Regional learning between variation and convergence: the concept of 'mixed land-use' in regional spatial planning in The Netherlands

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Abstract

Recent literature on regional learning has started to pay more attention to the external aspects of regional learning, that is, to the inter- (or supra-)regional dimension of learning. Drawing on this work, in combination with new insights into theories of knowledge development, this paper will explore the learning dynamics in an interregional perspective. The main contribution of this paper is the development of a scalar model of learning dynamics, featuring the spatialised institutional-organisational settings in which innovative concepts evolve. The model is embedded within an evolutionary approach to concept development, in which regional 'laboratories' are presented primarily as sites of variation and initial selection, and interregional policy relay centres and networks as sites of selection and convergence. This convergence is considered as a temporary phenomenon of stabilisation. Although the policy concepts used may be widely recognised, their local application and translation may lead to new insights which, through practices of mainstreaming, inspire mutations of the general concept, thereby contributing to innovation. The second part of the paper will discuss a particular case of a learning-oriented policy infrastructure in The Netherlands, which revolves around the concept of 'mixed land use'. In both urban and rural regions, the concept of 'mixed land use' has triggered numerous initiatives intended to address common problems of land scarcity and poor spatial integration in The Netherlands. Besides, at the national level, specific programmes and expert centres have been developed to facilitate learning processes and promote policy innovation. Drawing on recent evidence from both regions as 'laboratories' of learning and the national policy learning infrastructure, conclusions will be drawn about the specific dynamics of, as well as obstacles to, learning.

Introduction

The regional scale has come to play an important role in the discussion on learning in capitalist societies. Advocates of concepts such as 'Learning Regions' have even suggested that the region presents a highly appropriate level for organising learning processes (Florida, 1995; Morgan, 1997; Storper, 1997). Other authors have questioned this strong notion of 'learning regions'. Oinas and Malecki (1999) argue that regions accommodate essential processes of interactive learning, but that the appropriate label for that should be 'regional learning' rather than 'learning region'. The term 'regional learning' indicates that while important processes of learning take place at the regional level, these processes do not hint at the region as a learning entity; it also allows for the manifestation of learning processes at other spatial levels. Regions may thus be presented as just one context of learning, embedded in wider networks of exchange and learning at national and international spatial levels.

Following this line of reasoning, the present paper strongly rejects the image of regions as a 'natural' site for learning. Roughly stated, the idea of a natural learning site emerges from the popular notion that crucial phenomena like 'tacit knowledge' and 'interactive learning', through dependence on factors such as 'social-cultural embeddedness' and 'proximity', have become strongly localised (Lagendijk, 2001). The idea put forward here is that regions have not *become* learning sites through universal forces of localisation, but that they have been *constructed* as learning sites, supported by practices and discourses of localisation. The reason for this construction is essentially political, that is, born by the interests powerful *actors* have had in promoting the learning capabilities at a regional scale. So to understand the background of regional learning, important questions, besides the usual theme of learning *what*, are learning *for whom* and *why* (Hudson, 1999). A related question is *where* the learning incentives come from. Indeed, in many cases it is not just regional actors driving regional learning agendas. Often higher-level actors, such as national or international authorities *use* regions as a kind of 'laboratories' to experiment with new learning configurations, for purposes pertaining at the national or international level. Regional learning, in this perspective, presents a good opportunity to achieve specific goals; not a general, pre-given necessity.

An illustration of the constructed nature of regional learning is provided by the discourse on regional of competitiveness. Much of the work on regional learning focuses narrowly on competitiveness and innovation. Less interest is paid to those aspects of social innovation and institutional dynamics that do not (fully) target innovation trajectories (Moulaert & Sekia, 1999). Regional development is subdued largely to an 'economic finalité', cast by inescapable forces of globalisation and ever-increasing technological and industrial dynamics. On closer observation, the association of regional learning with innovation can be traced back to much less grand stories of

change. Over the last decades, the position and role of regions has changed in many parts of the world because of a shift in regional policy from an orientation towards top-down redistribution to bottom-up growth-orientation. Change has also been induced by political processes of decentralisation and regionalisation (Keating, 1998). This is the context in which much of the stories of, and interest in, regional competitiveness have emerged. For regional actors, stories of competitiveness based on regional learning matched their development ambitions, both economic and political. But also for actors at other spatial levels, national and international, images of bottom-up regional growth chimed with trends towards deregulation, decentralisation and the necessity to restrict policy intervention in national economies. Hence, regions have become a focal point serving multiple interests of various actors.

Regions, in this perspective, are social constructs that may facilitate particular processes scaled at regional and interregional levels. A simple functional logic is thus rejected. The study of regional learning should examine whose interest is at stake, addressing the role of actors at various spatial levels, in what may be called a scalar perspective. This raises questions such as: In which organisational context does the emphasis on regional learning emerge? Which (policy) actors and agendas promote regional learning? What are the - explicit or implicit - objectives of regional learning, and how does this bear on regional learning as a means to achieve these objectives? And, finally, within this broader context of regional learning, which ideas and concepts have gained prominence? This also means that we should look at process of regional learning that are not (solely) economically based. Regional learning is interpreted, first of all, as a social-political project in which the definition of, and association with, specific economic goals, should be included.

This paper elaborates a constructivist, scalar perspective on regional learning by focusing on the development of innovative policy concepts of regional development. Regions are considered as appropriate arenas for developing innovative policy concepts that help to address problems bearing on the regional (e.g. employment) as well as higher spatial levels (e.g. spatial cohesion). A paramount theme is thus the *scalar* dimension of policy learning, with strong emphasis on the interaction between the regional and interregional dimension of learning (Hassink & Lagendijk, 2001). The practical case involves the development of new forms of land use to accommodate nation-wide spatial pressures and enhance regional spatial quality within core regions of The Netherlands. Regions are employed, in this context, as a kind of laboratories to nurture and test new land-use concepts, set within a national context of organising innovation. This particular approach to regional learning will be discussed in three sections. The next section will present a basic model of policy learning grounded on an organisational-institutional perspective, introducing the notion of 'discourse coalitions'. Section Three will elaborate on a scalar model of leaning dynamics. Section Four will then briefly discuss the case of mixed land use. Finally, section Five concludes with some more fundamental remarks about the nature of policy innovation.

