

ARTICLES

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**REGIONAL POLICY BEYOND 2000:
learning as device**

Abstract: The region has now widely been recognised as a principal setting for knowledge creation and use. The paper sets out an integrated framework of activities that underlie knowledge-based economic growth in a regional setting, with an emphasis on the role of tacit knowledge creation and transfer. In this context, it discusses various potential policy ingredients. Furthermore, participatory policy approaches and scenario development are presented as policy tools that match with the multi-actor situation and the multi-faceted uncertainty in the field. The paper concludes with a few recommendations for future research.

Key words: regional development, economic growth.

1. INTRODUCTION

The past decade has shown a significant speed in the emergence of a global economy. The disappearance of man-made borders, such as following 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 labour 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,

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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 and Eskelinen, 1998; Morgan, 1997).

At the same time, the above indicated emergence of new external influences and the introduction of more complex technology and modes of organisation lead 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. Accordingly, questions like what economic growth will be realised and what will be the size of the future population cannot be answered easily. Transition processes in order to move towards a free-market economy, contribute to this uncertainty. For example, regional outcomes in 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).

When mapping uncertainty surrounding policy of learning-based regional-economic growth, different categories can be distinguished (Friend and Hickling, 1997; Maskell and Eskelinen, 1998). First, there is uncertainty in the dynamics of the field at hand (e.g. the region and economic sectors) and the interplay with the external environment. Secondly, there is uncertainty in our knowledge about the field and its environment, particularly due to shortcomings in statistics (OECD, 1996). Different from labour and capital, learning and knowledge and their economic impact are difficult to measure. A third type of uncertainty is concerned with impacts from the nature of policy making itself, such as the selection of goals and measures, and the need for support from the public. A final category to be mentioned here is uncertainty in the impacts of policy, in terms of achievement of goals and emergence of side-effects.

In policy making for the learning-based economy, one typically observes a multi-actor situation. This means the involvement of a variety of actors (stakeholders) with different goals and different perceptions, and often a diverse power to negotiate. Good examples are knowledge-based firms, universities, semi-public and private laboratories, organisations for the unemployed, local governments and regional development agencies. The diversity between these stakeholders may be reinforced by a multi-layer policy (management) framework. This can be illustrated with local municipalities that set particular

conditions for learning-based activity such as providing specific premises and services for high-tech firms and private and public actors at higher spatial scale levels deciding upon opening or closing down local laboratories and research institutes (Geenhuizen and Nijkamp, 1998a).

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

2. AN INTEGRATED APPROACH TO LEARNING-BASED ACTIVITIES

Learning processes and the resulting knowledge refer to technology but also to managerial, marketing and policy know-how, arts and (traditional) crafts. It is now widely recognised that knowledge is the most valuable resource of the regional economy, with learning as the most important process (cf. Camagni, 1991; Knight, 1995; Kukliński, 1996; Lambooy, 1997; Morgan, 1997). An integrated approach implies that learning processes are 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. We can distinguish different functions that constitute the basis of learning-based development (Geenhuizen and Nijkamp, 1998a). A first important function is the **creation** of new knowledge. This occurs structured and planned in universities, research institutes, and companies, but follows also from unexpected events (meetings) and failure (sideways). **Tacit** knowledge contributes most importantly to new combinations and applications. This type of knowledge cannot be communicated in an easy way because it is created in a highly personal setting, strongly connected with the informal social fabric of R&D and production. The latter means that the processes involved are highly localised and that tacit knowledge can only be transferred through workers in the labour market. A second important function is the economic use of new knowledge. This use is not only dependent upon the availability of new knowledge but also on the right conditions in the market and production organisation. 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). A third function is the management of (public) stocks of knowledge. This includes the updating of archives, libraries, etc. and providing access to them,

and more importantly, building (renewing) the skills of the resident population and labour force. The latter may work through 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. A related function is the systematic identification of new learning and knowledge needs. This includes the anticipation of new developments and monitoring of regional knowledge demand and supply.

