

*The evaluation of regional innovation and cluster policies: looking for
new approaches*

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Introduction

The first thing we must point out is that this paper comes out of an undergoing research project which began in July 1998 and is expected to be concluded at the end of this year, 2000¹. The objective of this project is to provide a reply to the following question: what is the most suitable way of tackling the evaluation of regional innovation and cluster policies? This research, therefore, takes its starting point from the confluence of two professional academic disciplines that, until only recently, have developed as two separate areas of study and, here, are dealt with from an integrated complementary perspective as the most convenient manner in which to find an answer to the problem we have set ourselves: first, theories of regional development and the new action policies for regional economic development stemming from them, and second, the evaluation of public policies and programmes and the development of new models, approaches and methodologies of evaluation.

Nevertheless, in this paper we will not attempt to show the entire range of conclusions and recommendations of this research project as we are still working on them. Our presentation will centre on those aspects of the research in which there is an emphasis on the devolution of powers to regional administration and the new challenges and opportunities brought into play when regional governments appear as new public actors in the evaluation game.

As a result, we have divided the paper into six sections. In the first, in the briefest possible way, there is a presentation of the research project, its content and the methodology applied within it. We feel that this information is necessary in order to understand the ideas presented below, since it is vital to know the context surrounding new regional policies and their evaluation. In the second section, we analyse the new role played by regions in launching this new generation of regional policies. In the third we try to answer the question: Why are regional innovation and clusters policies so difficult to evaluate?. In the fourth section, some recommendations of a general nature are put forward for tackling the new

¹ This research project has been financially supported by the University of the Basque Country: UPV 036.321-HA 120/99.

challenges poses for the evaluation of these policies. In the fifth part, we show the advantages of a participatory evaluation approach when applied to these new policies, and we conclude, in the sixth and final section, by suggesting that it is possible to convert the exercise of evaluation into a social innovation itself.

A brief presentation of the research project²

Theories for regional development and policies have undergone sharp transformations over the last two decades. Since 1980, regional development has moved to new arenas. Throughout these years, social scientists have increasingly focused upon the significance of the region as a fundamental basis of economic organisation and development (Storper, M., 1997; Cooke, P., 1997). At present, concepts like “endogenous development” have been relegated to the sidelines by new theoretical approaches that are more complex and sophisticated. A new regional paradigm has emerged, which some refer to as the "network or associational paradigm" (Amin, A. and Thrift, N., 1995; Cooke, P. and Morgan, K., 1998; Cooke, P., 1997; Grabher, G., 1993; Morgan, K., 1997; Storper, M., 1997; Storper, M., 1995 among others).

From this new approach, regions appear as focal points for learning and knowledge creation in this new age of global, knowledge-intensive capitalism³ and, as a consequence, the regions named as learning regions are increasingly important sources of innovation and economic growth (Florida, R., 1995, p. 528). This increasing role of the region is rooted in what Storper and other economists name "untraded interdependencies" and that "take the form of conventions, informal rules and habits that co-ordinate economic actors under conditions of uncertainty" (Storper, M., 1997, p.5). These untraded interdependencies constitute region-specific assets of production and are at the base of their "relational advantages". These include local tacit knowledge and face-to-face exchanges, formal and informal networks, the quality

² A more detailed presentation of this research project can be found in Diez M. A., 1999.

³ Since they consider that the economic process is fundamentally about the creation of knowledge resources, this leads to interpreting capitalism as a learning economy where knowledge is the most strategic resource and learning the most important process (Lundvall, B. A., 1995).

of local and regional institutions, institutional thickness, long standing habits and norms, conventions of communication and interactions, and so on⁴.

As a consequence, the driving factors behind economic growth are no longer those connected with physical capital, nor even with regional human capital. On the contrary, the new competitive conditions put a premium on social capital, formal and informal norms and rules which can foster reciprocal understanding and mutual confidence among the agents of the regional economy. That is why there is talk of the appearance on the scene of a new generation of regional policies which defines the competitive advantages of regions in terms of localised learning, the construction of networks of association and institutional thickness: "*building knowledge networks, learning mechanisms and social capital* is a necessary complementary asset to the economic factors traditionally thought to influence economic development" (Morgan, K. and Nauwelaers, C., 1999a, p. 236).

So, new regional policies have been developed where much attention is focused on innovation and networks of co-operation between companies as strong elements that must integrate actions undertaken by the regional administration and supported by all the existing institutions in the region (Cooke, P. et al., 2000; Amin, A., 1998; Morgan, K. and Nauwelaers, C., 1999b). In attempting to develop an innovative culture, regional innovation policies sought to promote the innovation message and develop new mechanisms for disseminating it, and "technology policy turned into innovation policies addressing the 'soft' issues as well as the 'hard' technology" (Cooke, P. et al., 2000, p. 137). Rather than an innovation policy *for* companies, it is a question of an innovation policy *with* companies. Greater attention was also paid to the degree of interaction between RTD infrastructures and regional actors and this became one of the most significant factors in regional innovation. Therefore, a system or network approach⁵ provides the best basis for promoting innovation in the regions (Landabaso, M., 1997)⁶.

⁴ Numerous authors have pointed to the importance of these intangible factors which come to constitute relational assets (Amin, A. and Thrift, N., 1995; Amin, A. and Hausner, J., 1997; Asheim, B., 1996; Asheim B., 1999; Cooke P. and Morgan, K., 1998; Malmberg A., 1996; Malmberg, A. and Maskell, P., 1997 and Storper M., 1997; Storper, M., 1998).

⁵ Hence the growing interest in regional innovation systems as a political instrument directed at the systemic promotion of the collective learning process in order to guarantee regional advantages (Cooke, P. et al., 2000; Asheim, B. A., 1999; Boekholt, P. and Weele, E. V., 1998).

⁶ The European Union has been one of the main "animateurs" of regional innovation policies. In particular, since the mid-1990s, the General Directorate for Regional Policy and Cohesion started to become the most

At the same time, with the aim of promoting network co-operation as a tool for regional competitiveness, we see the appearance of new regional policies based on industrial clusters. "The slogan of development policy during the 1990s is fast becoming "industry clusters": geographic concentrations of industries that gain performance advantages through co-location (Doeringer, P. B. and Terkla, D. G., 1995, p. 225). The concept of industrial clusters was popularised by M. Porter as part of his study of competitive advantage to the extent that many states in USA and regions in Europe have embraced this term to justify their policies promoting inter-firm collaboration⁷. Clustering initiatives should be seen as an "agenda that has emerged around concepts of networking, institutional building and industry targeting, rather than as well defined sets of policy measures" (Lagendijk, A. and Charles, D., 1998, p. 9). Political action, in this sense, centres on support for networks of companies or groups of related industries with strong roots where the capacities and possibilities of the region are concerned, and in establishing strong relationships between these clusters and the rest of the intermediate institutions that exist in the region, by means of wide public support designed to cover the needs of these networks.

In this new context, our main question arises: how can these new policies be evaluated and their real effects and impact on regional economy be known?. Here, evaluation and the models and methodologies associated with it appear as a specific field of knowledge. The search for answers in the field of evaluation led to the exploration of two complementary paths.

First of all, it involved an exhaustive re-examination of evaluation as a specific field of knowledge, as a specific theoretical and practical discipline with its own models and methodologies, and as a very fruitful active area of work which sees the emergence of new

enthusiastic promoter of a new regional approach to promoting innovation in the less developed regions. The General Directorate, using as a starting point Article 10 of the European Fund for Regional Development (ERDF), in its section on innovative actions, began to launch a series of regional initiatives - Regional Technological Plans, (RTP) and Regional Innovation Strategies (RIS)- attempted to encourage and help regions in getting new innovation policies, based to a great extent on the principles set out above. For a complete overview of the development of technological innovation policy in the Structural Funds over the last 10 years, see Landabaso and Reid (Landabaso, M. and Reid, A., 1999).

