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Regional and Urban Policy Beyond 2000:
New Approaches with Learning as Device

Marina van Ceenhuizen
Peter Nijkamp

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REGIONAL AND URBAN POLICY BEYOND 2000:

NEW APPROACHES WITH LEARNING AS DEVICE

Marina van Geenhuizen* and Peter Nijkamp**

*Faculty of Technology, Policy and Management
Delft University of Technology, Delft NL
** Faculty of Economics and Econometrics
Free University, Amsterdam NL

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ABSTRACT: Much of the debate over the spatial setting of innovation has now resulted in the recognition of the region as a principle framework for knowledge creation and use. Little attention has been given to knowledge activities in the region from an integrated point of view, and to policy approaches that match with the multi-actor situation and the multi-faceted uncertainty in the field. This paper sets out a broad framework of essential activities that underlie knowledge-based economic growth, thereby linking the public and the private sector, and linking different disciplines. The paper proceeds with addressing the major sources of uncertainty in policy making for knowledge-based economic activity. Two policy methods are presented that cope with uncertainty, namely participatory policy making and scenario development. Participatory methods try to increase consensus or commitment in a situation of uncertainty caused by actor-complexity. Scenario development tries to deal with uncertainty about the future development of the fields at hand. The paper concludes with various recommendations for future research.

1. Introduction

The past decade has shown a significant speed in the emergence of a global economy. Various processes underlie this phenomenon. The disappearance of man-made borders, such as the lifting of the iron curtain and the integration within NAFTA and the European Union, has increased the openness of regions towards the global world. In addition, the cheapening of transport and the development of world-wide telecommunication alongside an increased functional and spatial division of labor have enabled firms to source inputs globally.

An increased openness, however, does not automatically imply a higher living standard. Regions may turn into transit zones and become exposed to various negative externalities. More importantly, openness of regional economies means facing the competition from regions around the world. With the weakening of national protective measures, such as in taxation and energy prices, and an easy move of capital, raw materials, and components, sources of competitiveness are increasingly limited to regional *endogenous* qualities. The human factor, particularly the quality of knowledge, seems to be one of the few remaining sources of regional endogenous competitiveness. This development calls for regional policies focusing on learning-based activity (cf. Maskell et al., 1998; Morgan, 1997).

At the same time, the emergence of new external influences and more complex technology and organization leads to an increase in uncertainty in regional policy. This uncertainty refers both to the future course of events and the future impact of policy measures. When one moves beyond simple physical projects and short-range issues, predicting the future in terms of the state of the regional economy and outcomes of policy measures is increasingly difficult. Accordingly, questions like what economic growth will be realized and what will be the size (structure) of the future population cannot be answered easily.

Transition processes in the sense of institutional changes in order to move to a free-market economy, on their turn increase uncertainty. Regional outcomes on the medium- to long-term are uncertain in terms of catching up with development levels in the European Union, leading to questions about integration and cohesion. The main reason for this type of uncertainty is that there is no experience in recent history with transition processes starting from

a centrally planned economy and related innovation systems (cf. Bell, 1997; Dunning, 1993; Dyker and Perrin, 1997).

In the mapping of uncertainty in regional policy a distinction can be made between the following categories:

Uncertainty in the dynamics of the *field* at hand (spatial or sectoral) and the external environment.

Uncertainty in the *knowledge* about the field and its environment.

Uncertainty following from the nature of regional *(urban) policy making* itself, such as in selection of goals and policy implementation.

Uncertainty *in the impact of policy* on the field, in terms of achievement of goals and unwanted side-effects.

Regional policies aimed at enhancing learning-based activity clearly suffer from the above indicated uncertainty. There are particularly shortages in the mapping of the field because learning and knowledge themselves and their economic impact are difficult to measure (OECD, 1996). Further, processes of knowledge creation, transfer and transmission are still not very well understood in advanced economies. There has only been a considerable progress - in regional cross-comparative research - in understanding what spatial conditions favour innovative behaviour of firms.

