FACULTÉ DES LETTRES, DES SCIENCES HUMAINES, DES ARTS ET DES SCIENCES DE L'ÉDUCATION

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Sustainable Spatial Development in Luxembourg (SUSTAINLUX)

Working Paper 1

Luxembourg, October 2010

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LUXEMBOURG

Fonds National de la
Recherche Luxembourg

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ABSTRACT

This working paper opens a series of papers that evolve from the research project SUS-TAINLUX, funded by the *Fonds National de la Recherche* (FNR) Luxembourg and carried out at the University of Luxembourg's Department of Geography and Spatial Planning. The project aims at assessing the current efforts and policy instruments in Luxembourg with regard to their contribution to sustainability goals in spatial development. Given the recent demographic and economic dynamics, Luxembourg's comparably young spatial development and sustainability policy are challenged by a variety of developments such as the increasing number of cross-border commuters and related transport problems, the rise of real estate prices, and rapid land use changes in and fast growth of previously rural communities. These evolutions have had a strong impact at the local level in terms of urban development, by exerting a high pressure on housing and infrastructure provision. The latter is hitherto insufficiently embedded into binding planning ordinances or development schemes at the regional or national level. Against this background, the project explores the significance, policy relevance, barriers, and shortcomings of sustainable spatial development strategies in Luxembourg, with particular emphasis on governance.

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INTRODUCTION

The Government of Luxembourg's *Fonds National de la Recherche* is actively engaged in generating quality scientific research across six thematic domains. This research intends to satisfy the objectives outlined in the CORE Thematic Research Priority of "Sustainable Resource Management in Luxembourg," and more precisely, to the thematic research priorities described in "Spatial and Urban Development" (Fonds National de la Recherche Luxembourg 2010: 10). Given recent economic and demographic development dynamics and the strong pressure on land resources, SUSTAINLUX focuses on an evaluation of the existing planning policy instruments and governance patterns in respect to spatial development in the Grand Duchy in general and of housing policy and transport in particular. The project shall provide information about the strengths and weaknesses of current policy tools, and hence reveal potentially new tools and approaches to more sustainable spatial development policies.

The research was conceived in cooperation with the *Helmholtz-Zentrum für Umweltforschung* in Leipzig, who simultaneously submitted a project proposal concerning sustainability and governance and European Union water policies to the *Bundesministerium für Bildung und Forschung* – which has since been approved. A draft of this project idea was also presented to both the *Conseil Supérieur pour un Développement Durable* (CSDD) as well as to the *Conseil Supérieur de l'Aménagement du Territoire* (CSAT), two independent think tanks and advisory councils gathering a great variety of non-

governmental actors in Luxembourg. Both councils signalled their strong interest in this project and offered practical support, openness to participatory observation, and assistance with the identification of interview partners, organisation of group discussions, access to relevant data and documents for the reconstruction of policy processes.

This document constitutes the first working paper from a series of more to come, that function as progress reports of the SUSTAINLUX research project. First, the general literature context of the project will be reviewed, which will overview the trajectory of sustainability at the international policy level, some recent debates in the critical international academic discourse on sustainability, the role of sustainability in urban and regional planning, and the link between sustainable development and governance. Second, the setting of Luxembourg will be introduced and the complex challenge that housing and transport problems represent for the Grand Duchy's sustainable development policies. Third, the specific architecture of the project will be presented, including the specific objectives of the study and desired outcomes, as well as methodological considerations.

The purpose of this study is to identify development trends and ascertain the impacts and potential of existing and forthcoming planning instruments. The objective is thus to generate and provide valuable information concerning patterns of policy-making, decision-making, and governance, as well as configurations of social spatial transformation to planners, relevant practitioners, and other interested parties. At the same time, our findings will contribute to the broader international discussion on sustainable development.

THE GENERAL LITERATURE CONTEXT OF SUSTAINABLE DEVELOPMENT

Current International Discourse & Critical Perspectives

The Brundtland-Report (United Nations 1987: 54) defined sustainable development as development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs. Whereas this report introduced a first comprehensive understanding of sustainable development both to politics and the wider public, the general framework of sustainability was further developed in the declarations evolving out of the 1992-UN Summit in Rio de Janeiro (United Nations 1992). Since then, various attempts have been undertaken to bring sustainability closer to reality, as a series of policy documents, research reports, and a rich body of literature can prove (see, for example, Baker 2005; Meadowcroft 2007; OECD 2001, 2002).

Yet, as most recent research has also revealed, "things have got worse – not better – since the publication of Brundtland's landmark report on sustainable development," (Jordan 2008: 17). The scholarly observations that justify this statement are manifold, and the lack of change is a reflection of the complex and interrelated configuration of problems that remain to be resolved (which are more often than not pursued in practice by differentiated and disconnected, rather than integrated, policy models). Among these, we suggest the following as being essential: the inertia that lifestyles and corporate management institutions exhibit against major changes that might result in follow-ups to programs of sus-

tainable development; sentiments triggered because of perceived disadvantages or costs; and, the opportunistic character of policy and politics that avoid agendas that might hinder public appreciation and result in their loss of political control.

However, as differently the goals of sustainability are conceptualized, and as difficult or disputed the paths towards implementation are, there is a general consensus that sustainable development is characterised by a multidimensional composition, including economic, social, cultural, and environmental issues. Moreover, some approaches include institutional aspects as well. Although these dimensions are often in conflict with one another, the main goal of achieving sustainability – particularly at local and regional levels (though not exclusively) – is to integrate these three or four dimensions into more or less coherent policy strategies. Sustainable development is thus considered to be a "bridging concept" per se (Meadowcroft 2000), and the outcomes of such strategies are intended to respect the needs and rights of future generations through policy and their mid- or long-term implementation processes.