Dual structuration of policy innovation: evolution of knowledge and organisational configurations

Many policy fields, especially those in which traditional solutions and approaches do not appear to be effective, show the ambition to be 'innovative' and 'learning oriented'. In the field of regional development, the EU programmes on innovation (RIS and RITTS), with their emphasis on joint strategy formulation, manifest the ambition to explore new perspectives in policy-making (Lagendijk & Rutten, 2001). Another example is the OECD interest in developing and disseminating partnership approaches in regional development (OECD Territorial Development Division, 1997). In the Dutch case, one can point at the wish to overcome economic stagnation and dramatic environmental problems in rural areas (notably with intensive livestock industry) through 'organising innovations' jointly by research centres, policy-makers and farmers (Rutten & Van Oosten, 1999). Besides clearly bearing on the regional level, all these approaches manifest the relevance of the themes introduced above: a *scalar* dimension - interaction between the local, regional and supra-regional level - and a explicit definition of the *ends* of learning, related to a notion of the (relative) significance of the region as an *instrumental* site of learning.

To understand the way policy innovation is supported, it is important to gain insight into the specific nature of learning and innovation in the context of policy processes. While it may be obvious that policy may benefit from learning and innovation, the relationship between policy-making on the one hand and the articulation of knowledge on the other is not easy to unravel. A starting point for the discussion is provided by recent studies on the articulation of knowledge that suggest that the *context* of learning plays an essential role. The context refers to the nature and interactions of actors involved. Practical knowledge tends to be of an interdisciplinary nature, partly codified and partly tacit, and of a transient nature, as emphasised in Gibbons' (1994) notion of 'Mode II' knowledge. The role of knowledge is not so much the generation of universal, simplifying solutions reducing the complexity of the reality around us, but to provide specific, temporary answers that help to manage complexity and uncertainty (Funtowicz & Ravetz, 1993). Knowledge development is thus tied to local sites and moments of policy learning. Regions, in this context, represent structured contexts for communication underpinning collective processes of knowledge articulation.

The fact that the articulation of knowledge is context-specific, in space and time, does not mean that there are no generalising tendencies. Knowledge development has not become an entirely dispersed, heterogeneous practice. On the contrary, the interesting point is that between local sites of knowledge development, there are intensive flows of knowledge (Hassink & Lagendijk, 2001). Absorbing ideas and experiences from outside forms an essential component of local policy

learning. Promoting the exchange of ideas and experiences between the regions is what broader programmes encouraging policy-innovation, such as the EU and OECD programmes mentioned above, are about. It is not universal ideas with universal applications that are exchanged, however. Each step in the exchange and absorption of ideas involves a process of context-specific learning. Also, the exchange of ideas supported by national states, the EU or OECD is context-specific, born by specific institutional actors and organised within specific policy programmes, networks and conferences. In each step, knowledge is reinterpreted and translated, aligned with the insights and interests of the receiving parties. Hence, within a spatial perspective, knowledge is radically heterogeneous, but not disconnected. It is through the connections that we can actually study the articulation of knowledge and policy innovation in a more 'generalised' way. What counts is the capacity of concepts to mobilise and connect actors across space and time, thus linking heterogeneous sites of policy-making. For concepts to become dominant, they need to appeal to various agents at the interregional level and to be rooted at the regional level (for instance through regional success stories). An important characteristic of concepts is therefore their 'interpretative viability' (Heusinkveld & Benders, 1999; Hajer, 1995b), that is, the room concepts leave for multiple interpretations and associations. So ideas and concepts are not so much important for their general definition, but more for their strategic significance. It is only at the local level that concepts become defined more sharply, in terms of local practice.

The emphasis on connections, and the notion that exchange is also context-specific, introduces another set of actors besides local policy actors, namely those that transfer ideas and experiences between local sites of policy-making. Besides organisations already mentioned, such as the EU and OECD, an important role is played by 'policy entrepreneurs', 'think-tanks' and leading academics. These organisations and actors are explicitly aimed at the development and dissemination of new policy perspectives and ideas (Thunert, 1998). According to Worpole (1998), such intermediary agents have played a key role in "the creation of a new kind of intellectual and political public sphere". While there are many variations in these intermediary actors, they can be seen as part of large, world-spanning networks that help to disseminate an equally large variety of new ideas and concepts in policy making (Lagendijk & Cornford, 2000).

The variation of intermediary actors can be illustrated as follows. One side of the spectrum contains 'think-tanks' such as the Institute of Economic Affairs, which was engaged in the shaping of the Thatcherite agenda of neo-liberal economic reform, and Demos, involved in developing and promoting critical approaches to social forecasting. Then there is a wide range of consultancy firms that have put their stamp on many areas of policy-making. Examples in the case of regional policy are Monitor ('clusters'), Technopolis ('regional innovation strategies') and Ecotec ('ecological modernisation'). In the view of Saint-Martin (1998), the rise of think-tanks and consultancies is driven primarily by the shift towards more managerial attitudes among policy-makers, promoted for

instance by the concept of 'New Public Management'. In becoming deeply entangled in local policy-making practices, however, they also play an important role in disseminating new policy concepts. Another group of actors consists of the 'traditional' sphere of knowledge articulation containing university departments and research centres, building on their capability to translate more fundamental strands of research into policy advice and consultancy. Examples of such centres in regional studies are the *Centre for Advanced Studies in the Social Sciences* at the University of Cardiff, UK, the *Institut für Arbeit und Technik* in Gelsenkirchen, Germany, and the *Centre for Urban and Regional Development Studies* at the University of Newcastle, UK (Worpole, 1998). In effect, most active centres in this range combine a fundamental and analytical research role with a more political role as 'think tank'. Together, these knowledge actors and their interactions may be described by the term 'epistemic communities' as defined by Haas (1992, p.3). In the words of Haas, epistemic communities are "networks of professionals with recognised expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue-area". The influence of such communities stems from the strategic way they locate members in policy and political arenas (Thunert, 1998).

