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# Taking up a new role: Regional innovation policy in France.
# The case of the Rhône-Alpes Region

**Sebastian Künzel**

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CARL VON OSSIETZKY universität OLDENBURG

# Contents

# 1. Introduction

Social and economic change emphasizes the growing importance of successful regional political regulation in Europe. While the national level loses regulatory impact due to processes of Europeanisation and globalisation, regions increasingly have to take regional development into their own hands. The growing significance of a knowledge-based economy highlights regional adaptation and organisational capability in innovation-driven markets. At the same time, the conditions of regional development in Europe vary considerably within the limits of national organisation. In particular, regional integration encounters strong challenges in France. Due to a strong central regulation of research, technological and economic development, it has been referred to as the "Colbertist state". In France, the outcome of regionalisation, running between the claims of central organisation and regional integration, remains open (Aniello, Le Galès 2001: 118).

Among the twenty-two French regions, the Rhône-Alpes region is one of the most innovative ones. Here, regional policy claims a leading role in regional development within France. Using Rhône-Alpes as an example, we will discuss whether regional authorities can contribute to the development of viable strategies for the modernisation of regional economies in France. This question will be investigated in the field of research and technology policy. Two key programmes of regional innovation policy are at the centre of inquiry: 1) a regional technology network and 2) a regional research cluster initiative.

In the first part of this article, regionalisation processes in France are discussed. According to a regional innovation system's perspective, regional development proceeds in a dualistic way between central steering and local fragmentation. Given recent developments it can be argued that this view neglects enlarged regulatory instruments and new policy approaches of the regional level. Following a general overview of the Rhône-Alpes region, its innovation capabilities, and innovation policy, we will discuss the two above-mentioned policy programmes.[1] By analysing innovation policy's instruments with regard to their main ideas and their implementation processes, conclusions will be drawn as to how regional policy can play a distinct role for an innovation-based economy in France.

[1] Five representatives of the regional authorities, development agencies, research organisations and business organisations were interviewed in Rhône-Alpes during the first half year in 2007. These interviews, which were conducted by the author, have been recorded and transcribed. I thank the interviewees very much for their openness and support. As I have assured the interviewees of confidentiality, neither their names nor their positions are revealed in this paper. In addition, in depth information was collected from reviewing documents and reports.

## 2. Innovation policy in France: The role of the region

Three different types of innovation systems can be distinguished with regard to regional governance's capability to produce collective goods (Cooke 1998): In networked regional innovation systems, actors systemically organise learning processes, whereas nationally driven hierarchical innovation systems or (on a more personal, informal basis) organised local grass-root innovation systems lack comprehensive regional networks for learning. Mechanisms of "policy feedback" (Pierson 1993) constitute coordination effects and a selection of institutions (Pierson 1993: 624-628; Thelen 1999: 392-395). Innovation policy of the Colbertist state reveals firm institutional path dependencies that run opposite to the build up of networked regional innovation systems. Reflecting a strong hierarchical-bureaucratic organisation of society (Crozier 1964), mission-oriented innovation policy, steered by a strong political, economic and bureaucratic elite, has financed and reproduced the dominant system of innovation in France. Aimed at the modernisation of the French economy, ambitious "grand projects" (for example TGV, Concorde) have been developed in sector-based vertical-hierarchical innovation processes through a close interplay of large companies and state-run research establishments (Chesnais 1993).

In this context, regional development in France has so far been identified as a dualistic process. On the one hand, development of the main urban agglomerations has been pushed by a centrally animated division of labour in the framework of the national system of innovation (Hilpert and Ruffieux 1991: 74; Dunford 1995: 170). These metropolitan areas have substantially profited from centrally driven policy programmes investing in the upgrading of public infrastructure. On the other hand, local production systems exist, that regroup mainly SMEs (Aniello and Le Galès 2001; Le Galès and Tirmarche 2004). Often they remain competitive through autonomous initiatives and investments (Colletis 1994: 171; Große et al. 1998: 152–153). Though regions were constituted in 1986 as political and administrative authorities, the regional level has so far been declared as rather insignificant with regard to regulatory processes for innovation (Aniello and Le Galès 2001; Le Galès 1994; Levy 1999).

