[Preliminary Draft]

EVALUATION, FORESIGHT AND PARTICIPATION AS NEW ELEMENTS- FOR REGIONAL INNOVATION POLICY PRACTICE: LESSONS FROM THE REGIONAL INNOVATION STRATEGIES (RIS)

Elvira Uyarra (Universidad del País Vasco - UPV)*, Silke N. Haarich (INFYDE, S.L.)**

INTRODUCTION

Two important elements are seen as having considerable influence in the rationale and configuration of regional innovation policies, which result in a renewed importance of policy evaluation and policy intelligence mechanisms. Firstly, a perceived change in the conditions of innovation and competitiveness demands a reconsideration of types of policy interventions for the promotion of innovation and knowledge creation. Secondly, the increasing process of devolution/decentralisation of science, technology and innovation policies poses important questions about effective policy management at the regional level, and more broadly about the governance, transparency and accountability of these initiatives- of which evaluation is one important element.

Moreover, the need for an effective management and evaluation system of regional policies becomes an ever-more pressing issue in light of developments towards the European Research Area, insofar as much importance is attached to the *regional* level of policy making, and to the need to *benchmark* regional innovative performance. In addition, the development of a coordinated mechanism of policy intelligence, involving foresight type exercises is advocated. For these reasons, issues of comparison and of evaluation systems and principles emerge strongly.

* Elvira Uyarra is PhD candidate at the University of the Basque Country and Marie Curie research fellow at PREST, University of Manchester.

** Silke N. Haarich is consultant at Informacion y Desarrollo, INFYDE, S.L. and PhD candidate at the University of the Basque Country. Contact silke.haarich@spatialplanning.org .

A CHANGING LANDSCAPE OF INNOVATION

Innovation systems are seen to be evolving towards more complex socially distributed structures of knowledge production activities, as involving an increasing interplay between science and technology, as featuring an ever greater multidisciplinarity and specialisation in technological knowledge basis, and as encompassing a growing diversity of knowledge generating organisations.

Innovation activities are increasingly conceived of as being the result of a complex web or system of interrelations with other firms and organisations (who possess distinct and complementary knowledge), in which firms' innovation depends on their ability to co-ordinate, assemble and apply this distributed knowledge. The specialisation in the production of knowledge increasingly entails co-ordination of different knowledge generating activities, and outcomes are seen to depend on the degree of complementarity and interrelatedness between these different knowledge generating activities and entities – and on the absorptive capacity of firms in transforming available knowledge into new process and product innovations.

This process, in turn, is associated with increasing specialisation and the emergence of a diversity and multiplicity of knowledge generating entities, which makes the division between production and application of knowledge increasingly blurred.

Moreover, most science and technology applications affect social, organisational and institutional dimensions. The uncertainty associated with the impact of technology policies calls for a greater involvement of stakeholders and users in decision-making, e.g. through participatory mechanisms, public-private partnerships and far greater transparency in decision-making.

As a result, the focus on public-private partnerships is being strengthened, but also the co-ordination between national and regional policies in a form of 'multi-level governance', in which regions are assuming an increasing role. Indeed, one important trend in recent years has been that of moving towards decentralisation and regionalisation of policy making, i.e. the transfer of substantial powers to regional and local authorities, which are viewed as more capable of acting in the best interests of their respective areas. This trend relates to the concept of *subsidiarity*, whereby decisions should be taken by those public authorities that stand as close to the citizen as possible. Regions are thus

becoming more and more instrumental in the management, design and implementation of science, technology and innovation policies, adopting policy tools directed to enhance the technological infrastructure, promote R&D activities and the adoption of innovations by firms. Nourished by ideas of evolutionary economics and endogenous growth theories, regions are developing policies aimed at boosting competitiveness through nurturing regional systems of innovation, networks and clusters. However, the implementation of these policy ideas – as well as the concomitant need for complying with requisite policy evaluation mechanisms, and of following the principles of transparency and accountability, are still lagging behind.

This new policy making context, hallmarked by the distributed nature of knowledge production processes, greater levels of risk and uncertainty, public-private partnerships, greater importance of the regional level and coordination among different levels of policy making, clearly requires a more complex type of intervention. Policy is no longer about allocating resources, but about fostering firms' innovation capacities and linking firms with the wider matrix of knowledge generating institutions, including the relationships between firms and between firms and other institutions (Metcalfe, 1995). The policy maker is thus no longer an 'optimising policy planner' (ibid), but has to learn and adapt to changing circumstances. The selection of policy alternatives is not a static process, but an adaptive and evolutionary endeavour, as there inherently can be no policy appropriate for all circumstances and all times. Conversely, all the key factors at work are amenable to change according to economic and technical changes. This necessitates a greater amount of strategic policy intelligence, here understood as "tailor-made information to support decision-makers in developing and implementing their strategies, policies and interventions" (EC, 2001).

