

CREATING COOPERATION FOR CLUSTERS? LESSONS FROM THE IMPLEMENTATION OF A PARTICIPATORY POLICY EVALUATION PROCESS

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1. Introduction

Cluster policy is an economic policy instrument that has been extended across the world since Michael Porter began to promote it in the context of his various works on the competitiveness of territories. These policies have 'soft' roots in that they are oriented towards building cooperative relationships of a systemic nature, bringing together different economic, social and institutional effects. Their premise on a combination of proximity and cooperation makes them particularly relevant tools for regional policy. However there remain significant theoretical and empirical questions around their rationale and effectiveness. In particular, insufficient attention is often given to the underlying context in which cluster policies are implemented (Sternberg *et al.*, 2010). This paper contributes to the debate on the significance of cluster context by drawing lessons from a participatory policy evaluation process focussed explicitly on measuring and improving the actual state of cluster cooperation.

The Basque Country region was a pioneer, at the beginning of the 1990s, in the design and implementation of an industrial policy based around clusters. Under this policy, cluster associations, promoted and financed by the Basque regional government, assume the role of cooperation 'facilitators' among their associated firms. Their objective is to improve the competitiveness of the firms through facilitating the development of strategic projects in cooperation. Today there are 12 priority cluster associations supported by the Basque Government, which make up 6% of firms, 28% of value added and 32% of employment in the Basque region, and a further six 'pre-cluster' initiatives.

A stream of research since 2003 has sought to analyse the impacts of this cluster policy, taking a variety of different approaches. As highlighted by Aranguren *et al.* (2010), the results of this trajectory of research have confirmed the difficulty of measuring the impact of a relationship-oriented policy such as this on firms' competitiveness. Indeed, the importance of intangible and learning effects (trust, cooperation, transfer of knowledge and experience, ...), the complexity of cause-effect

relationships, and the embedded nature of these policies all contribute to the difficulty in evaluating them and pose new challenges (Raines, 2002; Diez, 2001). Responding to these challenges it is particularly important to find evaluation approaches that fit, and indeed contribute to the cooperative basis of the policy itself. This implies focussing evaluation processes on the existing culture and experience of cooperation in clusters that are supported by policy, thus targeting policy learning outcomes.

As such this paper reports on the evolution of a participative evaluation process that has been piloted in the Basque Country. Adapting Gilliam *et al.* (2002), the process has been developed and applied to the Basque aeronautics cluster association (Hegan) in eight phases: (1) proposal presentation; (2) semi-structured interviews; (3-4) two structured stakeholder workshops; (5) design of a data-collection tool; (6) collection and analysis of data; (7) a third stakeholder workshop to discuss and analyse preliminary findings; (8) wider dissemination of results and methodology.

After introducing the relevant theoretical and empirical precedents with respect to the design, implementation and evaluation of cluster policies, the paper structures reflection on the *process* undertaken in this case around three sets of questions: (1) Who defines the evaluation questions, and how inclusive is the process?; (2) What are the evaluation questions?; (3) How can data from these processes be generated? This reflection then forms the basis for analysis of *results* from the process in terms of the specific obstacles to cooperation encountered, the generation of policy learning outcomes, and the extent to which such a process can be generalised to other cluster and policy contexts.

2. Identifying the Need for Cluster Policy

Policies designed to nurture and support co-operative relationships among groups of co-located firms and other economic agents are today widespread. A 2008 report by the European Cluster Observatory, for example, identifies 69 distinct national 'cluster' policy programmes in Europe alone, with regional programmes also found in 17 European countries (Oxford Research, 2008). The rise of such policies has corresponded both with the emergence of systemic concepts of innovation (Freeman, 1987; Lundvall, 1992; Nelson, 1993; Cooke *et al.*, 1998) and with the establishment and growing popularity of the 'cluster' concept (Porter, 1990, 1998, 2003; Schmitz, 1995). However there has also been significant critique around the theoretical and empirical basis underlying the explosion of policies to support clusters (Beneworth and Charles, 2001; Duranton *et al.*, 2010; Belussi, 2006; Lorenzen, 2005; Martin and Sunley, 2003; McDonald *et al.*, 2010; Pitelis *et al.*, 2006).

Much of this critique has focused on the indiscriminate way in which Porter-type cluster approaches have been interpreted and adopted by policy-makers, a practice which is related to the elasticity or 'fuzziness' of the concept itself (Martin and Sunley, 2003). Indeed the conceptual imprecision of the cluster concept has two key implications. Firstly, it makes it difficult to rigorously show whether or not clusters in fact have positive effects on economic development processes; as Perry (2005: 833) argues, "it has been possible to pick and mix research evidence too freely". Secondly, it encourages the widespread adoption of what is an outwardly attractive concept as a kind of policy panacea, often without considering the relevance of the specific contextual conditions in which clusters are promoted.