Indeed, the structure of the French multi-level system implies strong restrictions for regional authorities to act in the field of technology and research policy. Weak financial and legal resources prohibit the tutelage of other actors by the regional level (Colletis 1994: 161–163). The decentralisation laws have so far avoided a clear and hierarchical division of labour between

the region, the department, and the commune (Levy 1999: 152-153). In addition, regional authorities do not possess legal competencies to pass laws (Colletis and Colletis-Wahl 1993: 13). Still, the research and technology policy legally remains foremost a matter of national politics (CESR 2004: 7).

According to observers of regional innovation policy, financial and legal limitations cause frequent deficiencies. The unclear division of competencies leads to wasteful duplications of competing programmes (Levy 1999: 156). In many instances, initiatives lack investments to reach any effect (Colletis 1994: 162). Or, projects are subject to symbolic claims of responsibility from regional actors, although they have been predominantly financed and carried out by the state (Le Galès 1994: 82-82).

However, changes of typical courses of action often proceed in the manner of an endogenous remodelling that makes it necessary to look at a system's "dormant resources" constituting its unrealised potentials hitherto disqualified due to failure (Crouch and Farrell 2004). Therefore, we want to defy the consistent dualistic perspective on regionalisation in the Colbertist system. Instead, we suggest to carefully review the region's role for innovation in two crucial dimensions: regional regulatory capacity and policy style.

The collective order of a region results from social and political regulatory processes (Scott 1998) leading to the production of tangible and intangible local collective competition goods (Le Galès and Voelzkow 2001). Tangible collective goods describe existing formal organisations and institutions (for example companies, training, education and research facilities, technology transfer agencies, financing systems, business organisations, and public authorities) as well as physical infrastructure (for example transport and telecommunication systems) in a region, whereas intangible collective goods are the cognitive and normative resources of a regional institutional order. The later constitutes what is referred to as institutional thickness (Amin and Thrift 1992).

Notwithstanding their modest legal competencies and financial resources, all regions in France today work on the development of proper research and technology policies (Colletis 1994: 161–163; Laredo and Mustar 2002). The role of the regions in innovation policies has been gradually increasing following a series of decentralisation laws over the last twenty years. Regions have today accumulated crucial competencies foremost in the field of territorial development (De Séverac et al.: 2001), vocational training (Baunay and Vergne 2006: 89-112) and the regional economy. While regional authorities protest against their increased financial bur-

den, they do not obstruct the continuous transfer of tasks from the central state in the hope of increasing their influence (Levy 1999: 192–206). Growing technocratic expertise has enabled the regions to advocate their proper regional interests (Leroy 2001: 213). Leroy (2001: 223) states: "(...) conceived as an accompanying level of state policy, the region uses from now on its financial means to try to promote its own policy initiatives (...)." For initiatives in the field of research and technology policy a certain room for manoeuvre is acknowledged within the region's general responsibility for regional economic development (Vavakova and Wolfe 1999: 108–111). This role has been reinforced by recent decentralisation laws, announcing the region to act as a coordinator of regional economic development (Loi du 13 août 2004). Also, regions have been recognized as a crucial partner in governing the *pôles de compétitivité* that constitute the major cluster initiative of national innovation policy (BCG and CM International 2008; Cohen 2007). These observations lead to the first hypothesis: *While French regions still lack the resources in a regional innovation systems' perspective today, especially as coordinator for the regional economy, they are in a situation to develop important regulatory capacity by providing certain local collective competition goods.*

