Linking two instruments for a better innovation policy-mix: the French case of the National Research agency and the Competitiveness Clusters

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Abstract:

Since 2004, investigations and debates have been carried out on the French research and innovation system. Policy-makers have tried to break with the traditional 'colbertist' state-centered model, which put emphasis on interventionism and state involvement. This system that was successful until the 80ies, seems unfit to the increasingly competitive and knowledge-driven economy. The French model is also challenged by the changes in the policy context, as new actors such as regions, and constraints such as the Lisbon agenda are framing policy-making and implementation in the arena of research and innovation policies.
The new Law for research aims at reforming the organisation of the research and innovation system, mostly by creating new structures, at the governance level, such as the National Research Agency (ANR), and at the research and innovation production level, such as the competitiveness clusters.
The aim of this paper is to provide a case study that illustrates empirically the challenges of the setting up of these two new structures, and their difficulties to combine their actions. This qualitative research highlights the need for coordination and communication to reduce uncertainties and redundancies. Our work illustrates that the new organisation of the research and innovation system consists of creating more and more structures, without thinking in terms of policy-mix. A policy-mix perspective, that is to say a combination and balance of the different instruments would provide a better coordination between the different actors of the system.

Keywords : National Innovation system, governance, Clusters, National Research Agency, Policy-mix

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Introduction

Since 2004, investigations and debates have been carried out on the French research and innovation system. Policy-makers have tried to break with the traditional 'colbertist' state-centered model, which put emphasis on interventionism and state involvement. This system that was successful until the 80ies, seems unfit to the increasingly competitive and knowledge-driven economy. The French model is also challenged by the changes in the policy context, as new actors such as regions, and constraints such as the Lisbon agenda are framing policy-making and implementation in the arena of research and innovation policies. In 2004, the French innovation system experienced a deep identity crisis. The critics denounced the poor performance of the highly specific French innovation system, which lacks strategic vision and monitoring.

This crisis forced the government to propose a new Law for Research and Innovation that aims to set up a new organisation of the research and innovation system. The creation of new funding agencies, the National Research Agency (ANR) and the agency for industrial Innovation modify the landscape of the state governance of research and innovation.

At the level of the research and innovation production, the creation of new structures such as the Carnot Institutes, the Thematic Advanced Research Networks[3] or the competitiveness clusters[4], contributes to structure the organization of the actors of public and private research by supporting the emergence of hybrid networks. The State governance is supposed to concentrate financial means on them.

[3] Réseau thématique de recherche avancée.
[4] Pôle de compétitivité.

One year after their setting-up, the objectives and procedures of these new devices are always subjects to evolutions. Since then, actors have to deal with the complexity of the system, enhanced by the problematic interfaces between new instruments.

These changes echo with the recent academic debates that focus on developing more efficient innovation policies, and among them, analysis in term of innovation policy-mix. A policy-mix perspective attempts to combine and balance various policy instruments that are used in complementary and mutually reinforcing ways to achieve desired objectives. Thus, a policy mix perspective grants less emphasis on the design and evaluation of individual instruments of innovation policy and focuses more on questions such as completeness, balance and interactions between policy instruments (OECD, 2006). Therefore, examining the innovation policies requires not only to analyse the instruments individually, but also to analyse the way they interact.

In order to contribute to the understanding of the challenges of the French policy-mix, this paper describes two policy tools, the National Research Agency (ANR) and the Competitiveness clusters, and their mutual interactions. As we realised two reports, the first one studying the ANR setting up, and the second one concerning the ANR's actions towards the competitiveness clusters, it gave us the opportunity to observe both instruments.

In that purpose, we conducted two series of interviews. We began to interview actors of the French innovation system during the first 2005 semester to get their perception of the newly created ANR. Then, we interviewed sixteen actors of competitiveness cluster and six managers of the ANR, between August and October 2006, in order to apprehend the relations between the two structures one year after their creation.

The aim of this paper is to provide a case study, illustrating empirically the challenges of the interactions between the ANR and the clusters. This paper is structured in three sections. First section gives some insights about the French National System. In particular, we focus on the description of the current evolution of the system and give some interpretations of this evolution. The second section deals with the detailed analysis of each individual instrument, its purpose and objectives in the changing system. The third section pays attention to the challenges of combining them.

1. Motives for a new law on research and innovation

The French national system of innovation is traditionally considered as being dominated by a centralised, colbertist State (Chesnais, 1993). This model can be defined by four main characteristics (Laredo and Mustar, 2002). First of all, the majority of the French public research budget was dedicated to large programme, such as defence sector. Secondly, unlike most foreign countries, basic research is not accomplished in universities. A special institution, the National Center of scientific research (CNRS) handles most of the basic research. Thirdly, France is characterised by a multiplication of the number of mission-oriented public research institutes. Finally, public support for industrial research is controlled by a number of large high-tech companies.