In policy making for the learning-based economy, one observes typically a *multi-actor* situation. This means the involvement of a variety of actors (stakeholders) with diverse power to negotiate, different goals, and different perceptions. Good examples are knowledge-based firms, universities, semi-public and private laboratories, organizations for the unemployed, and local governments. Some of the diversity between these stakeholders is reinforced by their multi-layer policy (management) framework. The local municipality usually sets particular conditions for learning-based activities, such as the availability of specific premises for firms and housing for specific income groups. At the same time, private and public actors at higher spatial scale levels influence the local level to a considerable degree (van Geenhuizen and Nijkamp, 1998).

For example, multinationals can decide to open or close down local laboratories, and national governments can decide to increase or cut down research budgets of universities.

This paper highlights relatively new ways in content and process of regional policy making with *learning* as device. With regard to the content it focuses on *an integrated* approach to processes that underlie knowledge-based economic activity. Regarding the policy process, the paper discusses new methods in order to cope with uncertainty, particularly in a multi-actor situation.

2. Learning-based Economic Activities: An Integrated Approach

It is now widely recognized that knowledge is the most valuable resource of the regional economy, with learning as the most important process (cf. **Camagni,** 1991; Knight, 1995; **Kuklinski,** 1996; Morgan, 1997). Learning processes and the resulting knowledge refer to technology, but also to managerial, marketing and policy know-how, arts and (traditional) crafts. From an integrated approach follows that learning processes need to be viewed in a multi-disciplinary   setting. This includes aspects of science dynamics, serendipity, communication, human resource management, micro-economic behaviour of firms, sociology of clubs and informal networks, and economics of public finance. The following activities can be distinguished, but it needs to be emphasized that some of them take place in combination (interaction) with other ones (van Geenhuizen and Nijkamp, 1998):

- *Management of (public) stocks of knowledge.* This includes the updating of archives, libraries, etc. and providing access to them, and more importantly, modernizing the skills of the resident population and **labour** force.
- *Identification of new learning and knowledge needs.* This includes the anticipation on new developments and the monitoring of regional demand and supply, as well as supply from elsewhere.

  Creation of new knowledge. This occurs well-structured and planned in universities, research institutes, and companies. However, new knowledge is also the result of

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unexpected events (meetings) and failure (sideways) in research experiments. *Tacit* knowledge contributes most importantly to new combinations and applications, but cannot be communicated in an easy way. It is often created in a highly personal setting, strongly connected with the informal social fabric of R&D and production. There are, however, differences in this respect between economic sectors (Storper, 1996).

Networking to advance knowledge creation andjlow. Networking is important in the transfer of knowledge from creator to user, and in the creation of synergy between different actors and disciplines. Furthermore, networking is necessary to improve the integration of knowledge actors in the local community, and to connect local actors with global actors.

Transfer and transformation of knowledge. Knowledge transfer takes place from knowledge institutes such as universities to various firms, but also between firms, such as based on supplier relationships (specification). There is a difference between basic knowledge and knowledge that can be applied, and between knowledge (vocabularies) of different disciplines, reason why knowledge is transformed in various ways.

Interactive use of knowledge. The economic use of knowledge is not only dependent upon the availability of the latter but also on the right conditions in the market and production organization (Amable and Boyer, 1995). Thus, the view of innovation as a linear process has given way to the view of innovation *as an interactive* process within firms, between firms (suppliers, contractors), and between firms and various institutes (OECD, 1996).

Transmission of knowledge. This includes formal education such as by universities, higher educational institutes, schools of art, and company schools. It also includes training and elaboration of regional (local) crafts using informal channels.

At a higher level, a key ability of regional actors is the *self-organizing power* to co-ordinate, preserve and renew the above indicated activities. It is particularly this ability in a *regional* setting that has received a great deal of attention in the literature since the late 1980s (Amin and Thrift, 1994; Camagni, 1991; Ratti et al., 1997; Storper 1992, 1995). The core argument is that tacit knowledge ▪ lying at the basis of much innovation ▪ is strongly

territorially-specific due to its person-embodiedness, social context, and therefore, need for proximity. Accordingly, the recognition of socio-cultural aspects (the social **embeddedness** of economic interaction) has given renewed impetus to the study of the region as a main territorial framework for learning and knowledge-based economic growth. While this trend for localization has first been viewed as 'opposing' to the trend for globalization, both trends are now conceived as interwoven to a certain extent (**Amin** and Thrift, 1994).