In summary, the multi-layered, multi-dimensional and multi-targeted nature of policy and policy-making necessitates complex, and effective policy learning mechanisms, and ones which allow policy-makers to both monitor and evaluate policies, to mobilise contrasting views and interests, and to anticipate and effectively react to future changes.

In other words, effective policy making for science and technological innovation requires:

- Appropriate **evaluation** of the effect of policies to allow for policy learning to enhance the learning abilities of public organisations.
- Careful **assessment** of future technological, economic and social trends
- The inclusion and alignment of the **different interests** of the agents involved, formulating strategies in a collaborative way.

However, it remains unclear to exactly what extent regional policies are incorporating these conditions for strategic policy intelligence (evaluation, participatory decision making and technology foresight). The remainder of the paper aims to investigate this issue, providing evidence from the RIS initiatives.

EVALUATION

Appropriate evaluation can be an important tool for the development of policies, organisations and institutions, beside its control function (evaluation for accountability) and its research function (evaluation for knowledge) (Chelimsky 1997).

Vedung defines evaluation as a

> "careful retrospective assessment of the merit, worth, and value of administration, output, and outcome of government interventions, which is intended to play a role in future, practical action situations." (Vedung, 2000:3)

Regarding S&T policy evaluation Kuhlmann et al point out to the following functions of evaluation:

- "Evaluation may provide legitimisation for the allocation of public money to R&D.
- Evaluation may enhance an adequate and effective use of funding by measuring the scientific/technological quality or the (potential) socio-economic impact.
- Evaluation may improve programme management and 'fine tune' S&T policy programmes.
- Evaluation may provide new ideas or legitimate already circulating ideas about changes in R&D centres and funding agencies, thus enhancing the fulfilling of their missions.
- Evaluation may be an attempt to improve transparency of the rules of the game of S&T funding decisions, and

- Enhance the information basis for S&T policies, in the sense of a government-led 'mediation' between diverging and competing interests of various players within the S&T system." (Kuhlmann, et.al. 1999:31-32)

However, in the field of science, technology and innovation policy, little evaluation culture has been developed in most regions. This can be seen as due to a variety of aspects, including the lack of adequate performance indicators, and because of a lack of experience and institutionalisation of evaluation mechanisms.

Evaluation and strategic planning have only recently begun to be developed at the regional level. The emergence of the European Structural Funds and their increasing importance during the last 25 years has helped to introduce and diffuse strategic planning and programming in the EU Member States, especially at regional level. Administrative regulations of the programmes and policies (co-) funded by the Structural Funds have meant that national, regional and local authorities have been more and more compelled to evaluate activities and interventions which were developed, against the wider EU context1. Within the last programming period and its regulatory framework, every programme and action co-financed by the EU had to be subject to ex ante, interim and ex post evaluations. These stipulations prompted – over a number of years – Europe-wide development of evaluation activities, albeit more notably in the Southern European Member States where evaluation "before EU" already had a more modest position in the actual political context2.

The evaluation of regional policies, including regional innovation policies, is still mainly dominated by macroeconomic approaches and techniques. Present evaluations combine micro and macro approaches, and feature 'top-down' and 'bottom-up' techniques, as well as quantitative and qualitative methods for data collection and analysis[3]. Nevertheless, the application of common methods and evaluation designs in particular policy fields throughout different national or regional frameworks, or even other policy

---

1 The emergence of evaluation needs and activities in the European Commission is described in a more detailed way by Vanheukelen (1995).

2 The positive influence of EU Structural Funds on the number and quality of evaluations in Europe was analysed by the Centre for European Evaluation Expertise C3E (1998).

3 In this context, the MEANS guide, developed to support the good evaluation practice for Structural Fund's supported actions, presents a widespread repertoire of methods, evaluation approaches and practical indications. This

sectors, is possible and necessary in order to further develop existing methods and overcome methodological limitations.

Evaluation practice in EU Member States is seldom a strategic exercise influencing political or budgetary decisions. It remains more of an obligation, and the results of evaluations generally are not seen as an input for future policy or intervention design – but more in terms of 'a report to Brussels.' In this context, it is not surprising that many 'Terms of Reference' for regional policy evaluations do not realistically or usefully specify the actual evaluation needs of the administration that commissions them, and that the forecast evaluation duration and budget are little related to the ideal scope and requirements of the evaluations (Lang et al, 1998).

