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Assessment methods and tools for regeneration of large urban distressed areas

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ABSTRACT

Large urban distressed areas (LUDAs) are present in many European cities where interlinked social, economic, and environmental decline occurs at a significant scale. LUDAs thus far have proved difficult to regenerate in a sustainable manner. The reasons for this have been recognised as: firstly, inappropriate use of ex-ante assessment in decision-making process and a limited spectrum of assessment methods and tools applied; and, secondly, inadequate knowledge about the situation in the distressed areas. In recognition of these shortcomings, the aim of the work described here, undertaken in the EU research project was: 1) to assess the state of knowledge about assessment methods and tools among European researchers and urban practitioners; and, 2) to identify the problems and drivers for change that should be taken into consideration in order to regenerate areas in a sustainable manner. The problems and drivers for change were identified by issuing questionnaires to authorities of six cities with recognised LUDAs: Bratislava, Dresden, Edinburgh, Florence, Lisbon and Valenciennes. The results confirmed the multifaceted character of deprivation in LUDAs. The most significant problems and drivers for change were related to economic situation and urban structure. A list of assessment methods and tools was compiled, and surveys were carried out with ten research institutions and practitioners to identify the theoretical knowledge and practical experience of these methods. The results showed that, while the knowledge of assessment methods was satisfactory, their practical application had been less advanced. The authors emphasise the need for exchange of experiences in regeneration and call for a development of assessment methods specifically related to economic and urban structure concerns.

Key words: Distressed Areas, Urban Regeneration, Ex-ante Evaluation, Assessment Methods

1 INTRODUCTION

In the European Union, roughly 80 per cent of the population lives in urban areas (Conway and Konvitz, 2000) and cities are considered to be economic engines and generators of growth and jobs (Jacobs, 1984; CEC, 2005). However, the presence of distressed urban areas suffering from multifaceted deprivation weakens cities by impeding economic growth and increasing social injustice (Conway and Konvitz, 2000). The OECD (1998) has stated that distressed urban areas are one of the most difficult problems faced by developed countries, and that this problem worsened throughout the 1980s and 1990s. In the ten countries surveyed by OECD, approximately 20 million people out of a metropolitan population of 185 million were living in deprived areas (OECD, 1998, p11). The European Commission has already pointed out the importance of the sustainable rehabilitation and development of urban distressed areas in the Green Paper on Urban Environment (CEC, 1990). However, until recently, the policy, research and practice of urban regeneration tended to restrict the actions to smaller areas (neighbourhoods and estates), while the situation of large distressed parts of cities has been often neglected.

Most of the European cities contain large urban distressed areas (here referred to as LUDAs) that suffer from interlinked environmental, social and economic problems, as well as from faulty urban structure and weak institutional capacity. Their significant physical dimensions, the number of their inhabitants, and the important role the areas often play in the functioning of the urban fabric, magnify the complexity of the problem. In many cases LUDAs have entered a vicious cycle of decline (Elkin and Cooper, 1993) and their future is extremely unpredictable. Factors such as migration, housing policies and image created by publicity (Conway and Konvitz, 2000) can either depress the area further or help to revive it.

Consequently, coping with unpredictability requires far-sighted strategies and flexible planning supported by a robust decision-making process. In reality, however, city planners and other officials who are responsible for delivering sustainable urban regeneration lack skills (Egan 2004) and often have little means to cope with such an intricate task. This can lead to shortcuts in analysing the situation and decision-making process. Indeed, it has been recognised that the failure of many regeneration projects hitherto has been related to two main factors:

1. There are often discrepancies between the purpose of the urban strategies and the problems they try to solve (Skifter Andersen, 2001). According to OECD (1998), traditional policies have not succeeded in halting the downward spiral that affects distressed areas because they were unable to address the complex nature of the problem. Therefore, recognition of issues causing decline of LUDAs as well as factors offering possibility of driving the regeneration process is crucial. Decision-making in the regeneration process needs to refer to these problems and drivers of change in order to effectively address the areas of greatest need (Conway and Konvitz, 2000).

2. Limited use of ex-ante assessment in the process of decision-making can hamper sustainable urban regeneration or even lead to counterproductive results. According to European Commission (2001) experience of ex-ante evaluations is still scarce in the EU structures, and there is also a lack of established good practice in the member states. In particular, in relation to urban regeneration programmes, the assessment process has more often than not been limited to ex-post evaluation concentrating on achievements in terms of programme outputs and on value for money (Ho, 1999). For example, absence of ex-ante assessment – and overall lack of monitoring and evaluation culture - has been recognised as one of the principal weaknesses in programmes supported by Structural Funds in the North West of England (Ecotec, 2007).

Ex-ante appraisal is seen as an effective management tool (EC, 2001) for providing information on the basis of which decision makers can judge the value of a proposal (EC, 2000). Good quality ex-ante evaluation supports rational decision-making as it assesses whether proposed solutions are in accordance with the expected results and impact. While ex-ante assessment cannot guarantee that the selected option will deliver sustainability in practice, it offers much greater assurance whether the course of action taken is leading in the appropriate direction and reduces the risk that decision-makers put into practice inappropriate and ill-fitting programmes. Moreover, the actions carried out during ex-ante assessment (e.g. baseline condition analysis) are necessary for reliable ex-post evaluation, and hence accountability for results and impacts (EC, 2000).