The concept of integration has thus become a key term and major point of reference for policies being developed in the context of sustainability. Concomitantly, practical applications of sustainable development also emphasize integration as a core strategy in different regards. First, sustainable development is supposed to ensure an economic development that respects the non-human environment, instead of exploiting natural resources beyond the rate of regeneration (Wackernagel and Rees 1996; Costanza and Patten 1995). Second, economic development is increasingly conceptualised as a means of promoting a more even distribution of wealth and social environmental justice, as seen recently in the concept of cohesion that attempts to simultaneously compromise competitiveness, labour market issues, and citizenship (OECD 2002). Third, urban and regional planning in the course of sustainability is understood as a concept that aims at integrating land use, housing, and transport, in order to provide a sustainable settlement pattern both in structural and sociological terms (Cowell and Owens 2006).

Urbanisation, Land use, and Transport

Prescriptive intent of sustainable development

As is the case with sustainability in general, a closer inspection of current attempts to operationalise and practice a convincing model of sustainable development at urban and regional levels reveals various caveats and limitations – particularly arising from epistemological problems, internal contradictions of the concept of sustainability, and the contested terrain of policy making (see Jordan 2008; Redclift 2005). These problems are grounded in the complex configuration of territorial development, in which structural, socioeconomic, and political factors, processes, and interests collide. It can thus be argued that integration is not necessarily a solution, but first and foremost a proper reflection of material realities. In this respect, the idea of sustainable development is challenged.

Policy manifestos such as the Aalborg Commitments (ICLEI -Local Governments for Sustainability and City of Aalborg 2004)

or Gothenburg strategy (Europäischer Rat Göteborg 2001), and in particular also Chapter 28 of the declaration of the United Nations-summit on sustainable development in Rio de Janeiro ("Local Agenda 21") (United Nations 1992), had already emphasized strategies and measures that were considered essential for making cities and regions sustainable. Related inventories are vast. The most recent of such declarations, the Leipzig Charter of Sustainable European Cities, released in 2007 under the German presidency of the European Union, tends to be similar in this respect:

> "For us, integrated urban development policy means simultaneous and fair consideration of the concerns and interests which are relevant to urban development. Integrated urban development policy is a process in which the spatial, sectoral and temporal aspects of key areas of urban policy are coordinated. The involvement of economic actors, stakeholders and the general public is essential. Integrated urban development policy is a key prerequisite for implementing the EU Sustainable Development Strategy. Its implementation is a task of European scale, but it is one which must take account of local conditions and needs as well as subsidiary," (Präsidentschaft der Europäischen Union 2007: 2).

Ironically, the conceptual metaphor of integration is becoming the leading formula towards implementation – at the same time as urban and regional fields are increasingly characterised by processes of fragmentation (Amin 2004; Amin and Thrift 2002). In addition, the wide palate of urban typologies, and their myriad of blended and transient forms, show that there is no apparent, agreed upon, and integrated model along which an allegedly integrated future can even be imagined. Hence, it is no surprise that there is a certain lack of comprehension in such recommendations, preventing the onset of an overarching framework for social, environmental, and economic integration.

Regarding development and planning, an increasing supply of good and best practices can be collected (see the related catalogues available from organisations such as the EUKN or ICLEI, and the overview by Berke 2008). Within that body of reference, issues of urban planning, housing, and real estate have placed prominently, and not without good reason. First, appropriate housing can be considered a basic and fundamental human need that has to be provided in sufficient magnitude both in terms of quantity and quality. Second, land use changes, such as the transformation of green spaces into developed land, have significantly contributed to environmental problems over the course of urbanization. There is also a commonly shared perception that the current degree of (open) land consumption that occurs in many regions triggers a set of direct and indirect consequences that further affect sustainability negatively, particularly through a strong link between location and mobility. Third, land use is closely associated with transport and motorised mobility, which is likely a dimension most critical to sustainability. This is because of strong interdependencies between the growth rates in transport that have been seen in recent years – with its related problems of energy consumption and carbon-dioxide emissions – and the systemic properties of mobility, which, as a major enabler of modern economies and modern lifestyles, have lead to a certain inertia

that limits political intervention (Ryan and Turton 2008). However, as the next section points out in more detail, attempts to foster such integrated patterns of development are confronted with a variety of constraints and barriers, not only in terms of implementation, but also regarding the complex character of the subject to be managed as such (socio-spatial relations, if you will), and with respect to the highly controversial processes of political regulation and governance.

A critical re-reading of sustainable development

Urban and regional sustainability has been under substantial critique in recent years, and there is a growing claim for rethinking its central assumptions. A poignant quote from Erik Swyngedow in *The Sustainable Development Paradox: Urban Political Economy in the United States and Europe* (Krueger and Gibbs 2007) reveals the problematic plasticity of sustainablity:

> "...Greenpeace is in favour, George Bush Jr. and Sr., the World Bank and its chairman (a prime war monger in Iraq) are, the Pope is, my son Arno is, the rubber tappers in the Brazilian Amazon are, Bill Gates is, the labor unions are..." (Swyngedouw 2007: 20).

This critique is principally based on comparable arguments as to the generic, non-specific discourse on sustainable development. As Voss et al. (2007) put it: the goals of sustainable development are ambivalent, the contextual knowledge needed towards its practice is highly uncertain, and the powers able to implement sustainable objectives are highly distributed (Voss et al. 2007: 194).

Regarding urban development and settlement structure, there are several points to be noted. First, many programmatic schemes are characterised by a simplified understanding of what the urban is about that mainly focus on a territorial view of the city within specific legal boundaries or given settlement structures – a Cartesian "container space" that is already criticised as outdated. Such place-based analyses tend to overlook not only the embeddedness, but also the simultaneously interconnectedness, of cities in large-scale networks, at regional, interregional, or international scales.