It is important to note that the setting of knowledge creation tends to increase in complexity. In advanced economies, there is a shift from hierarchical, disciplinary and division of labour-based knowledge production to a mode in which research problems are set across disciplinary boundaries with a strong focus on application (OECD, 1996). In terms of organization, there is a larger number of actors involved (aside from universities, research centers) with an increased emphasis on teams (consortia) working on a temporary basis. In this setting, networking is the most essential activity. With the growing complexity in knowledge itself, it is increasingly important to know the right person (know who) (OECD, 1996). Networking involves the formation of special social relationships and collaboration which enable to gain access to experts, and use their knowledge efficiently.

In the inherited situation in many transition economies, R&D was weakly developed within firms, whereas the above networking between firms and research institutes and mutually between firms was virtually absent (Bell, 1997; Dyker and **Perrin,** 1997). Essentially missing were user-feed back **from** the market and channels for the creation and transfer of tacit knowledge.

3.   Uncertainty in Policy for Learning-based Economic Growth

Uncertainty occurs in a wide range of aspects and fields of regional policy. In this section we draw **from** experiences in a broad range of policies, including those addressing learning-based economic growth.

As previously indicated, the field of knowledge-based economic growth is typically characterized by complexity of actors and processes.. First, many cause and effect relationships

are dominated by non-linear dynamics, including chaotic behaviour. Chaotic systems display a very irregular (unexpected) behaviour, being critically dependent on the system parameters and initial conditions. Accordingly, small changes in the initial conditions or parameters may lead to disproportional large dynamics, which may cause particular regions to follow a different development path than other regions (Nijkamp and Reggiani, 1993, 1998). This type of uncertainty is difficult to reduce.

Secondly, there is uncertainty stemming from imperfections of our knowledge (the modeled system). Despite various interesting case studies, our knowledge of regional economic growth and the role of learning processes on a generic level is still far from sufficient (Maskell et al., 1998). For example, there is small empirical evidence regarding when and under what conditions localized collaboration facilitates learning. This is not surprising because it is after all a relatively new avenue in research. Further, there are serious problems of reliable data on knowledge and learning processes. There is no standard production function of knowledge, no input-output recipe that tells the impact of a unit of knowledge on economic performance. Inputs into knowledge creation and use are also difficult to map because there are no knowledge accounts (OECD, 1996). There is also lack of research of particular topics. For example, it is not well understood under which conditions foreign direct investment contributes to local learning processes and effective technology transfer, and what role can be played by regional sourcing and subcontracting relationships (van Geenhuizen and Nijkamp, 1998).

A third source of uncertainty is connected with the multi-actor situation in policies for learning-based economic growth and a concomitant danger of small consensus about (competing) aims and limited means. A limited consensus and support may lead to a partial implementation of policy instruments with uncertain outcomes. However, in processes of learning-based economic activity, the key regional actors work together and learn interactively from each other *as* a *conditio sine qua non.* This calls for policy approaches that contribute to consensus building, or at least increase commitment among the major actors to arrive at solutions through cooperation.

A fourth source of uncertainty is the limited degree of rational and neutral behaviour in policy making itself, leading to defective procedures. It is now increasingly recognized that non-rational behaviour and subjectivity cannot be eliminated from the decision making process,

particularly when high complexity is involved (de Bruijn et al., 1996; Hofstee, 1996). Human decision making seems to be influenced by intuition and personal values of decision makers, and sometimes tends to manipulation in the supply of information. In addition, human beings (organizations) suffer from limitations such as in their reliance on old success stories and well-known solutions, even in an environment that is changing drastically. When we consider policy making systematically, i.e. by following the sequence of problem definition to implementation and monitoring, it appears to include specific sources of uncertainty and potential failure (Table 1) (Dror, 1988; Friend and Hickling, 1997; Funtowicz and Ravetz, 1993; van Geenhuizen et al., 1998; Hall, 1990; Nij kamp, 1996; Rietveld, 1993; Rowe, 1994; Wynne, 1992).