On the other side of the spectrum, a whole array of non-academic organisations has emerged that have also gained substantial voice in relaying new policy ideas and approaches. This includes lobby and campaigning groups, community organisations, and policy networks that have specific interests in regional development, for instance concerning environmental issues, traffic, economic development or protection of green spaces. The perspective of learning as a social process, which requires the input of, and confrontation between, different voices, has underscored the involvement of such non-academic organisations. Besides providing alternative ideas, the involvement of non-academic organisations is also a source of legitimacy and political support.

The variation in relay actors comes with a strong variation in concepts. On the one hand, concepts include encoded ideas and practices bearing on the *substance* of policy-making, such as 'clusters', 'industrial district', and 'innovation networks' regarding regional economic policy, 'ecological modernisation' and 'mixed land use' regarding sustainability themes, and 'Learning Regions' regarding education and innovation issues. Concepts can also bear on the *process* and analytical dimension of policy-making, such as 'interactive policy-making', 'partnerships', 'communicative planning', 'negotiated knowledge', 'SWOT-analysis', etc. These concepts only travel and work through the mediation of actors, however. What actors essentially do, at both the 'local' and 'global' level, is to link the stream of upcoming concepts with the political stream, driven by interests, problem-articulations and policy fascinations (cf. Kingdon, 1995).

Within a historical perspective, the interaction between actors and concepts results in processes of *structuration* and, more specifically, states of temporary *stabilisation*. Out of the many ideas that

surface in regional development policy, only *certain* concepts - promoted by certain actors - manage to achieve more dominant positions. Again, context plays an important role in these stabilisations. Concepts become dominant as part of prevailing *discourses* related to certain policy issues. 'Clusters' and 'Learning Regions', for instance, emerged from the prevalent discourses on 'competitiveness' and the 'learning economy', assisted by a growing emphasis on the endogenous development potential of regions. Actors become dominant because they create alliances with spiders in the webs of policy-making, notably authorities, business associations, and prominent civic organisations. A useful concept to describe the double-faced process of stabilisation is Hajer's (1995b) idea of 'discourse-coalitions'. Hajer defines discourse-coalitions as based on "a specific ensemble of ideas, concepts and categorisation that are produced, reproduced and transformed in a specific set of practices and thoughts which meaning is given to physical and social realities" (quoted in Pestman & Broekhans, 1998, p. 4). What is emphasised here, in addition, is that these transformations and practices are associated with specific groups of actors, at local and 'global' levels. In evolutionary terms, discourse coalitions can be interpreted as relatively stable networks, that derive internal coherence from the shared set of concepts and practices, and derive external recognition from the ability to provide contents and meaning to a particular issue.

The term 'discourse coalition' does not only provide a concept to describe the process of double structuration of knowledge and actors. More specifically, through embedding concepts in wider discourses, it also helps to grasp the link between the stream of policy concepts and the political stream of passing interests, problems and policy fascinations. That is because discourses should not only be understood as the *instruments* used by actors to mediate pre-given interests and back pre-defined positions. Discourses also bear a strong impact on the construction of interests and relative positions. Actors do not have fixed, pre-defined roles but are part of continuous discursive exchanges and practices that influence and redefines their positions. So, the link between the stream of concepts and the political stream is a two-way one. One the one hand, concepts will be mobilised because they play into the hands of policy actors with specific interests and ambitions. On the hand, by being exposed for instance to new discourses and new actors, policy actors may redefine what is at stake regarding specific policy issues. Policy innovation, seen from such a perspective, is thus a strongly political process, heavily dependent on prevailing discourse coalitions, that shape both the issues at stake and the policy concepts to tackle these issues (cf. Hisschemöller et al., 1998).

The learning cycle of regional policy concepts: towards a two-level scalar perspective.

Policy learning, as argued in the previous section, is supported by a double process of structuration, revolving around, on the one hand, the emergence of dominant ideas and concepts,

and, on the other, the shaping of organisational coalitions for learning processes. In addition, two basic levels of learning may be distinguished. First, the local site of policy learning, where new ideas and concepts are actually applied and experienced. In the context of this paper, the local site, or 'laboratory', is embodied by the region. Second, the 'global' level, consisting of organisations and networks relaying knowledge between regions, in other words, the interregional level. These two levels are engaged in a highly dynamic process, manifesting regular appearances of new concepts and actors, followed by temporary stabilisations (Hassink & Lagendijk, 2001). To capture the learning dynamics, the present section will develop a model of a learning cycle that will be the basis for the empirical studies in later sections.