⁷ For a complete presentation of the USA experience with regional industry clusters see the article of Doeringer (Doeringer, P. B. y Terkla, D. G., 1995). For more information about these experiences see Roelandt and Hertog (Roelandt, T. J. A. and Hertog, P. d., 1998); Boekholt (Boekholt, P., 1997, p. 15-20) and Lagendijk (Lagendijk, A., 1999).

proposals and increasingly sophisticated and plural evaluation approaches. This process brought us into contact with what has been termed the alternative or pluralistic paradigm, that represents a radical leap towards a new concept of evaluation. The latter is understood as a dynamic flexible process, open to the participation of the economic and social actors, in which emphasis is laid on the mutual capacity for learning that stems from respect for and recognition of the plurality of values and opinions existing in our society (Guba, E. G. and Lincoln, Y. S., 1989; Monnier, E., 1995; Patton, M. Q., 1997). Some of the new approaches that have appeared under this new paradigm are fourth-generation evaluation, participatory evaluation, utilisation-focused evaluation, learning evaluation or even what is referred to as empowerment evaluation. These new approaches give us a new open framework with which to look at new ways of designing the evaluation of regional innovation and cluster policies.

Secondly, it was necessary to undertake a specific analysis of the evaluation of regional policy, the younger brother, as it were, of regional economic science, which has frequently not been afforded sufficient attention, although in recent years its development has been given a powerful boost, due in particular to the atmosphere created by the interventions of the Structural Funds of the European Commission (Bachtler, J. and Michie, R., 1995; McEldowney, J. J., 1991). In these two areas of knowledge, the research we present here attempted to provide solutions to the challenges thrown up by the evaluation of regional innovation and cluster policies.

The re-examining of regional policy evaluation revealed, in particular, how evaluation practice had evolved over time. Pioneering work on the impact of regional policies in the early 1970s was focused on the analysis of economic data over a period of time and used econometric techniques based on statistical analysis, multiple regression analysis, time-series or even input-output models to estimate the impact of the policies⁸. However, due to the limitations of these traditional methodologies, evaluators progressively turned to more

⁸ For a review of the evaluation of regional policies during the 1970s and 1980s see the following articles: Ashcroft, B., 1982; Bartels, C. P. A. et al., 1982; Diamond, D. R. and Spence, N. A., 1983; Folmer, H., 1986; Hart, D., 1991; Nicol, W. R., 1982; Schofield, J. A., 1979.

comprehensive evaluation approaches such as cost-benefit evaluations and survey-based approaches targeting companies which had received political assistance⁹.

By the 1990s, the main evaluation method applied to regional policies across Europe and North America was that of cost-benefit approaches. These studies have sought to derive methods for identifying the benefits produced by the policies and comparing them with the cost of the Exchequer (Bovaird, T. et al., 1991, p. 109; Foley, P., 1992, p. 558). As a result, they are able to provide Value for Money performance indicators. Here, big methodological efforts have been directed at solving problems in the estimation of the net effects of the policies such as additionality¹⁰, displacement effects, multipliers and linkages, the measurement of benefits, where jobs continue to be the most commonly adopted measuring tool and, moreover, on the cost side of the account. The final result is usually a cost per job ratio and a leverage ratio¹¹.

The tension centres around whether these approaches can calculate cost and benefits with sufficient accuracy and around the difficulties involved in valuing the intangible benefits (Georghiou, L., 1998, p. 48). In addition, critical points and drawbacks have been identified and new approaches have started to appear¹²(Bovaird, T. et al., 1991; Coulson, A., 1990; Geddes, M., 1988; Hart, D., 1991; Murtagh, B., 1998; Turok, I., 1990; Turok, I., 1991). In this search for new proposals for evaluation, these authors rejected "value for money" studies and pronounced themselves in favour of more qualitative and more political evaluations. In a certain sense, a new way of conceiving evaluation, an alternative or pluralist paradigm of regional policy evaluation, timidly began to show its head (Turok, I., 1991; Hamblenton, R. and Thomas, H., 1995).

⁹ For a review of cost-benefits analysis applied to regional policy evaluation and empirical case studies see: Anderson, G. and Feller, I., 1994; Schofield, J. A., 1987; Swales, J. K., 1997; Willis, K. G. and Saunders, C. M., 1988.

¹⁰ See the works of Storey (Storey, D. J., 1990) and Willis (Willis, K. G., 1985).

¹¹ There are a large number of publications that deal with these methodological challenges (Begg, H. M. et al., 1998; Coulson, A., 1990; Foley, P., 1992; Gregory, D. and Martin, S., 1988; Martin, S., 1989)

¹² Some of the concerns introduced by these new evaluation approaches were: the need to introduce the social and institutional effects of these policies, the possibility of questioning the objectives of the programmes as unique criteria for evaluation, the region as the space where the effects of regional policy unwind, the need to understand how and why policies worked within their context and particular circumstances, the political dimension of evaluation and a recognition of evaluation as a subjective activity where different perceptions of social reality converge.

Within this new framework, our research project set out to question precisely what was the value of the traditional, objective and quantitative models and methods of evaluation, when applied to the evaluation of regional innovation and cluster policies. That is to say, we were of the opinion that classical evaluation models, based on quantitative analyses and/or "value for money" studies, did not adapt to the specific characteristics of this new generation of regional policies and proved to be of little use for evaluating these policies.

Many of these new ideas about regional policy evaluation are already being transferred to evaluation practice, where new focuses are being tried out for the evaluation of regional innovation policies and inter-company co-operation programmes or new assistance to SMEs. Once again, the role played by the European Union has been of great importance as a driving force behind research and empirical analysis about new evaluation methods and as a disseminator of new evaluation techniques. In particular, mention must be made of the contribution made by the General Directorate for Regional Policy MEANS Program, whose publications and studies have helped to spread the practice of evaluation in Europe, where new approaches to evaluation as alternatives to the quantitative paradigm are beginning to make themselves felt. Our research project analysed a sample of evaluation studies that were commissioned recently by this General Directorate of European Commission. To be specific, 6 evaluations have been re-examined: an evaluation of Community measures of support for Business and Innovation Centres- BICs- (P&G, 1998); an evaluation of the pre-pilot actions of Article 10: the Regional Technological Plans -RTPs- (Boekholt, P. et al., 1998); an intermediate evaluation of the pilot projects Regional Innovation Strategies -RIS- (ECOTEC, 1999); an evaluation of the Research, Technological Development and Innovation actions taken by the Structural Funds in Objective 2 (ADE et al., 1999); the thematic evaluation of the impact of the Structural Funds (1994-1999) on Research, Technological Development and Innovation in Objectives 1 and 6 (Higgins, T. et al., 1999); and the thematic evaluation of the impact of the Structural Funds on SMEs (Ernst & Young, 1999). They are all good clear exponents of the most up-to-date practices in the evaluation of these new regional policies.

At the same time, the results obtained were compared with some recent publications that offer a review of evaluations of policies that enhance innovation opportunities, including those of the activities of institutions, technology transfer mechanisms and regional innovation systems (Autio, E., 1998; Georghiou, L., 1998; Kuhlmann, S., 1998) and inter-firm

collaboration schemes (Rosenfeld, S. A., 1996). Other publications present singular evaluations of public programmes supporting business development always trying to use new models for evaluation (Finne, H. et al., 1995; Stame, N., 1999; Torvatn, H., 1999 among others).