Laredo and Mustar (2002) show that the system had evolved in the 1990s, as the almost disappearance of the large program or the stronger connexion between applied and fundamental research in the public sector can prove. However, these changes are not sufficiently efficient to face the complex modes of knowledge production and the increase of the interactions between science and industry (OECD). There might be a failure on the system coherence (Barré, 2006). In the 2000s, several events have then lead to re-think the French

innovation system or at least to modify this organisation. As a result, a new law called “pact for research” and voted in April 2006, targets to reform the governance modes of the French system.

1.1. The forces for change

During of the European Council of Lisbon in March 2000, the Heads of State and of government have adhered to an ambitious common objective: to make European Union "the most competitive and dynamic knowledge-based economy in the world" (European Council, 2000). One of the objectives is to devote by 2010, 3% of the GDP to R&D. This echoes with Caracostas & Muldur (2001) statement, which highlight that European R&D investments are insufficient and their allocation inefficient. Therefore, Lisbon agenda highlights the need to evaluate the performance of the national innovation system in a global economy. At the European level, one of the outcomes would be the building of the European research space (cf. Laredo, 2003 for a description)

In 2004, the European Commission has evaluated the progress made to achieve the Lisbon agenda. It has thus urged the governments to give a new impulse to the Lisbon strategy. In particular, it has distinguished two actions. On the one hand, investment in networks and knowledge, for instance, the launching of priority projects approved in the European initiative for growth should be a priority. On the other hand, members countries should reinforce their competitiveness in industry and services, in particular in the fields of industrial policy, market for services and environmental technologies. Thus, knowledge, network and competitiveness are the main issues for economic growth.

Along with the increasing importance of the European Union, regional authorities develop their sphere of competencies in strategy and financing in R&D and innovation. They develop joint policies with the government but they also decide to have their own actions in

emergence scientific domains. For instance, in 2005 the Paris Region (Ile de France) launched a strategic plan, and identified some scientific and technological priorities, so-called "domains d'intérêt majeur", upon which they will focus their financial aids. The Region also raised its R&D budget up to 5% of its total budget.

Coincidently, in 2004, different facts claim for new actions in the French innovation policy. Several public reports, such as Beffa (2004), Blanc (2004) highlighted the decline of the French industrial competitiveness, in particular in high value-added sectors. In contrast, these reports emphasize the importance of re-thinking industrial policy, by encompassing more innovation and competitiveness focus. Besides, some events had a kind of snowball effect in the debate. For instance, the Shangai ranking, which showed the decline of French research and education system attractiveness, made a fuss in the public opinion.

Moreover, in spite of the Lisbon Agenda and of the recognized importance of research in the economic system and its role in the competitiveness of a country, the French government reduced research budgets in 2003. This event led many researchers to mobilize to propose a reform of the French research system, but all the actors considered reforms as necessary.

1.2. Towards a new governance of research and innovation policies?

As a consequence of these facts, the government decided to propose a new law, which should enact a new pact between the State and the civil society, in particular the researchers' community. The "Law for Research" project should reconcile the need for a higher performance and stakeholders' interests. It states the following objectives and measures.

Table 1: Objectives and measures presented in the Pact for research

Objectives	Measures
Enforcing the capabilities for strategic orientation and for priorities setting	High Council for Science and Technology Interministerial Committee of scientific and technological research National Research Agency Agency for Industrial Innovation
Building a unified, coherent and transparent system for research evaluation	Agency for Research Evaluation
Clustering energies and facilitating cooperation betweens actors in Research	Research and Higher Education Poles Research Campus Calls for proposals launched by the National research agency
Making scientific carriers more attractive and evolving	Descartes Sponsorships
Intensifying the innovation dynamics and improving linkages between Public and Private Research	Aids for the development of Young innovative enterprises Increase the financial aids for SME's research Large Technological Programs funded by the Agency for Industrial Innovation Carnot Institutes ("Franhofer Institutes" like) Collaborative research project funded by the National Research Agency Competitiveness Clusters
Enforcing integration of the French System in the European Research Area	Researchers mobility Increase the proportion of evaluation realised by international experts Increase the proportion of THE ANR's funding devoted to European calls for projects

As this table summarises, most objectives have been turned into the creation of new structures. For instance, we see that various strategic councils and agencies such as Agency for Industrial Innovation, the National Research Agency were created to improve strategic planning and monitoring capabilities. OECD (2005) argues that this flourishing of agencies and fragmentation is a consequence of the increasing influence of the New Public

Management thought. This system of thought influenced policy-makers since the 80ies asserts the need for public accountability (Bach, 2006). It led to the creation of independent agencies, since they avoid risks of corruption and allow rationalization of public management. This increase in fragmentation may however deteriorate the transversal coordination if the efficiency of each instrument is prevailing over global long-term strategy.