The learning cycle proposed here frames the learning dynamics in an evolutionary model within a scalar perspective (Figure One). The evolutionary dimension introduces the notions of *variation*, *selection* and *convergence*. Drawing on the characterisation of knowledge articulation, and especially of the role of various actors, in the last section, these evolutionary concepts are considered to be linked to the scalar dimension in the following way. The region, as learning 'laboratory', embodies foremost the platform for *experience* in regional policy making. It is the level where, on the one hand, concepts are absorbed, translated and locally applied. It is also the level where experience may give rise to ideas named as new, local policy concepts. In evolutionary terms, regions thus produce *variation* in policy concepts, including an initial stage of selection. The interregional level, on the other hand, is supposed to be engaged primarily in the *exchange* of ideas and concepts. At this level, organisations and networks will be primarily involved in decontextualising local ideas, translating them into more general labels such as 'clusters' or 'interactive policy-making', and recontextualising them in the context of global flows of ideas, through conferences, consultancies, policy-makers, academics, books, etc. Further 'mainstreaming' of such concepts will require *selection* and promotion through dominant relay points. When a policy concept becomes widely accepted and applied to address a specific policy issue, the result is *convergence*: a temporary stabilisation in the process of learning dynamics.

A question remains to what extent regional development concept can be decontextualised from the 'local'. It appears that, even when absorbed in global flows of knowledge, concepts floating are never fully detached from the 'local'. Even prevailing concepts such as 'clusters' and 'industrial districts' continue to be associated with images of certain 'model' regions, such as Silicon Valley and Emilia Romagna, and the perception of practices within these regions. Model regions have an important symbolic function in supporting the strength and mobilising power of the concept at the interregional level. So, while abstraction and encoding necessarily takes place, concepts remain, at least symbolically, anchored to regional experience and practice. This anchoring is exemplified in the way high-tech cluster strategies are almost inevitably associated with 'Silicon Valley', resulting in notions of 'Silicon Glen' in Scotland, 'Silicon Isle' in Singapore, 'Silicon Plateau' in

Bangalore, and the 'Silicon Polder' supporting ICT-clusters in The Netherlands (Bouwman & Hulsink, 2000).

In addition to the learning cycle, the process of stabilisation of both actors and concept may be explained in terms of discourse coalitions. Since stabilisation occurs at both levels in the learning cycle, two levels of discourse coalitions may be distinguished. At the local level, policy learning is framed within local discourse coalitions. Such coalitions will determine what is at stake in the region, what the core problems and routes towards solutions are. These coalitions will consist of various stakeholders, varying from authorities and local planning experts to representatives of the business sector, civic organisations, environmental lobby groups, etc. Which stakeholders are included will depend, most fundamentally, on the political culture in the region, and, more specifically, on the position actors have acquired in the prevailing discourse. For instance, more open, communication-oriented political cultures will allow for wider coalitions (Healey, 1997), while closed, more authoritarian political cultures will be more exclusionary. More specifically, regions where environmental concerns run high may be more oriented to environmental organisations than regions that are primarily focused on economic restructuring. Obviously, an additional factor that influences local institutional settings for policy-making are the national, and where applicable, international guidelines and rules, and the provision of resources. In some cases, such as European programmes and funding, these may support more open and inclusive coalitions; other cases, like more traditional policy environments, might allow for only narrow formal coalitions, or even configurations dominated by one authority. Yet, since in order to acquire support for policy design and implementation, such narrow coalitions or central agents will have to create wider alliances, which makes the notion of discourse coalitions still relevant.

In terms of regional learning, the coalition stakeholders that populate the regional 'laboratory' can be roughly distinguished into two camps. First, the stakeholders engaged in local policy practices, who develop and articulate lay knowledge as practitioners (Wynne, 1996). Second, the 'experts' that capture local experiences in more abstract terms, with the capacity to associate these to generic concepts. Such experts, for instance professional planners or members of professional lobby organisations or business associations, may also act as gatekeepers relaying knowledge through external networks. They contribute to the translation of external concepts in the context of local development interests, agendas and ambitions, embedding concepts in local discourse coalitions. They may also contribute to adding experiential knowledge to concepts relayed externally through 'mainstreaming'.

At the interregional level, discourse coalitions consist of the actors and alliances that shape and relay policy concepts regarding specific policy issues, in line with their own predisposition of ideas, ambitions and resources. Whereas local discourse coalitions are concerned with the development

of specific locality, thus having to link a variety of issues - economic, social, environment, transport, etc. - at the interregional level discourse coalitions are, in general, more sectorally oriented. For many sectors, the discourse on a specific regional development issue will be dominated by particular 'epistemic communities', like the groupings of 'regional innovation' experts in the case of economic development, or the groupings of 'sustainability' experts bearing on environmental transport issues or. Moreover, whereas at the regional level one discourse coalition will generally dominate, although these may face strong resistance from, or even being replaced by, alternative coalitions, at the interregional level one may observe a larger variety of alternative coalitions. For instance, in the case of economic development, some groupings favour business development along sectoral lines ('clusters'), other favour horizontal measures of innovation support ('regional innovation systems'), or focus on education and training ('Learning Regions'). Indeed, in some respects, the interregional level can be conceived as a 'global ideas supermarket' (Thunert, 1998), in which regional actors can 'shop around' to see which prevailing discourses match their own position in terms of ideas and resources. On the other hand, one can also observe that interregional actors, especially national authorities and the EU, through their capacity to mobilise ideas and resources, have a strong impact on what happens in regional 'laboratories'. This brings back the earlier questions of *for whom*, *why*, and initiated from *where* is regional effectively developed.

Introducing the concept of 'mixed land use'

The concept of 'mixed land use' (also 'mixed-use' development) stems from debates on urban development and quality (Rowley, 1996). One of the problems that has emerged as a result of modern urban planning and land development, with its strong emphasis on functional separation, is that it tends to reduce the kind of combinations and interactions - physical, social as well as visual - that support urban qualities and vitality. In this context, 'mixed land use' reflects the ambition to return to a non-separatist approach to land use, as was common in pre-industrial and early industrial cities. In the American context, this ambition has been expressed in the visionary work of Jane Jacobs (1961). In terms of spatial development, 'mixed land use' is interesting because the concepts helps to bring together various themes, such as housing, business sites, clustering of complementary activities, and sustainable land use, under one umbrella.