Furthermore, French regions develop an own policy style. Observers of regional policy in France point out approaches strongly based on coordination (De Séverac et al.: 2001; Spenlehauer and Warin 2001). Consequently, regional policy tries to fulfil an intermediary role. In a region, relations between actors and their environment are structured by certain institutional logics (Scott 2001: 83, 136). The regulatory structures of a region are crucially determined through vertical processes of actors disposing of regulating and sanctioning resources (DiMaggio and Powell 1983: 150-151). While national government determines the broader general policy goals and provides resources, regional policy can make use of its local knowledge to implement new policy concepts in collaboration with regional actors (Sabel 1996: 22-23). Following the premises of experimental regionalism (Heidenreich 2005, Sabel 1996), regional policy does this foremost by a cognitive mode of regulation, guided by learning-based practices in planning and implementation (Sabel 2004: 19).

Experimental regional policy is based on reciprocity, fulfils coordination functions and sets incentives for cooperation (Sabel 1994: 149; Sabel 1996: 22). It is highly decentralised in its organisational nature. While political or administrative actors define the broader framework for cooperation, authority is given to different regional actors under conditions and rules inducing them to find autonomous arrangements for gradually building up regional cooperation (Helper

et al. 2000: 483; Sabel 1994: 151; Sabel 1996: 6, 10). Consequently, experimental regionalism, as a mode of governance, offers learning opportunities between regional actors and generates information to increase the effectiveness of policy programmes. Our second hypothesis is therefore: *Regional policy making is guided by learning based, decentralized practices exploiting the potential of proximity. Through this coordinated policy style, distinct from hierarchical or personal, informal modes of governance, the regional level fulfils a new and crucial intermediary role in the French multilevel system.*

Taking the Rhône-Alpes Region as an example, regional policy's capability to contribute to governance structures enhancing the mobilisation of regional innovation capabilities will be analysed. At first, socioeconomic trends in the Rhône-Alpes region will be described.

## 3. Sustaining Rhône-Alpes' innovation potentials

The Rhône-Alpes region constitutes a fairly new entity that was created in 1960 due to administrative reasons. The region with its 5,77 million inhabitants is therefore less characterized by a common cultural and historical identity (Dunford 1995: 172). Rather it is remarkable for its long-standing dynamic and multifaceted socioeconomic development. Occupying a "strategic position" (Dunford 1995: 186) along the European *Blue Banana,* Rhône-Alpes possesses a fully developed traffic, energy, and telecommunication infrastructure. Due to its favourable geographical position, the rhône-alpine economy has strong international trading activities (Dunford 1995: 182).

Rhône-Alpes is marked by its polycentric urban and economic development. While the largest three urban agglomerations Lyon (1 783 400 inhabitants), Grenoble (552 547 inhabitants), and Saint-Etienne (321 703 inhabitants) have traditionally been the focal points of economic development, a multitude of smaller employment, service and production hubs continues to exist (Colletis and Colletis-Wahl 1993: 16). Also, the regional mix of different-sized enterprises is fairly balanced with larger companies accounting for ten percent of industrial employment while the numerous small enterprises are the "trump cards" (Neumann 1991: 210) of the region due to their stable employment development (Dunford 1995: 182).