The importance of both national and regional institutional contexts is highlighted for example by recent comparative studies (Lee *et al.*, 2009; Sternberg *et al.*, 2010). Examining the role of policy in promoting biotech clusters in South Korea and Singapore, Lee *et al.* (2009: 627) confirm that “the ways in which the state pursues cluster development depend on the institutional setting in specific countries”. Sternberg *et al.* (2010: 1064) reach a similar conclusion from a more broadly focussed study of cluster policies in North Carolina (USA) and Bavaria (Germany), revealing “clear empirical evidence for the importance of institutional contexts that needs to be considered when adapting cluster policies to specific circumstances” (*Ibid.*: 1064).

Indeed, there are clear risks in producing generic cluster development programmes that do not recognise local conditions (Enright, 2000). In this sense each cluster is unique. It has a specific configuration of concentration of activities which is characterised by distinct existing patterns of collaboration. Moreover, these dynamics occur in a wider socioeconomic context that can either foster or produce barriers for cooperation and cluster development (Beccatinni, 1990; Amin and Thrift, 1995). It is not easy, therefore, to generically define the necessary conditions to establish a cluster policy program that is likely to have positive effects on local economic development. Nevertheless, as a starting point we propose three broad scenarios in which cluster policies are implemented, each of which corresponds to different potential for policy additionality.

The first scenario refers to when there is no particular agglomeration of activities or strength in the productive structure related to the cluster being promoted, but policy makers are interested in promoting this activity nonetheless. This is typically for strategic positioning reasons, as seen for example in the rush to establish bioscience clusters in many places. However the theoretical premises for the benefits of industrial clusters lie in the presence of agglomeration economies (Marshall, 1907, 1919), which raises serious questions around the wisdom of seeking to create clusters from scratch. There is perhaps greater justification in cases where the activity has clear synergies with other existing strengths in the productive structure, for example as part of a strategy of smart specialisation. However such policies carry a large element of risk, and as argued by Sternberg *et al.* (2010: 1065), “it is now widely accepted that governments can create favourable conditions for the emergence of clusters and facilitate their growth *only once they have emerged*”.

The second scenario refers to when there is an agglomeration of activities, suggesting the presence of an existing cluster that enjoys some unconscious positive externalities from co-location. However the intangible, institutional elements - social capital, trust, reciprocity, etc. - that support the cooperation required to and consciously exploit potential externalities are lacking. In this scenario it is very important to underline that clusters are not simply an agglomeration concept. Agglomeration *per se* implies potential costs as well as hypothesised benefits; congestion of infrastructure use and labour market pressures are two clear examples of negative externalities. Moreover the benefits require more than agglomeration. They rely on cooperation between agents to acquire competitive advantages; for example, sharing the costs of input purchases or risky innovation projects, or joint access to finance or international markets.

In this scenario there is therefore a clearer rationale for policy so as to maximise the potential of the existing agglomeration and support its growth. Specifically, geographical proximity should be combined with a socio-institutional context that facilitates a balanced mix of competition and cooperation. As such policies typically

seek to enhance social capital, fostering cooperative relationships among the agglomerated firms and with other relevant institutions (universities, specialised research or training centres, etc.). However there are two key considerations with regards such policies. Firstly, as argued above the existing institutional context in the nation, region and cluster will interact with any policy, making a solid understanding of the context in which the policy is introduced critical. Secondly, the pursuit of social capital and cooperation is a long-term process, which signals the need for a correspondingly long-term policy perspective with appropriate mechanisms to evaluate progress.

Finally, the third scenario refers to when both a natural agglomeration of activities and the institutional, intangible elements necessary for consciously pursuing externalities are present. That is, there is already a well-functioning cluster, which may or may not have received support from policy at different phases of its development. In such circumstances there may be policy inertia and/or legitimate reasons for continuing to support collective action and social capital development among the cluster. There are, however, greater dangers that the policy ‘crowds out’ activities that would have occurred within the cluster in any case. Again this highlights the need for understanding the precise context in which policies are implemented alongside appropriate evaluation processes to detect the extent of any policy additionality.

The three scenarios outlined above and their implications for policy rationales are summarised in Table 1. In this paper our focus is on the second and third scenarios. In each of these cases the context in which policies are implemented is argued to be critical for their likely success. Both scenarios also suggest the importance of appropriate evaluation processes that enable policy-makers to understand the evolution of this context as it interacts with the policy, identifying potential crowding out dangers as the socio-institutional environment of the cluster progresses. This is in line, for example, with the cluster development framework of Atherton (2003). He emphasises the uniqueness of each case, highlighting the importance of knowing about the context and development stage of the cluster in order to define a policy adapted to each unique case and phase.