The concept of 'mixed land use', however, is not without ambiguity. Urban planning in the US has confined 'mixed land use' primarily to particular site developments in the form of 'megastructures'. In various European countries, on the other hand, there has been a trend to promote 'mixed land use' at an urban-wide scale under the banner of the 'compact city', and also in the context of regional development. Elaborating on this divergence, Rowley (1996, p. 96) even sees the danger that "precisely because of the ambiguity of the term *mixed-use development*, it will rapidly

degenerate into just another marketing slogan for a product that is a very pale imitation of the genuine article". This 'degeneration' may result from the way the original, more conceptual term - associated with environmental qualities and urban revitalisation - is appropriated for instance by investors who use it to promote megastructure developments. Rowley also observes that more 'genuine' mixed-use ambitions - i.e. larger scale integrated urban design schemes - generally fail to appeal to users (potential business and residents) and investors. Planners and urban designers thus face numerous practical obstacles when they aspire to improve urban quality through mixed-use approaches.

Within the context of learning dynamics, however, Rowley's negative comments should be qualified. First, ambiguity is not a liability, but an essential characteristic of core concepts that move between 'theory' and 'practice' in innovative settings. Ambiguity contributes to a concept's 'interpretative viability' and its potential to be mobilised in different directions. Second, 'practical obstacles' are part and parcel of any process of innovation. As set out before, the adaptation of a new policy approach always involves alignment with the events, interests and agendas of local actors. The interesting point is how local perspectives change as a result of working with a new concept, and how new concepts and coalitions emerge. Third, one should be careful with presenting an image of the 'genuine article'. Concepts evolve and may thus become detached from original settings and ambitions. While this may be unfortunate for advocates associated with the original formulation of the concept, such evolution should not be instantly read as a sign of 'degeneration'. Indeed, it is the adoption of the 'mixed land use' concept in The Netherlands that may illustrate this point.

'Mixed land use' in The Netherlands

Like many Western countries, post-war spatial planning in The Netherlands has been dominated by mono-functional approaches. This has resulted in core spatial functions, such as housing, enterprise, farming, or shopping, being allocated to rather large scale areas, often separated by 'buffers' of open space. However, recent trends and studies have revealed the limitations of mono-functional land use (Nijhoff & Stuip, 1998). Not only does the mono-functional approach present a rather space-consuming form of land use; it also turns to be lacking in terms of spatial quality. The benefits of mixed land-use, accordingly, are counted along the lines of both quantity - more efficient use of sparse resources such as land - and quality - increased land valuation through an adequate mixing of spatial functions. In the Dutch context, where land is seen as scarce and the need is felt to improve spatial quality, 'mixed land use' has become a highly popular concept in discourses on spatial planning. The concept has become associated, in particular, with innovation and learning, which makes for an interesting case for the discussion here. The Dutch case shows, moreover, that the concept of 'mixed land use' has gone beyond its original association with urban

development and the 'compact city', however important these themes still are. In particular, the term has become aligned with two regional agendas, namely that of transport infrastructure and rural development. In the case of transport, mixing was interpreted as creating vertically segmented structure, e.g. through tunnels, to combine road or rail with residential or enterprise functions. In the case of rural development, the focal point became spatial integration of agricultural, residential and nature and water management functions.

The idea of tuning spatial development more towards 'mixed land use' was associated with a strong emphasis on *learning*. This was justified by recognising that the design and implementation of the concept required new or adapted knowledge of various kinds. To start with, planning procedures and rules, traditionally geared to mono-functional land use, have to be adopted to facilitate mixed land use. This also calls for approaches able to involve a large variety of stakeholders. New methods are required that measure the quantity savings gained by mixed land-use. Similarly, there is need for methods to account for the elusive concept of 'spatial quality'. A pressing issue in the context of regional development is to what extent mixed land-use may contribute to economic synergies through the support of agglomeration and clustering economies. Another challenge, both from a regulatory and regional development perspective, is how to accommodate environmental issues. Whereas mono-functional land-use at least allows for some straightforward rules for environmental protection, for instance through the use of buffering, this becomes much more intricate in the case of 'mixed land use'. Finally, professionals have called for more sophisticated visualisation techniques as part of the design and communication of 'mixed land use' projects.

As part of the initial development of the 'mixed land use' concept, Lagendijk and Wisserhof (1999a) undertook a more systematic analysis of the kind of inputs, and especially knowledge 'demands', considered to be important for the development of 'mixed land use' (Figure Two). This inventory placed one knowledge domain at the centre of knowledge development, namely 'planning, process and finance', in close association with the core activity of concept development. Other disciplines were considered as roughly either providing knowledge of a more fundamental nature (top layer) or of a more applied and supporting nature (bottom layer). The main challenge emerging from this picture is the co-ordination and capturing of knowledge articulation and flows. In addition, the analysis recommended that learning should be organised in the context of *practical* cases of 'mixed land-use' application, i.e. in local 'laboratories'.

In a historical context, the emphasis on learning stemmed from the way a variety of epistemic communities sought to promote and develop the 'mixed land use' concept. Interestingly, the first community to promote the concept was one that does not feature strongly in Figure Two, namely (physical) engineering. As part of the transport infrastructure debate, engineers, and the

associated construction ('concrete') sector initially employed 'mixed land use', to promote the building of underground physical structures, such as tunnels and parking. This was driven partly by technological advances, facilitating the building of such constructions in marshy terrain. Another factor was the fact that major public investment programmes, notably in coastal and river protection, were coming to an end, inciting engineering groups and companies to look for alternatives. In the last five years, however, 'mixed land use' has become associated with other agendas, notably rural and nature development, and regional economic development. The concept thus moved away from its physical engineering basis towards an orientation on regional development. Nevertheless, in practice the engineering domain - and especially the part backed by the 'concrete lobby' - continues to play an important role in project selection and design.