Second, implementation strategies and knowledge production processes have been criticized for their technocratic leanings reflected in the pervasion of much of the sustainable development discourse by environmental engineering and architecture, eco-efficiency or green technologies, just to name a few. As a consequence, social contexts and respective constraints are often underestimated, overlooked, or worse, deemed unimportant. This can set powerful limits to a politics of sustainability, and also carries with it deeper paradigmatic implications concerning ontology and epistemology.

Third, it is also often overlooked that changes at one political level are deeply embedded in the multi-layer construction of the overall political economic system, thus making local efforts for achieving sustainability extremely dependent on overarching political action, support mechanisms, and last but not least, financial resources. This is one of the reasons that "governance" is the operative model of multilevel, cross-sector policy making

that does not possess a traditional centre of strong decision-making.

Fourth, social spaces are necessarily wrought with contradictions (Lefebvre 1991) rendering the integration of various dimensions of sustainability a compromise of multiple perspectives and the result of a certain value judgment and institutional planning objective. On one hand, in many regions the scarcity of cheap housing calls for an increased supply of housing stock, in order to serve those who cannot afford private rentals, enter into a mortgage, or who have special needs with respect to housing. Some growth-regions may aim at creating self-sufficient functional areas that no longer depend on excessive commuter flows (which contribute to environmental problems, due to transport costs and energy consumption). On the other hand, the claim for reducing the amount of open space that is being converted into the built environment has become increasingly popular recently, particularly in regions with a stagnating or declining population, where infrastructure provision will become even more costly due to the lowering number of units to be serviced. It is difficult to fulfil both premises at the same time.

Fifth, urban spaces are a product of social constructions and discursive realities. An analysis of sustainable development in the context of urban and territorial issues also refers to - and may profit from - recent traditions of constructivist thinking. It is widely accepted that city and space do not only represent material entities, such as the built environment, big master plans, or essentialist ideas on the urban future. Based on the linguistic, cultural and last but not least spatially situated turn from a rather material, objectivistic perspective towards a more interpretative, subjectivist

view of the world, discourse is particularly considered instrumental for better understanding contemporary developments in late-modern society (Howrath 2000; Campbell 2009).

Related research approaches may have their roots in different streams of theories and understandings of science, particularly in structuralism, poststructuralism, postcolonialism or in the hermeneutic tradition. Their possibly common frame is first, that they are focussing on language and communication as specific ways of perceiving (and thus producing) material realities, and second, that they are no longer predominated by one "correct" or "true" approach to the subject of research, but allow for developing a broad range of per in quite different ways. This position seems to be particularly helpful once exploring the role of cities and space as subject of discursive or performative practices, practices (see e.g. Flyvbjerg and Richardson 2002; Philo 1991). There is little doubt that urban development has, among other factors, also emerged from individual perceptions and discursive construction in the past. It will probably do so in the future as well, often associated with collectively framed yet highly controversial ideas of how the city or the urban should look alike and whose interest should be served. As a consequence, these issues are essential in urban studies and have to be explored in more detail.

Thus, our research aims at reconstructing and critically discussing the different ways in which sustainability was placed on the public agenda in Luxembourg, by whom this was pursued, and on the basis of which argument it has been framed. As a result, the relational character of the concept of sustainability and its sometimes rather superficial use becomes quite

obvious (see Prudham who shows the "proliferation of this term as a form of discursive gloss over disparate material and political projects", (Prudham 2009: 737)). It is thus our starting assumption that a constructivist approach could not only lead to more open, pluralistic research findings but - paradoxically - also to somewhat robust, less aloof policy prescriptions.

Finally, there is a strong competition of policy models and ideological preferences prevalent, delimiting the capacity of the guideline of sustainable development to gain hegemony. A good indication for this problem is given by the more or less parallel use of the Gothenburg and Lisbon strategies developed by the European Union member states (Europäischer Rat Göteborg 2001; European Commission 2010b) – the former focussed on the social and environmental dimensions of sustainability, the latter was clearly devoted to strengthen economic competitiveness as an overall commitment. It is not unfair to say that the process of further implementing the "Lisbon-Agenda" ranked higher on the list of priorities of the European Commission and the EU-member states, leaving behind those aspects of sustainability that may get in conflict with its predominant economic orientation. And now, the Europe 2020 strategy document (European Commission 2010a), in all its controversies, has taken the foreground.

In this context, the research aims at reworking the approach of sustainable development by exploring the shortcomings and interdependencies as noted above, and by reconstructing the generic system of problem-definition, policy-formulation and implementation. Given the complex configuration of sustainability problems and challenges both in general

and in the field of urban and regional planning, this is the case of spatial governance, the flexible co-ordination of private and public activity in different fields of action and at various spatial scales, taking into account the importance of multi-level co-ordination of policy and politics.

The Consequence: governance for sustainability

Because sustainability is a process of production through negotiation, it can be argued that governance and sustainability go hand in hand. In fact, some argue that governance structures is not only compatible with sustainable development, they are essential to sustainable development. The tunnel vision of vertically integrated and centralized governmental systems, with particularized fields of jurisdiction, are incapable of addressing the multi-level character of sustainable development (Church 1996: 99-100), and, recent literature cites, "Governance for Sustainability" as a brand name of its own (Newig et al. 2007). Yet, it is not irrelevant to take note that governance structures emerged in the 1980s and 1990s as new forms of regulation, when governments -- particularly in North America -- began scaling down, and as vertical systems of industrial production began eroding and were being replaced by horizontal, transnational, and flexible systems (Mayer 1998: 67). At this time, it was observed that bargaining and decision-making began taking place outside of traditional centralized political structures (Mayer 1998: 67). These new structures did not guarantee political voice for those at the bottom, although there are instances where it has, and some were (and remain) quite con-

cerned that the new mode of production can only lead to social political and economic injustices, as well as environmental irresponsibility. And today, while studying the flexible structures of governance can reveal much about the degree to which sustainability is being addressed (or not), it might argued, that the *politic* of sustainable development remains but one of the few internationally recognized instruments of quality assurance (in terms of social justice, economic viability, and environmental protection), in the wake of a deregulated globalised economy.