Taking all these experiences as an empirical base, and analysing the pros and cons of each approach, we think it is possible to draw valuable conclusions that are helpful for establishing and specifying a series of useful recommendations for the evaluation of these new regional policies.

The role of the region in new regional policy

As has already been explained, this generation of new regional policies makes a radical break with the traditional model and constitutes the beginning of a new stage of profound changes in the objectives, strategies and measures used. As some authors points out, "traditional regional policy had been about building physical infrastructure, while the new accent is on building social capital- that is, a relational infrastructure for collective action based upon trust, reciprocity and the disposition to collaborate for mutually beneficial ends, the so called 'intangible factors' which are deemed to play such an important role in innovation and economic development today" (Morgan, K. and Nauwelaers, C., 1999c, p. 4). These intangible factors should not be understood as a regional asset that is only developed within specific geographical and historical spaces, but rather as a regional asset that may be developed positively through public intervention.

At a practical level, what this means is that regional policy must favour the creation of a *framework for interaction*: a framework in which companies, organisations and public agencies are able to explore joint solutions to problems shared in common, a framework in which, once dialogue has been established, attitudes that are more receptive to the interchange of information and interactive learning are generated. The creation of this framework for interaction contributes towards generating a cultural environment to stimulate and develop the relational advantages of the region. From this point of departure spring precisely this new

generation of regional policies focused on innovation and competitiveness that we mentioned above.

In this new context of regional policy, the role of the state will be that of a “animateur” of regional development (Morgan, K. and Nauwelaers, C., 1999c, p. 11). For Morgan and Nauwelaers, to conceive the state as “animateur” means the introduction of an alternative concept which emerges from economies of association and learning economies. The key to this new conception does not lie in the scale or degree of public intervention, but in the *mode* of intervention in the regional framework in order to achieve a systemic approach and effective interaction between all the regional agents. The fundamental task corresponding to public action, in this new generation of regional policies, is to create the conditions, the formal framework as well as the informal norms of trust and reciprocity, in short, the social capital that is required so that companies, intermediate organisations and public agencies be capable of self-organising around a process of interactive learning (Cooke, P. and Morgan, K., 1998, p. 23).

Following Cooke and Morgan (Cooke, P. and Morgan, K., 1998, p. 23-25; Morgan, K. y Nauwelaers, C., 1999c, p. 12-16), to understand the state as the "animateur" implies, at least, two institutional innovations of great importance: the devolution of powers from a national to a regional and/or local level and the delegation of certain tasks of promotion and stimulation to intermediate organisations of a private and/or public nature.

Firstly, we will deal with the devolution of powers from a national to a regional and/or local level. According to these authors, the region possesses very clear advantages that make it the most suitable area from which to launch development policies. First of all, it is able to act on local knowledge and, in particular, on tacit knowledge in relation to, for instance, the direct personal knowledge of the business collective and formal and informal relationships. Secondly, the regional level happens to be most appropriate for the construction of social capital since it is in this area of close proximity where face-to-face contact takes place and relations of co-operation and interchange are established, based on mutual trust and reciprocal understanding. "The regional level may be the most significant context in which to develop these attributes because it is the lowest *strategic* level at which to sustain the *regular*

interaction which is a key condition for building trust" (Cooke, P. and Morgan, K., 1998, p. 80).

For Morgan and Nauwelaers, however, what appears most important is that these two assets, local knowledge and social capital, are two potential assets that need to be mobilised through conscious political action because, otherwise, "they do not exist in some primordial form at the regional level" (Morgan, K. and Nauwelaers, C., 1999c, p. 15). The role of regional policy must, therefore, be that of promoting the development of the relational advantages of the regional economy and to transform them into competitive advantages for the region. This is not an easy task, as very special attention must be given to the nature of inter-company dependency and to the rationalities of behaviour capable of encouraging these relational advantages, such as open links, interactive decisions and/or a reflexive or recursive rationality. Hence, Amin points out that "regional-building cannot stop at simply securing regional political autonomy. Equally - perhaps more important - are matters of who makes decisions, and how" (Amin, A., 1998, p. 81). In this sense, Amin is quick to remind us how important is that the decision making process be absolutely open to the various associations representing local interests and to the need to introduce participatory processes in decision making, as two fundamentals ways of "enhancing a democratic and interactive pluralism" (Amin, A., 1998, p. 81), whilst all these bodies take part in creating policies of regional development.

In second place is the need to delegate some of the tasks stemming from these new regional policies to business associations that have a wider knowledge of local realities and a greater credibility in the eyes of the companies they must work with. This change implies abandoning the direct intervention of the public sector and opting instead for the indirect stimulation of the regional business "tissue" (Cooke, P. and Morgan, K., 1998, p. 23). These ideas lead, therefore, to a broadening of the institutional base upon which the new regional policy is built and to introducing a culture of association as common practice in a wider sphere of areas and institutional relations. Through the creation of these economies of association, the regional actors are encouraged and empowered for self-government and become able to build bottom-up initiatives, making use of their local knowledge.

Consequently, the process of institutional reform which must accompany the new conception of the state as animateur of this new generation of regional policies goes far beyond decentralisation and delegation, for it implies learning and institutional reflexivity. In fact, it presupposes the introduction of a new reflexive culture within the institutions and the public sector itself that is capable of stimulating the development of the kinds of logic that are connected with learning and adaptation and the need to overcome institutional rigidity. The region should not reproduce the logic of traditional behaviour proper to the central administrations but, rather, ought to develop a system of open functioning, empower public agencies and create opportunities for discussion and the transmission of information and knowledge conducive to institutional learning. It is a matter of the regions having the necessary powers at their disposition so that they can co-ordinate and direct, though without imposition, formal and informal interrelations that move towards learning and knowledge: "Powers and devolution to 'orchestrate the conversations'" (Morgan, K. and Nauwelaers, C., 1999c, p. 12). The open inclusive process of construction, therefore, of this associative regional government, is often more important for making regional governance possible than actually having the capacity for self-government (Amin, A. and Thrift, N., 1995, p. 56)¹³.

Learning and institutional reflexivity should lead towards the public sector itself acquiring a strategic innovative capacity. The regional authorities would have to consider themselves to be an essential component in the building of co-operative and reflexive rationalities of behaviour and to be those responsible for showing the way to the rest of the regional agents (Morgan, K. and Nauwelaers, C., 1999a, p. 227). As these authors point out: "regional government is an important ingredient in the recipe for regional development to the extent that it is able to help others to help themselves by animating communities of meaning, by building capacities for action and by crafting networks through which agents are able to collaborate for mutually beneficial ends" (Morgan, K. and Nauwelaers, C., 1999c, p. 14). What is required is a democratic radical agenda: to democratise the economy, regional government and civil society, giving a voice to the most poorly represented social groups and

¹³ The question is "to provide the region with a 'voice', with agency, with orchestrating capacities which cannot be reduced to arbitrary statist forms invented by an élite of policy makers on the look-out for a quick fix, or for a way of pursuing narrow sectarian interests" (Amin, A. and Thrift, N., 1995, p. 56).

constructing new mechanisms of participation for sectors of the community that have, till now, been excluded¹⁴.

