NEW CITY FORM. ANALYSIS TO SUPPORT DESIGN AND GOVERNANCE[1]

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The form of a city is visible in terms of its buildings, roads, green infrastructure and so on. But the form of a city is a lot more than just these visible items. To analyse a city is to analyse these spatial patterns but also to analyse other layers, which determine the form of a city as well. The spatial patterns and their management through land use planning cover the debate about norms and visions, driving policy-making and sector-based planning both in the strategic and operative timeframes, as well as the spatial integration of sectorial issues, decision-making, budgeting, participation, implementation of plans and decisions, together with monitoring results and evaluating impacts.

INTRODUCTION

The main focus of this paper is the management of spatial patterns through land use planning within different cultural and planning frameworks. It is based on the experience of a European working group within the URBACT programme, funded by the European Union. These experiences of the working group on land use management for sustainable European cities (LUMASEC[2]) are the core of the paper and are demonstrated by two case studies which show two different approaches of land use management in Europe: St. Étienne Métropole (France) working at the regional scale, focusing on the involvement of different stakeholders, and an urban quarter in the city of Baia Mare (Romania), focusing on the urban pattern. Based on these two case studies, further research and additional case studies within LUMASEC, the paper introduces a model of intervention on different layers, illustrated by the above mentioned case studies which were presented for discussion among young professionals at the European Urban Summer School.

CASE STUDIES ON SUSTAINABLE LAND USE MANAGEMENT

THE CASE OF ST. ÉTIENNE MÉTROPOLE: THE CITY AND ITS URBAN CENTRE[3] (FRANCE)

St. Étienne is a city of 175.000 inhabitants integrated in an urban area of 400.000 inhabitants. In the 19th century, St. Étienne had a flourishing heavy industry with mines, arms and iron factories which had laid the foundation stone of the city's success. However, a huge economic crisis had struck the local industry from 1970 to 1990. These twenty years of economic decline had considerable social and urban consequences. Many households were affected by unemployment but the most severe social decline affected people with a low level of qualification. Especially migrants had to face these difficulties. The attractiveness of St. Étienne decreased. Large brown field sites appeared with the departure of large firms. The high- and medium-income families moved from the city centre to the suburbs to live in a single family home.

Since then, the economic structure of St. Étienne has deeply changed. Although industry is still present, firms are now essentially small and medium size. Only 5,3% of the companies had more than 20 employees in 2007. A diversification of industrial sectors can be noted with the development of industries in the optical, design and biomedical departments. The majority of companies work for big firms located in other places but they increasingly develop high value processes making them less dependent. Reinforced cooperation between St. Étienne and Lyon or other urban centres in the Lyon metropolitan area is an important characteristic of the past decade. The metropolitan area of Lyon/St. Étienne has 1.200.000 inhabitants. Local authorities of the different urban centres develop common projects and policies (regarding transport, economic and spatial planning). The University of St. Étienne and the University of Lyon have founded a common Pole to reinforce their scope of lectures and to develop common research projects.

[1] This paper is based on Engelke D., Biehl E.D., (2010), *Land Use Management as Key Part of Metropolitan Governance and for Sustainable Urbanisation*. [In:] ISOCARP 46th International Planning Congress: *Sustainable city – Developing world*. The Hague, ISOCARP.

[2] LUMASEC working group on the web: www.urbact.eu/lumasec

[3] The description of this case studies are based on: Engelke D., Vancutsem D. (2010), *Sustainable Land use Management*. Published by the URBACT working group LUMASEC in cooperation with CERTU.

SPATIAL PATTERNS AND LAND USE ISSUES IN THE REGION

> In the urban centre of St. Étienne, large economic and urban brown field sites needed to be recycled. Important land use actions have been implemented to accelerate the recycling of housing and economic brown field sites. In 1999, a national public land establishment called EPORA has been created to accelerate industrial brown field site regeneration. EPORA was funded by ERDF, national and local subsidies. This public money has permitted to find solutions for polluted land and to sell it at very competitive prices to accelerate their regeneration.

> In 2005, a new national public structure has been set up to accelerate the urban regeneration of the core city centre: EPASE is targeting the redevelopment of central districts, for instance around the main railway station (St. Étienne Châteaucreux), the old weapon manufacture (transformed into a design centre with a university, a high school, firms, retail centres and housing), and two old residential neighbourhoods (Crêt de Roc, Beaubrun).