Some measures such as the creation of RTRA and clusters, targets the emergence of multiple hybrid networks of research and innovation producers. This fact also expresses "a shift from state regulation of economic affairs to a degree of self-regulation by responsible groups in economy and society" (Cooke, 2001), sometimes depicted as associative governance. However, our observations tend to relativize the significance of this trend. In particular, in the case of competitiveness clusters, we will show here after that the local structures of governance lack recognition from the State level of governance.

These various measures also target a stronger competitiveness of the French research and innovation system, since it gives more importance to project-based financing. With the Agency for Industrial Innovation, ANR and competitiveness clusters, financing is oriented towards competitive projects, fitting in the national priorities.

The Pact for Research expresses a clear political consciousness that innovation policy is a priority. There is in addition a strong political willingness for change towards more performance. The Pact for Research expresses strengthening linkages between fundamental research and innovation. Nevertheless, OECD (2005) advises policy makers to think about the tensions within the system. Otherwise the policy instruments cannot be coherently combined for developing innovation capabilities. As a matter of fact, innovation policy-mix should

combine instruments depending on the Ministry of Research and Higher Education and the Ministry of Industry. Historically there have been some tensions between these two ministries, which impact the efficiency of the policy design.

To further the interpretation of this evolution in the system, we propose to look closer at the effective functioning of these structures, Competitiveness clusters and National Research Agency. This will lead us in section 3 to examine if these different levels of governance cooperate and combine their action for the reach of their objectives.

2. Two new structures in the French Innovation system : the Competitiveness Clusters and the National Research Agency

2.1. Competitiveness clusters as multi-purpose instruments

As the Ministry of Industry defines them, competitiveness clusters encompass various forms of partnerships. To reinforce territories' attractiveness, they gather on a territorial scale, public research units, training centres and enterprises on projects whether on emerging themes or on more mature themes.

Since their launch, competitiveness clusters have gained more and more importance on the political agenda, so far as to encompass many objectives wider than innovation and technology.

2.1.1. Chronology and context

This project was established in September 2004, following two reports. Blanc (2004) states that in order to maintain its competitiveness, France has to promote a regional-based cluster policy. Such a policy will support the competitiveness of territories in which companies are settled as an indirect mean to promote their own competitiveness (Delemarle & Larédo,

2006). Cluster policy will increase synergies between heterogeneous actors, namely public research institutions, industries and local institutions. In particular, Blanc points out that in France, some territories, Saclay, in Paris region for example, don't enhance their potential strengths due to the lack of willingness and mobilising leaders.

The Datar, the French mission-oriented agency dedicated to territorial development, reviews the weight of the industrial sector in the economic potential of the country. The impact analysis of the localized production system, promoted in the 1990's by the Datar, showed that these networks suffer from the absence of research actors, although they can clearly help to catalyse cooperation in the field of innovation (Ginsbourger and al., 2006). In this new report, Datar proposes that France has to shift its industrial policy tools towards a better combination of industry and innovation, through the emergence and support of competitiveness clusters.

In this context, a inter-ministerial committee decided to implement structures to reinforce innovation particularly in relation to research units. A call for proposal was launched in November 2004 to select clusters projects. Four aspects are taken into consideration :

- The economic development strategy must enshrine the pole in the local economic network, in order to be inserted in the international competition.
- The pole must be visible from an international point of view and concern industrial and technological aspects.
- The partnership and the governance model that will be implemented are of core importance. The quality of R&D partnerships is a major criteria of the selection of the clusters.
- Projects that will be accepted must create synergies as regards R&D, and therefore provide new added value.

Originally, only 10 to 15 clusters projects were expected. Yet, 105 projects applications were proposed to the selection committee, which can be explained by two facts. First, as we mentioned previously, the local networks that were existing on the French territory constituted the basis for numerous clusters projects. Second, territorial authorities, in particular regions but also departments and local councils, were deeply involved in the process, which mobilising actors and supporting their efforts (Delemarle & Laredo, 2006). As a consequence, the State selected 67 proposals, distinguishing 15 world-class clusters and 52 clusters of national scope. To finance these numerous clusters, the initial State budget of € 750 m was doubled to reach €1,5 bn over a three-year period, distributed among several state agencies (Agency for Industrial Innovation, National Research Agency, Fund for Enterprise Competitiveness, Oseo-Innovation). These fundings are mainly managed by the Industry Ministry. But above all, territorial authorities are expected to fund the clusters as much as the State does.

Since their accreditation, the clusters have been working on settling their governance structures and the procedures for the general functioning. At this point, it is important to highlight that the official discourse concerning the clusters governance initially asserted the need for self-organisation. The government insists on the fact that economic actors have to decide for themselves.

2.1.2. An illustrative example: Cap Digital Paris Region cluster

In order to give some insights of the purposes and the challenges of competitiveness clusters, we would like to present one of them, namely Cap Digital. Although we observe that each cluster has its specificities, describing this world-class cluster can provide a general framework for understanding the French cluster initiative.