Table 1: Three broad cluster policy scenarios

Scenario	Policy Rationale
No existing agglomeration	Questionable policy rationale, except in very specific circumstances (e.g. strategic positioning for smart specialisation)
Existing agglomeration but weak institutional elements	Policy can help to maximise cluster potential, but in a long term process that fits the existing socio-institutional context
Existing agglomeration and functioning institutional elements	Policy may generate additionality depending on the specific socio-institutional context, but there are greater dangers of crowding out

Evaluation processes that form an integral part of the policy process itself can play an important role in developing the required insight into context and how it interacts with the policy. However it is particularly important to find evaluation approaches that fit, and indeed contribute to the cooperative basis of the policy. This implies focussing evaluation processes on the existing culture and experience of cooperation in clusters

that are supported by policy, thus targeting policy learning outcomes. In this regard the evaluation approach analysed in the remainder of this paper involves policy stakeholders in a participatory process so as to achieve two different aims. Firstly, to diagnose and understand the socio-institutional context relevant for the cluster at which the policy is directed; secondly to evaluate the policy and its interactions with that context from a perspective that can generate policy learning.

3. A participative evaluation approach for cluster policy development

As the term suggests, participatory evaluation is a process integrating the participation of all implicated parties. Specifically, it implies the development of a consensus around the criteria used to evaluate a particular policy among all of the stakeholders affected by that policy. Hence the determination of criteria for evaluation is not undertaken ex-ante; rather the engagement of actors in reaching consensus on these criteria is integral to the overall evaluation process. Given these characteristics, the term 'participatory evaluation' in fact covers a wide range of more specific approaches that all share a common denominator: they involve the implicated parties or stakeholders in a periodic evaluation analysing the relevance, efficiency and impact of an activity/policy/programme. Applied to the specific problematic identified in the previous Section, the participative nature of such approaches ensures that the evaluation process integrates the specificity and systemic nature of the cluster context.

In order to achieve this, the process must involve relevant agents directly, including in the stages of planning and development, so that the construction of consensus and mutual understanding is facilitated as a central tenet of the evaluation. A contrast with conventional policy evaluation processes is set out in Table 2.

Table 2. Conventional versus Participative Policy Evaluation

	Conventional	Participative
Who?	External experts.	Beneficiaries, business people, policy-makers, evaluation team.
What?	Success criteria and information necessities are pre-determined. Evaluation by objectives.	Participants identify their own information necessities and determine their own success criteria.
How?	Distance from the evaluation team and other participants	Shared methods and results from the involvement of participants
When?	In general, when the policy or programme is finished	Frequently, throughout the duration of the policy. Continuous evaluation.
Why?	Summative evaluation. Should the policy or programme be continued?	Formative evaluation to generate actions of improvement. Continual learning.

Source: Diez, M. (2001)

Thus participatory evaluation is centred on institutions and on people. The stakeholders in a particular policy become the principle actors in the process of evaluation, rather than merely the objects of evaluation. This brings a number of important advantages

over conventional evaluation approaches, in particular with regards opportunities for dynamic learning processes, leading to potential policy improvements. The opportunity for policy stakeholders and the evaluation team to analyse problems, restrictions and obstacles together has potential to lead to new solutions that emerge from the exchange of ideas and perspectives. At the same time the development of common understanding of the issues increases the viability of making necessary changes, and develops shared capacity for reflection, analysis and effective implementation of actions among participants. Moreover, such approaches can play a role in the democratisation of the policy process, closing the gap between strategic decision-making and the aims and objectives of the actors among whom key decisions are felt (Sugden and Wilson, 2002).

Diez (2001, 2002) suggests that participatory evaluation is particularly appropriate for new regional policies that emphasise the importance of networks, social capital and local learning. Cluster policies currently form a core component of these new regional policies and are characterised by precisely the features – intangible objectives, complexity of relationships, systemic nature, dynamism and flexibility – that pose significant problems for conventional evaluation approaches. Moreover, cluster policies are themselves premised on the benefits of co-operation among actors towards common goals, and as such seek to generate dynamic co-operative learning among those actors. This presents a compelling rationale for evaluating such policies using processes that parallel the types of participation that the policies themselves are seeking to stimulate and/or consolidate. Indeed, participatory evaluation is committed to the development of changes or improvements that are interactive, contextualised and directed to knowledge building, responding to Turok's (1990) challenge of incorporating understanding and explanation.

From a broader public policy research perspective, this rationale is coherent with the proposal made by Cooke (2007) that research must cease jumping to policy implications from theoretical modelling. Rather, implications should be subject to 'proof of concept' testing in negotiated stakeholder discourse so as to establish the appropriateness or otherwise of such policy implications. Indeed, participatory evaluation sits within the framework of 'action research' in the sense of being "not so much a methodology as an orientation to inquiry that seeks to create participative communities of inquiry in which qualities of engagement, curiosity and question posing are brought to bear on significant practical issues" (Reason and Bradbury, 2008, p.1).

In the Basque Country cluster context the rationale for participatory evaluation is strongly supported by the evolution of evaluation attempts during the last fifteen years. This is resumed in Table 3, which highlights the principle aims, participants, questions and methods corresponding to three key projects that have sought to evaluate aspects of the Basque cluster policy.