The application of evaluation mechanisms, as we will see later, is still poorly developed at the level of regional innovation policies, although a growing need exists for the identification of common methodologies and designs, (particularly in the area of adequate indicators) and for institutionalisation and more professional application of evaluation processes.

MOBILISATION AND INTEGRATION OF STAKEHOLDERS' VIEWS

Another precondition for good evaluation practice is the formulation of adequate mechanisms for participatory decision-making. As implied above, choosing the 'right' policy is difficult and requires a great amount of information and intelligence, plus the involvement and collaboration of different interests of a whole variety of stakeholders.

Innovation policy decisions take place in multi-level/multi-actor arenas (Kuhlmann et al, 1999). Policy makers only have partial access to existing knowledge (as this is scattered within and across the system). Knowledge resources and actors are present in a variety of different forms and organisational settings, i.e. the individuals involved in innovation processes come "from many different institutions and organisations," "will often be dispersed geographically," and "may only be able to work on a problem or project part-time" (Gibbons et al 1994:162). Thus, the challenge is to develop adequate

manual helped to spread the knowledge on evaluation throughout Member States, regions, but also institutions

interfaces in order to increase the accessibility of already existing information and stakeholders.

This collaborative policy-making is linked to broader contemporary debates about the nature of governance itself, which consider the implications and necessity of the participation of local actors in a negotiated and more consensual way. It is also is related to the idea of "associative" regional policy making (Cooke and Morgan, 1998), based on associative thinking, partnership building and encouragement of policy networks. Increasingly regions are adopting this idea of "associative" and strategic regional policy making, as evidenced by their participation in EU RIS/RITTS-type initiatives, as well as the present Innovative Actions, which have the idea of regional consensus and capacity building as one of their central building blocks.

ASSESSMENT OF FUTURE TECHNOLOGY, ECONOMIC AND SOCIAL TRENDS

Technology foresight, technology assessment and evaluation constitute key tools for any strategic intelligence that is directed at legitimating the distribution of public money, targeting and "fine-tuning" technology policy programmes, and improving transparency of the process (Kuhlmann et al, 1999).

Firstly, foresight activities are defined as the "[s]ystematic means of assessing those scientific and technological development which could have a strong impact on industrial competitiveness, wealth creation and quality of life" (Georgiou, 1996:359). Technology assessment and evaluation is described as "the anticipation of impacts and feedbacks in order to reduce the human and social costs of learning how to handle technology in society by trial and error" (Kuhlmann et al, 1999:22).

The distinction between these three exercises (evaluation, technology foresight and technology assessment) is becoming increasingly blurred (EC, 1997), with e.g. evaluations including advice or future scenarios for decision making based on foresight exercises. Academics and practitioners are increasingly advocating an integrated, overarching conceptual and operational framework for the more effective integration in the pol-

and administrations not familiar with evaluation.

icy cycle of these exercises, primarily to asses longer term unintended impacts of public intervention in technology (Kuhlman and Meyer-Kramer, 1995).

Foresight-type initiatives are already being carried out at national, sectoral and (increasingly) regional levels. Together with the evaluation of regional innovation policies, the interest in Foresight-related tools, as a way of complementing and improving policy and strategy planning at regional level, has recently gained much momentum[4].

Foresight involves the following elements (FOREN guide, EC, 2001):

- Structured anticipation and projections of long-term social, economic and technological developments and needs
- Interactive and participative methods of exploratory debate, analysis and study, involving a wide variety of actors and inputs, and a diversity of visions,
- Creation of new social networks through the interactivity among participants and appropriation of the process to the actors and stakeholders,
- Elaboration of a guiding strategic vision, shared among the stakeholders and giving them a sense of commitment
- Explicit recognition and explication of the implications for present day decisions and actions

Thus, foresight is seen as a mechanism to complement planning processes and increase their effectiveness. Foresight is meant to add "new dimensions and value, complementing what regionally based actors already do, and providing ways and means for broadening their horizons, as well as the legitimacy and effectiveness of regionally based strategies." (Gavigan and Scapolo, 2001:2)

Particularly under the auspices of European programmes such as the RTP/RIS/RITTS initiatives supported in the framework of article 10 of the Structural Funds, many regions have started to engage in strategic planning activities for innovation promotion in the regions. Through this type of policies, regions are starting to em-

[4] This is made evident by the variety of initiatives promoted at the European level such as the FOREN network and other initiatives under the STRATA programme (such as the Four Motors of Europe Foresight - FOMOFO)

brace a new type of policy-making, promoting innovation in a more 'bottom-up', strategic fashion. In the next section, we will examine to what extent the three conditions of policy intelligence have been effectively integrated in these exercises. Illustrative evidence will be provided of the evaluation carried out of the Castilla y León Regional Technology Plan 1997-2000 (Infyde, 2001).