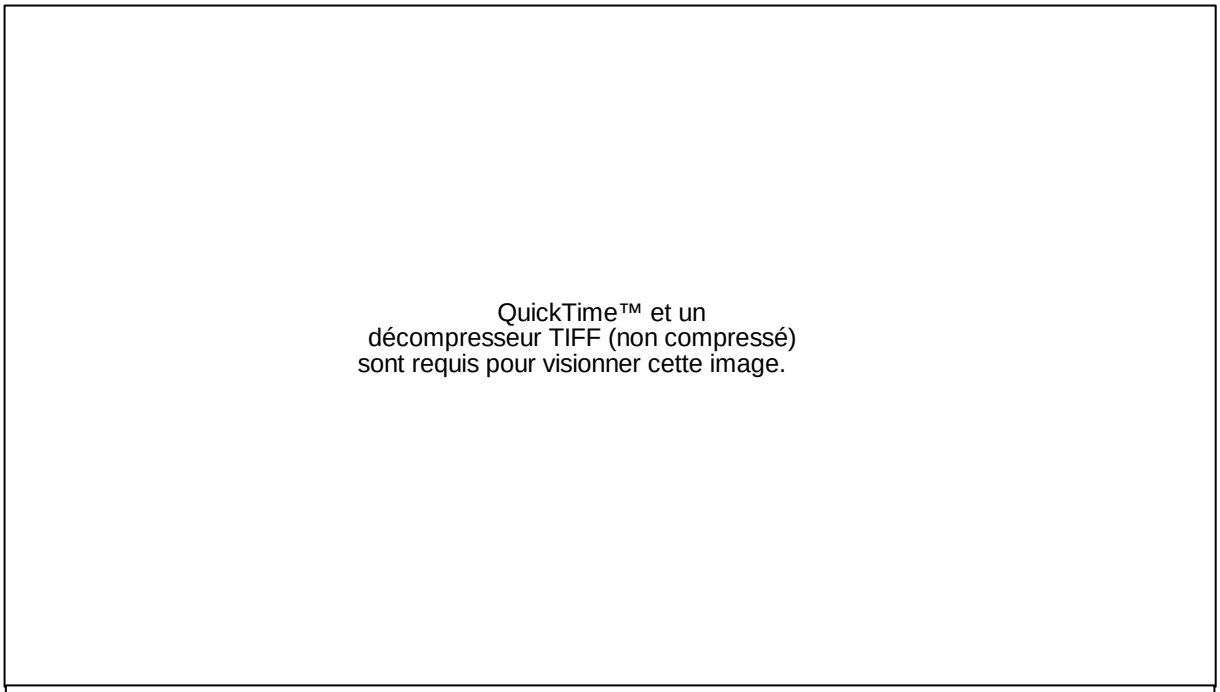

Figure 1: Cap Digital's application themes (source: capdigital.com)

Paris Region concentrates half of the research and innovation capabilities in multimedia technologies (video games, image and sound, ICT). Some local business networks and emerging spaces for collective actions existed before the cluster initiative, these are professional associations (Film producers Association), local production systems (Capital Games, Silicon Sentier) accredited by the Datar, several high tech incubators and technological platforms. When the call for proposals was launched, local authorities promoted two different projects. In order to reach a critical mass and because these two projects were

rather closely related in terms of technologies, the two projects were combined to form a unique competitiveness cluster for Digital Content and Knowledge Creation industry.

On 12th July 2005, the interministerial committee for regional planning and development accredited the cluster project finally entitled Cap Digital. Its activities revolve around the multimedia, knowledge and cultural industries to encourage cross-disciplinary innovation around 6 digital application themes: video games, Audio-visual and new media, Knowledge engineering, Digital heritage, education, digital lifestyle and services. The underlying vision is that these different themes share common challenges and needs, the main being the technological and usage convergence.

The cluster has the distinctive feature to comprise the most SMEs. More than 200 SMEs are members of the cluster association, plus around 80 potential 'indirect members' that is to say the members of the enterprises associations that are themselves members of the cluster. To which are added some MNCs, e.g. Thales, Thomson, France Telecom, Motorola, research institutions (universities and research labs), as well as territorial authorities (Paris City, Regional Council, etc.). Furthermore, territorial authorities such as the department Val de Marne, which were originally not expected to take part in the cluster governance, lobbied to be well represented in the administration board.

Although we observe some differences between themes, the multimedia sector, especially in Paris Region, is familiar with research and innovation policy tools. In 2004, 40% of the research projects partners funded in the national multimedia research program were located in Paris Region. In particular, the actors know quite well the instruments dedicated to innovation in SME, mainly provided by OSEO-Innovation. The pre-existing associations have also started up various collective actions, from lobbying on the political agenda (for a French small business act, or for sectoral aids in video games industry) to research projects, most of them funded by local authorities. However, the sector is still not mature. It is fragmented with

numerous young SME. Many actors face financial difficulties. Lastly, the Paris Region has been suffering from the global competition with cities like Montreal or London, which attract companies and competencies.