There is an increasing pressure on local authorities and other organisations delivering urban development or regeneration projects to use ex-ante assessments. The Environmental Impact Assessment Directive (Council of the European Union, 1997) has been implemented for nearly ten years now and the legal requirement for Strategic Environmental Assessment (European Parliament and the Council of European Union, 2001) across Europe is likely to boost use of ex-ante evaluations (SKM, 2006; WSP, 2006). The ex-ante appraisal is an integral part of the Structural Funds programme development (EC, 2001; European Council, 2006; GOWM, 2007). Also, national initiatives in member states are likely to emphasise use of ex-ante assessments, e.g. the Sustainability Appraisal in the UK (ODPM, 2005) puts a requirement on local authorities to integrate assessment into regional and local development strategies.

The importance of large urban distressed areas in the functioning of European cities, the poor understanding of LUDAs' problems and the associated drivers for change, and the inadequate use of ex-ante appraisal in regeneration projects prompted the launch of the "Improving the Quality of Life in Large Urban Distressed Areas - LUDA" research project, funded within the Fifth Framework Programme of the European Union (2003 – 2006). This project aimed to contribute to the improvement of the quality of life in LUDAs by providing a strategic approach for sustainable development, based on rational and systematic decision-making.

The objective of this paper is to summarise the work in the LUDA project, led by the University of Salford that aimed to gauge the state of knowledge and usage of ex-ante assessment methods within the research community and cities in Europe in order to assess the nature of the decision support in sustainable urban regeneration that should be provided to urban practitioners.

2 METHODOLOGY

Four areas were investigated:

1. The common problems in LUDA areas of the case study cities,
2. The drivers for change in these cities,
3. The assessment methods available for use in addressing these issues,
4. The level of knowledge and experience of these methods.

This was undertaken using simple surveys and interviews with all the partners in the LUDA project; including nine research institutions and six case-study cities (table 1).

Table 1: Participants of the LUDA project

Research partner and acronym	**Case-study city* and name of the LUDA**
Leibniz-Institut für ökologische Raumentwicklung, IOER	Dresden, Weißeritz (Germany)
University of Salford, School of Construction and Property Management, USAL	-
Slovak University of Technology, Faculty of Architecture, SUT	Bratislava, Východné & Žabi Majer (Slovakia)
Napier University, School of Built Environment, SBE	Edinburgh, Craigmillar (UK)
Universitá di Firenze, Dipartimento di Tecnologie dell'Architettura e Design "Pierluigi Spadolini", UNIFI	Florence, Brozzi & Peretola (Italy)
Universität Salzburg, Institut für Geographie und angewandte Geoinformatik, DGGS	-
Universidade Lusófona de Humanidades e Tecnologias, International Office, ULHT	Lisbon, Ameixoeirs & Galinheiras (Portugal)
Société de Mathématiques Appliquées aux Sciences Humaines, SMASH, and Institut de Programmation en Architecture et Aménagement, IPAA**	Valenciennes, Anzin & Beuvrage (France)
Dublin Institute of Technology, Faculty of the Built Environment, DIT	-

* Another 12 reference cities participated in the "Improving the quality of life in large urban distressed areas" project. However, they did not take part in the surveys reported here.
** IPAA did not participate in the consultation exercises reported in this paper.

The research institutions were chosen based on their expertise in sustainable urban development and regeneration problems. Selection of the particular case-study cities

provided the opportunity to study LUDAs from different locations, origins, climate and cultural conditions and to observe LUDAs' situation in different stages of regeneration. A total of 31 experts took part in the surveys; two persons from each of the research partners (excluding IPAA) and two from each of the cities (except for the City of Florence where three experts participated).

2.1 Identification of common problems in case-study cities

In total 54 issues or problems in LUDAs were identified and subdivided into four broad categories: environmental, economic, social and those related to urban structure (table 2). This list of issues was drawn up by IOER based on their research experience in range of previous national projects (in Germany) and from other EU projects that they were concurrently involved, notably HQE2R (subsequently published as HQE2R deliverable 17 - Outrequin and Charlot-Valdieu, 2003). Using this list the common problems in the case study cities were determined through a set of questionnaires co-conducted with IOER early in the LUDA project (2002). The questions explored issues relevant to each of the four main areas as already identified. The respondents were asked whether the situation in case of each issue was worse, the same or better than the situation in the whole city. The issues identified as being worse than the situation in the whole city were considered to be problematic for LUDAs. The responses from the six case study cites were collated and analysed according to the frequency of problematic issues found across the four main areas, i.e. economic, social, etc. The issues identified as problematic by five or six cities were considered as a common problem for further investigation.