The evaluation of regional innovation and cluster policies

A detailed re-examination of regional innovation and cluster policies, of their characteristics and peculiarities, as well as of their evaluations, makes it possible to identify the most problematic elements when undertaking their evaluation. The difficulties that have to be overcome in evaluating these new regional policies make themselves known in the shape of new methodological and political challenges for evaluation work and lead towards a search for new focuses that make their solution possible. From the perspective of evaluation, the most important characteristics of these new regional policies are:

Intangible objectives

Regional innovation and cluster policies are directed towards the creation of knowledge, learning and capacity building, both at a personal and at a collective level (Landabaso, M., 2000). The objective of these new policies is to introduce changes in the innovative behaviour of companies and regions, taken as a whole, through the driving force of processes of learning and of the creation and accumulation of knowledge made possible by action taken on social capital. The aim is to transform regions into learning regions. How can those effects be measured and how can one know if they are being produced as the politicians had expected? The problem is to transform these intangible objectives into operative ones: How may they be observed and measured? It is difficult to specify in precise terms and using quantitative indicators, and even qualitative, what individual and collective learning and the building of institutional capacity mean.

The effects of these policies may be revealed, then, not only via economic impact on well-defined concepts such as competitiveness and/or other indicators connected with market exploitation (sales of products, reductions in costs and so on), but also through non-economic

¹⁴ "The practical agenda for the region, therefore, cannot avoid the question of regional *political* empowerment and regional *political practice*" (Amin, A. and Thrift, N., 1995, p. 59).

effects on the behaviour of companies and institutions and regional organisations. The changes produced by these new regional policies can be translated in the form of processes of organisational, individual and collective learning, in influences on conventions, norms and standards. These effects, as demonstrated by the evaluating experiences reviewed in the research project, are, in all cases, much more important than the direct economic effects of these policies.

The problem is that these effects are not easily reducible to a single criteria of evaluation, represented by a monetary cost-benefit ratio, as required by cost-effectiveness analyses and other models that have been traditionally applied for the evaluation of regional development programmes. Whichever evaluation approach is adopted, the use of qualitative indicators to capture and observe these effects is indispensable, as well as the need to obtain information about the effects directly from the beneficiaries and intermediate organisations, which become involved, by means of personal interviews, panels and group sessions, given special attention to the observation of the organisational and cultural changes that arise from these new policies.

Complexity of cause-effect relationships

These new regional policies are aimed at innovation, but innovation is now seen as a process of socially interactive learning in which a great number of agents and organisations take part and where continuous feedback loops are produced (Morgan, K., 1997, p. 493). As E. Autio remarks, “the knowledge creation, diffusion and accumulation processes taking place in innovation systems are often highly complex, diffuse and unpredictable, and it is often a practical impossibility to measure them accurately and objectively” (Autio, E., 1998, p. 132). As a consequence, it is not possible to identify a linear cause-effect model of relation between inputs and activities, on the one hand, and the results and effects of regional policies, on the other, as needed and demanded by traditional evaluation models, whether they be experimental designs or econometric models. Nevertheless, there is the need to understand the logic behind the functioning of these policies, the Theory of Action, and to improve our knowledge of the working mechanisms. Evaluation ought to provide information which leads to better knowledge of the economic and social problems for which solutions are being

sought. How and why are these effects occurring? Why do some practices work well while others do not?.

A naturalist holistic approach might be more appropriate for evaluating regional innovation and cluster policies and case studies could prove to be an evaluating focus able to help resolve the complex structure of relationships. However, alongside the latter, there also exist other options for evaluation, such as the proposal for "realistic evaluation" and its intangible functioning mechanisms (Parson, R. and Tilley, N., 1997), plus the studies carried out by Weiss and other American evaluators (Weiss, C. H., 1995) in connection with evaluation based on the theory of change which appear to constitute useful evaluating options for comprehending how these complex mechanisms function and why.

Systemic nature: at a horizontal and vertical level

Regional innovation and cluster policies attempt to work simultaneously on the different components of the innovation regional system and/or the regional cluster, favouring the creation of links for horizontal co-operation directed to improve the overall behaviour of the system. Interactions are produced within a full range of contexts: "between firms and the basic scientific infrastructure, between the different functions within the firm, between producers and users at an inter-firm level and the wider institutional milieu" (Morgan, K., 1997, p. 493). Hence the emphasis given to the creation of networks and other intermediate institutions able to act positively on the meshing of the whole system.

These policies act simultaneously on multiple fronts (social, economic, educational, institutional) and seek to generate synergies between them. One option available to evaluation will be to observe the progress registered in each stratum of this system (in each subsystem). This option, however, involves forgetting, or even losing, part of the essence of this kind of policy, where the intention is to work, at the same time, on all the elements of the system as a whole, producing synergies that are fundamental for the regional development strategy adopted. If the evaluation centres on a discreet component of the system, the evaluator is unaware of the effects of their interaction. On the other hand, these new regional policies seek to produce effects on different levels of actors and/or beneficiaries, and that is why they show

also vertical complexity. These policies attempt to introduce changes in companies, opening the way for more innovative behaviour, in clusters of regional companies, helping them to become more competitive, and also in the regional community as a whole, transforming it into a learning region. That is why it is difficult to capture the effects of these policies and why it is necessary to work to identify different levels of effects: on individual companies, on clusters and organisations supporting innovation and on the region. Moreover, the interrelations produced between these three levels of impact cannot be established in a clear way, nor is it simple to specify, in precise terms, their nature¹⁵.

Evaluation will have to take into account the need to observe the changes produced in each of the horizontal sub-systems and in the three vertical levels at which it is intended to provoke observable changes. In addition, the interactions and synergies would also have to be analysed as part of the logical framework of the policy. To observe these effects it is helpful to use case studies as an evaluation method, because of their capacity to pinpoint information and contribute to understanding the phenomena that develop in complex contexts.

Embeddedness

Each regional innovation policy and each regional cluster policy is unique. They are the specific responses of each region to the needs of companies and contextual conditions. Moreover, these policies include institutional building as a key factor for ongoing adaptation, innovation and development. These policies, therefore, are firmly rooted in their social and cultural context, embedded within their socio-economic and institutional environment. They are policies that spring from and evolve within their own regional situation: identifying the socio-economic conditions, the needs of companies and the region, the political and institutional context within which regional policies take shape, with the aim of achieving a single design. The distribution of roles between different institutions, the channels and mechanisms of interaction are specific to their context and cultural environment (Autio, E., 1998, p. 136).

¹⁵ There is a connection between these levels and the traditional division between micro-economic and macro-economic impact. In fact, in some evaluations this classical division becomes transformed into micro, meso and macro impact, corresponding to the three levels we have identified.

Consequently, the cultural, social and political factors should form an integral part of the evaluation. The evaluation ought to be of a more contextual character, where exogenous factors of a social, economic, political and geographic nature transform into elements integrated within the evaluation, in place of attempting to control their effects so as to take them out of the evaluation and/or deal with them as 'confounding factors'. How do contextual factors exert an influence on the effectiveness and the functioning of these policies?

Dynamic and flexible

The process of learning is dynamic and continuous interactions take place within it: intercompany and interinstitutional interactions and flows of knowledge, resources and human capital which evolve over time. The objective of regional innovation and cluster policies is to launch "a process of building up collective learning in a bottom-up and interactive fashion" (Landabaso, M., 1997). As a consequence, the design of the evaluation must also be a design that is capable of evolving, that is flexible at adapting itself to changes in the policy under evaluation and in the changing conditions in which this new regional policy unfolds. It is for this reason that the term evaluation process is used, rather than evaluation study, for the evaluation itself must be understood as a developmental process.