The cluster ambition is to *promote the development of world-class competitive companies within the territory by boosting research innovation and job creation through networking and collaboration of private, public and investors stakeholders*. Therefore, the cluster governance activities centre on project management assistance and label accreditation, encouraging the exchanges of practices and knowledge among the clusters members[5]. Furthermore, their actions promote corporate growth through financial and industrial partnerships and lobbying as well as expand the internationalisation of members markets through alliances…

From the example of Cap Digital, we learned that clusters encompass different actors with various expectations. Territorial authorities expect the cluster to improve territories attractiveness and employment. SME expect clusters to provide with market opportunities and growth. MNCs search for new projects and new potential partners. Academics require research questions and also project funding. Consequently, governance structures have to find the right balance between individual interest and collective dynamics.

At a general level, we believe that the clusters' missions are threefold. First, clusters work for building strategic agenda for their industries and themes. Second, in alignment with these strategic visions, clusters have to identify and promote collaborative projects of different nature: some research-oriented, others growth-oriented. Furthermore, clusters will work for

[5] See Capdigital's website « Vision and mission. »
URL : [http://www.capdigital.com/xwiki/bin/view/AboutCapDigital/VisionMission] visited on 2007-01-09

the projects realisation and follow-up. Third, clusters build communities of heterogeneous actors.

Concerning their means, most clusters have two financial resources; the subsidies provided by the territorial authorities and the funding agencies; and the membership fees. Aside their fees, members boost the cluster dynamics with their time and competencies, which are in some case, more costly than the fees themselves. Most clusters cannot fund project by themselves, they rely on their different stakeholders that decide to finance the projects or not. And the National Research Agency is one of these stakeholders.

2.2. The ANR: an Agency for funding research projects

2.2.1. Chronology and context

The National Research Agency (ANR) was founded in February 2005, on the model of foreign funding agencies such as the US National Science Foundation. The rationales for its creation so were threefold—first to be a visible demonstration of the government's commitment to science, second to contribute towards the goal of investing 3% of the gross domestic product in science by the year 2010, third to make the French research system more visible and similar to international standards.

The Agency mainly operates on the basis of annual calls for proposals. This instrument is very common in many countries. Project-based funding aims at stimulating research exploring the frontiers of science. This mode of financing is adapted as well to cognitive research as to applied research, since the projects are conducted in the public sphere as much as in science-industry partnership.

The ANR selects projects mainly on scientific and technical excellence criteria thanks to a peer review evaluation. Subsequently, calls for proposal increase the competition between research teams. Thus, the agency initiated a shift from a majority recurrent financing to a project-based financing, which was widely criticized (Gallié, 2006). Indeed, one of the risks is then that researchers orientate their scientific choices to meet the ANR's programming, at the expense of *open science* and disruptive ideas. The teams that will pass, will be not only the best in terms of competences or tools but also the most reactive. Moreover, as it could be difficult to evaluate the impact of some research, especially in basic research (Gallié, 2006), one risk would be to favour only well-known domains of research or short-term projects. To avoid some limits of the competitive financing, the government must keep a balance between recurrent funding and project funding. The research cannot be considered as a pure competitive activity.

2.2.2. Missions and instruments

The aim of the creation of the ANR was to provide France with a reactive structure devoted to research funding by projects and to assure more transparency in the allocation of financial supports. The initial mission of the ANR is then to develop the dynamics of the research system and to facilitate its evolution towards a best integration of the national priorities in terms of knowledge development, economic activity support and response to the needs for the society. The ANR must bring more flexibility, reactivity and as a consequence, competitiveness in the system. The ANR has then three missions:

- support efforts of basic and applied research in order to produce new knowledge;
- develop science-industry partnership in order to favour interactions and the resulting innovations,
- facilitate technology transfers of public research in direction of the economic arena.

To carry out its missions, the ANR is addressed simultaneously to public research laboratories and firms. The activity of the ANR is based on two main processes : programming and project selection.

When the government defines its research priorities, the ANR builds the choice of the objectives to follow inside each priority (biodiversity maintenance...). Then it elaborates the content of every program launched in order to reach theses objectives.

Once the programming is done, calls for proposals represent 80% of its budget, that is to say 539,2 mo € in 2005.