LESSONS FROM THE RTP/RIS/RITTS INITIATIVES

Since 1994, more than 100 European regions have received support from the European Commission for the formulation of regional innovation strategies through RITTS and RIS projects. Through these types of policies, regions are starting to embrace a new type of policy-making, i.e. promoting innovation in a more 'bottom-up', strategic fashion. RTP/RIS/RITTS initiatives have aimed at promoting and fostering an innovation culture in the regions through a strategy based on regional consensus, and partnership building among the different regional stakeholders involved in innovation process, in a 'bottom-up', demand-led strategy.

The objectives of the RIS-RITTS exercise are twofold (European Commission, 1997):

- Improving the capacity of the regional actors to develop policies taking into account the needs of the industrial fabric and the characteristics of their Regional Innovation System;
- Providing a framework within which the regional, national and Community authorities might be able to optimise their decisions on future investments in R&D and innovation at the regional level.

These initiatives are aimed at supporting regions in carrying out an assessment of the regional innovation system, in order to optimise the decisions concerning innovation policy and infrastructure (European Commission, 1997). This assessment, involving the participation of the regional stakeholders through different mechanisms of participation and consultation (sectoral meetings, panel discussions etc.), provides the basis for the formulation of a strategic action plan for the region.

Important benefits and impacts of these policies have been identified, in particular as being (ECOTEC, 1999; Boekholt et al, 1998; Infyde, 2001) :

- Improvements, in the policy formulation process and the development of a policy planning culture.
- A development of strategic thinking for innovation-oriented regional development in the regions concerned, placing innovation higher in the political agenda of regional organisations in regions lacking experience in innovation policy. This has been translated, in practice, into the building up of specific mechanisms or institutions and an increase in public expenditure on innovation promotion
- An enhanced knowledge of the regions concerned through the assessments carried out and the consultation exercises, of, which helped to assess the efficiency and roles of existing institutions, thus favouring institutional learning and institutional building
- Additionally, they have brought about the development of more effective social public-private partnerships and enhanced coordination between public innovation support organisations.

However, some gaps have been identified in terms of effective *implementation* and in the extent to which policy intelligence mechanisms have been applied. Limitations have been observed in the embeddedness of *consensus building* mechanisms, *evaluation* practices and *institutionalisation* and '*vision building'* or foresight mechanisms.

As regards the *execution* of the plans, a disconnection has been identified between the design and implementation phases. Implementation has been limited in some cases, in the sense that plans have taken a long time to become operational, or some programmes have not materialised into identifiable projects. The outcome of this has been in some cases the loss of momentum and a certain disenchantment about the whole exercise on the part of the actors involved. Alternatively, when the actual programmes were launched, a certain lack of identification with, or commitment to the programmes by the agents involved in the process has occurred.

As regards the mechanisms of *partnership and consensus building,* these have been useful in bringing together different stances and have been a means of sensitising stake-

holders to the importance of innovation. It has often been the first instance in which such a degree of involvement and mobilisation of stakeholders has been achieved in many regions. However, the institutionalisation and embeddedness of these processes have been limited. Mechanisms for consensus building are often led by funding requirements, which means that they have been set up during the programme design and have normally not showed continuity, e.g. because management structures have often not remained or have not been incorporated into political decision-making channels. Once the stimulus from the Commission disappeared at the completion of the RIS, often no mechanisms were set in place in the regions to ensure the continuation of the stimulus formerly provided in the region by the RTP. Another difficulty in consensus building mechanisms is that it is very difficult to integrate all the affected parties. Thus, concerns have been risen regarding the participation bias in some of the exercises, in terms of sectors of activity, geographical locations (in favour of central areas) and policy levels (with less participation of local tiers of government). Consensus building is a cumbersome and expensive exercise and involves a high degree of learning. Second generation RIS are seeking to mitigate this bias and incorporate a broader range of views and interests (Henderson, 1999; INFYDE, 2001).