Moreover, given the experimental and innovative nature of these policies, we are unaware of important aspects concerning the process itself, this is, the way in which these results are produced and, therefore, it is vital to evaluate the real process. "The challenge lies in evaluating the processes themselves" (Autio, E., 1998, p. 136). So, throughout the evaluation experiences that have been examined, it has been observed that the evaluation of the processes has turned into a practice integrated into the evaluations carried out, with the aim of not only knowing their results, but also the ways of arriving at them and of deriving lessons on good practice from this analysis.

Therefore, the design of the evaluation must be capable of breaking down the traditional division between summative and formative evaluation and stimulate approaches whereby both type of evaluations form part of the same evaluating exercise.

The region as active subject

As has been indicated, one of the distinctive characteristics of regional innovation and clusters policies is that they imply, on the one hand, a devolution of powers and responsibilities to the region and, on the other, the introduction of new forms of designed regional policy based on bottom-up approaches and on the active participation of all the regional actors. The consolidation of the region as the active subject of regional policy means that a new solicitant and user of evaluation results appear in the evaluation sphere. This new client has given rise to the development of numerous evaluations, especially, as we mentioned above, in connection with the interventions of the Structural Funds. On the other hand, opening up the policy design to the different actors in the regional system of innovation and in the regional clusters, to companies, to intermediary organisations, etc., supposes a radical change in the ways of making regional policy, through dialogue and communication directed towards consensus and helped by democratic representational structures in the regional institutions themselves.

At this more political level, evaluation should be able to take up two very important challenges. In the first place, the evaluation of these new regional policies ought to contribute by helping regional governments, governments with little experience in policy design, to set better and better policies in motion. Secondly, the evaluation should be able to serve as a useful tool for mobilising communities for regional action, for providing training for companies and organisations, for promoting co-operation at all levels and for improving learning capacity. To put it succinctly, evaluation should transform itself into one more element in regional policy as such, into an element of social innovation. When this approach is applied to evaluation, in a natural way, that implies a recognition that policies are developed within a pluralist society. The design of the evaluation, therefore, must be guided by the participation of all the actors involved in this new generation of regional policies and the evaluation must itself turn into an open process of collective learning.

On the road towards new evaluation approaches

All the characteristics that have just been mentioned make up a broad diverse whole of challenges of a methodological and political kind which the evaluation must confront and

which require new forms of thinking concerning the content and design of regional policy evaluation. An approach must be sought that is able to adjust the focus of the evaluation in tune with the specificities of these new regional policies. There is no doubt that some of the new models that have been developed within the area of public policy evaluation have a clear practical application in the evaluation of regional policies, but it is vital to work so that these models adapt to the specific characteristics of each policy under evaluation. In this sense, although tremendous efforts have been made by regional evaluators over recent years, there is still much work left to do so as to consolidate, once and for all, this area of research into regional policy. The aim of the general recommendations we make below is precisely to contribute to improving evaluation practice concerning regional innovation and clusters policies.

To begin with, our starting point is that there is no single evaluation method amongst all the possible options that can serve as a methodological recipe applicable to each and every evaluation of these new regional policies. Therefore, there does not exist an ideal methodological design. Such a statement means implicitly that each situation requires a unique specific evaluation design. As some evaluators maintain, evaluation is more an art than a science. ‘The art of evaluation involves creating a design that is appropriate for a specific situation and particular action or policy-making context’ (Patton, M. Q., 1990, p. 249).

In second place, it is taken for granted that evaluators must be creative, using their imagination and technical expertise in trying to identify new designs for evaluation that prove most suitable for the characteristics of each policy, the socio-political context and the needs of different stakeholders. In our consideration, evaluators must use the models and techniques that adapt best to each situation, regardless of whether they be of a quantitativist or qualitativist nature. Indeed, there are proposals directed at a combination (triangulation) of inductive and deductive analysis and towards the joint use of quantitative and qualitative data within the same evaluation. It has become absolutely apparent that the toolbox of the new evaluator is expanding, given the multiple combinations of techniques and data that it is possible to obtain and use. The evaluation of regional innovation and cluster policies, therefore, faced with a plurality of evaluation options where the evaluator must be able to combine creativity and technical skills. This is within a context that is increasingly more open

to experimentation and the combination of paradigms and methods, breaking out of the straight-jacket within which evaluation had developed in the past.

Thirdly, we are in a position to say that the pluralistic paradigm presents itself as the most suitable evaluation framework for tackling the evaluation of these new generation of regional policies. In fact, many of the difficulties and challenges thrown up by these policies receive a better response within this pluralistic approach which appears to suit, in a more natural way, the specific characteristics of these policies and the objectives pursued by regional governments through their design and application, as is expressed in the following table.

Table: Matching regional policies to evaluation approaches

<i>Characteristics</i>	<i>Challenges</i>	<i>Evaluating proposals</i>
Innovation is a complex interactive process where continuous feedback is produced	There is no linear causal relationship between resources, activities, results, effects and regional impact	What is needed is a holistic approach and the application of naturalistic, qualitative and interrogative techniques
The objectives of the policy are the creation of knowledge, learning and capacity building	Well-defined objectives do not exist and there are numerous difficulties in quantifying effects and identifying measuring indicators	Qualitative information is the most suitable and useful tool for estimating the effects of individual and institutional learning
Systemic nature: at a vertical and horizontal level	Complex interactions are produced between the different regional subsystems and effects at different levels: companies, institutions, regional community	Case studies as a method of observation and analysis
The policies are firmly rooted in their context and embedded in their socio-economic framework	It is necessary to know and understand the cultural and political context in which the evaluation develops	Social, cultural and political elements are an integral component of the evaluation. Evaluation is a socio-political process
Innovation policies are dynamic processes where continuous interactions are produced	Evaluation must be an active-reactive-adaptive process in relation to changes in conditions (context) and the needs of stakeholders	Evaluation design must be dynamic and flexible
Policies are designed via a bottom-up approach and with the active participation of all the regional actors	Evaluation must be opened up to the different actors involved and must recognise the existence of a pluralist society	The participation of the actors involved must guide the evaluating design. Evaluation is a collective learning process

Participatory evaluation: a new practice

From different disciplines and traditions within the evaluation field a wide range of related approaches have been designed which could be grouped together under the designation of participatory evaluation. Although there are some differences between these approaches¹⁶, they all provide an evaluating focus committed to the development of a change or improvement that is interactive, contextualized and directed at knowledge building. This focus has given rise to evaluating practices with provocative implications, both theoretically and practically speaking. Essentially, participatory evaluation starts out from a recognition that evaluation develops within a pluralistic society and allows evaluation to be built upon the ideas, values and aspirations of those taking part at all levels and throughout the whole evaluation process.

The evaluation design is not imposed from outside, but gradually takes shape through the collaboration of all the stakeholders and their active participation in the analytical evaluation process. This focus considerably increases the probability that the results achieved by the evaluation will be used in an effective way to improve the policy, since it allows the actors in the programme to make the actual evaluation process and its results their own, transforming the evaluation into a learning process which, in a certain sense, belongs to them.

In our opinion, the evaluation of regional innovation and cluster policies should be understood as a participatory evaluation since this approach makes it possible to convert evaluation into an exercise contributing to achieving the very goals of these new regional policies. Moreover, this focus is helped in practice by the decentralisation process of these policies. It is precisely at the regional and/or local level where participatory evaluation can be easily put into action. Other evaluators have given their support to this approach. Thus, Stame, for instance, maintains that the evaluation of new regional policies should be transformed into participatory evaluation (Stame, N., 1999, p. 105) and take into consideration the viewpoints of the different actors in relation to both the methodology as well as the content of the evaluation. Kuhlmann stressed how the various interests and

¹⁶ These approaches tend to differ in the emphasis placed on action as compared to research and the construction of theories, on the role played by the evaluator and in their political orientations (Brown, P., 1995, p. 216).

perceptions of the actors taking part must be explicitly taken into account (Kuhlmann, S., 1998, p. 136).