Table 3. Different cluster policy evaluation attempts

Evaluation Project	Aims	Participants	Key Evaluation Questions	Methods
Project I: Evaluation of the impacts of membership of Cluster Associations	<ul style="list-style-type: none"> - Improvement of the policy programme and its organizational design - Generation of practical and conceptual knowledge 	<ul style="list-style-type: none"> - Policy-makers - Cluster Association management teams - Academic experts 	Perceptions of impacts of the cluster policy on the firm members: <ul style="list-style-type: none"> - Cooperation values - Relationships - Strategic projects in collaboration - Economic performance 	<ul style="list-style-type: none"> - Design of a specific cluster association questionnaire - Semi-structured interviews with managers of cluster associations
Project II: Comparison between members and non- members of Cluster Associations	<ul style="list-style-type: none"> - Improvement of the policy programme and its organizational design - Generation of practical and conceptual knowledge 	<ul style="list-style-type: none"> - Policy-makers - Cluster Association management teams - Academic experts 	Comparison of differences between members of the cluster association and firms in the natural cluster but not members of the cluster association: <ul style="list-style-type: none"> - Quality - Innovation - Internationalization - Economic performance 	<ul style="list-style-type: none"> - Analysis of secondary sources to identify potential cluster association members. - Analysis of secondary sources to compare performance data of both groups of firms
Project III: Participative Evaluation	<ul style="list-style-type: none"> - Support policy decision-making. - Improvement of the policy programme and its organizational design - Generation of practical and conceptual knowledge - Advances in cooperation processes 	<ul style="list-style-type: none"> - Policy-makers - Management teams - Firm beneficiaries - Academic experts 	<ul style="list-style-type: none"> - Joint definition of the strategic challenges to reach in the cluster association - Definition of the parameters to identify positive evolution in those strategic challenges - Development of individual and collective learning derived from the evaluation process 	Workshops with the stakeholders of the policy to define jointly: <ul style="list-style-type: none"> - The strategic challenges - The parameters for their evaluation - Reflections and learning from the process

In particular, evaluating the policy's mission of improving competitiveness by responding to strategic challenges through cooperation has proved challenging using convention methodologies (Iturrioz et al., 2006). Following the above rationale, we suggest a synergy between the challenges inherent in evaluating this policy and the advantages that are argued to stem from participatory evaluation approaches. Such an approach in the context of this specific policy would involve developing a consensus approach to the definition of a set of indicators and their interpretation that is shared (in particular) by three groups: the policy makers (and their technical teams); the management and technical teams at the cluster associations; and the representatives of those firms/institutions belonging to the implicated clusters. Building on earlier experiences, we suggest that the development of an appropriate methodology to address this challenge is an important step forward in the policy evaluation process. In the next Section we set out a specific experience undertaken with the Basque aerospace cluster association (Hegan).

4. Implementation of a participative evaluation approach: The Hegan case study

In this Section, we explain the evolution of a participative evaluation process that has been piloted in the Basque Country. We focus on the processes involved, with the objective of describing and reflecting on this new input to the evaluation of the cluster policy. We examine the distinct phases of the evaluation process as applied to a

specific case study (the Basque aeronautics cluster association, Hegan), and then reflect on the particular contributions of a participative approach to evaluation.

Adapting Gilliam et al. (2002), the participative evaluation process has been developed and applied to the Hegan case in eight steps: (1) proposal presentation; (2) semi-structured interviews; (3-4) two structured workshops; (5) design of a data-collection tool; (6) collection and analysis of data; (7) a third workshop to discuss and analyse preliminary findings; (8) wider dissemination of results and methodology. The objectives, results, stakeholders and tasks involved in each of these steps are summarised in Table 4.

Table 4: Participative Evaluation Process: The Hegan Case

Steps	Contents	Aims	Results	Participants	Period
PHASE 1: PLANNING AND MODEL DEVELOPMENT					
1. Proposal presentation	The initiative of developing a process of participative evaluation is presented to all existing Cluster Associations in the Basque Country.	To reflect about the concept, the reasons for, and the potential benefits of participative evaluation.	Six different Cluster Associations are interested in participating in a participative evaluation process.	Basque Government; SPRI; Cluster Associations; Research team.	May 2008
2. Semi-structured interviews	A common view of the aims and scope of the evaluation process is defined	To share the general aims of cluster policy. To identify and agree the potential aims of the evaluation.	Hegan and Basque Government views about the process are shared and a document with the mission and scope of the evaluation process is delivered.	Basque Government; SPRI; Hegan Cluster Association; Research team.	June 2008
3. Workshop 1	Which are the results that we aim to obtain from the cooperation in the cluster association?	To defined the key evaluation questions.	A document with the identification of the strategic challenges of the Cluster Association is defined.	Basque Government; SPRI; Hegan; Research team.	December 2008
4. Workshop 2	A reflection and consensus about evaluation of indicators	To establish the indicators to measure the advances of the cluster association in terms of the strategic challenges To agree the	An adapted and approved system of indicators.	Basque Government; SPRI; Hegan; Firm members; Research team.	March 2009