In some way, consensus building has been achieved at the process stage at the expense of implementation (Tsipouri, 2000), which has meant that consensus about general objectives and priorities was achieved to some extent, but not on concrete measures and performance indicators. This has led to more conservative decision-making about programmes and measures, and often involving continuation of existing policy tools. In this sense, the "specific problem with administrative procedures is their natural bias towards selecting majority views (risk-taking is not the philosophy of administration – public or private)." (Kuhlmann et al, 1999, p.30).

As regards the *evaluation* of the exercises, in many cases, no adequate monitoring and evaluation systems have been developed, and few independent, expost evaluations have been carried out by the regions themselves, and these have been somewhat fragmented and *ad hoc*.

The lack of evaluation and monitoring mechanisms has been seen as due to a lack of experience in evaluation or to the absence of political will to conduct expost evaluations (Tsipouri, 2000). Alternatively, this has been due to a pursuit of broad objectives that are difficult to quantify, and a lack of consensus over effective indicators to use.

In the case of the evaluation of the RTP exercise of Castilla y León conducted by INFYDE, a few problems were made evident, namely, the general character of some of the schemes, the diffusion of policy intervention among a variety of schemes, the little availability of data and the lack of adequate performance indicators.

One first difficulty in assessing impacts is thus the lack of clear objectives within schemes. Most policy programmes present rather general aims (e.g. 'raising awareness') and no clear targets and indicators. This renders policy impacts difficult to quantify. This is often the problem with innovation policies, where the concepts being promoted are often very difficult to pin down in order to later assess or evaluate progress.

Moreover, a second problem in innovation policies is, as opposed to more traditional R&D programmes in the past, the proliferation of small projects or schemes that are difficult to evaluate. Intervention is then diffused among a diversity of schemes, which poses the problem of appropriability: which effects correspond to the different measures adopted.

As mentioned earlier, an third difficulty has been the lack of adequate indicators. Often the indicators used are related to macro-economic figures, such as Gross R&D expenditure, business expenditure in R&D (BERD), number of patents, etc. This presents the problem of availability of statistics at the regional level, and of time lags incurred since collection and publication of relevant data. Moreover, use of these indicators presents problems of causality and attribution: e.g. the expected effects of government measures are linked to many other factors such as the firms' strategy and general economic climate.

Moreover, the dependence on 'linear' indicators, such as BERD and GERD, is a poor policy instrument, particularly in the less favoured areas. R&D is but one measure of overall innovative activities. In other words, the use of these indicators rests upon the now commonly discredited views of the so-called 'linear model'. Patenting and R&D

efforts are not necessarily linked to commercial innovations. Thus, these indicators can be misleading, and lead to an over-emphasis on R&D capacity enhancement, or the promotion of new high tech sectors at the expense of the internal transformation of sectors that already exist (Smith, 2000). In less favoured regions, a large share of economic growth also comes from medium to low intensive industries, which perform little formal R&D activity. However, these sectors present a high opportunity for innovation, often from other sectors. Overall, "'low tech' industries are knowledge intensive, and are frequently part of 'high-tech' systems.[...] The depth and complexity of industry knowledge bases are not linked to their direct R&D performance, and indicators or industrial classifications based on this are misleading." (ibid, p.31)

Tsipouri (2000) argues for the construction of specific, tailor-made indicators that are more in tune with the objectives of programmes and policy aims. Consensus upon adequate indicators to be used needs to be reached in order to develop effective assessment of policies. This calls for further development of good, robust RTD indicators at a national and regional level – i.e. besides RTD expenditure data. So far, this has been largely absent in regional policy.

Other mechanisms employed to assess the impact of the policies have been the *resources* mobilised in the exercise, and the *'reach'* of the measures (Teather and Montage, 1997). By 'reach' is meant certain direct results, such as number of applications received, of approved projects, of groups being targeted or recipients of the outputs, of key stakeholders participating and of more general 'beneficiaries' of activities. It is interesting to know which firms and groups of firms have been beneficiaries of the programmes (and which firms of which size, sectors of activity, location etc.), and then to be able to see the evolution of participation in the project among a wide spectrum of firms and organisations. This can be very instructive in informing about the participation of firms and actors.

In the case of the RTP (1997-2000) evaluation in Castilla y León, this approach was interesting in so far as it allowed to track the participation of peripheral, less dynamic, areas of the region over time and the participation of medium-sized firms vis-à-vis smaller firms.