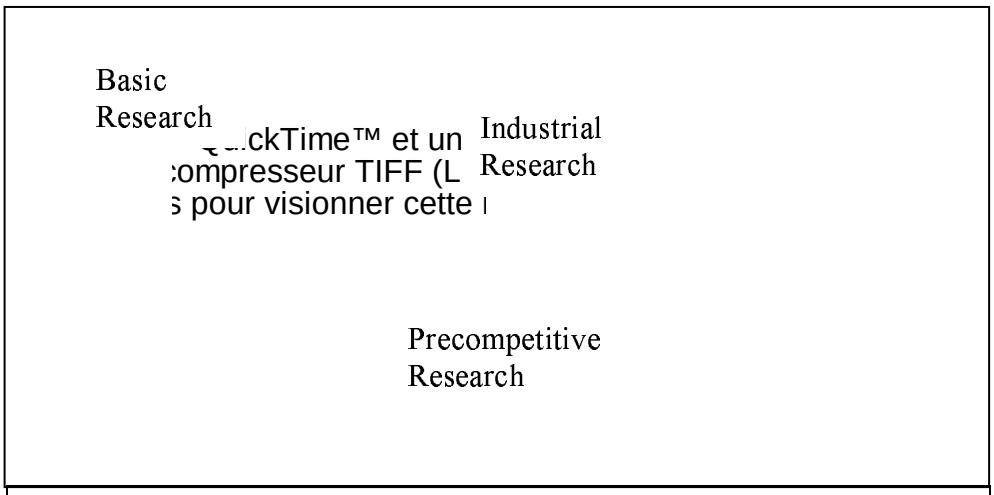

Figure 2: the distribution of ANR's financing by type of research (source : ANR annual report, 2005)

The ANR distinguishes thematic and "white" (or non-thematic) calls for proposals. The first ones represent the national priorities identified by the Government. The second ones support knowledge production and scientific progress in every subject. It supports the most original and promising research projects. Indeed, scientific and technological ruptures are supposed to come mainly from projects, which are not strictly in the national priorities. The logic rests on the recognition of excellence and the encouragement given to the innovative or interdisciplinary steps. Some of the calls for proposals, such as Young researcher programs, result from the inheritance of programs led by the Research ministry.

It must be pointed out that these calls for proposals are qualified of “open” when they only concern public researchers. They are named “partnership” when firms are associated to public laboratories.

In addition, the ANR has a set of instruments dedicated to the economic development. They are managed by the department "Partnership and Competitiveness" which was created to deal with actions oriented towards the support for research achieved by firms, and the knowledge transfer between the academic world and firms. In this context, competitiveness clusters are one of its duties through additional funds. Besides, this department has developed and managed its own instruments: Carnot Institute, Thematic Advanced Research Network.

The ANR manages a large panel of tools, which can sometimes question the coherence of the system. Furthermore, it has to deal with tools that do not fit completely in its initial action. In particular, competitiveness clusters constitute one of the elements the agency has to deal with, to keep in line with the general political willingness, although the agency management seems unease with this instrument.

3. Linking these policy tools for cohesion: stakes and challenges

In the precedent section, we draw our attention on each individual structure. The purpose of this section is to focus on describing and analysing how these two structures work together and combine their actions. By giving more interest to interactions, we keep in line with the idea of analysing innovation policy as a system and not only as a bunch of structures and tools.

3.1. A propensity of decoupling though some interests to work together

Thus, as we showed in table 1, the ANR and the competitiveness clusters share the objective for intensifying innovation dynamics in the French innovation system. However, it seems

obvious that the ANR and the competitiveness clusters have different functions in the system. According to the typology proposed by Rémi Barré (2006), the National Research Agency acts for the programming and financing function in the system, while clusters act for producing and using innovation and research capabilities.

As a consequence of this situation, we observe an asymmetry of information between these two levels. In particular, some clusters reproach the ANR for the lack of transparency and intelligibility of the selection process. For instance, some researchers mentioned that they believed *the cluster certification accounts for the project selection process*. However, this was absolutely not the case. Even from the ANR's managers view, they regret that because industrial actors don't know its functioning, *the ANR is invisible in industrial fields*, to the advantage of other instruments like OSEO-ANVAR. Reciprocally, the ANR is deficient in knowing the clusters' procedures. At the time of our interview, one of the managers admitted that apart from a few emails, *she never had any formal information exchange with the clusters' governance structure*. Asymmetries of information are also testified by the heterogeneity of mutual knowledge that our interviews revealed. Some clusters don't know much about the ANR functioning while few clusters, world-class clusters, that have privileged relationships with the ANR, tend to have a clear overview and a better knowledge of the processes. If they are not reduced, such lacks of information can discourage firms from applying for the ANR's projects and consequently restrict the firm's propensity to collaborative research.

Besides, the ANR and the competitiveness clusters have different rationales for actions. Although the ANR has for mission to promote private-public partnerships, we observed that the ANR has a strong propensity to prefer the 'open science' mode of knowledge production. The scientific excellence as main selection criteria is one example of this propensity. The

interviewees revealed that "*the ANR is a way to assess the project's scientific excellence*", which helps also the cluster in its legitimisation process. At the same time, some of our interviewees said, the ANR main focus is on academic projects and that its action is "*oriented towards public research*". Therefore, some actors may think they are not concerned by the ANR's financing.. Furthermore, the ANR is a national structure, while clusters have a strong territorial identity. Their embeddedness in the territory is a force for the construction of their legitimacy and identity. It weights as well for the funding of their actions, since it appears that regional and local authorities are important financial contributors. This exposes the difficulty of coordination in a multilevel governance.