> Vacant dwellings were pulled down in the social housing district located at the edge of the city centre. These projects were funded by the National Urban Regeneration Agency (ANRU) with the support of local authorities. Refurbishment projects managed to offer new housing to families living in badly integrated buildings. The objective is also to attract new residents to these neighbourhoods, such as first time owner households by proposing low cost, high quality housing.

> Conversely, urban sprawl must be limited because of its negative consequences on the development of the urban region of St. Étienne, such as the alteration of landscape quality, the increase of demand for car transport or social segregation.

> However, the implementation of highly effective operational tools has not resolved all land use issues. Three main challenges remain:

- **To build an integrated land use strategy instead of sectoral interventions**. For example, the public agency in charge of the urban and industrial brown field sites (EPORA) wants local authorities to adopt a cross-sectoral land use strategy. EPORA considers their actions as economically and operationally inefficient due to the lack of a global strategy. If local authorities had a mid- and long-term strategy, the financial costs of their interventions could be reduced, as short term actions are exposed to market trends and the acceptance of market prices.
- **To improve the link between land use planning, urban planning and operational projects** to build housing and develop jobs in urban centres characterised by quality, diversity and density. To achieve this, the functional diversity of new programmes needs to comprise large-scale operations, as well as development control measures over a wide range of sectors. Without these standards, only disparate projects will be delivered and often only residential plots without economic activities.
- **To develop land use management on a large scale**. Recycling of brown field sites depends on organisation or limitation of urban sprawl. Space consumption has been important in the urban region of St. Étienne despite a low growth demographic context (between 1999 and 2005, 440 hectares have been consumed by new urbanisation). Land prices in recycled places will remain higher than in rural areas, unless new residential settlements can be limited in rural areas.

GOVERNANCE APPROACH FOR AN INTEGRATED LAND USE STRATEGY THE REGIONAL LEVEL

The elaboration of an integrated land use strategy was at the heart of the Local Action Plan elaborated by St. Étienne Métropole, a political institution of inter-municipal cooperation grouping 43 municipalities. St. Étienne Métropole is financed by a business tax (called taxe professionnelle) as well as by national allocations from the government. <

> The methodology adopted was articulated around four steps:

- The GIS analysis has permitted to locate the largest extension areas for economic and residential development and the main economic and urban brown field sites. Satellite photos were used to define potential development land (in continuity with existing urban areas, in proximity of public transport and infrastructures). The urban planning documents have been compiled with GIS to check if these potential areas defined by satellite could be urbanised or not.
- An analysis of each area (in extension or in urban renewal areas) has been delivered by a team of architects, geographers and economists to determine their strategic character for the implementation of St. Étienne Métropole's policies. This work has lead to a priority-ranking of geographic areas in terms of land use management: strategic places for the development of high quality mixed urban renewal projects (housing, activities, green spaces); strategic new housing areas to develop new urban forms (density, quality, diversity of housing, etc.); areas afflicted by land use conflicts.
- Indices were attributed to each selected area considered to be strategic in terms of implementation tools, budget and timtable. The Local Action Plan designated the places whose development St. Étienne Métropole should control. This comprised the tools and procedures for the intervention of St. Étienne Métropole (spatial planning documents, development tools); the strategy for places where the municipal level is in charge of controlling the development of a project regarding contracts, financial subsidies and expertise.
- The land use strategy combines regulatory tools and financial resources. In a context of limited public budgets, the strategic approach is therefore based on an understanding of land markets (land use survey, monitoring of pending sales), an appropriate use of all existing tools (regulatory, financial, negotiation, agreements) and a formal framework for a partnership with local owners and operators acting on specific sites (target agreement). The Local Action Plan also implies that local elected officials are aware of the various tools of action laid out in the land development factsheets illustrated with local examples. Due to its strategic vision and its leadership role, and as advisor to operational actors St. Étienne Métropole may well be the guarantor of a sustainable implementation of development planning.