Nevertheless, this is still an approach that has, to date, been very little used in regional innovation and cluster policies evaluations, as demonstrated by the review of evaluating experiences undertaken within this research project. So, only a few evaluation teams, when faced with new regional policy evaluation, have reached a point where they consider the possibility of opening up the evaluation process to the regional actors involved in these policies¹⁷. This approach, without any doubt, seems to contradict a defence of planning processes and regional policy designs built from a bottom-up approach, where the participation of the regional actors becomes an essential element as one of the new ways of making regional policy. Consequently, if one is defending the idea that new regional policies must be jointly designed by all regional stakeholders, what stops these ideas being extended to the evaluation process?. In principle, there is nothing to prevent us understanding evaluation as a natural extension of this participative open process in the society of the region as it designs its own development policies.

Perhaps it is exactly at this point where we find the reason behind the lack of attention given by these new regional policies to the actual evaluation exercise. Indeed, one of the most important weak points identified by the evaluations under examination was, in all cases, that the new regional policies did not pay sufficient attention to designing mechanisms and structures that allowed later evaluation of these policies. In our consideration, leaving aside the methodological problems, this omission is due mainly to the predominance of a traditionalist objective view of evaluation and to the failure to introduce open processes of participation into the actual evaluation exercise¹⁸.

That is why we stand for participatory evaluation, first, as a natural prolongation of the objectives pursued by these new generation of regional policies, second, as a decentralisation able to transform the region into the agent responsible for its own development process and, third, as the introduction of participative processes for drawing up new regional policy. The

¹⁷ Some exceptions can be found in the following evaluations: Finne, H. et al., 1995 and Torvatn , H., 1999.

evaluation process must therefore be institutionalised within the actual dynamic of regional policy, “functioning as a medium of moderation, pointing to the problems of the actors and reflecting their learning processes” (Kuhlmann, S., 1998, p. 137). In our opinion, the advantages that participatory evaluation introduces into the evaluation practice of regional innovation and clusters policies are very important:

- Evaluation is understood as a learning process around the policy evaluated from the perspective of all the stakeholders. It is precisely the very participants in the policy of economic development who contribute to understanding and learning about the processes of change underlying the programme and to the development of a new awareness regarding the policy under evaluation. Evaluation ceases to be an exercise of assessment where the predominant perspective comes from only one angle, that of the objectives of the policy designer as the only criteria for evaluation, and becomes an exercise stimulating the appearance of a learning process (Kuhlmann, S., 1998, p. 138).
- This common learning process allows the creation of a working framework where the evaluation process is used to build trust among stakeholders, managers, institutions and evaluators (Kuhlmann, S., 1998, p. 138). Participatory evaluation makes it possible to democratise the process of knowledge building. Active participation should be a practice applied throughout the entire evaluation process and be directed towards identifying and resolving problems and improving understanding of regional necessities.
- Evaluation is used to create useful knowledge for those involved in the process in order to achieve their objectives in the short and long term. “The process is aimed at creating a situation where new understanding is built on the ‘best’ from all participants” (Finne, H. et al., 1995, p. 15). In a pluralist society where there exist a multiplicity of viewpoints and perspectives, to expect to obtain an exact objective measure of policy impact, in the sense of an unchangeable truth, is neither possible nor desirable. Furthermore, when attempting to evaluate complex policies involving broad interrelated aims, the objective of the

¹⁸In this context, the managers of the new regional innovation programmes are reluctant to invest time and resources in evaluation, since it appears to be a secondary exercise among the priorities in the new political agenda of their region, and there always seem to be more urgent tasks for them to achieve their objectives.

evaluation must be to create practical knowledge, instead of mechanistic judgements concerning the results, and attention must be fixed constantly on the learning processes.

- This creation of knowledge is, at the same time, a facilitator of action and regional mobilisation, it is a practical kind of knowledge that will stimulate the capacity of regional governments, community institutions and organisations, in general, to solve the pertinent problems (Finne, H. et al., 1995, p. 12). In this context, participatory evaluation favours learning for action, since the evaluation process is used to propel action directed at policy improvement.
- Participatory evaluation, then, makes it possible to strengthen the power of the participants to resolve their economic and social problems. For this reason, some researchers highlight the capacity of evaluation to prepare the regional community for action (empowerment). Evaluation is understood as a process of collaborative change that combines knowledge creation and, through learning, facilitates mobilisation for action. Participatory evaluation may be conceptualised as a way of developing awareness, facilitating learning and empower to the different stakeholders to resolve the challenges confronting the region. It broadens the objectives and the agenda of the region.

Evaluation becomes an integral part of regional policy and its normal activity. It forms part of policy as one more element in its planning, implementation and development. Evaluation is understood as a tool that makes it possible to monitor the progress of the initiative, make short term corrections and centre on regional policy objectives. Through evaluation, the meaning of social reality can be explained from different perspectives, while there is an increased likelihood both that the stakeholders will feel that the results are relevant and proper to them and that, in this way, there is a guarantee of them being put into practice.

Evaluation: a social innovation?

Participatory evaluation lets evaluators, managers and social groups work together in an open interchange of information where everyone has the chance to take part in the debate. This process of collaboration creates new demands for evaluation. The aim of evaluation

shifts beyond its contribution towards an understanding of the effects of the regional policy under study and of the generation of learning processes, to take up the question of how this knowledge and learning can be used in the taking of decisions, in action. Evaluation plays a new role in which the interchange of information, and formal and informal learning, demystify the process of evaluation itself, clarify its function and expectations of what evaluation can offer, and generate mutual trust, helping regional actors to know and understand how others comprehend the world.

As a consequence, participatory evaluation as applied to these new generation of regional policies turns evaluation into an innovation in itself, to the degree to which it is transformed into a useful tool for mobilising the community towards regional action, empower companies and regional organisations so that they can resolve their own problems, stimulating co-operation and the creation of mutual trust and building the capacity to learn. Is it not the case that all these elements are essential components common to regional innovation and clusters policies? Are we saying, then, that evaluation is a fundamental tool, an instrument allowing regional governments to achieve the objectives pursued by their new regional policies? Our suggestion is that evaluation needs to go through the same process of adaptive interactive learning followed by innovation, and that evaluation is called upon to carry out a very important role in new generation regional policies.

Indeed, both participatory evaluation and new regional policy are built upon the development of a process of interactive learning. They both recognise the power of participation and they strive hard to make frameworks of work and joint action develop, directed at improving and sustaining such participation and collaboration between regional agents. In their essential make-up, both share the same conception concerning the need for collective transformation based on the generation and liberation of energy and hopes regarding the future of the region, which would be produced through collective dialogue, the construction of a common regional perspective and action. New generation regional policies are experiments for transforming regions into learning regions, participative evaluations contribute precisely to social learning and evaluation becomes an indispensable social innovation for making a region an intelligent region.

So the evaluation process becomes a powerful tool for the promotion of collaboration and the commitment of the regional community towards the economic and social future of the region. The building up of a regional capacity for solving continuous problems is an objective of regional policies and, given that participatory evaluation puts an explicit premium on building knowledge through participation within evaluation structure and design, it carries out an educative and mobilising function in relation to local actors and their participation in a continuous process of regional planning. It helps to make explicit the agenda for building up regional policy capacities and integrate the role of evaluation within that agenda.