**Table 1: Indicators of economic dynamics in comparison: Rhône-Alpes (NUTS level II), France and the EU (2000-2006)**

| Indicator | | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|
| Employment rate (in % of 15-64-year-old population) | Rhône-Alpes | 63.5 | 64.8 | 64.8 | 65.2 | 64.9 | 65.8 | 66.0 |
| | France | - | 62.1 | 62.4 | 63.4 | 63.2 | 63.3 | 63.3 |
| | EU-27 | - | 54.8 | 62.7 | 62.9 | 63.1 | 63.9 | 64.7 |
| Unemployment rate (in %) | Rhône-Alpes | 8.1 | 7.2 | 6.9 | 7.1 | 8.3 | 8.2 | 7.6 |
| | France | 10.2 | 9.1 | 9.2 | 8.9 | 9.3 | 9.3 | 9.3 |
| | EU-27 | 9.2 | 8.6 | 8.9 | 9.1 | 9.2 | 9.0 | 8.2 |
| GDP (PPS; in % EU-27) | Rhône-Alpes | 117.4 | 117.4 | 115.9 | 112.3 | 111.4 | 112.9 | - |
| | France | 115.6 | 115.9 | 116.2 | 112.1 | 110.3 | 111.9 | - |
| | EU-27 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | - |
| High and medium high technology (in % of employment) | Rhône-Alpes | 8.56 | 8.57 | 8.63 | 7.12 | 7.63 | 6.99 | 7.20 |
| | France | 7.24 | 7.16 | 6.82 | 6.39 | 6.40 | 6.32 | 5.93 |
| | EU-27 | - | - | - | - | - | - | - |
| Knowledge-intensive services (in % of employment) | Rhône-Alpes | 33.49 | 34.10 | 34.80 | 33.67 | 34.38 | 36.42 | 35.85 |
| | France | 34.69 | 35.04 | 35.53 | 36.00 | 36.11 | 36.64 | 36.87 |
| | EU-27 | 30.34 | 30.89 | 31.42 | 31.98 | 32.18 | 32.45 | 32.78 |
| HRSTO (in % of active population) | Rhône-Alpes | 26.89 | 29.00 | 29.75 | 30.30 | 29.18 | 27.25 | 28.90 |
| | France | 25.21 | 26.24 | 26.56 | 28.31 | 28.10 | 28.53 | 28.67 |
| | EU-27 | 24.22 | 24.76 | 25.04 | 25.65 | 26.35 | 26.78 | 27.24 |
| HRSTC (in % of active population) | Rhône-Alpes | 16.96 | 18.64 | 19.14 | 17.21 | 15.95 | 16.53 | 16.85 |
| | France | 15.48 | 16.39 | 16.66 | 16.90 | 16.76 | 17.34 | 17.82 |
| | EU-27 | 12.99 | 13.33 | 13.43 | 14.04 | 14.75 | 15.21 | 15.55 |
| EPO Patent applications | Rhône-Alpes | 458.72 | 479.73 | 517.09 | 479.69 | 491.51 | 319.52 | - |
| | France | 280.97 | 271.78 | 270.51 | 281.28 | 294.71 | 190.55 | - |
| | EU-27 | - | - | - | - | - | - | - |
| Low educational attainment | Rhône-Alpes | 29,00 | 28,00 | 26,00 | 29,00 | 27,00 | 27,00 | - |
| | France | 32,00 | 30,00 | 29,00 | 29,00 | 29,00 | 29,00 | - |
| | EU-25* | 28,47 | 28,11 | 27,25 | 26,27 | 24,87 | 24,49 | - |
| Medium education | Rhône-Alpes | 45,00 | 45,00 | 44,00 | 46,00 | 47,00 | 47,00 | - |
| | France | 44,00 | 43,00 | 43,00 | 43,00 | 43,00 | 43,00 | - |
| | EU-25* | 48,31 | 49,50 | 50,09 | 50,67 | 50,62 | 50,43 | - |
| High education attainment | Rhône-Alpes | 26,00 | 27,00 | 30,00 | 25,00 | 26,00 | 27,00 | - |
| | France | 24,00 | 25,00 | 25,00 | 28,00 | 28,00 | 28,00 | - |
| | EU-25* | 21,12 | 21,23 | 21,73 | 23,06 | 24,51 | 25,08 | - |
| R&D-Quota | Rhône-Alpes | 2.38 | 2.55 | 2.73 | 2.57 | 2.47 | - | - |
| | France | 2.15 | 2.20 | 2.23 | 2.17 | 2.15 | 2.10 | 2.10 |
| | EU-25 | 1.85 | 1.86 | 1.87 | 1.86 | 1.82 | 1.82 | 1.84 |

Source: Eurostat online database (http://epp.eurostat.ec.europa.eu/; accessed on 9/2/2009).