The *resources* mobilised have been employed to evidence the amount of public funds made available by the programme for innovation promotion, and the resources from other national or European programmes that the firms have been able to make use because of the impulse and awareness-raising effect of the RIS. For the conduct of this Castilla y León RTP evaluation, a thorough analysis was undertaken of the available public funds for R&D and innovation for the years 2000-2006 coming from European, national and regional programmes (regional programmes under the RTP, structural funds, Fifth Framework programme and national programmes for innovation and R&D). However, resources should not be an objective *per se* (these resources could have been misused or over-utilised); rather account should be taken of the way these resources have contributed to increase the social return of the region. It is acknowledged that participation of firms in research and technological development programmes has a beneficial effect in upgrading the technological knowledge base of firms. However, this data needs to be treated with caution, as often in 'objective 1' regions, participation in national and international programmes is dominated by public and higher education institutions, and the type of research is determined by scientific excellence rather than by industrial needs.

In conclusion, these approaches based on quantitative measures, albeit useful, do not say much about the real impacts of the exercise.

Besides such quantitative measures, more effort needs to be made towards trying to qualitatively assess the impact of these initiatives on a regional system of innovation. 'Systems of innovation' approaches have consistently failed to provide much indication on how to effectively compare or assess the performance of systems, let alone to understand their internal dynamics. Knowledge for many key activities is distributed among agents, institutions and knowledge fields, and further efforts are needed towards assessing the 'distributed knowledge bases', which have a more systemic and institutionally diffuse location. (Smith, 2000).

Evaluating the 'system of innovation' is therefore not merely about evaluating the actors in the system, but also about the intensity and quality of the knowledge flows and interconnections among them. Generally, little attention is given to systemic indicators,

and assessment initiatives seem unfortunately to have been more geared towards quantifying resources and collecting macroeconomic indicators. More emphasis is needed on developing performance measures related to network building and institution building, and to complementarities and synergies in policy design and policy delivery.

INSTITUTIONALISATION OF EVALUATION

Besides the building of adequate indicators, there is a need for greater institutionalisation of evaluation practices. Therefore, the institutionalisation of the evaluation function as well has to be an integral and embedded part of the new regional innovation policies and part of a more general policy intelligence system: Only its consideration during the preparation, design, implementation and administration of policies and programmes makes it an instrument of strategic intelligence. The implementation of the evaluation results starts already at the evaluation definition stage.

The creation of an evaluation system is a very complicated and complex enterprise, and still then only the first step to integral strategic programming. Evaluation should be seen as a feedback instrument, and the implementation of its results and recommendations during the implementation of the policies has to be the focus of the evaluation process.

The implementation of an adequate evaluation system requires the building of evaluation capacities.[5] That includes not necessarily only the setting up of an evaluation agency or a central evaluation unit, but also the development of:

- Technical and human infrastructure (qualifications for evaluators, career opportunities, professional associations, journals, meetings, education and training in evaluation methods and techniques, etc.),
- The correct localisation of the evaluation function (internal, external, centralised, decentralised),
- The inclusion of the evaluations in the policy cycle (demand for evaluation, utilization of evaluation, dissemination of evaluation reports),

[5] Boyle and Lemaire (1999) offer general insights into the needs and factors that influence effective evaluation capacity building.

- The possibility to grow and evolve (investigation in evaluation, international exchanges and comparisons, supranational influences) and
- The adequate consideration of evaluation in programmes and their budgets.

It is clear that every country, region or policy sector (if the evaluation function only covers a particular policy field) requires a new and unique approach to capacity building, parting from its single experience, its expectations and its motivation.

TECHNOLOGY FORESIGHT MECHANISMS

Finally, these effective evaluation mechanisms should be integrated into wider strategic intelligence systems. In light of the above-mentioned shortcomings observed in the implementation of strategic planning initiatives, arguments have been recently put forward as to the merits of foresight-related tools, i.e. in complementing, legitimising and rendering these initiatives more effective (see e.g. IPTS, nov.2001).

Strategic planning exercises have often served as a consultation process, not a real 'vision building' exercise (Capriati, 2001). Therefore, decisions have had a 'short-term' character, and have not been backed by longer-term prospective analyses.

Strategic intelligence may potentially create "broader 'roadmaps' orienting actors towards a more conscious decision making exceeding 'conservative' alignments" (Kuhlmann et al, p.14). It can, in theory, then orient decision making towards more targeted regional policy-making. Throughout Europe, regions are increasingly adopting foresight type exercises as a tool to improve decision-making. Some of the regions undertaking RIS type of exercises have included foresight exercises (e.g. RIS West Midlands) in order to predict trends within regional industries, and in some cases foresight-type initiatives have been developed in the framework of the actions stemming from the RIS initiative (e.g. Castilla y León). However, these exercises are still fragmented and do not constitute 'general' practice (especially in less favoured regions).