However, the ANR and the competitiveness clusters have interests in facilitating the interface between them. The ANR is an important actor among the financial stakeholders in the clusters' system.

Year	Number of the selected project that were accredited by the clusters	Total amount for the accredited projects (millions €)	Total number of projects selected by the ANR	Total budget for the calls for proposal
2005	330	195,9	1454	539,2

Figure 3: the proportion of clusters' projects in the ANR calls for proposals (ANR annual report, 2005)

In 2005, it was officially displayed that the ANR was the first financial contributor of the clusters with a budget of 195,9 mo €. However, the projects that got accredited by the clusters in 2005 were not actual 'clusters' projects, if we consider that a cluster project is a one that emerged thanks to the clusters actions. Nevertheless, from the ANR's point of view, clusters can bring a lot of opportunities and advantages for its activity. Thus clusters allow to enlarge the scope of the calls for proposals by integrating more actors in regions and actors that are

not usual projects respondents. For instance, a knowledge transfer institution that took active part in a cluster, succeeded in the ANR call for proposal.

In order to refine our argument, we examine the different actions of the ANR and the clusters and their propensity of interacting. In that purpose, we distinguish three categories of activities, according to the following typology. First kind of activities, the 'distinct' ones are those that clearly have no relationships between each other. In that case, there is no need to think about coordination means since the ANR and the competitiveness pursue different ends. The existence of ANR instruments devoted to pure academic science, namely the white calls for proposals, asserts the ANR's distinct orientation. Clusters' specificity is asserted by a set of activities that concern only firms, like the human resources projects, in particular education and training projects, or projects related to growth and competitiveness, for instance investments, buildings, intelligence services etc.

Second kind of activities, complementary activities are those when the actions of the ANR and clusters are related to each other and when coordination can then reinforce each other. This category includes the instruments related to R&D projects. We highlight the fact that if for the ANR, research projects are the ends, for the clusters, they are intermediary means to reach other ends. Yet, they have been important milestones and indicators for assessing clusters dynamics. Therefore projects are an important part of current competitiveness clusters' activities. And clusters' support and assistance to project proved to be efficient when considering the rate of success in the ANR's calls for proposal. This also relates to the programming activities. In the frame of is programming activities, the national research agency tries to collect information from the clusters, about their future projects. As one of the main ambition of the clusters' governance is to build strategic agenda for the technological

and scientific community. By their work, clusters can contribute efficiently to the programming.

Third kind of activities, overlapping activities are those that present a risk of redundancy. Overlapping instruments show the need for better coordination and communication between these two structures. The label accreditation proved to be one example of potentially overlapping situations.

3.2. Overlapping instruments: the case of 'labellisation' accreditation

With the calls for proposals the ANR action is not specifically oriented towards cluster projects (contrary to other financing). However, projects, which are accredited by the governance structure of the cluster, can receive an complementary fund so called "abondement". In 2005, the total complementary fund was 6,1 millions euros. In 2005 and 2006, complementary fund is given to each partner of a financed cluster project if he is eligible to the aid.

Since the label accreditation determines the payment of the ANR complementary fund, we consider it as an important managerial tool for the clusters. The label accreditation consists of the recognition by the cluster, of projects carried out by local actors and fitting in with its strategies. Without the automatic character of the complementary fund, the question of the label accreditation would be of none importance. The examination of such a managerial tool for cluster is further interesting because it reveals the challenges for a national institution to deal with local 'self-governance' practices.

The collection of information at the level of the governance of competitiveness clusters confirmed the assumption of a diversity of the possible cases according to clusters.

Due to the policy agenda in 2005, the label accreditation was accomplished after the closing of the calls for proposal. Consequently, the cluster procedures were not in place yet. In 2006, the clusters structures are progressively setting up the procedures, sometimes after consulting the ANR. Our interviews allowed us to collect eight different procedures of label accreditation. From these procedures, we identified three models of label accreditation models. These models offer empirical evidences for understanding the underlying objectives of the label accreditation for the clusters' governance:

- Model 1 : Automatic label accreditation
- Model 2 : Label accreditation according to the objectives of cluster development
- Model 3 : Multicriteria label accreditation

For each model, after examining its evaluation criteria, we assess its interests and limits. Finally, we conclude on the complementary or overlapping character of this model with the ANR selection process.

3.2.1. The automatic label accreditation : simple process but without evaluation

Model 1 reflects the case where clusters did not set up accreditation procedure. This case is less frequent, but it happens in some "small" clusters which encounter difficulties of mobilizing the actors so that they present a joint project. We qualified it "as automatic" because while simplifying, it is enough to form part of the cluster to obtain the label.

If this simple model makes it possible to identify the projects belonging to the 'clusters', the latter are absolutely not evaluated. The cluster cannot have strategic action on the projects it recognizes. As for the ANR, it will give a complementary fund to projects for the only credit that its members are located in competitiveness cluster, without guarantee that this project contributes not only to some actors but also to the development of the cluster.