Governance has emerged recently as a key concept in political science and across a broad field of disciplines that study political processes in various contexts. However, there are at least three different understandings of governance that should be distinguished: first, a theoretical one that is focuses on the core governing mechanisms behind policy making; second, an empirical one that uses governance as an analytical construct in order to explore and assess the political practice; third, a normative one that emphasises "good governance" as an ideal, in contrast to the mere business as usual in politics, government and administration. For the purposes of this paper, we will be concentrating on the second understanding as named above, using governance as a particular lens for analysis.

Based on its origins in the political science literature, governance focuses on a perceived shift in policy making from political steering – primarily undertaken by the state – towards the co-ordination of policy measures in a complex setting of different actors and interests (see Treib et al. 2007). Besides a broad range of definitions and meanings:

"…there is, however, a baseline agreement that governance refers to the development of governing styles in which boundaries between and within public and private sectors have become blurred. The essence of governance is its focus on governing mechanisms which do not rest on recourse to the authority and sanctions of government," (Stoker 1998: 17).

A significant emphasis had been put in past research on the differences between the 'old' and the 'new' modes of policy making. It can be argued that this distinction is somehow artificial and that there is a need to further clarify the benefit of using the concept of governance for analysing policy and practice. In this context, Stoker (1998: 18) presented five propositions to define governance from a theoretical standpoint as follows:

"1. Governance refers to a set of institutions and actors that are drawn from but also beyond government. 2. Governance identifies the blurring of boundaries and responsibilities for tackling social and economic issues. 3. Governance identifies the power dependence involved in the relationships between institutions involved in collective action. 4. Governance is about autonomous self-governing networks of actors. 5. Governance recognizes the capacity to get things done which does not rest on the power of government to command or use its authority. It sees government as able to use new tools and techniques to steer and guide," (Stoker 1998: 18).

Related issues have to be taken into account once analysing political processes from the governance perspective.

For the same reason, (Treib et al. 2007) introduced so-called "modes of governance", indicating a more gradual shift (rather than a rupture) from government action towards societal steering and co-ordination within networks. This shift is based on a flexible rather than rigid practice of implementation, the use of malleable, negotiated norms instead of fixed goals, and a procedural rather than material regulation. However, state agents remain powerful actors in the political system, as for example Brenner (2004) has discussed extensively, with respect to state restructuring in Europe and the associated politics of re-territorialisation.

Corresponding changes were being observed in urban studies and in research on planning theory and practice, aiming at the interaction of different partners at different spatial scales, particularly the interplay of the private and the public. Why did governance become such a prominent stake in this respect? As (Kearns and Paddison 2000: 845) put it:

> "…something has changed and city governments are no longer able, or not able as they thought they were previously, to direct events…" (Kearns and Paddison 2000: 845).

These changes in the urban context are being addressed in the literature as follows. First, economic globalisation (emerging flexibilized production models with horizontal instead of vertical organizing patterns) set city governments under the pressure of the freely flowing capital that seeks the best conditions for corporate investments, thus substantially lowering the degree of control that was exerted by urban policy before. Second, as governmental structures scale down, cities have opened themselves up to private capital investments as sources of deregulated project funding, leading to a rise in urban marketing, economic competition between cities, and commodification of urban life such as culture. Third, urban and regional governments have been taking over certain administrative and political power that was formerly being executed by national governments and institutions.

As a consequence, public services became privatised, so-called public-private-partnerships were launched in order to develop, finance, and politically realise large urban projects jointly by state, municipal and corporate actors, rather than solely focusing on the legal and administrative power of the state. A certain emphasis is also being put on the role of institutions, not only including organisations but also rules and norms that are determining the behaviour of actors (see Healey 1997). Regarding the essence of urban and regional governance, there is a certain agreement on the contention that governance is enforced as a multilevel activity with some emphasis on procedures rather than pure outcome, that the boundaries between the public and the private sphere are increasingly perceived as permeable, and that the informal management of processes is becoming quite significant, respectively.

To some extent, the challenge of sustainable development, with its multidimensional approach and a transdisciplinary perspective, seems predestined for being addressed with the help of governance as an analytical tool – although there is some suspicion in the literature that, by doing so, two slippery, rather imprecise terms would be married, producing fore-

seeable results. However, as Jordan (2008: 28) put it, "the terms 'sustainable development' and 'governance' are both potentially powerful bridging concepts around which interdisciplinary debates can take place". Therefore, it is recommended: i) to conduct more theoretically inspired empirical studies on this subject; and ii) to pursue sustainable development by using new rather than old models of governance (Jordan 2008: 29), which, instead of simply describing certain practices of government, allow for to explore the dynamic relationships between governance intervention and outcomes 'on the ground' (ibid.).

Essentially, the role of governance as we see it in sustainability contexts is two-fold: first, it deals with the organization of decision-making processes at various levels and different spatial scales that have to be analyzed, in order to ensure that the requirements for achieving sustainability are being met. Second, governance is also conceived of as the *relais* that mediates between the different – and often contradictory – elements of spatial development and their immanent, constituting logics, see, for example, the fundamental differences between place-based and flow-related issues as mentioned above.

LUXEMBOURG AND THE RATIONALE BEHIND THE STUDY

The Luxembourg Setting

At the "Heart of Europe" lies an often overlooked nation: Luxembourg, a country with a modest territorial size of just over 2,500 km², and a population of just over half a million (Statec Luxembourg 2010: 9).