LESSONS LEARNED AND CAPACITY BUILDING

The production of the Local Action Plan has reinforced the dialogue between the services of St. Étienne Métropole. It was an opportunity to develop inter-sectoriality within the local administration. The Local Action Plan has also fostered the development of the local GIS on land use aspects. Information about operational projects has been integrated into the GIS. A basis of strategic areas has been set up and will be updated by St. Étienne Métropole. The Local Action Plan has shown local elected officials the necessity to adopt an integrated land use policy. However, the case study also reveals that challenges in land use management persist. <

A LACK OF PUBLIC-PRIVATE PARTNERSHIP IN LAND USE MANAGEMENT

The PPP with landowners is not fully developed in the governance process of land use. Sometimes a municipality succeeds in organising cooperation between property landowners interested in future urbanisation. Politicians try to negotiate with landowners a timetable of urbanisation aimed to optimise the infrastructure projects (roads, energy networks). Three main reasons can be advanced to explain the lack of private landowner's mobilisation. First, the landowner is not the <

developer (this is a huge difference compared with England). Secondly, the heritage of a common representation in which the public and the private sector keep different functions is still vital in France. Decision making with private partners is not shared by public leaders (political officials or civil servants). Thirdly, in small municipalities, the mayors know the main landowners personally and avoids private business transactions with them.

DIFFICULTY TO IMPLEMENT STRATEGIC PLANNING GOALS AT AN OPERATIONAL SCALE

> The institutions in charge of regional spatial planning, as well as the institutions in charge of operational actions, ask for land use management but fail to involve political local authorities. Of course, each political local authority agrees with the general principle to elaborate a global land use strategy. However, due to operational pressures land use action is giving priority to setting up projects, instead of elaborating a global land use strategy. Land use management is still seen as related to operational projects and not considered as a tool in itself.

> Moreover, due to the distribution of competences between different local authorities, none of them feel to have the legitimacy or the authority to take the leadership in land use management. All spatial and urban planning documents in France converge to fixed quantitative and qualitative objectives for urban regeneration or new development areas. Only few planning documents are setting precise objectives for land use management. The Housing Programme of St. Étienne Métropole (programme local de l'habitat, PLH) proposes tools and funding procedures to foster the development of affordable housing programmes in urban regeneration areas. At a larger scale, the Master Plan (schéma de cohérence territoriale, SCOT) comprises a list of priority urban renewal projects with precise guidance on urban design and densities, and suggests a public control mechanism to deliver them. However, these examples of land use management aimed at the implementation of a planning strategy are quite rare in the French urban planning context.

The strategic level should be the institution in charge of strategic spatial planning. The SCOT is a Master Plan covering a large area, encompassing transportation, housing and environmental issues. However, the body in charge of the SCOT, Sud Loire is a young institution in the St. Étienne's area. The SCOT has not yet been adopted and no such document has existed before (SCOT have no statutory power). St. Étienne does not have any tradition of urban and spatial planning and the political leaders of SCOT have no proven strategies for project implementation yet. Huge conflicts of interest still exist between them concerning housing or retail developments. The implementation of strategies is not subjected to a 'gentlemen agreement' any more and political officials involved in the SCOT Sud Loire refuse to contribute directly to the local plan development process at municipal level.

BROWNFIELD REGENERATION ISSUES: THE EXAMPLE OF THE FERNEZIU AREA IN BAIA MARE[4] (ROMANIA)

The city of Baia Mare (138.000 inhabitants) is located in the central-western area of Maramureş County, on the middle course of Săsar river, at an average altitude of 228 meters. Maramureş is a geographic, historic and ethno-cultural region in northern Transylvania, along the upper Tisza river; it covers the Maramureş depression and the surrounding mountains that form part of the north-eastern Carpathians. Baia Mare has been a mining town for a long time with related industrial areas for processing copper, lead, silver and gold. After the revolution of 1989, the city's de-industrialisation began. The result of this de-industrialisation led to the total closure of the mines, but not to the total cessation of the related industrial processing of minerals. Although two large metallurgic factories are still operational, their production rates and impact on the environment now seem limited compared to what has happened since the war until the early 1990s.

[4] The description of this case study is based on: Engelke D., Vancutsem D. (2010), Sustainable Land use Management. Published by the URBACT working group LUMASEC in cooperation with CERTU.