Moreover, this new approach to evaluation imbues evaluation results with a national and international projection of a wider scope than is usual, expanding the natural audience of its results to the global area of policy and research concerning territorial development. On the one hand, evaluation makes it possible to improve the design of new generation regional policies. Not only is it going to be able to offer information concerning the results of specific measures applied within that specific regional context, but it can also help to know which elements favour the success or failure of these policies and what conditions produce the best or worst results. On the other hand, this focus can contribute to filling in the gaps in existing knowledge concerning new regional development theories and help to develop a research agenda for the future.

It is vital, therefore, to create conditions of legitimacy, between the scientific community and politicians, for evaluations based on focuses of participative, qualitative and contextual evaluation. It is a matter, therefore, of creating opportunities for evaluators to develop and explore the latter, as well as other focuses and methodologies that are suitable for the specificities of this new generation of regional policies. Emphasis on this participatory approach to evaluation should not make us forget the need for more innovations and experiments directed at new learning strategies. As Georghiou states, "variety here is as productive as it is in the innovation system itself" (Georghiou, L., 1998, p. 49).

References

- ADE; Enterprise PLC and Zenit (1999): "Evaluation of Research, Technological Development and Innovation related actions under Structural Funds in Objective 2 regions", European Commission, , págs. 103.
- Amin, A. (1998): "Una perspectiva institucionalista sobre el desarrollo económico regional", *Ekonomiaz* N°. 41, págs. 69-89.
- Amin, A. and Hausner, J. (Eds.) (1997): *Beyond market and hierarchy. Interactive governance and social context*. Ed. Edward Elgar.
- Amin, A. and Thrift, N. (1995): "Institutional issues for the European regions: from markets and plans to socioeconomics and powers of association", *Economy and Society*, Vol. 24, N°. 1, págs. 41-61.
- Anderson, G. and Feller, I. (1994): "A benefit-cost approach to the evaluation of state technology development programs", *Economic Development Quarterly*, Vol. 8, N°. 2, págs. 127-140.
- Ashcroft, Brian (1982): "The measurement of the impact of regional policies in Europe: a survey and critique", *Regional Studies*, Vol. 16, N°. 4, págs. 287-305.
- Asheim, B. A. (1999): "Innovation, social capital and regional clusters: on the importance of co-operation, interactive learning and localised knowledge in learning economies", Regional Studies Association International Conference. *Regional Potentials in an Integrating Europe*. Bilbao, págs. 1-30.
- Asheim, B. T (1996): "Industrial districts as 'learning regions': a condition for prosperity", *European Planning Studies*, Vol. 4, N°. 4, págs. 379-400.
- Autio, E. (1998): "Evaluation of RTD in Regional Systems of Innovation", *European Planning Studies*, Vol. 6, N°. 2, págs. 131-140.
- Bachtler, John and Michie, Rona (1995): "A new era in EU regional policy evaluation? The appraisal of the Structural Funds", *Regional Studies*, Vol. 29, N°. 8, págs. 745-751.
- Bartels, Cornelis P. A.; Nicol, William R. and Duijn, Jacob J. van (1982): "Estimating the impact of regional policy: A review of applied research methods", *Regional Science and Urban Economics*, Vol. 12, págs. 3-41.
- Begg, H. M., et al. (1998): "Business Enterprise in the Highlands and Islands of Scotland. An evaluation of the Finance for Business Program", *Evaluation*, Vol. 4, N°. 4, págs. 410-433.
- Boekholt, P. (1997): "The public sector at arms length or in charge? Towards a typology of clusters policies", Technopolis, Innovation Policy Research Associates., Amsterdam, págs. 23.
- Boekholt, P.; Arnold, E. and Tsiouri, L. (1998): "The evaluation of pre-pilot actions under Article 10. Innovative measures regarding RTP.", D. G. de Política Regional. Comisión Europea., .
- Boekholt, P. and Weele, E. Van der (1998): "Southeast Brabant: A regional innovation system in transition" in *Regional Innovation Systems*. Eds. Braczyk, H.-J.; Cooke, P. and Heinderich, M. UCL Press. London. págs. 48-71.
- Bovaird, Tony; Gregory, David and Martin, Stephen (1991): "Improved performance in local economic development: a warm embrace or an artful sidestep?", *Public Administration*, Vol. 69, .
- Brown, P. (1995): "The role of the evaluator in Comprehensive Community Initiatives" in *New approaches to evaluating Community Initiatives: concepts, methods and contexts*. Eds. Connell, J. P., et al. The Aspen Institute. Washington, D. C. págs. 201-225.
- Cooke, P. (1997): "Regions in a global market: the experiences of Wales and Baden-Württemberg", *Review of International Political Economy*, Vol. 4, N°. 2, págs. 349-381.
- Cooke, P.; Boekholt, P. and Tödtling, F. (2000): *The governance of innovation in Europe*. Ed. Mothe, J. d. I., Science, Technology and the International Political Economy. Vol. Pinter.
- Cooke, P. and Morgan, K. (1998): *The associational economy. Firms, regions and innovation*. Vol. Oxford University Press.
- Coulson, A. (1990): "Evaluating local economic policy" in *Local Economic Policy*. Ed. Campbell, M. Casell Educational Limited. London. .

- Diamond, D. R. and Spence, N. A. (1983): *Regional policy evaluation. A methodological review and the scottish example*. Vol. Gower, Aldershot.
- Diez, M. A. (1999): "How to improve evaluation practice? From traditional to participatory evaluation". Regional Studies Association International Conference. *Regional Potentials in an Integrating Europe*. Bilbao, págs. 1-30.
- Doeringer, P. B. and Terkla, D. G. (1995): "Business strategy and cross-industry clusters", *Economic Development Quarterly*, Vol. 9, Nº. 3, págs. 225-237.
- ECOTEC (1999): "The ongoing evaluation of Regional Innovation Strategies", European Commission, , págs. 120.
- Ernst & Young (1999): "Thematic Evaluation of Structural Fund Impacts on SMEs", European Commission, págs. 180.
- Finne, H.; Levin, M. and Nilssen, T. (1995): "Trailing Reserach. A model for useful program evaluation", *Evaluation*, Vol. 1, Nº. 1, págs. 11-31.
- Florida, R. (1995): "Towards the learning region", *Futures*, Vol. 27, Nº. 5, págs. 527-536.
- Foley, Paul (1992): "Local economic policy and job creation: a review of evaluation studies", *Urban Studies*, Vol. 29, Nº. 3/4, págs. 557-598.
- Folmer, H. (1986): *Regional Economi Policy. Measurement of its effect*. Martinus Nijhoff Publishers, Dordrecht.
- Geddes, M. (1988): "Social audits and social accounting in the UK: a review", *Regional Studies*, Vol. 22, Nº. 1, págs. 60-65.
- Georghiou, L. (1998): "Issues in the evaluation of innovation and technology policy", *Evaluation*, Vol. 4, Nº. 1, págs. 37.51.
- Grabher, G. (Ed.) (1993): *The embedded firm. On the socioeconomic of industrial networks*.Ed. Routledge, London.
- Gregory, D. and Martin, S. (1988): "Issues in the evaluation of inner city programmes", *Local Economy*, Vol. 2, Nº. 4, págs. 237-249.
- Guba, Egon G. and Lincoln, Yvonne S. (1989): *Fourth Generation Evaluation*. SAGE Publications.
- Hambledon, R. and Thomas, H. (Eds.) (1995): *Urban policy evaluation. Challenge and change*.Ed. Paul Chapman Publishing.
- Hart, D. (1991): "US Urban policy evaluation in the 1980s: Lessons from practice", *Regional Studies*, Vol. 25, Nº. 3, págs. 255-261.
- Higgins, T.; Tsipouri, L. and Lande, R. Van der (1999): "Thematic evaluation of the impacts of Structural Funds (1994-1999) on Research, technology Development and Innovation (RTDI) in Objective 1 and Objective 6", D. G. de Política Regional. Comisión Europea, .
- Kuhlmann, S. (1998): "Moderation of policy making?. Science and Technology Policy evaluation beyond impact measurement-the case of Germany", *Evaluation*, Vol. 4, Nº. 2, págs. 130-148.
- Legendijk, A. (1999): "Good practices in SME cluster initiatives. Lessons from the 'Core' regions and beyond", Centre for Urban and Regional Development Studies, págs. 231.
- Legendijk, A. and Charles, D. (1998): "Clustering as a new growth strategy for regional economies? A discussion of new forms of regional industrial policy in the U.K.", OECD Focus Group on cluster analysis and cluster-based policies, Newcastle uponTyne, págs. 32.
- Landabaso, M. (1997): "The promotion of innovation in regional policy: proposals for a regional innovation strategy", *Entrepreneurship & Regional Development*, Vol. 9, págs. 1-24.
- Landabaso, M. and Reid, A. (1999): "Developing Regional Innovation Strategies: The European Commission as Animateur" in *Regiona Innovation Strategies. The challende for less-favoured regions*.Eds. Morgan, K. and Nauwelaers, C. The Stationery Office. págs. 19-39.
- Landabaso, M. (2000): "EU policy on innovation and regional development" in *Knowledge, innovation and economic growth: the theory and practice of learning region*. Eds. Boekema, F. et al. Edward Elgar Publishing Ltd.
- Lundvall, B. A. (Ed.) (1995): *National Systems of Innovation. Towards a theory of innovation and interactive learning*.Ed. Pinter.
- Malmberg, A. (1996): "Industrial geography: agglomeration and local milieu", *Progress in Human Geography*, Vol. 20, Nº. 3, págs. 392-403.