Table 1   Common sources of uncertainty in policy making in a multi-actor setting

Stage	Source
1. Problem Definition	Not clearly stated (ill-defined and -structured) and no agreement on it.
2. Problem Analysis	Poor knowledge of cause-effect chains. Poor knowledge of future states and driving forces (particularly future value systems of relevant actors). Poor knowledge of related decisions.
3. Search for alternative solutions	'Forgotten' options due to too strict selection or a-priori focus (bias).
4. Selection of solution	Shortage of good criteria in the assessment of impacts (ex-ante evaluation). Poor knowledge of the field (see under 2) in the assessment of impacts, including side-effects. Poor knowledge of the strength of policy instruments (their corrective power). Penetration of non-rational (subjective) arguments.
5. Implementation and monitoring	Partial or modified implementation of policy instruments. Shortage of ex-post evaluation of impacts, particularly of reasons why policies fail (or succeed).
* Feed back/forward	Shortage of such activity due to 'fixed' thinking and lack of flexibility.

Much potential uncertainty arises in the early stage of searching for alternative solutions. The conditions for the first selection of these solutions are often too strictly defined, leading to an early rejection of potentially relevant alternatives. For example, alternatives may be defined in terms of one single technology, whereas it is not asked what radically different ways there are to achieve the same objective. A rejection of potentially relevant alternatives happens when there is no systematic and provocative generation of alternatives but instead an a-priori focus on a few attractive alternatives (Hall, 1990; Rietveld, 1993).

Further, the shortage of *ex-post* evaluation (Table 1) is particularly serious because sound results of such an evaluation constitute a major input in ex-ante evaluation, which is necessary for the selection of solutions, and thus vital for a better policy making. This means that the annual measuring of changes, such as new firm survival and failure, is only half the job. There is a need to increase knowledge about reasons why particular policy instruments fail, i.e. a wrong problem diagnosis, insufficient corrective power of policy instruments, or unexpected behaviour, and why others are successful. These considerations touch upon a more fundamental issue in policy making. A systematic monitoring and evaluation allow and encourage the development of an *incremental* style of policy making. Big and expensive once-for-all decisions are avoided in this policy making (Hall, 1990).

4.   Policy Making as a Learning-based Process

This section highlights two important methods in learning-based policy making. The process involved is bottom-up, meaning that solutions emerge from the relevant actors (stakeholders) in a consensus-seeking endeavour. This sharply contrasts with imposing solutions from above and fixing them from the beginning.

The first method to be discussed here is *participatory policy analysis* (PPA) (DeLeon, 1990; Durning, 1993; Geurts et al., 1997). The learning in this method occurs between the stakeholders, including policy makers. Learning means that stakeholders increase the knowledge about each other, and achieve a more complete and richer picture of the values, perceptions, expectations, and options involved than otherwise. If stakeholders have crossed the

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borders of their own frame (*frame* reflective learning) and have established new networks and communication, based upon a change in attitude, one might say that there is a process result.

Participatory policy approaches may play a substantial role with regard to policy issues in which large parts of the population are stakeholders, national (regional) stakes differ from stakes of citizens in particular communities, or new models or organizational formats are introduced without knowing the impacts (Geurts et al., 1997). By nature, such situations include more or less controversy between the stakeholders involved. A good example of an issue with certain controversy is the policy for learning-based economic growth itself. An important reason for this would be that the policy is a *time-consuming* endeavour, without immediate employment gains. Thus, the unemployed in particular regions may not benefit on the short-term, leaving problems of social exclusion unresolved in the first years (Morgan, 1997). Whereas this type of controversy may be manageable with the help of participatory policy approaches, a deep controversy between high stakes may not be affected by these policy approaches. Thus, participatory policy making is certainly not a recipe for all controversial policy solutions.