> It should not be forgotten that Baia Mare is the place where one of the largest environmental disasters in Europe happened: the pollution of the Tisza river (a tributary of the Danube) in 2000, due to the overflow of an artificial lake (the disaster was provoked by the Esmeralda gold mine). Throughout the past 15 years, Baia Mare has initiated a development that will direct the city's economy towards stronger links with services and new technologies (based on R&D), while addressing the serious environmental damage left from the exploitation of mines, but mainly from processing of minerals.

> Baia Mare is also the place where the first example of a regeneration of a historic centre started, even before the blazoned redevelopment of Sibiu (city that became European Capital of Culture in 2007). The Millennium Project of Baia Mare was the first example of revitalisation and requalification of a historic centre in Romania. This requalification was realised through economic activities related to events (cultural, economic, social) and leisure in the oldest and historic part of the town, but also through the refurbishment of key public spaces and buildings.

THE URBAN PATTERNS OF THE FERNEZIU AREA

> The project area chosen in the context of LUMASEC is the area of Ferneziu in the north-eastern part of the city. The decision to intervene in this area as a relevant planning process started in Baia Mare about ten years ago with the adoption of Agenda 21, a process still on-going that has resulted in important milestones of urban planning over time.

> This area is one of the most contaminated areas in Baia Mare because of a lead processing factory. Town planners and other technicians have said for years that the state-owned Phoenix and Romplumb plants were responsible for most of the pollution here. However, being considered of strategic importance by the government, it has been difficult to address the issue although the local council expressed the will to do it. In the strategic plan designed in 2008 five areas have been chosen for regeneration. Ferneziu, and the annexed area of the company Romplumb, is one of these five areas. The major environmental issue is soil contamination due to the presence of heavy metals, especially lead and copper and other by-products. Paradoxically, this industrial area is surrounded by an area of high natural and landscape value. Ferneziu provides the opportunity to achieve the same quality as the historic area of Maramureş, which is one of the most beautiful areas of Romania and Europe and a cradle of cultural identity. This added value of its beautiful landscape is attracting urban sprawl. The bad condition of mobility infrastructures is another major issue in the area where there is a need to rationalise the road networks by completing and connecting the current streets, but also by improving them to elementary safety standards to provide access to, and mobility in this part of the town. Moreover, social housing where the mining workers are still living requires refurbishing and improvement. This housing stock lies in a very unfavourable neighbourhood without elementary urban functions and services in its proximity. The most dangerous situation is that most of the pollutant elements are not protected and rain water easily penetrates the surrounding soil. Moreover, fine particles moved by the wind cause pulmonary diseases.

Ferneziu sums up the key questions of many < post industrial neighbourhoods. After the end of industrial production and intense exploitation, a number of problems remain on the ground connected to the previous production processes whilst financial means to pay for highly expensive soils and water decontamination are not available. Additionally, the high job losses are raising a number of social questions, and call for administrative and economic measures to avoid the creation of clusters of extreme poverty.

INTRODUCING A NEW GOVERNANCE APPROACH BY DEVELOPING A LOCAL ACTION PLAN

Urban strategic planning is a continuous process <

in Baia Mare. This is an exception in the Romanian context where usually cities do not have mature town planning strategies. This planning process began in 2000 when the Agenda 21 initiative started with the support of UNDP. It continued with the project CIVIC (Creativity, Initiative, Volunteer, Integration, Communication) involving the main local communities of Baia Mare in a continuous dialogue on the following topics: culture and art, architecture, media, religion, education, business, ngos, health, sports, youth, tourism, economics, and of course urbanism. The last step of this approach was to set up of the Baia Mare Strategic Plan in 2008. This corridor is characterised by a system of mixed functions, proposing places for tourism, research and training, sport and a neighbourhood centre. A strategy of sustainable development for the Ferneziu area proposed by the Municipality of Baia Mare, will become the base of the local government, thus both a process and a tool of partnership with the entire community (based on an innovative way of using an urban observatory – focussing on districts rather than on the entire city, and resulting in the implementation of real public policies. The Municipality and its partners consider this the best approach for a sound and proper development plan. Such a strategy should propose a framework for economic development comprising a social component, guided by a rational use of resources to protect the environment. This philosophy has led to setting up the LUMASEC Local Support Group, composed of local communities and associations, local architectural offices, private investors interested in the area, international experts in town planning, together with local politicians and civil servants.