2.2 Identification of regeneration drivers in the case-study cities

A list of issues that can drive the regeneration process in LUDAs was put together by the research partners (COMFI, UNIFI and USAL) based on their research and regeneration consultancy experience and drawn from the literature, e.g. (OECD, 1998; Hall, 1997; Morrison, 1999). These internal factors significant for improvement of the situation in LUDAs were as follows:

- In the category of urban structure: Redevelopment of the cities, Land use planning, Urban design quality, Transportation, Housing;
- In the economic category: Large developments (property market-led, co-operatives and community based), Economic activities, Access to finance, Access to employment, Formation of public-private partnerships,
- In the social category: Crime, Education, other social aspects,
- In the environmental category: Environment, Technology.

The representatives of local authorities of the six case-study cities were asked in face-to-face interviews to state which of the issues listed were the most significant for

driving the regeneration process in their respective LUDAs. In order to reduce bias, the cities also had the opportunity to report on any other issues that they perceived as important drivers for change in their LUDA.

Table 2: List of 54 issues included in the questionnaires for the case-study cities

Economic (13)	**Environmental (11)**
Local commercial activity Endogenous dynamic of economy Dependency on outside investment Levels of private and public investment In- and out- migration of enterprises Demand of retail goods and services Supply of retail goods and services Land values/rental rates Number of enterprise start-ups Vacant industrial and commercial land Level of unemployment Range of local employment activities Spatial disparity between workforce and jobs	Industrial, traffic and households emissions Pollution of air Pollution of water Pollution of soil Hazardous waste/contamination Level of noise Decrease in biodiversity Provision of open space Provision of green space Public access to green areas Probability of natural disasters
Social (16)	**Urban Structure (14)**
Population change Ageing of people Mortality Percentage of immigrants/minority groups Level of social disintegration Average income Level of poverty Welfare state contributions Health conditions Levels of education Levels of crime Level of civic involvement Level of community empowerment Costs of housing relative to income Population density Overcrowding of flats/rooms	Presence of barriers in cityscape Image/perception from outside Image/perception from inside Urban design Residential quality Vacant living and office space Conditions of buildings in terms of: - scope of renovation - sanitary installations - size of apartments Ownership of land/buildings: - private - public - co-operatives Quantity and quality of infrastructure: - social and cultural - technical

2.3 Compilation of a list of assessment methods

The preliminary list of assessment methods and tools applicable to regeneration of LUDAs was drawn-up by the University of Salford. The majority of methods were either proposed by researchers participating in the project or drawn from literature,

using their applicability to the problems of large scale urban regeneration as an overarching criterion. The list was based on the 57 assessment methods explored in a previous research project, BEQUEST (Building Environmental Quality Evaluation for Sustainability through Time), funded by the EU in the Framework Programme 4 (BEQUEST, 2000; Curwell et al 2005). However, a number of the methods considered in BEQUEST were not applicable to LUDAs because of their scale of application (e.g. individual building or regional scale). The most generic methods and those focused on the building scale of assessment were removed from the list, resulting in set of 38 applicable assessment methods (table 3).

Table 3: Preliminary list of assessment methods and tools

Assessment methods and tools	
Analysis of interconnected decision areas	Multi-criteria analysis (MCA)
Analytic hierarchy process (AHP)	Project impact assessment
Availability of public, near-residential green spaces (APNRGS)	Prospective process through scenarios
Brainstorming sessions	Prospective workshops
Cluster evaluation	Quality of life capital
Community impact evaluation	Regime analysis
Competence trees	Risk assessment methods
Concordance analysis	Scenario development
Cost benefit analysis (CBA)	Semantic differential
Cross impact analysis	Social cost-benefit analysis
Ecological footprint	Social impact assessment
Economic impact assessment	Spider analysis
Environmental impact assessment (EIA)	Strategic conversations
Environmental impact model	Strategic environmental assessment (SEA)
Flag model	Survey questionnaires
Horizon scanning	Sustainability appraisal (SA)
Integrated sustainable cities assessment method (ISCAM)	SWOT analysis
Life cycle analysis	Visioning
Managing speeds of traffic on European roads (MASTER)	Wind tunnel testing

2.4 Level of knowledge of the assessment methods and tools

The level of knowledge of the assessment methods in research community and among city authorities was explored in two consultation exercises carried out in the first half of 2004:

1. Survey of the research partners asking the following questions regarding the assessment methods and tools:

i) Do you have practical experience in the use of this method/tool?
ii) Do you have theoretical knowledge of this method/tool?

2. Survey with the representatives of local authorities of the six case-study cities asking the following questions:
   i) Do you use this method/tool regularly?
   ii) Do you use this method/tool occasionally?
   iii) Are you aware of the existence of this method/tool?

Short descriptions of the ex-ante assessment methods and tools listed in table 3 were provided for participants of both consultation exercises.

3 RESULTS

3.1 Identification of problems in LUDAs

The results of questionnaire survey regarding the problems in LUDAs showed that all 54 listed issues were recognised as problematic by at least one city. Table 4 lists the 23 most common problems identified across the four domains and presents the proportion of common problems in the overall number of issues listed in a given domain. The most common problems of the six case-study cities were of economic and urban structure nature, constituting respectively 69 and 57 per cent of the issues listed in a given domain. Social and environmental problems tended to vary more between the six investigated LUDAs, and the common problems in these domains form respectively 25 and 18 per cent of the issues listed in social and environmental domain. Only seven of the issues were indicated as problematic by less than three cities. These were: pollution of water, decrease in biodiversity, provision of open space, ageing of people, mortality, population density, and size of apartments; therefore, relating mainly to the social and environmental domains and indicating that these subjects were seen as less problematic.