Now the question is what types of stakeholders need to participate (who), to what extent needs participation to be offered (what level and function), and in what stage of the policy process needs it be organized (when)? The answers mainly depend on the precise aim of the method. On a detailed level participatory policy approaches may pursue different aims (Durning, 1993). For example, as previously indicated. the aim may be to advice and inform about stakeholders' interests and values. In this case, the method works through citizen consultation, workshops and conferences where various stakeholders can disclose their information, opinions and values. The Consensus Conference is an interesting example of this type (Geurts et al., 1997). It is a high level debate on potentially controversial and complex societal problems with intense (active) participation of two panels, namely a panel of (laymen) citizens and a panel composed of experts. The public attending the conference may be seen as a third category. The Consensus Conference can analyze complex problems and give recommendations to the government. It may also mainly focus on providing information to the public, and on gathering information about what ordinary citizens perceive as important after they have been fully informed. There are also forms of participatory policy making in which stakeholders not only

provide information but also contribute to an interpretation. Practices used in this type include group modeling techniques, and simulation and gaming.

An extreme form of participatory policy making is the one in which citizens can affect the policy making process to a large extent. It assumes mature citizens who are able and willing to participate in the process. The quality of the argumentation of the stakeholders involved is the key factor that determines the impact of the analysis on actual decisions. From a democratic point of view, this type would tend to a direct democracy.

Given distinct aims, it is important to know what conditions critically influence the success of participatory policy making. Except for housing policy and policy for community development (e.g. in rural areas), there is not much experience with participatory approaches and hence, with an evaluation. Thus far, the following points appear to be important in a successful application of participatory approaches (van Geenhuizen et al., 1998):

> *Motivation;* all stakeholders need to be motivated to participate, although the issue at hand is sometimes not generally perceived as a problem.
> *Transparency* of aims and procedures for all stakeholders, and *trust,* meaning that stakeholders are convinced of a potentially genuine participation.
> *Removal of barriers in communication* between stakeholders, such as connected with 'languages' and types of argumentation.
> *An adequate role* of the process manager; he (she) is an organizer of communication and interactions between stakeholders; dependent upon the aim, the precise role ranges from facilitator and moderator to collaborator of stakeholders.
> A *short time* between the participation and implementation of the results; the positive change in attitude of stakeholders towards each other cannot be sustained over a long time (e.g., may be completely gone after two years) (van Zuylen, 1997).

It can be concluded that participatory policy approaches deserve a great deal of attention in preparation, process guidance and implementation of results. The second learning-based policy method to be discussed here ▪ scenario development ▪ has generally a broader scope. Scenario development is a tool to increase understanding of the future course of events and

impacts of decision making on the future, by focusing attention on causal processes (transition paths, critical events) and decision points.

In research on the future, reliable data are often scarce, especially when exploring long-term developments. One is then more or less forced to use *qualitative* methods, scenario development being one of them. Scenario development can be organized in a participatory way and - when necessary - be supplemented by work of outsider-experts. Scenario development is a useful tool under the following conditions (Nijkamp et al., 1998):

The number of stakeholders and relevant factors is high.

Uncertainty about the future is large, including events which did not happen before. However, the field at hand shows a basic level of continuity.

The field lends itself to steering by governments.

There is controversy between various stakeholders about the actions to be undertaken.

The field is relatively open, i.e. no hidden agendas' or blueprints.

Generally, a scenario describes the present situation in (segments of) society together with likely and desirable future states of society, and a sequence of events (or transition paths) which may connect the present situation and future states (Becker et al., 1982). Scenarios can be contrasted by looking at their *starting point. Forecasting* takes the existing situation as a starting point, and trends are modified by assumptions about how the future might develop. The effects of those developments are then described. Dependent upon the situation, forecasting can have the disadvantage of being too conservative (a poor imagination of what might happen). By contrast, *backcasting* takes the situation at the future reference year as a starting point, and the consequences or necessary policy measures are analyzed (Dreborg, 1996; Steen, 1994). This type of scenario is explicitly normative, can focus on the main issues, and is useful to analyze policy packages. Backcasting is of course also restricted by the imagination of the creators, but the process can be made more open-minded. The typical product of a backcasting study is a number of alternative images of the future, thoroughly analyzed with regard to their feasibility and consequences (Dreborg, 1996). Such images often aim to highlight polarities, like an

integrated Europe or fragmented Europe. A backcasting study typically identifies strategic choices, particularly decisions that may close or open the door to the identified solutions.