As founding member of several European and international institutions (such as the European Union, Schengen, NATO, and United Nations) (Chilla 2009b: 14) , host to several institutions of the European Union (such as the Parliament Secretariat, Court of Justice, the European Investment Bank) (Chilla 2009a: 16), and ranked 16th among global financial centres and 5th European-wide (City of London and Z/Yen Group Limited 2010: 28), it is by no means insignificant. Luxembourg's size is in many ways enigmatic. Yet at the same time, it offers scholars of urban studies a unique laboratory in which to study global processes operating within a small frame.

Luxembourg's primary industry is the financial industry and corresponding service sector (legal services, gastronomy, information and communications, commerce, and software development), which together comprise 40 percent of the Grand Duchy's Gross National Product (Schulz 2009: 116; Schulz and Walther 2009: 130). Estimates from 2005, reveal that 900 million Euros were earned from the sales of gasoline (Beyer 2009: 138) an equivalent to 11 percent of the State's tax income, while the entire petrol station trade (the sales of gasoline, cigarettes, coffee, alcohol and other products) accumulates to roughly 25 percent (Schulz 2009: 116).

Another of Luxembourg's specificities are its unusual demographic dynamics. Of its half a million residents, just over 200,000 are landed immigrants (Statec Luxembourg 2010: 9). Moreover, on each working day, the City of Luxembourg's population almost doubles in size as commuters from Lorraine, Wallonia, Saarland, and Rhineland-Palatinate enter it to work (Becker and Hesse 2010: 2) – and the city's nodal position, in an ever growing

Grande Région at the crossroads that lead to Cologne, Paris, and Brussels, is continually gaining in importance.

The aforementioned development dynamic of Luxembourg's service economy, labour market, and domestic population requires appropriate and integrated spatial development approaches and assertive planning tools to tackle sustainability goals. The newly established legal instruments such as the *Programme Directeur de l'Aménagement du Territoire* (Ministère de l'Intérieur 2003) or less formal and legally non-binding guideline documents such as the *Integratives Verkehrs- und Landesentwicklungskonzept* (Innenministerium et al. 2004) explicitly follow cross-sector approaches and have lead to partly tense debates about the Grand Duchy's development goals and their consideration in everyday planning policies at both the national and the local levels. The two fields of particular research interest are the housing and transport sectors because in this discourse competing interests and sector policies are most evident. Both the housing provision and transport are closely intertwined with the housing market and land use planning specifically, and social spatial transformation in general.

The case of Luxembourg is well suited for an analysis in the context of governance because of its multi-faceted challenges in spatial development and its current and future forms of regulation. This will be done in a decidedly multi-level governance perspective since spatial development policies and their sustainability related implications are not only characterised by a (horizontal) multi-actor setting, but also strongly influenced by the interplay between various levels or scales. Hitherto many empirical studies dealing with multi-level governance in terms of

spatial development were either centred on the interface between the national and the international (EU) level (Jessop 2008), or on rather sector case studies (e.g. environmental conflicts, resource management). However, changing terms and concepts from spatial planning to spatial development following integrative approaches reveal a new notion of governance in territorial analysis (Pütz 2005: 2), including both the vertical and horizontal dimensions of governance patterns as well as a cross-sector perspective. Here the concept of "task specific governance" (or Type 2 governance according to Hooghe and Marks (2003: 236) is an appropriate starting point to explore the cross-cutting character of policies such as the realm of housing and urban development. It conceptualises the overlapping of different jurisdictions (in our case study: spatial development and housing) as well as intersecting memberships of actors formally or informally enrolled.

However, the particular Luxembourg governance setting is not only challenged by the difficulties of applying a set of indicators in order to operationalise sustainable development. Regarding a major gap in current knowledge of both research and practice, our study will also reflect the immanent barriers and contradictions that characterise related multidimensional strategies. By taking stock of most recent literature on the governance for sustainable development, specific properties of the subject - particularly ambivalence, uncertainty and distributed power that "arise from limits to rational steering" (Newig et al. 2008: 187) - will be used as conceptual guidelines for our research. In so doing, we are confident not only to properly address the case of Luxembourg in relation to the broader context of sustainable development, but also to push

forward the theoretical debate on how to explore and further improve the possibilities of governance for sustainability in Luxembourg and internationally.

The Cases of Housing and Mobility

The housing sector represents a complex challenge for Luxembourg's sustainability policy, given the tight real estate market and the strong demand for (affordable) housing due to strong population growth (see Stadtland and Ministère des Classes Moyennes, du Tourisme et du Logement 2007). While general housing policy and the specific and growing need to provide affordable housing to vulnerable social groups both refer to the social pillar of sustainability, its materialisation through new housing estates and urban sprawl tendencies ignite further environmental concerns. Furthermore, the State's attempt to proactively influence the real estate prices by providing incentives for municipalities and private developers to invest into housing presumably distorts market driven price mechanisms and therefore affects the economic dimension of sustainability (see Ewringmann 2007).

Addressing issues of mobility and transport is becoming critical in Luxembourg and in the entire Greater Region because of the unusually high flow of daily commuters, which contributes to excessive energy consumption, air pollution, and related over usage of existing local infrastructures. Given the specific conditions of the Luxembourg area (high motorisation rates of private households, dispersed spatial setting, limited public transit accessibility outside core urban centres), mobility and transport represent

a major field of conflicts in terms of sustainability. Although it seems to be far from easy to solve the underlying problems (such as spatial mismatch), establishing closer links between land use and housing policies and the provision of more efficient forms mobility is essential.

In addition to clearly mirroring all three facets of sustainability in addressing certain sector policies, the chosen case studies also offer insights into policy making characterised by multi-level and multi-actor constellations in the sense of the governance concepts presented above. Besides the state government as the central authority in charge of spatial development that increasingly adapt to European policy agendas, the comparably autonomous local municipalities play a major role in terms of land use planning and urbanism. The pending revision of their *Plans d'Aménagement Général* currently offers great opportunities for the implementation of national policy goals. In this respect, three most recent legal acts are of particular interest: The *Pacte logement* (PL) (Ministère du Logement 2008), the *Plan directeur sectoriel logement* (PSL) (Ministère des Classes Moyennes, du Tourisme et du Logement and Ministère de l'Intérieur et de l'Aménagement du Territoire 2009), and the *Integratives Verkehrs- und Landesentwicklungskonzept für Luxemburg* (IVL) (Innenministerium et al. 2004).