In terms of the individual cities' self-assessment (figure 1) the overall situation was the worst in Bratislava, which identified 83 per cent of the listed issues as problems. In contrast, the least disadvantaged LUDA was in Florence, where only 44 per cent of potential problems were reported. For all the cities, apart from Florence, economic problems were the worst threat; in the case of LUDAs in Bratislava and Dresden all economic issues listed in the questionnaire were identified as problematic. The urban structure problems also were rated high, between 43 per cent in Florence, and 93 per cent in Bratislava and Dresden. Problems within environmental issues ranged between 27 per cent in Edinburgh and Lisbon and 82 per cent in Bratislava. Social problems were assessed by cities as comprising between 50 per cent of the listed issues (in Dresden, Florence and Lisbon) and over 87 per cent in Edinburgh.

Table 4: Most common problems in the case studies and their proportion in the four subject areas

Economic problems (69 per cent)	**Urban structure problems (57 per cent)**
Local commercial activity Endogenous dynamic of economy Dependency on outside investment Levels of private and public investment* In- and out- migration of enterprises Demand of retail goods and services Supply of retail goods and services* Land value/rental rates* Range of local employment activities	Image / perception from outside Image/ perception from inside Urban design Residential quality* Condition of buildings: - scope of renovation - sanitary installations Quantity and quality of infrastructure: - socio-cultural* - technical*
Social problems (25 per cent)	**Environmental problems (18 per cent)**
Average income* Level of poverty* Welfare state contributions* Cost of housing relative to income	Industrial, traffic and households emissions Pollution of soil

* Issues recognised as problems by all six cities

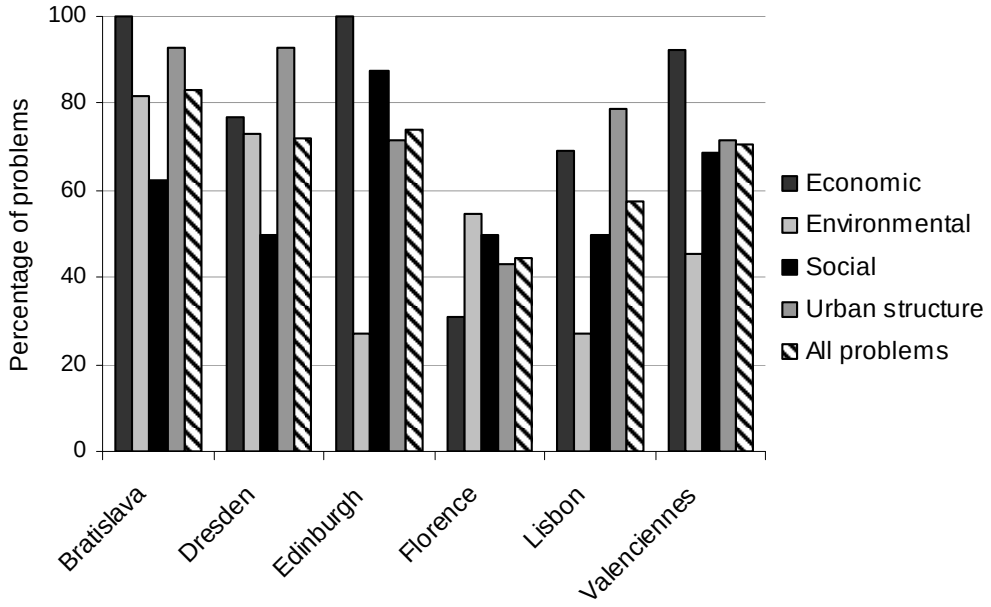

Figure 1: Percentage of listed issues seen as problems by case-study cities.

Figure 1 shows that the pattern of self-assessed disadvantage in terms of aspects of urban sustainability is different for every city. These discrepancies are not surprising considering the different history of every city as well as other factors such as location

of LUDA or reasons for its emergence. Nevertheless, all cities confirm the occurrence of a large number of problems in their LUDAs.

3.2 Identification of drivers for change

The significant drivers for change (indicated by five or six cities) included: economic activities; urban design quality; transportation; formation of public-private partnerships; access to finance; and social aspects (see table 5). Among them, economic activities were identified as an important driver for change by all of the cities. On the contrary, the least important drivers were education, redevelopment of the cities, technology, and large developments.

