministry of Defence (MD)	<ul style="list-style-type: none"> • In addition to other regular military tasks, MD is engaged in property related activities and carries out operations connected to legal matters, land register and cadastre. • After the separation from the Socialist Federal Republic of Yugoslavia, Croatia took over 657 military properties. As from 1992 onwards, 123 of them were offered to local self-governments for local use and management and the rest to the CSOMSP and CFP. However, these properties were not taken over officially as they were not considered sufficiently attractive (Ministry of Defence, 2005). • To resolve the problem of unneeded properties, MD is developing a special programme for the closing and reuse of military properties. Out of 335 properties (status in 2005), only 218 are considered potentially useful for military purposes, while 117 are classified as not potentially useful. • Military property is owned by the Republic of Croatia and MD has the right to use and manage it, but does not have the right to give concessions, sell, donate or lend it.¹⁸ • MD can propose alternative uses of such property for purposes of local economic development (including agriculture, tourism, housing, recreation), i.e., the development of the society. • For every property that is declared as not potentially useful for military purposes, the MD prepares a special report with all relevant information and submits it to the CSOMSP, which goes on to market and sell such properties in cooperation with the Croatian Privatization Fund. In the period 2001-2005, the MD submitted 262 reports to the CSOMSP, and for 100 former military properties a new user or owner was found. • Brownfield redevelopment projects are currently implemented in the cities of Zagreb, Rijeka and Zadar (university campuses on former military sites).

¹⁶ Act on Croatian Credit Bank for Reconstruction (Official Gazette, No. 33/92).

¹⁷ Act on Croatian Chamber of Economy (Official Gazette, No. 66/91).

¹⁸ Such actions are under the jurisdiction of institutions above the MD - the CSOMSP is responsible for transactions of up to 100,000 HRK (i.e., 13,333 EUR); the Government Commission for Property for transactions of up to 10 million HRK (i.e., 1.3 million EUR); while transactions above 10 million HRK are the responsibility of the Government of the Republic of Croatia.

Figure 2 Number of Potentially Contaminated Localities in Counties and the City of Zagreb



Note: I. Zagreb County, II. Krapina-Zagorje County, III. Sisak-Moslavina County, IV. Karlovac County, V. Varaždin County, VI. Koprivnica-Križevci County, VII. Bjelovar-Bilogorje County, VIII. Primorje-Gorski kotar County, IX. Lika-Senj County, X. Virovitica-Podravina County, XI. Požega-Slavonia County, XII. Brod-Posavina County, XIII. Zadar County, XIV. Osijek-Baranja County, XV. Šibenik-Knin County, XVI. Vukovar-Srijem County, XVII. Split-Dalmatia County, XVIII. Istria County, XIX. Dubrovnik-Neretva County, XX. Međimurje County, XXI. City of Zagreb.

Source: CEA (2009).

As brownfields are seen in the context of privatisation, a major part of the national legislative and institutional framework is directed towards dealing with the remaining state property and enterprises in which the government still has a stake. Property management is centralised in CSOMSP, while the management of state-owned shares in over a thousand companies is handled by the CPF. As one of the obstacles to resolving the problem of brownfields is bankruptcy, the respective Act²⁵ had to be analysed. The current way that bankruptcies are dealt with suggests that the procedure is too lengthy. As the procedure is also of judiciary relevance, commercial courts are still overwhelmed with bankruptcy cases, whereas they lack administrative capacity to finalise the procedure faster. Depending on the “bankruptcy year”, the cases are shifted back and forth between commercial courts and the CPF, which further hinders successful finalisation of

²⁵ Bankruptcy Act (Official Gazette, No. 44/96, 29/99, 129/00, 123/03).

procedures (Đokić, 2004). Local self-governments that are at the lower end of the decision making process do not have much influence on speeding up the procedure. Local self-governments could take a more proactive position and articulate programmes, plans or projects on how to develop affected areas and put more effort into accelerating procedures through concrete project proposals.

3.3 Relevant Policy and Regulatory Framework for Brownfields in Croatia

With respect to the clean-up of contaminated brownfield sites, it is worthwhile to mention the most relevant EU strategic documents being applied in Croatia as well as national development documents:

- (1) International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests, launched in 1985); The International Cooperative Programmes of the United Nations Economic Commission for Europe (UNECE);²⁶
- (2) Thematic Strategy for Soil Protection (European Commission, 2006e);
- (3) Proposal for a Directive of the European Parliament and of the Council establishing a framework for the protection of soil and amending Directive 2004/35/EC (European Commission, 2006c);
- (4) Thematic Strategy for Soil Protection, Summary of the impact assessment (European Commission, 2006a);
- (5) Thematic Strategy for Soil Protection, Impact assessment of the Thematic Strategy on Soil Protection (European Commission, 2006b);
- (6) National Environmental Strategy (*Official Gazette*, No. 46/02);
- (7) National Environmental Action Plan (NEAP) (*Official Gazette*, No. 46/02); and
- (8) Mineral Resources Management Strategy, Republic of Croatia – Draft (MELE, 2008).

²⁶ For more information, see <http://www.icp-forests.org/>.

With regard to regulations in this area, there is an extensive list of acts confirming various conventions and protocols related to soil contamination, and national acts, decrees and ordinances defining activities in this regulatory area.²⁷ As far as the cleaning-up costs based on the Environmental Protection Act (*Official Gazette*, No. 82/94, 128/99, 110/07)²⁸ are concerned, the “polluter pays” principle is followed. Besides this principle, there are no other regulations directly referring to potentially contaminated and contaminated localities.²⁹

A recently conducted analysis by the World Bank (2009) in cooperation with the MEPPPC showed that the exact number of brownfields is still unknown³⁰ and a national database of brownfield sites would be useful for potential investors. However, reuse of redevelopment sites is usually initiated either from:

- *the bottom*, if there is a strong local self-government unit with a stable political situation and the ownership of a site that is planned to be redeveloped is transparent; or
- *the top*, if the sites are severely contaminated; in such cases, MEPPPC is usually the initiator (these actions can be assisted through financial and consulting services, e.g., supported by the World Bank or future EU Structural Funds).