In order to stabilise the housing prices in Luxembourg, the *Pacte logement* was introduced in 2008 (Ministère du Logement 2008). By signing the *Pacte logement* with the State, the municipalities committed themselves to contribute actively to the creation of new housing in order to increase their population with more than 15% over a period of 10 years. In the

framework of this *Pacte logement*, the municipalities are given certain new rights such as the pre-emption right, the lease-hold (*droit d'emphytéose*) or the right to introduce certain new fiscal and administrative measures (Ministère du Logement 2008).

The draft proposal of the new *Plan Directeur Sectoriel Logement* (PSL) (Ministère des Classes Moyennes, du Tourisme et du Logement and Ministère de l'Intérieur et de l'Aménagement du Territoire 2009) was presented in April 2009 and is currently undergoing a strategic environmental assessment as well as public consultation. Its final version expected for 2010 shall define the legal framework needed in order to successfully implement its aims and measures. It will thus become the superior and binding planning scheme providing the requirements and targets to be respected by the local authorities.

Based on the general framework of the *Integratives Verkehrs- und Landesentwicklungskonzept für Luxemburg* (IVL) (Innenministerium et al. 2004), its focused strategy coined *Mobil2020* (Ministère des Transports 2007) in combination with the *Programme Directeur de l'Aménagement du Territoire (PDAT)* (Ministère de l'Intérieur 2003), the draft proposal of the Plan Directeur Sectoriel Transports (PST) (Ministère des Transports et al. 2008) was presented in October 2008 for further public consultation. The PST reported on the state of transport and related infrastructures in Luxembourg. It also prioritized certain goals for future developments, e.g. regarding modal share between motorised and non-motorised transport with respect to infrastructural improvements. Despite the IVL's claim for integration, this particular strategy as well as the subsequent frameworks is highly

technical in design, defining operational rather than environmental or sustainability goals. The current situation seems to be dominated by the functional constraints of the car system and its impact on both transport and spatial development. However, the formulation of strong sustainability goals and of measures that are subsequently derived from the goals is still missing.

In this context, the PSL and PST create crucial linkages and contradictions between the sector policies on housing and transport and the more integrative spatial planning, all of them belonging to the responsibility of different ministries. Apart from the different public actors formally enrolled, both the national and the local scale of Luxembourg's housing policy is characterized by a variety of other actors from the economic (developers, real estate agents and their associations etc.) and the civil society sector (land owners, environmental NGOs, etc.) involved in the governance and decision making processes. Also, it can only be fully understood against the background of a specific settlement structure, including the two major agglomerations of the Cities of Luxembourg and of Esch/Alzette, the relatively dense, highly urbanised south of the country and a broad range of smaller municipalities, to a certain extent characterised by their dispersed, semi- or peri-urban landscape. This particular constellation combined with the young history of deliberate spatial development policies in Luxembourg offers a most suitable setting for an accompanying scientific monitoring and evaluation of the concrete implementation of sustainability goals.

The issues of housing and transport in Luxembourg constitute two scenarios in Luxembourg of high importance. They

represent areas of social spatial transformation pressure and at the same time the nexus of these two areas forms a lens through which governance structures, and corresponding policy results, can be examined.

Starting with analyzing the implementation of the PDAT (Ministère de l'Intérieur 2003) and also the subsequent negotiation of the sector plans, the research project will explore the present achievements and shortcomings of the sustainable development policies in Luxembourg, by focusing on the underlying governance patterns.

ARCHITECTURE OF PROJECT

Chronological Streams and Substantive Emphasis

The project has two primary frameworks in terms of the chronology of the sustainable development in Luxembourg. We are interested, first, in the historical course that put sustainability on the planning agenda of Luxembourg. Second, we are interested in possible future trajectories that might result from existing and emerging policies. Research questions that follow are:

a) How did Luxembourg get to where it is today?

b) Who put sustainability at the top of the policy agenda in Luxembourg, why, and how?

c) What was the political economic context of such a development and what were the implications?

d) To what extent and how has the concept of sustainability become part of

spatial development and planning policies in Luxembourg? How consistent is the approach in the realm of housing and mobility policies? What kind of guiding principles and which discourse patterns can be identified? What are the different conceptual "forms", "modes" or "models" of governance this particular practice can be referred to?

e) What has been done and where are the results leading?

f) How do the current administrative and legal structures respond to the requirements of the sustainability objective laid down in the *Programme Directeur d'Aménagement du Territoire*? What kind of barriers and obstacles can be observed in the field of housing, mobility, and spatial development, regarding the implementation of the related sector plans?

g) What is the role of non public actors in this area and how do they interfere with the formal bodies in charge of housing, mobility, and spatial development?

h) Against this background, what kind of strategies would permit to respond both to the needs of the domestic population in terms of housing and mobility, as well as to the requirements of a sustainable spatial development? How could these strategies be conceived and what impact would they have on the existing political practices and other institutions?

i) How can the concept of governance for sustainable development be improved and validated in terms of reflecting its ambivalences, uncertainties and unequal distribution of

power, in order to allow for its smooth implementation?

A central issue emerging out of the international literature on sustainability revolves around the problem of power. While some officials might be reluctant to confront such matters, to neglect them is to ensure socially unsustainable practices. A discourse analysis will reveal which themes are prioritized, why, by and for whom. Research questions that may be addressed are:

a) What/where/who are the resistance factors? (Why does sustainability take so long to implement?)

b) Who is participating in discussions?

c) Why is there a sustainable development discourse in Luxembourg, who made these decisions and why?