Table 5: Issues driving the regeneration process in the six case-study cities

Drivers for change	Bra.	Dre.	Edi.	Flo.	Lis.	Val.	No of responses
Urban structure							
Redevelopment of the cities	X		X				2
Land use planning	X	X	X		X		4
Urban design quality*	X	X	X	X	X		5
Transportation*	X	X	X	X	X		5
Housing	X	X	X		X		4
Economic							
Large developments:							
• Property market-led	X		X				2
• Co-operatives	X	X			X		3
• Community based	X		X				2
Economic activities*	X	X	X	X	X	X	6
Access to finance*	X	X	X		X	X	5
Access to employment	X		X		X	X	4
Public-private partnerships*	X	X	X	X	X		5
Social							
Crime	X		X		X		3
Education			X				1
Other social aspects*	X		X	X	X	X	5
Environmental							
Environment	X	X	X	X			4
Technology	X		X				2
Total	16	9	16	6	11	4	
Drivers added by cities:							
Improvement of image		X					1
Flood protection		X					1
Public participation					X		1

* Issues recognised as drivers by five or six cities

There was a discrepancy among the cities regarding the number of drivers indicated as important, ranging from four in the case of Valenciennes and six in Florence, up to 16 in the case of Bratislava and Edinburgh. This may indicate the differences in perceived scope for regeneration in different LUDAs. Dresden included flood protection and improvement of image as the additional drivers, and for Lisbon an additional important driver was public participation.

3.3 Familiarity of research institutes with the ex-ante assessment methods

Table 6 presents the summarised results of the investigation into research institutions' level of practical experience and theoretical knowledge of the 38 listed assessment methods and tools. Full results are included in Appendix 1.

Table 6: Research institutions' knowledge of the ex-ante assessment methods

Level of knowledge about methods (Number of positive answers out of 9)	Practical experience	Theoretical knowledge
Zero	4	0
Low (1-3)	25	18
Medium (4-6)	7	15
High (7-9)	2	5

The research institutes had only theoretical knowledge (and no practical experience) of four out of 38 listed assessment methods and tools. These were as follows: APNRGS, flag model, MASTER and quality of life approach. Over half of the methods had been used in practice by between one and three research institutions participating in the consultation exercise, which meant that their level of use was relatively low. Seven methods were used to a medium level, i.e. by between four and six research institutes: cost-benefit analysis, ecological footprint, economic impact assessment, prospective workshops, scenario development, spider analysis and visioning. Only two methods had been used by seven or more of the research institutes, which would indicate high level of use; these were SWOT analysis and survey questionnaires. While all of the assessment methods and tools had been known to the research institutes, the level of theoretical knowledge about the vast majority of the methods (33 out of 38) was low or medium. The remaining five methods that were known by seven or more of the research institutions were cost-benefit analysis, environmental impact assessment, scenario development, survey questionnaires and SWOT analysis.

The results of this exercise indicate that, while in the research community the level of theoretical knowledge can be seen as satisfactory and can be shared across Europe,

the level of practical experience could be enhanced in order to provide flow of knowledge between academia and cities.

3.4 Familiarity of cities with the ex-ante assessment methods

Table 7 presents the level of practical experience and awareness of the listed ex-ante assessment methods and tools that the case-study cities declared in the self-assessment exercise. The full results are in Appendix 1.
Out of 38 methods listed, 11 had not been used in practice by any of the cities, and the cities did not even have an awareness of six of these methods. These six methods were as follows: flag model, horizon scanning, MASTER, regime analysis, spider analysis and wind tunnel testing. In terms of case-study cities' awareness of the existence of other methods, 15 were recognised by one or two of the cities and another 15 methods were recognised by three or four cities.
Nineteen methods have been used to a low level, i.e. by either one or two cities. The six methods applied to a medium extent were CBA, project impact assessment, prospective workshops, scenario development, survey questionnaires and visioning. Only two of the methods – brainstorming sessions and SWOT analysis were very popular among the cities and had been used by five or six of the cities, including regular use.

Table 7: Case-study cities practical and theoretical knowledge of the ex-ante assessment methods

Level of knowledge about methods (Number of positive answers out of 6)	Practical experience	Awareness of existence
Zero	11	6
Low (1-2)	19	15
Medium (3-4)	6	15
High (5-6)	2	2

Interestingly, two of the methods required by law under European Union Directives – Environmental Impact Assessment (EIA) and Strategic Impact Assessment (SEA) – did not score high. At the time of the survey (2004) EIA was used regularly by two cities (Florence and Bratislava) and Edinburgh and Lisbon declared theoretical knowledge of EIA. In the case of SEA, Bratislava declared regular use and Lisbon occasional, and Edinburgh was familiar with the method.
Table 8 presents the individual cities' familiarity with methods. The best situation seems to be in Bratislava, which declared overall familiarity with 28 out of 38 methods (17 of the assessment methods had been used regularly, four occasionally and another seven practitioners had knowledge of). Ranking second was Edinburgh with ten methods known from practical use, and awareness of another ten. In

contrast, in Dresden only four methods were occasionally used (brainstorming sessions, concordance analysis, prospective workshops and SWOT analysis). The situation was not much different in Valenciennes, where five methods were known: strategic conversations used regularly, brainstorming sessions and SWOT analysis applied occasionally, and risk assessment methods and scenario development known in theory.