The World Bank (2009) also reported possible policy options directed at promoting and facilitating the beneficial use of brownfield land such as:

- reducing attractiveness of other land (e.g., “greenfield”),
- increasing allowable densities to stimulate profitability for developers and investors,

²⁷ A full list of regulations can be found in CEA (2009, pp. 129-130).

²⁸ The costs include all those costs incurred with regard to contamination of the environment, including an estimation of costs of damage, required measures and remediation of damages to the environment.

²⁹ The Croatian Act on Soil Protection is not in force yet, therefore, the provisions of the Environmental Protection Act are applied. CEA does not have data on the number/percentage of inhabitants affected by brownfields.

³⁰ Therefore, it is not possible to show the trend at which they have been generated within the last decade.

crafts tradition, the establishment of a local entrepreneurial centre, business zones and support to small and medium sized businesses, makes it an attractive place for new investors in the area (Town of Samobor, 2005). The town offers standard business incentives related to utility charges, except for shopping malls, as well as financing opportunities through loan programmes offered jointly with MELE and the banking system. In addition, the town authorities were actively engaged in establishing a new entrepreneurial district for greenfield investments (co-financed by MELE) and enforced special stipulations for construction, in accordance with the town's general town-planning project. In this respect, the business areas are intended for production, services, trade and other business activities under the condition that the facilities do not harm the environment. In the new business zone, care is taken of infrastructure, such as roads, parking, public transport, water supply and sewage system, gas, electricity and telephone lines.

Besides the carefully designed future use of greenfields, the town also has brownfield sites, which the municipal authorities are aware of. However, their numerous problematic privatisation and bankruptcy issues are not sufficiently dealt with publicly, primarily due to significant institutional, legal and procedural obstacles. One such potential brownfield case is the local crystal factory Kristal, which has a long history in the town. A number of investors were interested in this particular location,³² (rather than investing in the same or similar production activity), but without success, leaving it to remain an unused brownfield site.³³ The local government showed interest in finding a solution, but did not prepare any concrete proposals, and due to the slow liquidation process, the entire attempt was halted. The community offered some solutions for the same problem, but these initiatives were merely ideas and have not developed yet into a concrete project proposal. From the investor's point of view, some negotiations had started, but were soon terminated, after the ownership issue became a

³² *One plant of the factory is located in the vicinity of the town centre and is thus attractive to potential investors.*

³³ *From the information obtained by the Town of Samobor (personal communication, July 2009), there are still no figures on contamination of that area, costs related, measures or similar facts required for a possible redevelopment project.*

among politicians caused delays in the decision making process and created additional costs for the development project.

If the town had had a sound land use policy, it would have bought split and privately owned plots classified as new zones in the current spatial plan in the first place, and then it would have consolidated them, which would have reduced the costs of administration and management. Consolidated land is more attractive to investors, and later on sold through public tenders. What actually makes this case interesting is the existence of brownfield sites adjacent to the new business zone, which had not been considered on time and prepared for investments together with the new zone. Those sites are already equipped with infrastructure inherited from former factories, while in the new zone significant infrastructural investments were required. The town's investments in the new zone were generally considered to be a positive trend, but can actually seem contradictory. New infrastructure had to be built by taking up new loans, while leaving existing infrastructure unused. Another critique is related to the efficiency of land use. Greenfield investments, as the term says, occur on plain green plots of land. Though the world trend is to preserve green spaces as much as possible, as highlighted by Agenda 21 (UN, 1993), and to maintain sustainability requirements, this was not the case in the town of Samobor.

This case clearly confirms the problems mentioned before:

- lack of a comprehensive land use policy (i.e., it was incomplete, inadequate and, in the end, inefficient);
- unsolved bankruptcy and liquidation processes at the national level (Commercial Court) can seriously impede the process of redevelopment;
- low level of knowledge and experience of decision makers can seriously harm the stability of local self-government units on different levels (political, administrative, financial), which can have further negative impacts on sustainability.

- a lack of a clear definition to create a common understanding about the issue,
- dispersed data on properties (lack of a database),
- outdated cadastre and land books and unclear ownership issues (particularly when investors try to realise their investment on locations at the local level),
- lack of a standardised methodology for brownfield redevelopment and other issues (to support decision makers and stakeholders),
- low level of general awareness regarding environmental and broader social problems,
- low institutional and fiscal capacity of local governments that contributes to the general neglect of brownfield redevelopment possibilities.

Since there is limited initiative at the national level and a lack of urban development experts in Croatia, the result is an everlasting bankruptcy procedure, with no legal sanctions for institutional inefficiency and atomised brownfield initiatives. The role of the Croatian Privatization Fund is rather reactive than proactive, which means that the destiny of many sites is unclear, without any particular time constraints. At the same time, with the establishment of the Central State Office for Management of State Property and positive developments in the reuse of military sites, further research can be conducted in the cases of Zagreb, Rijeka or Zadar for example. Efforts to create a database have been initiated by the Central State Office for Management of State Property and Croatian Privatization Fund, but should also take into consideration the one developed by the Croatian Environment Agency. Once the required and accurate data are available, and adequate acts, regulations and decisions dealing with brownfields are in place, it will be possible to tailor a policy framework for brownfield redevelopment activities that can contribute to local and regional growth and development.

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