Besides the link to epistemic communities, the 'mixed land use' concept has also been part of attempts to forge new networks formed between policy-making, practice and research. This ambition primarily stems from the shift towards more managerial attitudes in policy-making, with emphasis on public-private partnerships, project-oriented policy-making, competitive bidding and engaging with 'stakeholders'. How such network strategies and the promotion of 'mixed land use' have worked out in practice, will now be shown for two regional cases in The Netherlands.

'Mixed land use' in practice: the case of the Achterhoek and Zeeland,

The Achterhoek and Zeeland are two predominantly rural areas that both have experimented with 'mixed land use' as part of regional development ambitions. In both regions, the concept of 'mixed land use' (also called 'multifunctional land use') was absorbed from elsewhere through intermediary organisations. In the case of the Achterhoek, a region in the East of the Netherlands bordering with Germany, the participation in the national programme on Sustainable Technological Development (DTO) provided the main source. The interest for the concept was triggered because it matched the ambition to create new forms of sustainable agriculture that could accommodate other spatial functions and activities, notably tourism, integrated water management, landscape protection and environmental action. The local counterpart of DTO was an established organisation originally in charge of preserving local countryside, the 'Valuable Culture Landscapes' (WCL) in Winterswijk. The mixed-use projects have been primarily geared to site developments (farmland, stable facilities, recreational areas), with increasing recognition of issues concerning regional identity and ambitions (Lagendijk & Wisserhof, 1999b; Neven & De Boer, 1999).

Zeeland, located in the far southwestern corner of the country, is a primarily rural area sandwiched between two expanding port cities, i.e. Rotterdam and Antwerp. In this case, the interest in mixed-land use emerged from a local consortium of national knowledge centres, led by a division of the Ministry of Transport and Water Management (Rijkswaterstaat) concerned with Zeeland's future.

Mixed-land use was seen as a way to accommodate new functions imposed upon the region from neighbouring regions, particularly concerning transport, industrial development and residential functions, while preserving the traditional qualities of the area. To explore this opportunity, two so-called 'design workshops' were organised, in which a group of local experts and policy-makers set out to create a new vision for the province using a 'mixed-use' perspective (Projectteam MVR-ZWN, 1999).

The two cases differ in terms of questions 'for whom' and 'why' learning was initiated. The Achterhoek was primarily destined as a 'laboratory' for new mixed-use approaches. Although the region contained the relevant scale of action, the learning objectives had been defined at a higher spatial scale, in the context of the national DTO programme on sustainability. The regional projects were thus seen as *prototypes* supporting the dissemination of more general mixed-use concepts across the country. However, the involvement of the local organisation WCL Winterswijk changed the approach somewhat, tuning it more to the region's own needs and visions. The Zeeland programme, in contrast, manifests a reverse development. Originally concerned with creating a regional vision applying a mixed-use perspective (cf. Figure One, bottom part), the organisers increasingly aspired to articulate more 'general' knowledge, to be used elsewhere (moving to Figure One, top part). In practice, this meant that regional concepts derived from local experience were associated with generic concepts taken from national discourses, through a process called 'modularization'. Examples of these associations, as generated during the workshops, are shown in Table One. The left column lists regional, experiential concepts denoting particular development visions for Zeeland ('Delta corridor', 'Eco-port City', 'Green-blue Heart'). The right column lists the generic, transferable concepts. To achieve these associations, the programme included the organisation of a 'concept market'. In a true street market-like environment, local developers could fill their 'basket' with generic concepts that they thought would contribute to their local development concept, exemplifying the idea of a 'concept supermarket' mentioned before.

Regional, experiential development concept for Zeeland	Associated generic concepts (selection)
'Delta-corridor' (focus on transport and experience of spatial quality)	'string-of-pearls' (i.e. transport corridor with hubs as activity and decision centres) multi-modal tunnel (as part of the string) multi-modular industrial estate
'Eco-port city' (focus on sustainable economic development)	industrial ecology/ clustering (supply chain management) restoration of closed river arms ('Overschelde') spatial zoning on the basis of regional identities
'Green-blue Heart' (focus on quality of spatial environment)	organic farming ecological management of the coastal zone multifunctional industry and port areas living-on-water combining nature, recreation and water management

Table One. Associating local to generic concept, the case of Zeeland.
Source: Projectteam MVR-ZWN, 1999

Parallel to concept development, organisational configurations were evolving. A crucial factor was the involvement of regional practitioners, in the form of either local farmers and residents (Achterhoek), or local area specialists and policy-makers (Zeeland). Besides, researchers, as knowledge experts and gatekeepers, were granted an essential role in articulating research questions and in assisting the process of concept translation and generalisation. However, what did not fully materialise in both cases was the development of local discourse coalitions. This can be attributed largely to the fact that the programmes did not originate from the regional actors themselves. Despite the attempts to involve local actors, the programmes were generally considered as 'top-down', by some even as being imposed. For Zeeland, the question is to what extent local actors will be really prepared to adopt certain workshop ideas in future development actions. In the case of the Achterhoek, there seems to be more local interest, also due to the impact of the local promoter, WCL Winterswijk. Yet, here the question is to what extent the programme can reach beyond the stage of a small series of prototype developments, and can contribute significantly to local development. From a recent study of the attitudes of Achterhoek farmers towards the mixed-use projects, a general complaint could be heard that farmers were used by, instead of engaged in, the project: "Don't use the farmers only as guinea pigs, let them also reap the benefits" (Neven & De Boer, 1999, p. 9, author's translation). Neven and De Boer also detected a lack of communication between project leaders and local population. They recommended the establishment of a local 'Interaction Centre' for mixed land-use. Besides improving communication and planning, such a Centre could also act as a knowledge relay point between generic (including academic) and local (including lay) knowledge, in line with Figure One. Finally such a Centre could also bear prime responsibility for providing and securing a regional focus in the design and planning of mixed-use projects, providing, to paraphrase the authors, "regionally customised policy" (Neven & De Boer, 1999, p. 18).