Table 8: Use and theoretical knowledge of methods among six case-study cities

No of methods	Bra.	Dre.	Edi.	Flo.	Lis.	Val.
Used regularly	17	0	9	6	5	1
Used occasionally	4	4	1	4	6	2
Aware of	7	0	10	5	1	2
All methods	28	4	20	15	12	5

4 DISCUSSION

Despite some common characteristics shared across all LUDAs, significant differences between them occur too, stemming from specific historical, social, cultural and economic conditions in each of the respective European countries. The results of the survey investigating the problematic issues in LUDAs indicate that the economical improvements and changes in physical structure are the most important and urgent for the majority of the cities. This is particularly valid in the case of Bratislava and Dresden, which could be explained by the political and economical transformation in Eastern Europe, resulting in plethora of economic problems and deficient infrastructure (Hannemann, 2000). Similarly, the great obstacle for development of cities in Portugal and Spain has been recognised as deficient urban structure resulting mainly from inefficient urban planning in these countries (LUDA Team, 2006a). This would suggest that these three cities need effective decision-making regarding these issues, and the resultant tangible changes can bring effects in relatively short time. Such a strategy can be tentatively extrapolated to other distressed areas in post-communist and Southern European countries. On the other hand, Edinburgh's problems focused primarily around socio-economic issues, which is consistent with the notion of "social exclusion" that has replaced "deprivation" in relation to distressed areas in the UK (SEU, 1998) and the Republic of Ireland (Dublin Regional Authority, 1999). This would suggest different set of methods appropriate to decision making and longer time-scale of solving the problems.

It should be emphasised that the short-term focus on improving physical structures is not sufficient as the solution of deep-seated economic, environmental and social problems is required in order to regenerate large distressed areas (LUDA Team, 2006b). Moreover, the focus on physical aspects might be the legacy of the

regeneration programmes carried out in the 1970s and 1980s that were mainly property-led and negligent towards social and environmental aspects (Hopkins *et al*., 1997). All factors – economic, environmental, social and urban structure – are important, only the relative attention given to each will vary according to local needs. There is a need for development of multifaceted strategies taking into account the local conditions (Conway and Konvitz, 2000) and the local drivers of regeneration process.

The key drivers for regeneration process in the six case-study cities were: quality of urban design; improvements in transportation; development of public-private partnerships; economic activities; access to finance; and social aspects. Parallels can be drawn between the identified drivers for change and previously identified key problems. Urban design quality and transportation can be classed under urban structure, and economic activities, access to finance and public-private partnerships can be related to economic aspects, which were the most problematic for all the cities.

Good urban structure, in terms of effective urban design and improving access to services can significantly improve urban residents' quality of life. For instance, interventions of this kind can help reduce crime in the short term and, in the longer term, improve the overall image of the area. Public-private partnerships (PPPs) are seen as the most effective way of dealing with the multidimensional and complex nature of urban problems by enhancing the effectiveness of policies (Geddes, 1998), and providing additional funding for public initiatives from private sector (LUDA Team, 2006b). Formation of PPPs is not only actively encouraged by both national and European Union programmes (Conway and Konvitz, 2000), but it is often a mandatory requirement for access to funding, as for example in case of Local Strategic Partnerships, required by the Neighbourhood Renewal Fund in the UK (SEU, 2001). Economic activities are the most vital part of urban regeneration. Integration of supply (e.g. investment in infrastructure) and demand processes (i.e. the city's ability to retain local expenditure and to attract local investment) into economic regeneration makes the area more attractive for businesses and in doing so creates opportunities for local employment. Also, access to finance is very influential for all manner of regeneration activities covering physical, social and economic parameters. Money can be obtained in the form of private investment (e.g. through PPPs), or European Regional Development Fund, as well as from national funding programmes, e.g. within New Deal for Communities in the UK the State provided £2 billion over 10 years (Lawless, 2004).

The presence of common problems and common issues driving the regeneration process indicates that the factors leading to decline and revival of LUDAs are similar across Europe. Therefore, it can be implied that is both room and opportunity for exchange of experiences and good practice between cities. Conway and Konvitz (2000) emphasise the importance of networking events enabling practitioners to become aware of each others' activities, benefit from "lessons learned" and identify opportunities which have potential for their own areas.

The investigation into researchers' knowledge about ex-ante assessment methods and tools resulted in an overall conclusion that the theoretical knowledge about listed methods is sufficient, but the practical know-how to ensure deployment of the methods to support rational decision-making is missing. Furthermore, well-practised, generic methods, such as survey questionnaires, SWOT analysis and CBA may not be fit for purpose in terms of solving the specific problems of an economic and urban structure nature. The positive result was that the Environmental Impact Assessment was well-known in the research community, which in turn could support cities struggling with meeting the requirements for EIA application stated by the European Directive 97/11/EC.

Moreover, what needs to be emphasised is that all of the methods of which the researchers had no practical experience were still in the experimental phase at the time of the survey and had not been widely applied or publicised. APNRGS had been applied only in Berlin, Germany (Berlin Digital Environmental Atlas, no date); Quality of life approach was developed in 2001 by the UK Countryside Agency as a tool for sustainable and bottom-up approach to development (Countryside Agency *et al.*, 2001); MASTER was an outcome of an European research project running between 1996 and 1998 (MASTER, 1999); and flag model had been mainly used for assessments in sustainable development in Netherlands (Nijkamp and Ouwersloot, 1998). Therefore, there is room for testing these methods in practice and evaluation of their applicability to urban regeneration.