		level of achievement for each indicator: when can we say that the policy is doing its job effectively?			
PHASE 2: DATA COLLECTION AND PROCESSING					
5. Design of a data collection tool	A simple method to collect data has to be developed.	To design an on-line questionnaire to collect the defined data.	An on-line software application is developed to collect data.	Research team.	June 2009
6. Collection and analysis of the data	Collection and analysis of the data from the questionnaire and from in-depth interviews with cluster association management team.	To collect and analyze quantitative and qualitative data.	Documents with the analysis of the data collected.	Hegan; Firm members; Research team.	January 2010
PHASE 3. REFLECTION AND ACTIONS					
7. Workshop 3	Sharing insights about the information analyzed to extract knowledge and learn. Validation of the conclusions extracted.	To capture the problems, lessons learned, solutions, recommendations for future actions in the cluster association.	Documents with evaluation findings and learning lessons.	Hegan; Research team	March 2010
8. Wider dissemination of the results and methodology	The evaluation findings are disseminated to show the potential learning derived from a participative evaluation process.	To present the results and main learning derived from the process. To open the discussion about the potential of the participative methodology.	An additional set of Cluster Associations are interested in the process.	Basque Government; Hegan; Other Cluster Associations; Research team	June 2010

Our reflections on the contributions of this participative evaluation process have been organised in response to three sets of key questions: who makes the evaluation questions?; what are the information needs?; and finally, how to generate the data for the evaluation?

4.1. Who makes the evaluation questions?

In traditional evaluation approaches, questions and criteria are defined by default by the agents conducting the evaluation. However in our evaluation cluster policy stakeholders are all involved in setting the evaluation agenda. They define the questions and the criteria for judging them: how are we going to know if the policy is doing its work? Therefore, one central point of our evaluation approach is to set how inclusive the evaluation process should be; who should participate in the process, and have we succeeded in generating the interest and active participation of all relevant stakeholders?

Four groups of stakeholders were identified:

- **Basque Government** (Cluster Policy Director and management team) represents the top level for policy decisions and defines and sets the framework of the cluster policy.
- **Hegan Cluster Association** (Hegan Director and management team) represent the executive level of the cluster policy. They manage the cluster association, enhancing relations and cooperation process among its members.
- **Hegan members**, the organizations and firms that are members of the Cluster Association and participate in its initiatives.
- **The research team** that also can be considered a stakeholder of the process due to its interest in developing an effective evaluation process that allows to improve the cluster policy.

Each one of these stakeholders has a set of specific characteristics that can be analysed through the social analysis summarized in Table 5.

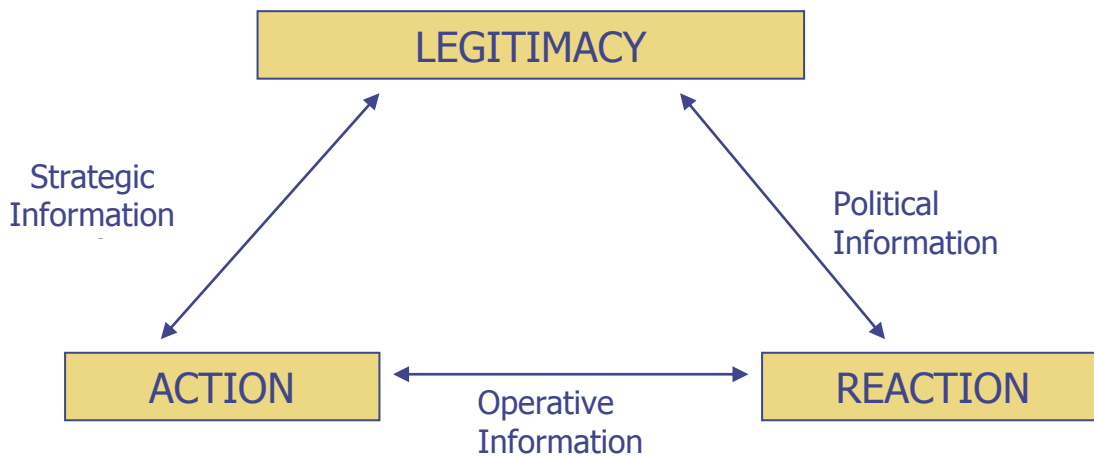
Table 5: Stakeholders' Social Analysis

	Power	Interest	Legitimity
Basque Government	Authority financing the cluster policy	Improvement of territorial performance	Political
HEGAN Association	Information management Access to firm members	Improvement of their function in the implementation of the cluster policy upwards and downwards	Technical
HEGAN firm members	Knowledge about the industry and business Practical Abilities Main character of the cluster policy	Improvement their positioning in the industry	Receptors of the policy

Research Team	Knowledge about the policy	Improvement of the professional function	Technical
	Knowledge about the conceptual frameworks behind the policy		
	Access to information		

Following the reflections of Monnier (1995) on social actors participating in an evaluation, we can approximate the main elements of each of the stakeholders identified following the scheme presented in Figure 1.