One further classification of scenarios is by looking at the role *logic* plays in the credibility given to them by users (Sviden, 1989). This leads, for example, to the contrast between intuitive scenarios based upon an instinctive knowledge of a development direction without an explanation of causal chains and basic assumptions, qualitative scenarios based upon expert-assessment, and scenarios including quantitative prognosis. In the latter, formal methods may easily increase the credibility by relying on historic data (trends) and ▪ if the latter are absent ▪ on a set of educated guesses and simulation methods.

The previous remarks indicate that in practice scenario development may range **from** a few sessions, e.g. in the case of expert assessments, to several months in the case of a comprehensive task of scenario building, including qualitative and quantitative elements. It seems that the latter way ▪ in view of the demand for large resources in terms of money, people and time ▪ is not practical. From an efficiency point of view, methods of flexible and customized scenario development seem to be preferred.

Scenario development leads to various important learning effects among policy makers (their organizations) and other stakeholders in understanding complex and unstructured situations (Nijkamp et al., 1998):

Scenarios stimulate creative thinking and communication. By generating different alternative images and solutions, stakeholders are challenged to make their assumptions and mental models (perceptions) explicit.

Scenarios stimulate to **identify** events or forces which are relevant for solving specific problems. They are helpful in scanning for 'weak signals' that foreshadow a crisis.

Scenarios may be used to simulate the future by comparing and evaluating various alternative options. Scenarios may also be used to simulate diverging sets of preconditions and outcomes, helping to compare the consequences of various options.

Scenario development encourages the design of plans that fit a situation of uncertainty, i.e. robust plans (good under a wide range of conditions), and flexible plans (in which intervention is possible when unexpected developments occur).

The development of scenarios starts with *an initial* stage. This stage includes important activities, such as the problem analysis (a scan of the present to discover main development trends) and the definition of the main field (actors, their objectives, and the surrounding networks), leading to a conceptual model. The stage also includes a first exploration of the consequences of alternative actions. Further, the focus is on data gathering, exploration, explanation and interpretation, with an analysis and monitoring of trends as the next logical activity.

The main stage of scenario development includes four main tasks. First, there is the choice of the scenario type, given different policy problems and resources available for policy making. As a second task a theoretical model is built which puts the driving forces on the map. It needs to be emphasized that this task ▪ when applied in regional policy for learning-based economic growth ▪ suffers from the previously indicated lack of empirical insight into the driving forces in knowledge-based economic growth, particularly the conditions under which these forces work in different directions. Third, the actual writing of scenarios takes place: it involves the design of the theoretical model with driving forces and the design of scenarios by one or more groups of writers, and this is followed by a plenary discussion and redesign of the scenarios in various rounds. Ideally, the latter process leads to a 'saturated' set of scenarios. Then the fourth task is the most important one: the design of *critical incidents* (Vleugel, 1998). This may be an incident with a short life-time, such as the construction of a major road segment through which the region is much better connected, but it may also refer to a long-term crisis, such as serious political instability in the Russian Federation, or failure of the European integration. In many cases, scenario developers are likely to choose for a predictable crisis but it is far more interesting to incorporate totally unexpected developments by using a strong imagination.

There is an interesting methodological point here. If scenario analysis includes various formal methods, there is a need to validate the results. For example, it is necessary to find out whether the (way of) gathering of information, such as interviewing, use of questionnaires, the composition of the panel of experts, produces stable results.

Although scenarios have many positive properties, there are also some problematic ones. Developing and using scenarios in organizations require a relatively steep learning curve, meaning that the persons involved have to adopt a deep critical vision on the future. This may, however, bring them into conflict with the consensus culture within their organizations. Second, the results of scenario development may have drastic consequences for the policy making organizations themselves. Suppose that various scenarios indicate that it is better for the organization to leave the policy field or adapt drastically to emerging fields of interest. Then, the policy making organizations face a serious conflict. Situations like these indicate the need for changing organizations in such a way that they can handle such outcomes from policy processes.

In general, the main danger to the above discussed learning-based policy tools is that their results are not sufficiently used in practice. It is quite essential for the motivation (and trust) of stakeholders that results of the participation and scenario development are translated into practical policy. Here we touch upon a fundamental issue. Due to tradition and past practices most policy making institutions prefer fixed solutions, instead of diversity and flexibility. This means that with a further introduction of learning-based policy making there is also a need to transform the policy making organizations involved.