There were visible differences in the use of methods and tools by individual cities, splitting them into two distinct groups. In the first group, Dresden and Valenciennes relied solely on the application of very generic methods and procedures defined at national policy level. Dresden's situation can be explained by the fact that German cities are much more likely to have to adhere to defined procedures relating to national building law and administration. However, while the practitioners in the cities may be limited to using defined procedures, they might employ external consultants to carry out evaluations who are likely to be not impeded by such restrictions and are able to apply a wider selection of assessment methods. In the second group, Edinburgh, Florence and Lisbon have an adequate knowledge and experience of the listed methods and tools, mainly concerned with well-established methods, such as cost-benefit analysis or project impact assessment. In contrast to the first group, local planners and urban practitioners in the UK, Portugal, and Italy are not restricted by national jurisdictions and can apply assessment methods freely in the context of planning and rehabilitation.

Bratislava stands apart from the other cities in terms of the vast experience and knowledge of the listed methods and tools. Bratislava is also the only city to practice Strategic Environmental Assessment on a regular basis (Lisbon had used SEA occasionally), therefore setting a benchmark for other cities to follow.

The differences between cities in terms of the selection of methods they are using in ex-ante evaluation of their regeneration programmes again emphasises the need for exchange of knowledge and experiences. According to European Commission

(2001), existing information and evidence from earlier evaluations, studies and other sources should be fed into the ex-ante assessment process whenever possible. This is particularly relevant to the European LUDAs that show a large degree of similarity in terms of their problems and drivers for change.
The surveys carried out with the research institutes and the representatives of six case-study cities allowed to divide the 38 ex-ante assessment methods investigated into three categories: 1) regularly used and well-known, 2) used occasionally/ recognised, and 3) experimental/unknown (table 9).

Table 9: Categorisation of assessment methods and tools:

Regularly used/well known	**Used occasionally/recognised**	**Experimental/Unknown**
Brainstorming sessions	AIDA	APNRGS
Cost-benefit analysis	Analytic hierarchy process	Cluster evaluation
Ecological footprint	Community impact evaluation	Concordance analysis
EIA	Competence trees	Environmental impact model
Prospective workshops	Cross impact analysis	Flag model
Scenario development	Economic impact assessment	Horizon scanning
Survey questionnaires	Life cycle assessment	ISCAM
SWOT analysis	Multi-criteria analysis	MASTER
	Project impact assessment	Quality of life capital
	Prospective process through scenarios	Regime analysis
	Risk assessment methods	Semantic differential
	Social cost-benefit analysis	Wind tunnel testing
	Social impact assessment	
	Spider analysis	
	Strategic conversations	
	SEA	
	Sustainability appraisal	
	Visioning	

The first category of methods includes the very generic ones (brainstorming sessions, survey questionnaires, SWOT analysis) and a widely used monetary method of assessment – cost-benefit analysis (CBA). The use of SWOT analysis and CBA as important evaluation methods is stressed by the European Council under the draft General Regulation on Structural Funds 2007-13 (EC, 2006); therefore, a growing use of these methods can be expected. What may be surprising is the presence of two methods related to environmental aspects in the first category, considering that environmental problems were the least common in the case-study cities. However, it might be caused by the well-established and mandatory nature of EIA. Presence of two futures methods (prospective workshops and scenario

development) indicates that the regeneration programmes involving cities and research institutes using them include elements of foresight analysis. What is surprising is the absence of economic problem-related methods in this category, considering how important the economic problems were for all of the case-study cities. Potential explanations could be absence of such methods in the list offered to cities (however, the second category of methods includes economic impact assessment) or limited number of easy to apply methods in general. If the latter is the case, there is a need for development of such methods in order to meet the needs of distressed areas.

The majority of the investigated methods cluster in the second category of occasionally used and recognised methods. This category includes several multi-criteria methods, i.e. analysis of interconnected decision areas, analytic hierarchy process, cross impact analysis, MCA, and spider analysis. According to Higgs (2006), multi-criteria techniques could be particularly useful in situations where there are a large number of alternative development option, a large number of potential criteria to be taken into consideration or where subjective judgements by different stakeholders is needed to try to reach an objective consensus in the final decision-making process. This situation is likely to occur in urban development and in regeneration of LUDAs in particular. Recognising that, Department for Transport, Local Governments and the Regions in the UK produced a guide on application of multi-criteria methods for public decision makers (DTLR, 2000).

Another major group in the second category are methods related to social aspects (community impact evaluation, social cost-benefit analysis and social impact assessment). While social problems have not been recognised as the most urgent issues in the investigated LUDAs, they are likely to be the outcome of economic and urban structure deficiencies and have a major impact on quality of life of urban residents. Hence, the application of these methods can help to address problems such as social exclusion.

It can be expected that methods such as SEA and risk assessment will soon figure in the well-known category rather than the occasionally used one. This is due to the requirements posed by European Union – SEA is required by Directive 2001/42/EC and risk assessment is a mandatory requirement for applicants for Structural Funds (EC, 2006). In the individual member state context, Sustainability Appraisal is likely to be used much more commonly in the UK as it is now a national legal requirement (ODPM, 2005).