Figure 1: Information Flows among the subsystems of actors



Source: Monnier (1995: 160)

The Basque Government clearly corresponds to Monnier’s legitimacy context, because it has an institutional power based on juridical legitimacy (decrees and laws), on political legitimacy (electoral power), on scientific-technical legitimacy (knowledge accumulated by its technical staff) and finally on operative legitimacy (financial resources control). Following Monnier, “its implication and charisma constitute very relevant factors for the success of the program” (Monnier, 1995, 118).

The Hegan association is clearly positioned in the action context; that is, it acts within the framework set up by the legitimated responsible of the policy, but it profits from a relative autonomy and its own perceptions and motivations condition the programme development. Hegan has the responsibility to structure the action and its operatives, and it has scientific-technical legitimacy.

The members are located in the reaction context, or in this case what might be termed the evaluation context; this is composed by a group of heterogeneous social actors that react differently to the program, which aims to produce some effect on them. This is the most structured context.

The conclusions of this analysis of actors is that, due to the specific characteristics of each one of them and the different evaluative context where they act, their expectations towards the evaluation process and their evaluation needs are going to be

different. The Basque Government looks for information retrieval that helps them to redefine the cluster policy and to clarify the reasons that motivate them to define and implement it in the Basque Country. This actor is more concerned about the achievement of the general objectives and the global strategy of the cluster policy. Hegan is especially interested in the efficacy and efficiency of the policy. As a management institution, it is interested in applying the new evaluation approach in order to improve the internal coherence of its actions in the association and improve their performance. Also it is concerned to produce data that allow them to justify the activities either to superior (Basque Government) or to inferior levels (firm members). The firm members do not express a clear need for information, although they want to visualize the positive effects in firm performance of the public action and of their participation in the association (which implies a membership fee).

4.2. What are the information needs?

Cluster policy evaluations tend to focus on measurement of quantitative indicators that aim to show the changes in the economic performance of the firms and regions. But, are these economic indicators the only reason why firms are trying to cooperate among themselves? Which are the specific aims of these cooperation efforts? Our participative evaluation gave the stakeholders the possibility to reflect together on the results they are looking for and offered them the possibility to reach a consensus.

From the beginning of the process, in the semi-structured interviews developed (Step 2) with the Basque Government responsible for the cluster policy and the management team of Hegan, two main focuses of needs were identified:

FOCUS 1: The difficulties in isolating and measuring the impact on competitiveness of any policy that forces a definition of concrete problems linked to competitiveness where the policy may potentially impact. After a debate, one important agreement was established: the key evaluation questions complied with the condition that they were strategic competitive challenges, or key elements of these challenges, that had to be confronted in cooperation and within the scope of the CA.

FOCUS 2: Social capital as a key element in the policy development and improvement. In this sense, a policy-maker argued that: *"It is an intelligent environment that, as opposed to an environment of isolated agents, can build on what already exists to create the conditions for generating a virtuous circle."* Moreover it was argued that *"the intensity of the policy depends on the degree of acceptance (the voluntary adscription to the cluster policy). If a cluster really exists it is because the members want it to, and if they stop believing (in the cluster policy) it will disappear ... The weakness of the model is the weakness in the relations of the network."* A member of the Hegan management team also stressed the importance of the *"team mentality and cohesion"*, pointing out that this is something that should exist prior to the involvement of the cluster association, but that in reality often needs this policy stimulus.

This identification of these two different focuses of evaluation needs was relevant to organize Workshop 1 (Step 3), where we used several group-dynamic techniques to identify and select these strategic challenges organized by the previous identified focuses (Table 6).

Table 6. Selection of the Strategic Challenges

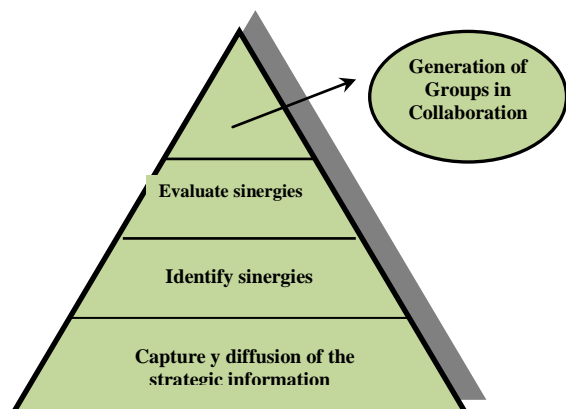
FOCUS 1	Qualitative growth of the cluster to consolidate the value chain Innovation and generation of new products Adaptation to new technologies Financing of projects Internationalisation and search for new clients
FOCUS 2	Improvement of communication between the CA and members Deepening of the cluster philosophy among members Training and identification of 'best practice' Strengthening the design of government support programmes

Once the strategic challenges were defined, they were analysed by the research team in order to structure them in a coherent evaluation framework. From here a proposal of evaluation needs was developed. Thus in this step scientific knowledge was applied and combined with the practical knowledge of the stakeholders about their evaluation needs.