The incorporation of foresight-oriented tools can ostensibly aid in providing legitimacy to the strategic planning process and contribute to construct a shared vision that would better guide innovation support policies (Capriati, 2001).

However, Foresight exercises are costly and cumbersome to carry out, and are unlikely to prove useful unless performed correctly. In light of the conclusions of the RIS, certain recommendations can however be put forward as to what conditions are needed in order to guarantee some degree of success:

- Ensure a balanced participation, across locations, organisations and sectors
- Despite the often greater emphasis on the process rather than the results, firms need to see tangible, identifiable results in order to keep their commitment and not to lose momentum
- Ensure an adequate evaluation of the exercise
- Ensure a certain degree of continuity of the exercise in order for it to be an effective learning exercise, but in turn avoiding the danger of 'foresight fatigue'.

Therefore, it should be part of an embedded process of decision making, alongside with the institutionalisation of evaluation.

CONCLUSIONS

Through the course of this paper, the relations between new regional innovation policies and policy intelligence systems have been outlined.

The multi-layered, multi-dimensional and multi-targeted nature of policy and policy-making are seen as requiring more complex and effective policy learning mechanisms, ones which allow policy-makers to both monitor and evaluate policies, mobilise contrasting views and interests and to anticipate and effectively react to future changes. As we have seen, regions are starting to embrace a new type of policy-making, promoting innovation in a more 'bottom-up' and strategic fashion. In the course of this paper, several issues were outlined for the development of a strategic intelligence system as a way to complement, and increase accountability and transparency of, existing policy practices, namely:

- Evaluation mechanisms and the institutionalisation of evaluation, i.e. the capacity building that leads to stable learning and feedback processes,

- mechanisms to ensure adequate participation of different actors and stakeholders, and
- mechanisms to anticipate future trends in order to complement and inform decision-making.

Through the generation of information, the improvement of management, the creation of dialogue and the guaranteeing of quality, efficiency and effectiveness, these mechanisms can potentially influence the evolution of regional or national science, technology and innovation policies.

The regional innovation policies, especially the EU innovative initiatives with their innovative and experimental character, represent a good opportunity to include creation of new evaluation capacities and the implementation of intelligence practices. Certainly, the emphasis on networking, on creating new forms of co-operation and co-ordination, and on the integration of multiple levels and actors permits the integration of a strategic intelligence system. In conclusion, within the contemporary framework of the knowledge society and of complex social systems, the integration of a 'learning function' in regional policies is crucial. Evaluation can initiate this learning function, because it helps to identify weaknesses and gaps where adaptation and development are necessary. Evaluation is part of a reflection process that separates a static programme from a flexible and dynamic, intelligent policy, and further helps to re-define an innovation system in response to new problems, threats and demands.

REFERENCES

Boekholt, P., Arnold, E. and Tsipouri, L. (1998): "The Evaluation of the Pre-pilot Actions under art.10: Innovative measures regarding Regional Technology Plans." June 1998, Mimeo.

Boyle, R. and Lemaire, D.(eds.) (1999): "Building Effective Evaluation Capacity. Lessons From Practice". Transaction Publishers. New Brunswick.

Braczyk, H., Cooke, P. and Heidenreich, M. (eds.) (1998): "Regional Innovation Systems". UCL Press. London.

Branscomb, L.M. And Florida, R. (1998): "Challenges to Technology Policy" in Branscom, L.M, and Keller, J.H.(eds.): "*Investing in Innovation:creating a research and innovation policy that works.*" MIT Press, Cambridge and London.

Capriati, M. (2001) "The Merits and Challenges of the Deployment of Foresight Methods in Less-Developed Regions" *IPTS report* vol 59:nov01

Centre of European Evaluation Expertise C3E (1998): "Development of Evaluation of Structural Interventions in the Member States." Draft Synthesis. Paper presented at the *European Conference on Evaluation Practice in the field of Structural Policies*, Seville.

Chelimsky, E. (1997): "The Coming Transformations in Evaluation" in Chelimsky, E.and Shadish, W.R.(eds.): "*Evaluation for the 21st Century. A Handbook*.". Sage. Thousand Oaks. pp. 1-26

Coombs, R. and Metcalfe, S. (1998): "Distributed capabilities and the governance of the firm." CRIC discussion paper, nº16. University of Manchester.