Method

Because sustainability is a contested concept just as it is more prevalent than ever in the literature, a current research on sustainable development demands innovative, critical, possibly reflective and iterative research methods. Qualitative methods have been chosen for SUSTAINLUX. There are a variety of specific survey and interview techniques to be evaluated, and possibly implemented. The first steps include a discourse analysis to identify the central themes and various positions taken in Luxembourg. Subsequent steps will involve the gathering of empirical data from those active in the field. Besides an exploratory literature review and document screening as well as

the use of statistical data related to land-use and housing and transport, the methodological design of this study will be threefold, consisting of the use of: discourse analysis to identify the most relevant actors, policy strands, and conflict lines; a multi-level approach to understanding the underlying governance and decision making patterns and related power topographies; and scenario techniques for illustrating potential development trends and for synthesising policy recommendations.

Discourse

The existing programmes and political strategies regarding spatial development, housing and transport in the Grand Duchy will be analysed by focusing on their main objectives, policy practices, and related discourses. This will lead to a profound assessment of the conceptual framework, the implementation process, and the operationalisation of Luxembourg's sustainability policies. While not forgetting that the concept of sustainability is a social construction (see Hajer 1995; Castree and Braun 2001), discourse analysis techniques will be applied to identify the dominant framing patterns and potentially existing discourse coalitions in Luxembourg. This is a precondition for a better understanding of the internal dynamics of political strategies and their actual role in governance processes.

The discourse shall be gathered from interviews, meetings, and documentations. Major documents and their respective timelines that are of central relevance are:

a) 1987 *Brundtland Report* (United Nations 1987);

b) 1992, UN Summit in Rio de Janeiro (United Nations 1992);

c) 1999 *Loi du 21 mai 1999 concernant l'Aménagement du territoire*;

d) *Plan National pour un Développement Durable* (Ministère de L'Environnement 2000);

e) *Programme Directeur D'Aménagement du Territorire* (Ministère de l'Intérieur 2003);

f) Local Planning Law 2004-2005, and the 2010 revision;

g) Leipzig Charter on Sustainable Cities (Präsidentschaft der Europäischen Union 2007);

h) Sector Plans for Housing and Transport (Ministère des Classes Moyennes, du Tourisme et du Logement and Ministère de l'Intérieur et de l'Aménagement du Territoire 2009; Ministère des Transports et al. 2008);

i) publications of the Ecological Footprint working group (Conseil Supérieur pour un Développement Durable and Global Footprint Network 2010);

j) Luxembourger media coverage -- Tageblatt, Wort, Woxx, Letzebuerger Land, IUEOA, and Forum for Politik, Gesellschaft und Kultur;

k) marketing platforms of development companies;

l) position papers from civil society (e.g. MECO, Syvicol, Chamber of Commerce); and,

m) expert reports.

Multi-level approach

With regard to sustainability, governance structures are understood as multi-actor and multi-level constellations, going beyond formalised and vertically structured administrative decision-making by including non-governmental actors (e.g. business associations, firms, environmental NGOs etc.). The latter are supposed to play a major role in the so called new modes of governance. This broader understanding of governance including informal "rules of the game" and institutions (Hodgson 2006) permits an analysis of sustainability policies a longer term or process-based perspective, while at the same time integrating the various spatial levels and sector policies. Here, the particularities of Luxembourg's institutional and political system with its small dimensions and narrow relationships between the levels of government – the local political sphere and other societal actors on the one hand, and the strong influence of interregional and international/European policies on the other hand – might bear much potential towards finding new ways of implementing the goals of sustainability, and handling related conflicts.

A governance focused multi-level analysis will be applied, based on empirical evidence revealed in qualitative interviews, participatory observation, and document analysis. The major aim of this perspective is to reveal diverging discourse patterns, agendas, and political strategies at the various levels (European Union/cross-border, national, local) and in the various actor groups enrolled at each

level (government bodies, private firms, NGOs etc.). The results will be validated and differentiated through Delphi-style group discussions, within which key actors from the aforementioned set of institutions will be confronted with the outcome of the first empirical phase. The two advisory councils at the national level can play a crucial role as test beds for this phase, because, by their composition, they already reflect a wide variety of possible standpoints and conflicting interests (e.g. between economic and civil society actors).

Methodological considerations

Creswell's (2009) book on research design was an introductory and useful overview of inquiry methods used in social sciences. Relevant to the study of sustainable spatial development in Luxembourg were the passages on qualitative and mixed methods. Such studies pose open-ended questions (as opposed to closed-ended questions), compensate for the position of the researcher with respect to the researched, and focus on the context or setting of participants (Creswell 2009: 19).

For the SUSTAINLUX project, it is also important to obtain voices of participants that are as little influenced as possible by the researcher. To this end, Creswell (2009: 13) discussed grounded theory, which was defined as:

"… a strategy of inquiry in which the researcher derives a general, abstract theory of a process, action, or interaction grounded in the views of participants. This process involves using multiple stages of data collection and the refinement and interre-

lationship of categories of information," (Creswell 2009: 13).

A mixed method of Delphi (MacMilllan and Marshall 2006) and Q-Method (Robbins and Krueger 2000), for example, might extract a grounded theory approach – namely the "views of the participants" (ibid.).

Delphi-style

The Delphi Technique was originally used by the American military ('Project Delphi' and American Air Force RAND Corporation study) to gather consensus data concerning weapons requirements. During the early years of Delphi implementation, Delphi was solely a forecasting instrument (Donohoe and Needham 2009). In recent decades, however, the technique has been implemented both as a forecasting tool and as a tool to analyze more complex social problems or issues (ibid.).