- High tech and medium-high tech manufacturing: office machinery; communications equipment; medical precision and optical instruments; chemicals; machinery and equipment; motor vehicles, other transport equipment.
- Knowledge-intensive services: Water and air transport; post and telecommunications; financial intermediation, insurance and pension funding, real estate activities; computer and related activities; research and development; other business activities; education; health and social work; recreational, cultural and sporting activities.
- HRSTO: Human Resources in Science and Technology—Occupation Individuals who are employed in a S&T occupation (ISCO '88 COM codes 2 or 3). HRSTC: Human Resources in Science and Technology—Core Individuals who have successfully completed education at the third level in a S&T field of study (ISCED '97 version levels 5a, 5b or 6) and are employed in a S&T occupation (ISCO '88 COM codes 2 or 3).
- EPO Patent applications: Patent applications to the European Patent Office by year of filing; per million labour force.
- Lower education: Pre-primary, primary and lower secondary education (in % of total employment between 25 and 64 years).
- Medium education: Upper secondary and post-secondary non-tertiary education—levels 3–4 (ISCED 1997) (in % of total employment between 25 and 64 years).
- High education: Tertiary education—levels 5–6 (ISCED 1997) (in % of total employment between 25 and 64 years).

Although stagnating with regard to employment and added value, industrial activities present the engine of the rhône-alpine economy. The diversified economy covers a wide range of production activities. The chemical industry and the mineral oil refining are the most important sector of the strong basic and production goods industry in the region. Its companies produce goods ranging from basic products to highly innovative medical products. Capital goods remain the second largest industrial branch. Large vehicle constructing companies produce in the region. On the other hand, the "Technic Vallée" of the metal-working industry located in the Arve Valley displays one of the many local pocket of SMEs in the region Most of the companies in the important branch of electrical engineering, electronics and micro-electronics are traditionally producing in the area of Grenoble. Another local concentration of SMEs is found in the "Plastics Vallée" in the Jura. Here, companies produce for the plastic synthetic material industry. The foodstuff industry, specialising in high quality products, constitutes a further important branch in the region (Große et al. 1998: 157-161).

Overall, the economic development of the region proceeds parallel with the dynamic evolution of industrial and service activities, while other branches are declining due to the economic structural change. Larger companies, foremost in the chemical, pharmaceutical and electronics sector, have intensified their research efforts to remain internationally competitive with highly specialised and innovative products. Other premium services are offered in the area of software-engineering, consulting, finance and research (Große et al. 1998: 145-147).

The favourable economic development of the region is based on a dense infrastructure of research, training, and education facilities. There are nine universities and thirty-seven graduate schools in the region accounting for 236 000 students. Research activities are organised in more than 600 private or public organisations. Amongst them are numerous nationally and internationally renowned research centres (Colletis 1994: 164; CRCI 2007).