Derlien, H.-U. (1990): "Genesis and Structure of Evaluation Efforts in Comparative Perspective" in Rist, R.C. (ed.): "*Program Evaluation and the Management of Government. Patterns & Prospects across Eight Nations.*" Transaction Publishers. New Brunswick.

Dodgson, M. and Bessant, J. (1996): "Effective innovation policy: a new approach." International Thomson Business Press.

ECOTEC (1999): "Final Report of the On-going Evaluation of the Regional Innovation Strategies Under Article 10 of the ERDF."

European Commission (1997): "Practical guide to region innovation actions. Regional Innovation Strategies (RIS). Regional Innovation and Technology Transfer Strategies (RITTS)." Office for Official Publications of the European Communities, Luxembourg.

European Commission, (1997): "Second European Report on S&T Indicators 1997"

European Commission (2001)*Strategic Policy Intelligence: Current Trends, the State of Play and Perspectives* - IPTS Technical Report Series

FOREN network (2001): "A practical guide to regional foresight."

Gavigan, J. and Scapolo, F. (2001) "Regional Foresight – Future-proofing and validating Development Strategies." *IPTS report* vol 59:nov01

Georghiou, L. (1996) "The UK Technology Foresight Programme". Futures, nº4, vol.28, pp.359-377

Henderson, D. (1999) *Interactive Learning and Regional Development: New Departures in Regional Policy in Wales*, Unpublished PhD, Department of City and Regional Planning, Cardiff University.

INFYDE (2001) Valoración del Plan Tecnológico Regional Castilla y León (1997-2000). mimeo.

Kuhlman, S. and Meyer-Kramer, F, (1995) "Practice of technology policy evaluation in Germany: Introduction and overview" in Becher, G. and Kuhlmann, S. (eds.): *Evaluation of Technology Policy Programmes in Germany*. Kruwer, Dordrecht.

Kuhlmann, S.; et.al. (1999): "Improving Distributed Intelligence in Complex Innovation Systems. Final Report of the Advanced Science and Technology Policy Planning Network (ASTPP)". Karlsruhe.

Lang, J. / Naschold, F. / Reissert, B. (1998): "Management der EU-Strukturpolitik. Steuerungsprobleme und Reformperspektiven." Edition sigma. Berlin.

MacLEOD, G. (2001): "New Regionalism Reconsidered: Globalization and the Remaking of Political Economic Space" *International Journal of Urban and Regional Research* Volume 25.4 December 2001

Metcalfe, J.S. (1995): "Technology systems and technology policy in an evolutionary framework" . *Cambridge Journal of Economics*, 1995, 19. pp.25-46

Morgan, K. and Henderson, D. (2002): "Regions as laboratories: the rise of regional experimentation in Europe", in M.S. Gertler and D.A. Wolfe (eds): *Innovation and Social Learning: Institutional Adaptation in an Era of Technological Change.* Basingstoke: Palgrave, pp. 204-226.

Palma, D. (2002) "New Technological Paradigms and National Competitiveness: Potential for regional foresight, The IPTS report, issue 62 mar 02

Smith, K. (2000) "What is the 'knowledge economy'? Knowledge-intensive industries and distributed knowledge bases". Paper presented to DRUID Summer Conference on *The Learning Economy - Firms, Regions and Nation Specific Institutions*. June 15-17 2000

Soete, L. And Weel, B.J. (1999): "Innovation, knowledge creation and technology policy in Europe". MERIT working papers ref.mer99001. Maastricht University, The Netherlands

Teather, G. and Montague, S. (1997): "Performance measurement, management and reporting for S&T organizations – An overview". *The Journal of Technology Transfer*, vol. 22, nº 2, summer, pp. 5-12

Toulemonde, J. (1995): "The Emergence of an Evaluation Profession in European Countries: The Case of Structural Policies." In *Knowledge and Policy*. Vol.8, Number.3, pp.43-54.

Tsipouri, L (2000): "Regional Innovation Indicators: merits and problems". *Conference Innovation and Enterprise Creation: Statistics and Indicators France, 23- 24. 11.2000*

Van der Steen, M. (1999): "Evolutionary systems of innovation: Veblian-oriented study to the role of the government factor". The Netherlands: Van Gorcun, Assen.

Vanheukelen, M. (1995): "The Evaluation of European Expenditure: The Current State of Play." In: *Knowledge and Policy*. Vol.8, Number.3, pp.34-42.

Vedung, E. (2000): "Public Policy and Program Evaluation" New Brunswick.