5.   Concluding Remarks

With the recognition of the importance of tacit knowledge and the interactive and social-embedded character of learning and innovation, attention has now shifted to the region as the relevant policy framework. However, regional policy aimed to enhance localized learning suffers from shortages in *generic* empirical insights, particularly when using an integrated approach. The term integrated refers to linking the different but strongly interwoven activities of knowledge creation and use, linking the public and the private sector, and linking various policy departments and disciplines, particularly the social with the economic.

Empirical research needs hold equally strong for advanced economies and transition economies, be-it that particular attention should be given to the peculiarities of the latter (Dyker

and Pen-in, 1997). In order to achieve generic insights, research preferably follows a *cross-comparative regional* approach. The following lines can be sketched with an emphasis on an integrated perspective:

(1)   To develop and test a set of indicators in order to map and identify the nature of learning processes and knowledge in the region, such as management of stock, identification of demand, and new knowledge creation and use, including the main actors, their objectives, and networks, and to identify the spatial scale of these networks.

(2)   To explore the links between firm collaboration, the type of learning processes and new knowledge creation, and the type of innovative behaviour of firms. In particular: the circumstances under which localized collaboration leads to learning, innovation, and a better performance of firms. In this respect, the degree of sectoral specialization (diversification) and type of dominant sector(s) of the regional economy (Storper, 1996) call for specific attention.

(3)   To identify labour market dynamics and skills in the labour market which influence localized learning processes, e.g. the match between labour demand and supply, in- and out-migration of knowledge-based firms, and the supply of training programs.

(4)   To identify housing market dynamics connected with localized learning processes, such as the match between demand and supply of housing for knowledge workers, and the migration pattern of the latter (Knight, 1995).

(5)   To identify social institutions, routines, conventions, etc. that are connected with networking and localized learning processes, with a particular focus on inter-firm networking between SMEs and large firms and within the SME sector.

(6)   *For transition economies:* To identify impacts on localized learning from different types of foreign direct investment (including impacts via supply chains). To explore how the

regional economy can benefit from this investment, given the particular industry structure, strategies of investors, and available policy options.

(7)   To identify how participatory policy approaches and scenario development can be further adapted to policy making for the learning-based regional economy in advanced economies and transition economies, in order to improve coping with the uncertain **future**.

Some of the above research lines are not entirely new for most regions. What is new, however, is the role of learning and knowledge outcomes as guiding principles in research of widely different fields in the regional economy and society.

With a new millennium ahead we are moving towards policy approaches that are much more open to diversity and can better cope with unexpected events and outcomes than traditional approaches. In this context, this paper has paid particular attention to participatory policy approaches and scenario development. Participatory methods are oriented towards consensus building between the stakeholders involved, consensus being a prerequisite for localized collaboration and collective learning. The enhancing of collective learning is now seen as a major policy line in less favoured regions in the European Union (CEC, 1994). To this purpose so-called Regional Technology Plan (**RTP**) guidelines have been established, in which the regional networking capacity is challenged in a bottom-up approach in order to break with inertia. Now that **first** experiences are becoming available, it seems worthwhile to further explore how the basic ideas of the RTP can be transformed into plans for regions in transition economies, given differences that are more than a nuance. A supportive tool in the design of the plans would then be the use of participatory policy making with results of scenario development as a major input. Although **RTPs** basically work by a bottom-up approach, they need to be supported by top-down measures with regard to investment, training and technology transfer. For transition economies, the following issues seem urgent, i.e. to stimulate those organizations and firms for which the use of best knowledge is of central concern, such as innovative small and medium-sized firms and 'centers of excellence' in the public sector, and to stimulate transfer of knowledge in a broad sense.

Regional policy for learning-based economic growth will mainly produce basic results on the medium to long term, although particular measures may trigger the pace of change. In the mean time, it would make sense to carry out a number of pilot projects, in order to achieve some short-term results in particular areas and to test whether the long-term objectives are still valid.

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