The third category includes methods developed within European research projects (environmental impact model - ENVI and MASTER), smaller research projects (ISCAM; Ravetz, 2000) or confined to one country (APNRGS and quality of life capital). Interestingly, two of these less-known methods – MASTER and APNRGS – are the only ones in the list presented to researchers and cities that refer very directly to urban structure problems. Consequently, it may be observed that the number of methods relating to economic issues and urban structure is limited. If these two

aspects are indicated as the most important in urban regeneration, absence of relevant methods needs to be considered as significant gap in knowledge.
Remaining methods in the third category also include other multi-criteria methods (concordance analysis and regime analysis) and less-known future methods (wind tunnel testing). It needs to be emphasised that lack of knowledge and experience about certain methods does not mean that they should not be considered in the future.

5 CONCLUSIONS

The small sample size means that one has to be cautious about drawing too strong conclusions from the results about the situation in all cities in the European Union. Nevertheless, the study was a litmus test of the situation of large urban distressed areas in Europe, and provided some insight into the level of knowledge and application of ex-ante assessment methods and tools that can be applied in the decision-making process in urban regeneration. The results showed that all the investigated LUDAs suffered from similar problems and that they had a comparable outlook on issues that can drive regeneration forward, including mainly economic and urban structure concerns.
While the level of theoretical knowledge in academia was sufficient to provide information for cities, the practical know-how of research community was considerably less comprehensive. The overall level of practical experience and theoretical knowledge was rather low. However, there were significant differences in the use of methods between the cities and this implicate the need for greater exchange of knowledge and experiences. This is the more justified considering the similarities of the distressed areas and possibility on learning from other regeneration projects.
Both in the case of cities and research community it is clear that the assessment methods and tools that were classified as “regularly used/well known” were mainly generic, and the less well-established methods seemed to be more relevant to the actual problems of LUDAs. This indicates, firstly, that some progress is being made into the research and development of methods and tools relevant to the situation of LUDA and in line with the principles of sustainable urban regeneration. Secondly, there is a need for further research into assessment methods and tools that can address the most urgent issues, be easily applied, and fit into the planning process and procedures of the European cities. Thirdly, more guidance is needed on application of all ex-ante evaluation methods. This is particularly valid in the light of existent and forthcoming requirements for ex-ante evaluation.

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Appendix 1: Level of knowledge and experience of assessment methods among research institutions and case-study cities

Assessment methods and tools	Number of research institutions with:		Familiarity of case-study cities with the methods					
	Practical know-how	Theoretical knowledge	Dre	Val	Flo	Edi	Lis	Bra
Analysis of interconnected decision areas	1	2	-	-	-	R	R	A
Analytic hierarchy process	1	4	-	-	A	-	-	R
Availability of public, near residential green spaces	0	1	-	-	-	Oc	Oc	-
Brainstorming sessions	2	2	Oc	Oc	R	R	R	R
Cluster evaluation	2	2	-	-	-	-	-	R
Community impact evaluation	3	5	-	-	A	A	-	R
Competence trees	3	4	-	-	-	A	-	A
Concordance analysis	1	1	Oc	-	-	Oc	-	
Cost benefit analysis	5	8	-	-	Oc	R	Oc	R
Cross impact analysis	3	4	-	-	-	-	-	R
Ecological footprint	4	6	-	-	Oc	A	-	A
Economic impact assessment	4	5	-	-	-	A	Oc	A
EIA	3	7	-	-	R	A	A	R
Environmental impact model	1	2	-	-	-	-	-	A
Flag model	0	2	-	-	-	-	-	-
Horizon scanning	1	1	-	-	-	-	-	-
ISCAM	1	1	-	-	-	-	-	A
Life cycle analysis	2	6	-	-	-	A	-	A
MASTER	0	1	-	-	-	-	-	-
Multi-criteria analysis	3	5	-	-	A	R	-	R
Project impact assessment	2	2	-	-	R	R	-	R
Prospective process through scenarios	3	5	-	-	-	-	-	R
Prospective workshops	4	5	Oc	-	R	-	Oc	Oc
Quality of life capital	0	2	-	-	-	A	-	-
Regime analysis	1	1	-	-	-	-	-	-
Risk assessment method(s)	3	6	-	A	-	-	-	Oc
Scenario development	5	7	-	A	Oc	R	-	R
Semantic differential	1	2	-	-	-	-	-	R
Social cost-benefit analysis	1	2	-	-	A	A	Oc	Oc
Social impact assessment	1	3	-	-	A	A	-	Oc
Spider analysis	4	5	-	-	-	-	-	-
Strategic conversations	2	2	-	R	R	-	-	-
SEA	1	4	-	-	-	A	Oc	R
Survey questionnaires	7	7	-	-	Oc	R	R	R
Sustainability appraisal	1	4	-	-	R	-	-	R
Swot analysis	9	9	Oc	Oc	A	R	R	R
Visioning	4	5	-	-	-	R	R	R
Wind tunnel testing	1	3	-	-	-	-	-	-

R - regular use, Oc - Occasional use, A - awareness of a method