A function which has increased in importance is **networking** in order to advance knowledge creation and flow. Networking – both formal and informal – is important in the transfer of knowledge between creator and user, and in the creation of synergy between different actors and disciplines. Knowledge transfer takes place between firms and between knowledge institutes and firms. 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. Networking is also necessary to improve the integration of knowledge actors in the regional community and to connect regional actors with global actors. In this context, 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). There is also a larger number of actors involved (aside from universities and research centres) with an increased emphasis on teams (consortia) working on a temporary basis. In this setting, it is increasingly important to know the right person(s) (know-who) (OECD, 1996). Networking involves the formation of special social relationships and collaboration which enables to gain access to experts and use their knowledge efficiently. In the inherited situation in many transition economies, networking between firms and research institutes and mutually among 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.

At a higher level of abstraction, a key ability of regional actors is the **self-organising power** to co-ordinate, preserve and renew the above functions. 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 is strongly territorially-specific due to its person-embodiedness, social and cultural 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 localised learning and knowledge-based economic growth.

3. INGREDIENTS OF A LEARNING-BASED REGIONAL POLICY

The literature on the management of firms indicates an increased recognition of the importance of a multi-faceted learning throughout the firm (Hertog and Huizenga, 1997; Pettigrew and Whipp, 1991). In the shift to a learning firm, five essential components can be distinguished as follows:

1. Establishing a **vision** on competence and what can be achieved with it, including how the firm distinguishes from competitors. Such insights underlie a 'sense of urgency' for dynamic learning.

2. Establishing a **knowledge ambition**. This means the selection of meaningful competence, including new (innovative) knowledge fields but also old ones necessary in order to create value added in routine activity. Establishing a knowledge ambition may also mean giving up particular competence.

3. Establishing a **knowledge development**. This means to establish an internal strategy aimed at the creation, the transfer and use of new knowledge. In this respect, a free flow of knowledge within the firm and between the firm and the outside world is important. Regarding the latter, the ability to assess changes such as in markets and technology is crucial, which implies not only the mastering of assessment techniques but also the ability to link assessment results with central business operations.

4. Becoming a **learning** organisation. This means that learning processes are deeply anchored in individuals, teams and the firm as a coherent organisation. Two conditions influence the potentials to become a learning organisation, i.e., the culture and structure (such as hierarchy) of the firm and past product-markets and organisational development, the latter due to the fact that the firm cannot withdraw easily from old patterns (path dependency) (e.g. Geenhuizen, 1999).

5. Using particular **tools** in becoming a learning organisation. Often mentioned tools are the lateral organisation (crossing hierarchical borders) and human resource management.

There are a number of interesting ways in which regional policy may enhance the move of firms towards a learning organisation (e.g. Knight, 1995; Morgan, 1997) (table 1). The ingredients of such a regional policy can only be stated in relatively **generic** terms because there is much unknown about the processes and impacts involved. In addition, the problems encountered may be

structurally different between regions, implying that what appears as best practice in one region may not yield satisfactory results in other regions. A first ingredient would be to increase the awareness among firms of the need for learning-based development. Role models of successful firms may be used in such a policy. In addition, it is necessary to increase the awareness of the regionally available knowledge, including nodes that connect with national and global knowledge sources.

Table 1. Potential ingredients of regional policy for learning-based growth

Firm level
<ul style="list-style-type: none"> - to increase the awareness of the need for learning-based development, as well as the awareness of what knowledge is available in the region and available from elsewhere; - to create opportunities for the establishment of inter-firm networks and networks between firms and knowledge institutes, and firms and users; - to create opportunities for casual and informal meetings; - to improve conditions for human resource management through a labour market policy (skills formation and improving labour mobility).
Level of region
<ul style="list-style-type: none"> - to establish trust and a sense of urgency for learning-based development; - to improve the self-organising capacity of the region, particularly the formation of an institutional basis; - to develop the city as an (inter)national knowledge node by organising exhibitions, conferences, summer courses, and knowledge tourism; - an integrated housing and labour market policy aimed at attracting a sufficient share of knowledge workers in the resident population; - an integrated physical planning and economic policy, aimed at a sufficient supply of premises and buildings for innovative firms (including support for new firm formation), and aimed at an increased multi-functionality in city design; - an integrated cultural and economic policy, particularly aimed to upgrade the cultural level of the city and strengthen city-marketing based on culture and knowledge-based activity.