LESSONS LEARNED AND CAPACITY BUILDING

> Investing in the design of innovative neighbourhoods offers the opportunity to test how creativity can contribute to the liveability of cities, and how the agents of the knowledge economy are influenced by such initiatives. The proposed transformation for the Romplumb area is based on ideas that depart from completely different concepts in comparison with those that have characterised the realisation of such a large industrial complex in the past, highly polluting and completely detached from what is, and has been, the will of Baia Mare's inhabitants. It is also true that the conditions that allowed the construction of Romplumb during the industrial age, with its Fordist production mentality and an authoritarian and centralised political system do not characterise the contemporary nature of Baia Mare and Romania.

The main problems to be addressed in Romania, in launching this kind of regenerative projects, are determined by all those external conditions that define the meanings of economies in transition: a productive environment which is no longer that of the industrial age, but a post-industrial one, which often failed to propose sustainable strategies for a sound urban development, even in countries with advanced economies in Europe. The main difficulties in launching these initiatives are linked to obtaining the financial capital to implement these changes, especially when there is a high level of soil contamination due to pollutants which are difficult to remove. Moreover, the low demand of the real estate market and the lack of private investments, especially in these past two years of economic crisis, have to be considered, too. The approach suggested to finance this project is to involve all the actors of the LUMASEC Local Support Group, but also to seek forms of financing at the municipal, regional, national levels to bring the project to the attention of the European Union, with the aim to obtain the support from JESSICA or another European Investment Bank. However access to these financial instruments is fraught with many obstacles. JESSICA requires the mobilisation of private capital, not easy to achieve in Romania, especially when the Romanian Government is not properly supporting and promoting such initiatives. The main lesson learnt is that despite strong mobilisation of local communities and local political forces towards a different future, <

the inertias of the past and the remains of the industrial heritage are very difficult to overcome when there is weak public investment.

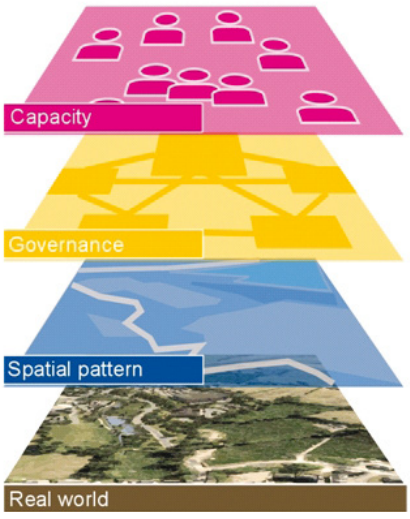
LAYERS OF INTERVENTION: A MODEL TO ANALYSE THE FORM OF THE CITY AND TO MANAGE THE USE OF LAND[5]

> The two case studies discussed above, the case of St. Étienne Métropole at the regional level and the case study of Ferneziu Area in Baia Mare at the communal level have shown interventions on different layers. It is demonstrated that sustainable land use management acts in a multi-level governance structure between an operational project level and a strategic level of urban management. The aim is to diffuse the often occurring conflict between short-term and long-term orientation within the planning process. Such sustainable land use management is improving the coordination of urban policy, public and public-private investment, as well as the involvement of inhabitants and local stakeholders in common visions. This way, land use management can be a strategic asset to develop sustainable, attractive and competitive cities. Therefore, land use planning as an instrument of land use management. Or rather a tool to reach the broader aim of sustainable development is concerned with the formulation of policies and plans for the use and development of land.

> Research on land use management in Europe shows that key factors for building up a land use management system are the occurrence of urban sprawl and its negative ecological, economic and social impacts; the existence and increase of urban brown field sites; lack of attractiveness and competitiveness of urban structures; competition for investment and locations of European cities and regions. The URBACT working group LUMASEC addresses these issues through a land use management approach based on sharing knowledge and achieving consensus on the need of integrated and sustainable land use management. The need for an integrated approach is not only based on the daily necessity of managing urban land, it is also based on the effects of various new global challenges like urban sprawl, climate change and demographic changes, which cannot be tackled by a segregated methodology. Therefore, it is important to set up a management approach to intervene on different layers. Three layers – spatial pattern, governance and human capacity – are the key layers of intervention of sustainable land use management. On a strategic level, each of these layers displays a section of the real world which has to be tackled before the different layers can be integrated at an operational level. However, as the cases of St. Étienne Métropole and Baia Mare show, it is not possible to work within one layer without considering the others.