Another issue is the organisation of concept relay, and associated process of knowledge articulation, at an interregional level. This has been facilitated over the last two years by the set-up of a national expertise centre on mixed land use (now called 'Habiforum'). The ambition of Habiforum, besides presenting a prime sponsor of mixed-land use project across the Netherlands, is to evolve as a 'think tank' network of innovative spatial planning in The Netherlands. As yet, the centre still needs to prove its capacity to fulfil this task. Although the centre has established alliances with all dominant actors in the discourse on mixed-land use and spatial development, it is still in need of a more coherent vision on the development and application of mixed-use concepts. Habiforum may thus be expected to play an essential role as a relay agent for new concepts between various (regional) sites of practice. However, without a more profound vision, it will be difficult for the organisation to evolve as a core agent in the discourse on mixed land use. It is

even possible that, without such a core actor emerging, no enduring discourse coalition around the 'mixed land use' concept will take shape. The question then also arises to what extent the concept of 'mixed land use' will preserve its dominance in the broader discourse of spatial planning and regional development.

Conclusion

Regional learning has been presented here within the context of a proposed learning cycle that essentially involves two spatial levels: the regional and interregional. In this cycle, the region is seen as embodying a learning 'laboratory', where experiential knowledge is articulated about how to tackle regional development problems. While this represents a highly localised, and idiosyncratic process, it is not an *isolated* process. Rather, regional learning heavily depends on the absorption and customisation of concepts from elsewhere, while local experience, after being encoded into transferable policy concepts, may serve to be used in other regions. The interregional relay of policy concepts, moreover, is neither an incidental nor dispersed phenomenon. On the contrary, it is a highly structured and contextualised process, resulting in the selection of a few concepts that manage to dominate a specific policy issue for a certain time, like 'clusters', 'Learning Regions', or 'mixed land-use'. The result is an evolutionary approach to regional learning, where the regions represent the prime site of concept *variation*, and the interregional level that of *selection* and *convergence*.

In addition to this evolutionary dimension, an institutional dimension is introduced to clarify why certain concepts are effectively absorbed and promoted at the two spatial levels. The concept of 'discourse coalition' provides a link between the articulation of ideas, policy practices and actors. At the regional level, discourse coalitions involve local stakeholders that articulate and promote specific solutions for what are perceived as the core problems of regional development to tackle. At the interregional level, discourse coalitions consist of relay agents such as (inter)national authorities, consultants and academics that, often closely associated to specific epistemic communities, will articulate, develop and promote particular policy concepts. This amounts to a constructivist approach of regional learning. The region is not a natural site of learning, but one that is promoted because it matches the ideas, interests and resources of particular actors, regional as well as non-regional. Central questions are *why*, for *whom*, and *from where* regional learning is promoted. The literature on regional learning has tended to take too many aspects for granted that should actually be open, empirical questions.

'Mixed land-use' in The Netherlands served as an example to illustrate the learning cycle model and the constructivist nature of regional learning. 'Mixed land-use' is an appealing concept that has spread from urban to regional development discourses because it provides a key to how to spatially integrate various development themes - economic, housing, recreation, sustainable land

use - creating value added and saving space. It should come as no surprise that in a crowded country as The Netherlands the conceptual development of 'mixed land-use' has received such an amount of attention and resources. The concept helps to bring together actors with quite different interests, such as engineers involved in infrastructure and environmental experts concerned with protecting green space. Especially at the interregional level, 'mixed land use' appear to have induced the formation of new discourse coalitions. Indeed, what these developments show is that one should be should cautious with considering the region as the main site for concept emergence, as suggested in the conceptual introduction. Other levels may also play a substantial role in engendering variation.

At the regional level, mixed land-use has become a focal point for regional interaction and learning, resulting in new local concepts of regional land-use that may help to solve land scarcity problems as well as specific local economic development issues. The question remains to what extent mixed land-use will make inroads upon regional discourse coalitions, in the way 'clusters' or the 'Learning Region' have done. The 'stock' of experiential knowledge regarding mixed land-use in the Netherlands is still limited. To become truly successful, the concept will need to overcome certain barriers that are not due to its basic message, but to the actors that are using and translating it.