According to Donohoe and Needham (2009), recent criticism of Delphi in the literature is partly attributed to its unclear and nebulous definition. Though case studies in tourism research, Donohoe and Needham (2009) reviewed and critically evaluated the advantages and disadvantages of a generic Delphi design, which they described as a qualitative method of research whose aim is to:

"…combine expert knowledge and opinion to arrive at an informed group consensus on a complex problem," (Donohoe and Needham 2009: 416).

Consensus was defined as, "opinion stability" (ibid.), and is:

"…achieved using iterative rounds, that is, sequential questionnaires interspersed with controlled feedback

and the interpretation of experts' opinion. It provides an enabling mechanism for organizing conflicting values and experiences, and it facilitates the incorporation of multiple opinions into consensus," (Donohoe and Needham 2009: 416).

Donohoe and Needham (2009: 417) argued – and this is where the Delphi technique might be an interesting tool for a study of governance and sustainable development in Luxembourg – that the Delphi technique is most often used to address:

"…complexity and uncertainty in an area where knowledge is imperfect, where there are no correct answers or hard facts, and consensus of expert opinion is considered an acceptable second choice…" (Donohoe and Needham 2009: 417).

The authors justified the focus of expert opinion in the face of uncertainty with the argument that a round of experts is better than just a single expert (ibid.)

Donohoe and Needham (2009) were convinced that the correct application of the Delphi method would crystallize a consensus among participants. At the same time, they argued that the fall-out rate per round of surveys could be quite high, and to compensate this, the researcher should begin with a large pool of participants. However, they did not explain how a consensus would actually be guaranteed through the Delphi process: a) with respect to the iteration rate, and that the end pool of experts will not necessarily reflect the views of the wider pool of experts; b) with respect to the problem of arriving at shared views at all. It does not follow, that simply adding rounds of ques-

tionnaires will achieve consensus. MacMillan and Marshall (2006) were helpful here.

Unlike Donohoe and Needham (2009) who described the Delphi process as a sort of funnel process, whereby the respondents remain the same throughout the process, MacMillan and Marshall (2006: 13-14) used different sets of interviewees each round. In their specific study, the first round of experts were used to extract definitions and typologies. This list was then presented to a second group of experts, who ranked and commented on them. The third round was a conference, to which all experts (from the previous rounds) were invited. During this last round, lively discussion was generated and consensus on certain aspects of the study was reached (MacMilllan and Marshall 2006: 13-14).

Q-method

A variation on the Delphi technique might constitute the Q-method, which is a powerful quantitative and hermeneutic technique for human geographers. It is essentially a questionnaire technique; however, it differs from standard surveying because the researcher can, "surrender the monopoly of control in their relationship with the researched and so contribute to more democratic research design and implementation" (Robbins and Krueger 2000: 636).

The research method seeks (ibid.) to reveal, empirically, a respondent's subjectivity by erasing the researcher's bias. The structure of the Q-method allows respondents to reveal their own ideas about a given subject, while at the same time, the researcher's ideas about that subject remain irrelevant (Robbins and Krueger 2000: 638). There are seven steps to a Q –

Method survey (Robbins and Krueger 2000: 640):

a) the creation of a domain of subjectivity, which the researcher derives from discourse;

b) the creation of a concourse of statements, which are extracted from "domains" created in the previous step;

c) collaboration with participants who sort the concourse of statements (Q-sorting) ;

d) collaboration with participants who rank the concourse of statements ;

e) the calculation of a Q-sort factor analysis and matrix;

f) the interpretation of results, possibly together with respondents;

g) the obtaining of definitive reactions to the material from the respondents;

The Q-method can therefore be classified as a grounded theory research technique that, like the flexible Delphi technique that MacMillan and Marshall (2006) described, involves rounds of collaboration and feedback from participants.

Identifying development trends

The interpretation and validation of the findings will enable us to estimate the impact and potential shortcomings of existing and future planning tools and their respective implementation process. Thus future trends can be illustrated by different scenarios, starting from different assumptions as to political strategies and actions to be taken, including a laisser-faire scenario assuming no change in the respective policies. Although not working with traditional spatial indicators, the long term social and economic impact of these trends will be revealed, based on an adapted operationalisation of the aforementioned concepts. Given the cross-border dimension of spatial development trends in Luxembourg (commuter flows, migration, and residential mobility), these steps shall take into account the interaction with the adjacent parts of the Grande Région.

The analysis of discourse and the gathering of qualitative data from research participants are expected to form the primary empirical base from which an analysis of sustainable development policy in Luxembourg can be assessed. From this data, too, the objectives and efficacy of the policies can be evaluated, scenario techniques can be developed, and finally, policy recommendations can be formulated. The ultimate objective of this study is to provide valuable information concerning patterns of policy-making, governance, and social spatial transformation to planners, relevant practitioners, and other interested parties, as well as contributing to the wider discussion on sustainable development. These steps, however, will follow in later work packages.

Outlook

After two decades where strong growth and significant spatial dynamics could be observed in Luxembourg and the Greater Region, numerous activities have been initiated in recent years: i) in order to establish an effective system of spatial planning and governance in the Grand Duchy; and ii) to accomplish a more sustainable development of the region. Whereas the basic goals and ambitions in seeking sustainability seem undisputed, it is far from

easy to define a best (and politically accepted) way of implementation. The SUSTAINLUX project is conceived as a timely addition to ongoing activities, with its focus on related socio-economic, political, and discursive processes. Such research has to be open, but also critical. If existing activities, policies, or institutions fall subject to critical scrutiny, it is not an indication that the ambitions and respectabilities of those engaged in creating a more sustainable Luxembourg are questioned. Rather, SUSTAINLUX offers exchange and open communication for everybody interested or engaged in these issues. The working papers, project communications, and events such as workshops are to be understood as parts of our commitment to broaden the basis for sustainable development in Luxembourg and beyond, both in terms of scientific inquiry and of a reflective political practice.

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