Fig. 1 shows the three different layers of intervention of sustainable land use management. The result of acting – and not acting – on the three layers is affecting the real world. <

The integrated LUMASEC approach deals with sustainable land use management within the three different layers and with their integration in order to achieve sustainability. The approach is process-oriented with the aim to reach a higher quality of land use management. For this purpose, it is important to analyse which stakeholders are involved in each layer and what kind of interests they have. All actors are interested in land, playing different roles and having different strategies. Usually, the typology of actors, or players, covers two different profiles: the private and the public actors. Private actors are residents, entrepreneurs and speculators, property dealers and developers; public actors are urban administrators, local bureaucracy, political representations, planning bodies, civic supplies, or police. These different stakeholders have only the power to implement sectoral approaches, but integrated approaches can only be implemented in a group of stakeholders. <



1. LUMASEC Layers of Intervention in Sustainable Land Use Management

[5] The LUMASEC layers of intervention on land use management are based on the interventions in spatial planning by Wolfgang Jung.

> The LUMASEC approach is an example of a possible strategic solution to the question of how to be integrative in the field of land use management.

SPATIAL PATTERN LAYER

> It is essential to be aware of the different existing data streams and processes as a basis for the formulation of policies and plans on the use and development of land to reach sustainable development. Hence, working within the spatial pattern means to map existing patterns, getting an overview on development potentials and to be aware of traditional land use planning (e.g. building permits, spatial policies, etc.). Brown field site regeneration by EPORA in the case of St. Étienne Métropole is one example of an intervention in the layer of spatial pattern. The analysis and the mapping within the poster-plan in Baia Mare is a second example of action within this layer.

GOVERNANCE LAYER

> In general, spatial policies aim to influence stakeholder's and their behaviour towards land use, leading to a sectoral view on land use by the different stakeholders and their requirements and needs. Therefore, it is important to open up the stakeholders view to an integrative view on land use and to coordinate and combine different sectoral requirements and needs regarding land use. For this reason, the question of stakeholder and scale is central within the governance layer. Integrated land use management is located at a new scale, the metropolitan scale which makes the need for metropolitan governance apparent. Against this background, working within the governance layer means to outline existing structures, processes and tools of governance and the stakeholders involved. Land use management is driven by various decisions taken at different levels (local, regional, national) and in different sectors (public, private, civil society). Thus, being integrative implies to involve all stakeholders in the field of land use management, and to integrate and respect their tasks, roles, competences and principles to understand the mode of decision-making. The complexity of sustainable development results in the fact that a single stakeholder cannot reach this aim on his/her own. Win-win situations for single stakeholders and society or the environment are based on linkages between the stakeholders. To define these specific linkages and to point out the specific win-win situation for a certain stakeholder – and to accept or balance disadvantage – is a key factor in managing land use. The LUMASEC Local Action Plans in St. Étienne Métropole or Baia Mare are examples of the government approach at the layers of intervention.

CAPACITY LAYER

Both the spatial pattern layer and the governance layer of land use management depend on the ability and skills to set a framework for the stakeholders to act within. Building up of this framework depends on the ability and skills contained in policy, administration, professional organisations and civil society. In the end it is based on the ability and skills of single persons within this process. So a wider approach to land use management is to develop ability and skills to achieve sustainable cities. LUMASEC has a capacity layer approach to sustainable land use management: the capacity to act in inter- and trans-disciplinary processes to reach the objectives within and across the different layers of intervention in sustainable land use management. Consequently, working within this layer means to develop empowerment and participation strategies of inhabitants and other (non professional) stakeholders who are insufficiently involved by raising awareness and political backup for land use and its management. A continuous process of lessons learnt is a good example of capacity building. Monitoring and evaluation are supportive mechanisms of this process. With regard to the new metropolitan scale, it is also important to build up professional competence at different levels to deal with complex problems and tools. <