The framework of information needs proposed by the research team was structured around four different components:

- a) *Drivers*: designed to act as an overall thermometer of the 'cluster philosophy' or 'associative maturity' among the cluster members. The conceptual framework that gives meaning to this thermometer of the "associative maturity" of the cluster is based on the cooperation pyramid framework defined for the Basque Cluster Policy represented in Figure 2. This framework allows us to establish conclusions about the level of associative maturity reached in the cluster association related to the different stages of the pyramid.

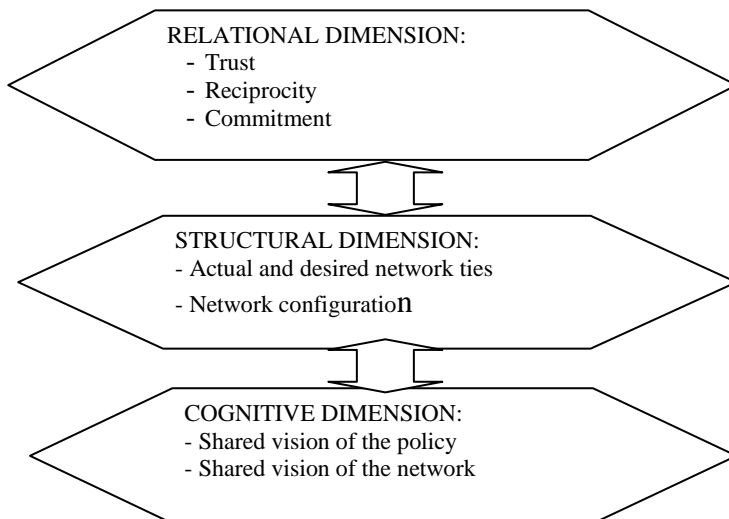
Figure 2. Cooperation Pyramid for Cluster Policy



Source: Basque Government and own elaboration.

- b) **Facilitators:** designed to reflect the social capital and common interest among the cluster stakeholders that are basic conditions for effective cooperation and related to the strategic challenges of improved communication and program design. In this case, the structural, relational and cognitive dimensions of the social capital concept are taken into account in order to show us a picture of the social capital existence in the cluster association.

Figure 3. Social Capital Framework



- f) **Results:** Designed to capture achievement in specific desired strategic challenges for members as a result of their participation in the CA, including consolidation of the value chain, innovation and technological adaptation, training, finance and internationalization.
- g) **Impacts:** Designed to reflect evolution in the overall impact of the cluster in the Basque economy, including measures of productivity, growth and critical mass.

4.3. How to generate data?

This structure of information needs was presented for discussion in Workshop 2 (Step 4), where representatives of the Basque Government, Hegan and Hegan members reflected on and modified proposals using group-dynamic techniques. The aim of this workshop was to agree a framework for evaluation and the final selection of indicators, together with the data collection methods, and to establish consensus around the timetable for the implementation of the ongoing evaluation. Thus as a result of this workshop, the complete evaluation model was approved and ready to be implemented. The final set of indicators approved includes three groups of indicators that introduce some modifications to those proposed originally by the evaluation team:

1. **Drivers - Network Policy Outcomes (NPO):** A development of 'drivers' in the initial proposal, NPO indicators measure the level of accomplishment of the specific behavioural changes that the cluster policy aims to promote. Firstly, 'associative maturity', as a reflection of the degree of advancement in the development of strategic projects in cooperation. We measure it using a 12 item

question designed to reflect perceptions of where each participant is situated in the key progress stages to reach the final cluster policy purpose of working together in strategic cooperation projects. Our second measure of NPO captures the observed projects in cooperation among the network, including the number of projects, their nature and the perceived value generated by them.

2. Facilitators- Social Capital (SC): A refinement of 'facilitators' in the initial proposal, these indicators measure the existing social capital among CA members. The evaluation centres on the three dimensions of social capital identified by Nahapiet and Ghoshal (1998): relational, structural and cognitive. In the relational dimension we measure trust, reciprocity and commitment, using an adaptation of previously published scales for these constructs.
3. Results and Impact (RI): These two groups are combined due to the longer time scale with which data is collected. The first sub-group measures the level of results in relation with the key strategic objectives that the cluster association has established in its strategic plan (these are very similar to the results indicators in the initial proposal). The second-subgroup measures the overall impact of the activity of the CA in the development of the region.

Table 7: Final Selection of Indicators

Indicators	Sub-indicators	Definition	Measurement Scale
Network policy outcomes (NOC)	Associative maturity	Degree of advancement in the development of strategic projects in cooperation	Level 0: Presence and some Information Exchange Level 1: Capture and Diffusion of Strategic Information Level 2: Identification of Synergies. Level 3: Collective Interest Priority. Level 4: Generation of Cooperative Groups of firms.
	Network development	Projects in cooperation among the network	Number of projects Strategic nature of projects Perceived value of projects
Social Capital (SC)	Relational	Measuring trust, reciprocity and commitment	Synthetic Indicators of Social Capital (Valued from 0 to 1)
	Structural	Measuring the network: the actual and desired relationships	
	Cognitive	Measuring shared vision, perception of common goals	
Results and impact (RI)	Results	Qualitative growth of the cluster to consolidate the value chain	Joint Offers Inclusion of firms in new value chain activities
		Innovation and generation of new products Adaptation to new technologies	R+D innovation projects in collaboration
		Training and identification of 'best practice'	Training activities in collaboration
		Financing of projects	Financing activities in collaboration
		Internationalisation and search for new clients	New customers and markets through collaboration