A further important policy ingredient would be to promote the establishment of networks between firms (supplier relationships) and between firms and knowledge institutes by offering opportunities to access and to connect. Regional innovation centres, transfer institutes at universities, and sector-based institutes (like centres for technical textiles and centres for micro-electronics) may play such a role, but regular (informal) meetings between relevant actors seem also important in establishing networks. Another policy ingredient to enhance the development of learning-based firms is improving the conditions for human resource management. Results from a cross-comparative European research indicate that labour market considerations are among the most

important location factors of innovative firms (Nijkamp *et al.*, 1999). Accordingly, regional policy needs to improve the qualitative match in the labour market, such as by the supply of training and by improving the flexibility and mobility in order to develop a pool of relatively mobile knowledge workers.

At the level of the region, improving the institutional basis for learning seems extremely important (Morgan, 1997). With trust and a sense of urgency as essential preconditions, the focus needs to be on building mutually coherent sets of expectations and conventions that direct strategic behaviour of the actors involved. This process preferably includes the promotion of a learning attitude and an attitude that sets a premium on finding joint solutions on common problems. Self-organisation particularly in East-Central Europe may also refer to the generation of capital in order to finance learning and new firm formation. To date it seems that foreign investment is not able to create knowledge spill-overs and other advantages for learning-based development in the regional economy (e.g. Pavlinek and Smith, 1998). In addition, regional policy may include various integrated policies connecting physical planning policies for culture and art, labour market policy, housing policy, and economic policy (table 1).

For all the above efforts it seems impossible and useless to break rigorously with the past in East-Central Europe. Rather, there is a need to elaborate on capacities that are available and enhance diversity in institutional forms. By preserving a certain variety in organisational routines, the adaptability of key actors in the region may increase, allowing to remain alert and learn over a long period, and to influence external changes if necessary (e.g. Grabher and Stark, 1997).

4. UNCERTAINTY IN POLICY FOR LEARNING-BASED ECONOMIC GROWTH

Policies for learning-based economic growth are typically characterised by a high complexity of processes and actors. First, various dynamics in the regional economy are dominated by non-linear relationships, including chaotic developments. In the latter case, there is highly irregular behaviour, being critically dependent on the system parameters and initial conditions. Accordingly, small changes in the initial conditions or parameters may lead to disproportionately large dynamics, which may cause particular regions to follow a different development path than other regions (Nijkamp and Reggiani, 1998). Secondly, there is uncertainty stemming from imperfections in our modelling of the regional economy. Despite rapid growing insights, the knowledge of

regional economic growth and the role of learning processes on a **generic** level is still modest (Maskell and Eskelinen, 1998). For example, there is limited empirical evidence about conditions that facilitate learning from localised collaboration. Further, there are problems of reliable data on knowledge and learning processes. There is no standard production function of knowledge, no input-output recipe telling 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). In addition, there is lack of research on particular topics concerning learning processes in transition economies, being a relatively new research avenue after all. For example, it is not well understood under which conditions foreign direct investment contributes to local learning and effective technology transfer, and what role can be played by regional sourcing and subcontracting relationships of foreign firms (Geenhuizen and Nijkamp, 1998b). A third source of uncertainty is connected with the multi-actor situation in policies for learning-based economic growth and the concomitant danger of a limited consensus about policy aims, given a situation of restricted means. Key regional actors that may be opponents are those representing the unemployed and striving after fast solutions, and those aimed at learning-based developments which yield results only on the medium to long term (Morgan, 1997). In learning-based development, however, the key regional actors need to work together and learn interactively from each other as a *conditio sine qua non*. This calls for policy approaches that primarily contribute to consensus building. A fourth source of uncertainty is the limited degree of rational and neutral behaviour in policy making itself, leading to imperfect procedures. It is now increasingly recognised that non-rational behaviour and subjectivity cannot be eliminated from the decision making process, particularly if high complexity is involved (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 (organisations) suffer from limitations such as in their reliance on old success stories and well-known solutions. Accordingly, activities in the policy cycle include various specific sources of uncertainty and potential failure, particularly when policy makers are not fully aware of them (table 2) (Geenhuizen *et al.*, 1998; Nijkamp *et al.*, 1996; Rowe, 1994). Much uncertainty may arise in the stage of searching for alternative solutions. The conditions for the first selection of these solutions are often too strictly defined, in such a way that potentially relevant alternatives are overlooked. 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 if there is no systematic and provocative generation of alternatives

(Hall, 1990). Furthermore, a shortage of *ex post* evaluation is serious because sound results of such an evaluation constitute a major input in *ex ante* evaluation. There is a need to increase knowledge about reasons why particular policy instruments fail, e.g. a wrong problem diagnosis or insufficient corrective power of policy instruments, 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, thereby avoiding big and expensive once-for-all decisions and potentially obsolete solutions and unwanted side-effects (Hall, 1990).