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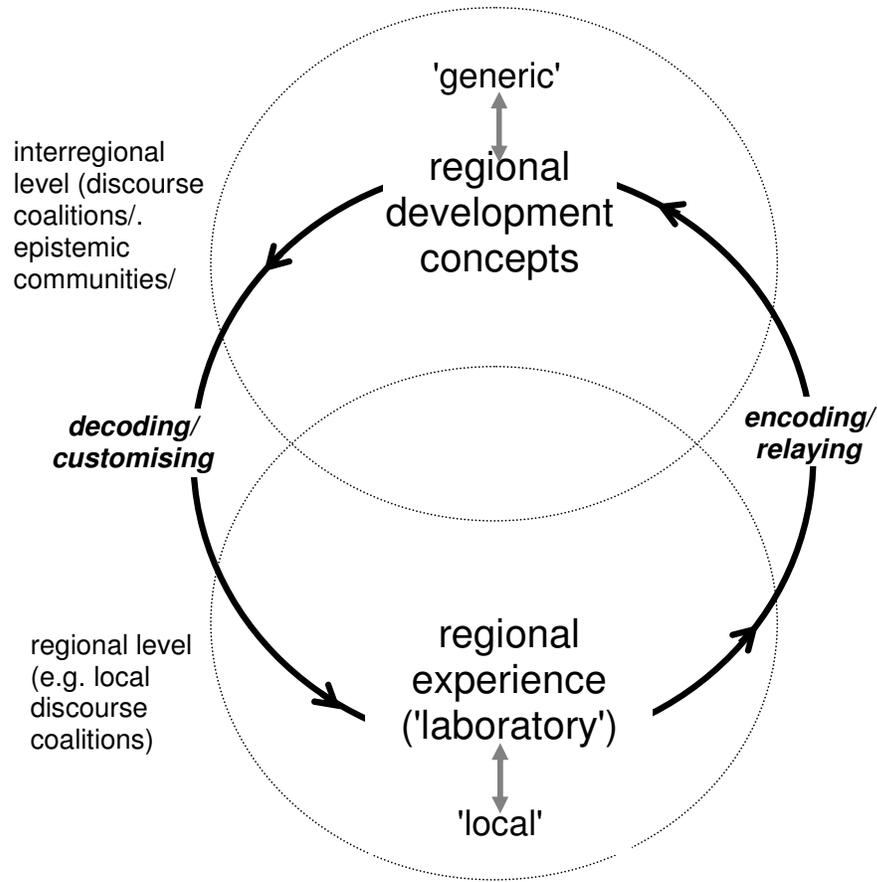
'generic'

regional
development
concepts

interregional
level (discourse
coalitions/.
epistemic
communities/

decoding/
customising

encoding/
relaying

regional level
(e.g. local
discourse
coalitions)

regional
experience
('laboratory')

'local'

Figure 1. Learning cycle model for regional development policy
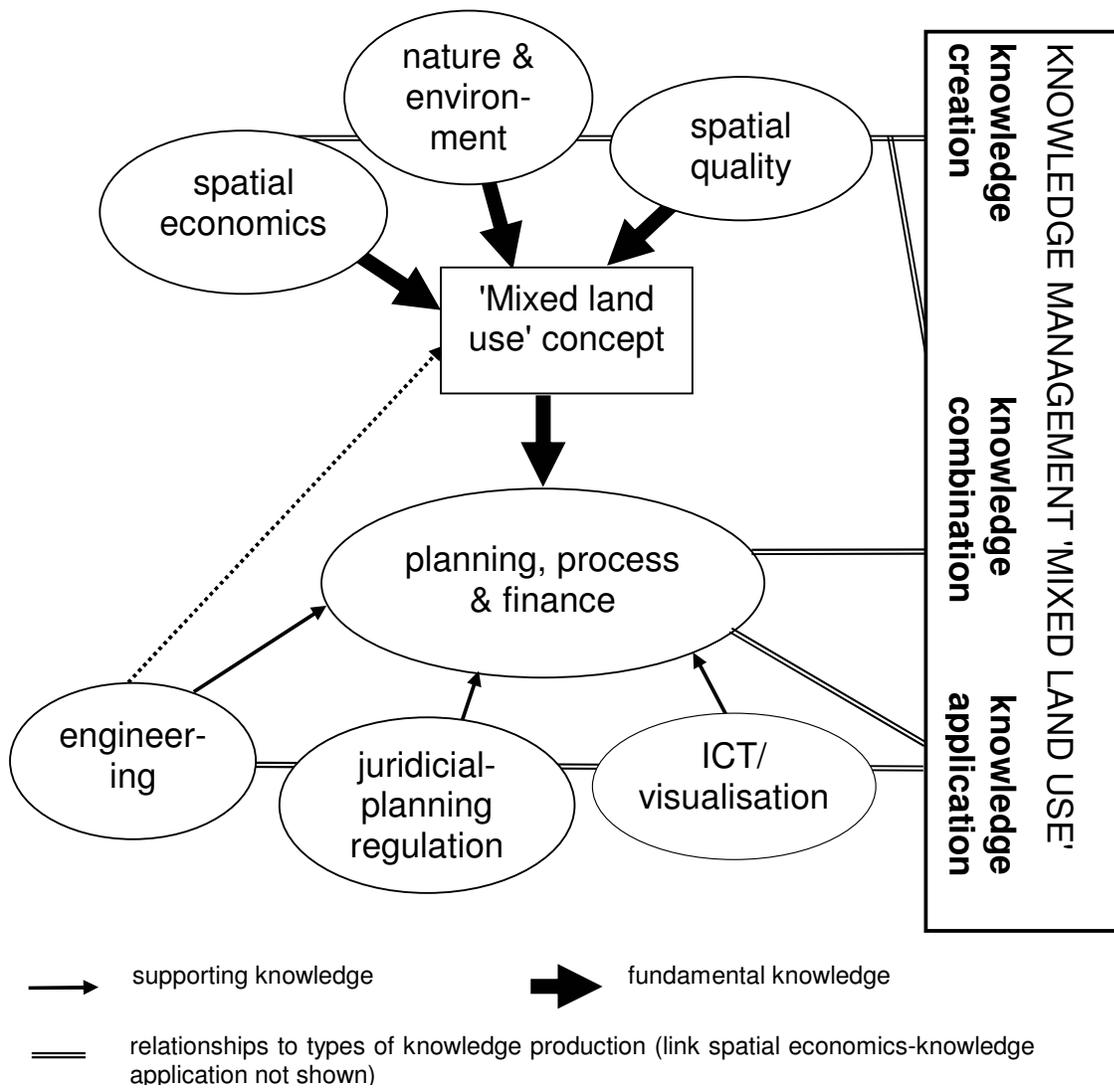Source: after Hassink and Lagendijk, 2001

Figure 2 Knowledge inputs for 'mixed land use' development, in the Dutch case.

Source: Lagendijk and Wisserhof, 1999a.