	Impact	Overall impact in the development of the region	% Increase of the cluster in the GNP of the Basque Country Increase of the value added per employee of the cluster association firms (productivity) Increase of the industry turnover of the aerospace industry
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Data to construct the NPO and SC indicators was collected through an *ad hoc* evaluation survey addressed to all cluster associates through a simple online software application¹ that includes three different types of questions:

- First, a 5-level Likert scale questionnaire of 24 items be answered by firm members in order to capture not only data on the Social Capital indicators but also on some of the Network Policy Outputs indicators.
- Second, a prepared grid in which firms can easily declare the actual and desired relationships among firm members of the cluster association.
- And finally, a individually-tailored list of the projects in collaboration in which each firm is participating is presented to collect the firms' perceived value of each project.

The on-line software application was positively valued Hegan and its members and it has given great flexibility to the whole evaluation process.

5. Conclusions

The need to better evaluate the widely used tool of cluster policy is widely recognised, and recent studies have highlighted the importance of both national and regional institutional contexts in understanding their effectiveness (Lee *et al.*, 2009; Sternberg *et al.*, 2010). In the first part of this paper three broad cluster policy scenarios were identified, and it was argued that in two of these scenarios in particular the context in which policies are implemented is critical for their likely success. Evaluation processes that form an integral part of the policy process itself can play an important role in developing the required insight into context and how it interacts with the policy. However it is particularly important to find evaluation approaches that fit, and indeed contribute to the cooperative basis of the policy. This implies focussing evaluation processes on the existing culture and experience of cooperation in clusters that are supported by policy, thus targeting policy learning outcomes. The participatory evaluation process analysed in this paper has generated a number of learning insights in this regard.

Specifically as a result of this process policy-makers and the cluster association have been able to identify groups of agents among which different strategies can be employed to enhance cooperative behaviour, and potentially the impacts of the network. It has also led to improved understanding of the critical role that small firms play in the network under study, despite the tendency of policy to look first towards larger firms in initiating projects. Finally, reflections on the results have led to greater appreciation of the centrality of 'people' alongside 'organisations' in such policies, encouraging the development of strategies to broaden and deepen the pool of participants. These findings clearly have specific practical implications for the agents

¹ The application was designed so that it can be extended at a later stage in the process to collect data pertaining to the RI indicators.

that form part of this case and their discovery in this context opens the way to further research with the potential for more general reach.

The conclusions reached are now being integrated into CA's strategic definition process and concretely in their action plans. In particular, the CA management has started the definition of several strategies designed to build on the strengths and address the weaknesses uncovered by the network performance and social capital indicators. This has involved the identification of groups of firms with shared weak or strong characteristics, to be targeted either for special assistance or to learn from good practice. It is envisaged that the development of action plans based around the NPO and SC indicators will be further strengthened as insights from the planned collection of RI indicators become evident later in the long-run evaluation process.

We must underline that one of the main obstacles was to enhance active participation in the process and that the evaluation team faced in some of moments of the process a lack of involvement from different stakeholders. Regarding the Basque Government, the director of the cluster policy of the Basque Government showed a very high implication in this innovative approach to evaluation and his attitude was definitely very relevant in the process. The Hegan cluster association declared an interest in adopting the participative evaluation and there was an initial positive motivation of the management team. However, the motivation has fluctuated along the process, since in some key moments there was a lack of understanding of the benefits that could be obtained in comparison with other more commonly-used strategic planning techniques. In this sense it was not until the first results could be visualised and learning from the data collected, that the real usefulness of the participative evaluation was perceived.

As a consequence of this obstacle the participation of the firm members has also been limited at times. The assistance at the first workshops and the implication of the firms in the planning phase was satisfactory. However as time passed their implication has been lower, and only with a great effort of communication a significant number of members finally answered the survey. One of the main reasons is the difficult change of focus that firms have to experiment with from an individual perspective to a cluster perspective, in particular the difficulty in accepting the relevancy of soft elements like social capital as a relevant facilitator of the cluster activity.

If we look for reasons, we should state that this participative project was the first project of these characteristics developed in the cluster association. Indeed, we can say that the participation culture was not well developed initially, but at the end of the process when results and learning outcomes were shared among the stakeholders, a more enthusiastic attitude towards the participative evaluation was shown and it was approved that the process will continue periodically as the evaluation becomes embedded in the annual processes of the Cluster Association. In any case the evaluation process would be different in different contexts, so the main lesson here is that it is critical that the stakeholders feel the need of a participative process in order to learn more about their possibilities; it is critical to design a process that is aligned with the aims of the policy, helping them to improve their competitiveness through cooperation, and thus seeing and feeling the benefits.

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