Table 2. Common imperfections in policy making in a multi-actor setting

Stage	Details
1. Problem Definition	Not clearly stated (ill-defined and -structured) and no agreement on it.
2. Problem Analysis	Poor knowledge of cause-effect chains in the field. Poor knowledge of future states and driving forces (particularly future value systems of relevant actors).
3. Search for alternative solutions	'Forgotten' options due to too strict selection or <i>a priori</i> focus (bias).
4. Selection of solution	Shortage of good criteria in the assessment of impacts (<i>ex ante</i> 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 measures. Shortage of <i>ex post</i> evaluation of impacts, particularly of reasons why policies fail (or succeed).

5. POLICY MAKING AS A LEARNING-BASED PROCESS

This section highlights two important tools in learning-based policy making that match with the multi-actor situation and uncertainty about future developments. The processes involved are all bottom-up, meaning that solutions emerge from the relevant actors (stakeholders) in a consensus-seeking endeavour. In **participatory policy making** (Durning, 1993; Geurts *et al.*, 1997) learning 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 each other's values, perceptions, and options than otherwise. By nature, the policy issues at hand involve more or less controversy between stakeholders. As previously indicated, an important source of controversy concerning learning-based development may be the fact the policy is a **time-consuming** endeavour without immediate employment gains. Whereas such as controversy may be overcome with the help of participatory policy approaches, a deep controversy connected with high stakes may not be affected by these approaches. Thus, participatory policy is certainly not a recipe for solving all controversial policy issues.

In the design of participatory policy approaches, various questions need to be clarified, namely concerning the types of stakeholders that participate (who), the extent to which participation is offered (what level and function), and the stage of the policy process in which it is organised (when). The answers mainly depend on the precise aim of participatory policy approaches (Durning, 1993). As previously indicated, the aim may be to advise 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 so-called 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. An important process result would be the extent to which stakeholders cross the borders of their own frame (**frame reflective learning**) and establish new networks and communication, based on a change in attitude. There are also participatory approaches in which stakeholders contribute in an explicit way to the design of solutions. Practices used in this type include group modelling techniques, and simulation and gaming.

Given distinct aims, it is important to know what conditions critically influence the success of participatory policy making. Except for housing (community) policy and policies for transport infrastructure, there is not much experience with participatory approaches. A preliminary analysis has identified the influence of the following factors (Geenhuizen *et al.*, 1998):

- **motivation**: a sufficient number of stakeholders needs to be convinced of the problem and convinced of co-operation as an important way to arrive at solutions (sense of urgency);
- **transparency** of aims and procedures for all stakeholders, and **trust**, the latter meaning that stakeholders are convinced of a genuine participation (as opposed to manipulative participation);
- **removal of barriers in communication** between stakeholders, such as connected with languages (vocabularies) and types of argumentation;

- an **adequate role** of the process manager; he (she) is an organiser of communication and interactions between stakeholders; dependent upon the aim, the role ranges from facilitator and moderator to collaborator of stakeholders;
- a **short time** between the participation and implementation of results; it seems that changes of attitudes of stakeholders cannot sustain over a long period (disappearance after two years).

The practice of participatory approaches implies particular requirements in the use of **information** that supports the processes involved. There is a need for information systems that enable a flexible and interactive use, implying that the information drawn from the systems is transparent and customised (matches the specific questions).

Scenario development is the second tool to be discussed here. It serves to achieve understanding of future developments and impacts from decision making in a situation of scarce reliable data on the future. Scenario development can be organised in a participatory way and – if necessary – be supplemented by work of outsider-experts. In general, 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. Scenarios fall apart into two types 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 has 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 analysed (Dreborg, 1996). This type is explicitly normative and is useful to analyse policy solutions (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 future images, thoroughly analysed with regarding their feasibility and consequences, including strategic choices that close or open the door to the solutions identified. A further classification of scenarios is based on the role of rational-analytic thinking in the creation of them. This leads, for example, to the contrast between intuitive scenarios based upon an instinctive knowledge of a development direction without an explanation of causal relationships, qualitative scenarios based upon expert-assessment, and scenarios including quantitative prognosis such as based on historic data (trends) or sets of educated guesses and simulation methods.