It then helps the ANR in these aids to clusters. We can say that this model is complementary to ANR actions, even if it is not satisfactory in terms of evaluation.

3.2.2. Socio-economic criteria, a *happy medium* for strategic evaluation

Model 2 gathers accreditation procedures whose criteria are built upon the cluster development objectives. The cluster evaluates the project's contribution to its strategy of development. The project must be co-operative to create synergies and be based if possible on former agreements. Such a condition increases in theory the chances of success because the actors already trust each other, which is an indispensable condition for co-operation (Dupuy and Torre, 2000). The project must have locally economic outcomes but also contribute to the internationalization of the cluster while making it more visible. Lastly, it must fall under the technological objectives of the cluster to contribute to its global development, in a definite speciality.

For us, the interest of this model is that it proposes a clear division of labour. On the one hand, the governance sets up criteria that meet the clusters' needs. On the other hand, the ANR carries out the scientific evaluation of the projects. It finances the selected projects, whose socio-economic criteria answer the needs and requirements of the clusters. If the evaluation carried out by the cluster is recognized for its quality, the projects accreditation and selection procedures done by the cluster and the ANR would offer a complementary approach, each one highlighting the different aspects of the projects.

3.2.3. Multicriteria Certification, a risk of overlap between cluster and ANR

Model 3 evaluation is based on a combination of the evaluation of scientific and organisational qualities of the project, and its conformity to the objectives of the cluster. A

accredited project presents a strong probability of success because many inherent questions at the co-operations were already considered. This model proposes then a complete evaluation of the projects.

Model 3 is ambiguous because it helps to identify projects of excellent quality but with a potential risk of evaluation duplication. Indeed, being given its missions and instruments, the ANR will have to make its own scientific and financial evaluation, even if the one of the cluster would be of quality. We conclude then that the model 3 and the ANR procedures overlap.

In addition to this first risk, we question the interest for the clusters to carry out such a precise scientific and financial evaluation before applying for financings. Furthermore, this evaluation is high costly for the governance structures, which generally lack human and financial means. Some clusters pay their expertises to ensure the quality. It can also be difficult to find available experts and to mobilise them. Indeed, in very specific fields, an expert could be solicited for the same project by both the cluster and one of the agencies. The problem of the redundancy and quality of the work might occur, as well as the lassitude of the experts.

These three models illustrate the difficulty to deal homogeneously with locally organised procedures. Indeed, if the socio-economic accreditation process offers a complementary approach with the ANR selection process, the multicriteria model present some overlap with the ANR selection process, as they both evaluate the scientific quality of the project. This questions the efficiency of the complementary fund procedures, as different projects, certified with different procedures, can receive the same aid. Further coordination work should think about mechanisms in order to enhance efficient interactions. For example, the ANR could decide to use the accreditation report in its selection process.

There is an obvious need for clarifying the role of the accreditation and to look for a coordination of the procedures, since a fair use of complementary fund is not possible as long as there is such diversity in the process.

Conclusion

This paper examined the setting up of two new policy instruments, the ANR and the competitiveness cluster, in the context of the French reforms for a new organisation of research and innovation. In particular, we wanted to focus on the nature of the interactions between these two instruments.

This study shows that there is a lack of communication between the ANR and the governance structure of the clusters. More dialogue and coordination would increase the efficiency of each of these instruments. Indeed, the instruments cannot be seen individually but integrated in a complex system. They would be more efficient if their function and means of action are clearly defined in coherence with the others.

Our first recommendation consists of a clearer division of labour between the ANR and the competitiveness. Objectives of each actor should be explicit and understood. Subsequently, the different actors should define the information flows needed for working together. The recent designation of ANR corresponding agents for the cluster could improve these communication flows.

A better coordination would allow to reduce the selection process cycle time, by reducing the time frame between label accreditation and project selection. A recent KPMG study (2006) highlights that the selection process cycle time is an important factor for the success of clusters policy and for firms' involvement and dynamics.

Our second recommendation aims at building a common language and vision for all the actors. For instance, the ANR agents could participate to the elaboration of local projects

guidelines. Actors seem also to require measures along this line, which is testified by their willingness for more joint work, including joint workshop on the label accreditation.

We admit that our current observations cannot provide a rigorous evaluation of these reforms. We also admit that such an evaluation would not be relevant, since the reforms are just at the start. In particular, it is obvious that actors are currently learning by interacting with each other, and thereby developing new ways of working together. However, this descriptive case study aims at developing a policy-mix perspective, which can improve the understanding of the French innovation system as a whole.

In order to enrich our findings, our research work will require to be expanded to the analysis of interactions between new instruments and old instruments. As the French innovation system is building new instruments, it also maintained its old instruments. In particular, further work would need to examine the relations between the agencies and the mission-oriented public research institutions, since there might be redundancies in the programming functions between these two levels.

Furthermore we plan to frame this work in a more theoretical scope, to examine how the empirical evidences meet the new theories of public management.

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