- Malmberg, A and Maskell, P. (1997): "Towards an explanation of regional specialization and industry agglomeration", *European Planning Studies*, Vol. 5, Nº. 1, págs. 25-41.
- Martin, Steve (1989): "New jobs in the inner city: the employment impacts of projects assisted under the Urban Development Grant Programme", *Urban Studies*, Vol. 26, págs. 627-638.
- McEldowney, J. J. (1991): "Evaluation and European regional policy", *Regional Studies*, Vol. 25, págs. 261-265.
- Monnier, Eric (1995): *Evaluación de la acción de los poderes públicos*. Ed. Instituto de Estudios Fiscales, Colección: Estudios de Hacienda Pública. Vol. 2. Ministerio de Economía y Hacienda, Madrid.
- Morgan, Kevin (1997): "The learning region: institutions, innovation and regional renewal", *Regional Studies*, Vol. 31, Nº. 5, págs. 491-503.
- Morgan, K. and Nauwelaers, C. (1999a): "The new wave of innovation-oriented regional policies: retrospects and prospects" in *Regional Innovation Strategies. The challenge for less-favoured regionsc Policy Series*. Eds. Morgan, K. and Nauwelaers, C. The Stationery Office. Regional Studies Association. págs. 224-237.
- Morgan, K. and Nauwelaers, C. (Eds.) (1999b): *Regional Innovation Strategies. The challenge for less-favoured regions*. Ed. Martin, R., Regions, Cities and Public Policy Series. The Stationery Office. Regional Studies Association.
- Morgan, K. and Nauwelaers, C. (1999c): "A regional perspective on innovation: from theory to strategy" in *Regional Innovation Strategies. The challenge for less-favoured regionsc Policy Series*. Eds. Morgan, K. and Nauwelaers, C. The Stationery Office. Regional Studies Association. págs. 1-18.
- Murtagh, Brendan (1998): "Evaluating the Community impacts of urban policy", *Planning Practice & Research*, Vol. 13, Nº. 2, págs. 129-138.
- Nicol, W. R. (1982): "Estimating the effects of regional policy: a critique of the European experience", *Regional Studies*, Vol. 16, Nº. 3, págs. 199-210.
- P&G, Sociedad de Estudios (1998): "Evaluation of Community Measures in support of European Community Business and Innovation Centres (EC-BICs)", D. G de Política Regional. Comisión Europea, Madrid-Karlsruhe.
- Patton, Michael Quinn (1990): *Qualitative Evaluation and Research Methods*. SAGE Publications.
- Patton, Michael Quinn (1997): *Utilization-Focused Evaluation*. SAGE Publications.
- Pawson, R. and Tilley, N. (1997): *Realistic Evaluation*. SAGE Publications.
- Roelandt, T. J. A. and Hertog, P. den (1998): "Cluster analysis & cluster-based policy in OECD Countries", OECD- Focus Group on cluster analysis and cluster-based policy. Utrecht, págs. 48.
- Rosenfeld, S. A. (1996): "Does cooperation enhance competitiveness? Assessing the impacts of inter-firm collaboration", *Research Policy*, Vol. 25, págs. 247-263.
- Schofield, J. A. (1979): "Macro evaluations of the impact of regional policy in Britain: a review of recent research", *Urban Studies*, Vol. 16, págs. 251-271.
- Schofield, J. A. (1987): *Cost-benefit analysis in urban & regional planning*. Unwin Hyman Ltd, London.
- Stame, N. (1999): "Small and medium enterprise aid programs: intangible effects and evaluation practice", *Evaluation and Program Planning*, Vol. 22, págs. 105-111.
- Storey, D. J. (1990): "Evaluation of policies and measures to create local employment", *Urban Studies*, Vol. 27, Nº. 5, págs. 669-684.
- Storper, M. (1995): "The resurgence of regional economies, ten years later: the region as a nexus of untraded interdependencies", *European Urban and Regional Studies*, Vol. 2, págs. 161-221.
- Storper, M. (1997): *The regional world. Territorial development in a global economy*. Vol. The Guilford Press, New York.
- Storper, M. (1998): "Las economías regionales como activos relacionales", *Ekonomiaz* Nº. 41, págs. 10-45.
- Swales, J. K. (1997): "A cost-benefit approach to the evaluation of regional Selective assistance", *Fiscal Studies*, Vol. 18, Nº. 1, págs. 73-85.
- Torvatn, H. (1999): "Using program theory models in evaluation of industrial modernization programs: three case studies", *Evaluation and Program Planning*, Vol. 22, págs. 73-82.

- Turok, Ivan (1990): "Evaluation and accountability in spatial economic policy: a review of alternative approaches", *Scottish Geographical Magazine*, Vol. 106, N°. 1, págs. 4-11.
- Turok, Ivan (1991): "Policy evaluation as science: a critical assessment", *Applied Economics*, Vol. 23, págs. 1543-1550.
- Weiss, C. H. (1995): "Nothing as practical as good theory: Exploring Theory-Based evaluation for Comprehensive Community Initiatives for children and families" in *New approaches to evaluating Community Initiatives: concepts, methods and contexts*. Eds. Connell, J. P., et al. The Aspen Institute. Washington, D. C. págs. 65-92.
- Willis, K. G. (1985): "Estimating the benefits of job creation from local investment subsidies", *Urban Studies*, Vol. 22, págs. 163-177.
- Willis, K. G. y Saunders, C. M. (1988): "The impact of a development agency on employment: resurrection discounted?", *Applied Economics*, Vol. 20, págs. 81-96.