From the above discussion follows that scenario analysis plays a different role in learning about the future. It may be strongly connected with policy decisions and plans, such as the design of policy packages to arrive at particular

future states. However, scenario development may also have merely the role to contribute to a vision about the preferred direction of the future, e.g. by experimentation. In the latter case, the future is seen as relatively open and the main aim is to explore the future. In most scenario analysis, essential activities include the design of a theoretical model with driving forces and the design of the scenarios themselves in various rounds of discussion (redesign). An interesting task in scenario writing is the introduction of **critical incidents**. These may be incidents with a short life-time such as the construction of a major road segment but may also refer to a long-term crisis such as failure of 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. The previous activities lead to important learning among policy makers and other stakeholders (Becker, 1997; Nijkamp *et al.*, 1998):

- **creative thinking and communication**; by generating different alternative images and solutions, stakeholders are challenged to make their assumptions and mental models explicit, and to adapt them to changing conditions;

- **identification of events (forces)** relevant for solving specific problems; scenarios are helpful in scanning for ‘weak signals’ that foreshadow a crisis;

- **simulation of 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;

- **design of plans that fit a situation of uncertainty**; examples are robust plans (good under a wide range of conditions) and flexible plans (intervention if unexpected developments occur).

The above different types and functions of scenario development indicate that in practice scenario development may range from a few sessions 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 – due to the use of large resources in terms of money, people and time – is not practical. In terms of efficiency, methods of flexible and customised scenario development are preferred.

Although scenario development has many positive properties, there are also some problematic ones. Developing and using scenarios in organisations 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 organisations. Further, the main danger to learning-based policy tools in general is that their results are not sufficiently used in practice. It is quite essential for the motivation (and trust) of stakeholders that results of scenario development are translated into practical

policy. Here we touch upon a fundamental issue. Due to tradition and past practice, most policy making institutions prefer fixed policy solutions, instead of diversity and flexibility. This means that with a further introduction of learning-based policy making there is a need to transform the policy making organisations involved.

5. CONCLUDING REMARKS

With a new millennium ahead we are moving towards regional policies with learning as a primary ingredient, both as a goal for regional development to enhance competitiveness and as a major activity in policy tools. While keeping in mind various shortages of generic insights, the article has discussed a number of potential ingredients of regional policy and policy tools. These tools are based on a bottom-up approach which is an essential precondition for getting collaboration and collective learning from the ground. The article has also expressed concerns about the lack of knowledge in the field. Accordingly, we recommend to design empirical research following a **cross-comparative regional** approach. The following lines might be included:

1. To develop and test a set of indicators in order to identify the nature of knowledge-related functions in the region (such as knowledge creation and use), including actors and their (spatial) networks.
2. To explore the links between firm collaboration, learning processes and innovative behaviour of firms, particularly the circumstances under which localised collaboration leads to innovation and a better performance of firms.
3. To identify labour market dynamics and skills in the labour market which influence localised learning processes, e.g. the match between labour demand and supply, and relocation and formation of knowledge-based firms.
4. To identify housing market dynamics connected with localised learning processes, such as the match between demand and supply of housing for knowledge workers, and migration patterns of the latter.
5. To identify social institutions, routines, conventions, and so forth, that are connected with networking and localised learning processes.
6. To identify the impact of specific types of investment (such as branch plants) on localised learning. Particularly in transition economies: to identify how localised learning can benefit from foreign direct investment, given the particular industry structure and strategies of investors.
7. To identify the impact of specific policies for advancing culture, art and knowledge-attitudes, and policies for improving architecture and improving diversity in city design.

8. To improve the contribution of learning-based policy tools in policy making, with regard to consensus seeking and coping with uncertain future.

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 and some support by top-down measures. Now that first experiences are becoming available, it is 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. Regional policy for learning-based economic growth will yield important results mainly on the medium to long term, although particular measures may trigger the pace of change. In the meantime, it would make sense to carry out a number of pilot projects, in order to produce some short-term results in particular areas and to test whether the long-term objectives are still valid.

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