**Table 2**
**Employees by economic activity in Rhône-Alpes (NUTS II) and France (2000-2006)**

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|
| *Rhône-Alpes* | | | | | | | |
| Agriculture (A, B) (%) | 4.1 | 3.5 | 4.1 | 3.2 | 2.3 | 2.1 | 2.9 |
| Industry; construction (C-F) (%) | 29.9 | 30.3 | 28.6 | 30.0 | 28.7 | 27.0 | 26.3 |
| Manufacturing industry (D) (%) | - | - | - | - | - | - | - |
| Services (G-P) (%) | 65.8 | 66.2 | 67.3 | 66.3 | 68.6 | 70.8 | 70.7 |
| Trade, hotels and restaurants,; transport, communication (G-I) (%) | 22.4 | 22.1 | 21.6 | 22.4 | 22.7 | 23.4 | 24.5 |
| Financial intermediation; business activities (J, K) (%) | 11.8 | 11.7 | 12.3 | 11.6 | 12.2 | 12.6 | 12.7 |
| Community, social and personal services (L-Q) (%) | 31.6 | 32.4 | 33.5 | 32.3 | 33.7 | 34.8 | 33.6 |
| Employees (in 1000) | 2284.1 | 2360.3 | 2376.5 | 2471.2 | 2489.2 | 2538.4 | 2575.2 |
| *France* | | | | | | | |
| Agriculture (A, B) (%) | 3.9 | 3.8 | 3.7 | 3.7 | 3.6 | 3.6 | 3.5 |
| Industry; construction (C-F) (%) | 21.9 | 21.7 | 21.3 | 21.0 | 20.6 | 20.4 | 20.3 |
| Manufacturing industry (D) (%) | 15.0 | 14.8 | 14.4 | 14.1 | 13.6 | 13.2 | 12.9 |
| Services (G-P) (%) | 74.2 | 74.4 | 74.9 | 75.3 | 75.8 | 75.9 | 76.2 |
| Trade, hotels and restaurants,; transport, communication (G-I) (%) | 22.9 | 23.0 | 23.3 | 23.5 | 23.6 | 23.4 | 23.3 |
| Financial intermediation; business activities (J, K) (%) | 17.3 | 17.6 | 17.7 | 17.6 | 17.8 | 18.0 | 18.3 |
| Community, social and personal services (L-P) (%) | 34.0 | 33.8 | 33.9 | 34.2 | 34.4 | 34.5 | 34.6 |
| Employees (in 1000) | 24332 | 24765 | 24919 | 24950 | 24977 | 25116 | 25356 |

Source: Eurostat online database (http://epp.eurostat.ec.europa.eu/; accessed on 9/2/2009)

In spite of Rhône-Alpes' remarkable development, unexploited regional innovation potentials remain. Especially in its diversity lie future regional challenges. The territorial differences in the region have an effect on the economic infrastructure (Zimmermann-Steinhart 2003: 105). While strong spatial polarisations of diverse production structures exist in the region, regional coherence in form of a stronger networked, regional economy is lacking (Colletis and Colletis-Wahl 1993: 19-20). Thus, regional policy faces the challenges of a fragmented infrastructure. Local concentrations of SMEs are dealing with typical problems of grass-root innovation systems. Among these insufficiencies are: the supply of skills, knowledge, and capital. Overall, the potential of regional interfirm cooperation remains to be exploited. Finally, territorial isolation of research and production activities persists (Colletis and Colletis-Wahl 1993: 22; Große et al. 1998: 167–173; Laurencin 1993: 9-11).

Summing up, the Rhône-Alpes region belongs to one of the most competitive regions in Europe due to its solid industrial basis, comprehensive knowledge resources as well as a successful development of highly innovative technologies, research intensive products, and services. While the socioeconomic development is marked by strong local polarisations, integration and coherence at the regional level remain weak. Therefore, a regional innovation policy meets the challenges of strengthening the linkages of a regional economy in order to ensure the exploitation of innovation potentials in the long run.

## 4. The innovation policy of the Rhône-Alpes Region

The research and technology policy takes a high profile among the initiatives taken by the Rhône-Alpes Region. It is understood as an inseparable part of the Region's responsibility for the development of the regional economy (CESR 2004: 7). With a planned sum of 53 million Euros, expenditure for research and technology policy remained weak in 2006 compared to national expenditure in the region (roughly 2 billion Euros) (Région Rhône-Alpes 2006b).

The Rhône-Alpes Region constitutes one actor amongst several others that undertake initiatives of innovation policy in the region. Services supporting technological development are offered by numerous public and private organisations (Présence Rhône-Alpes 2007a). Besides the Rhône-Alpes Region, other main actors are the central state with its agencies[2] and the chambers of commerce at the regional as well as at the local level[3] (Larat 1996: 10-11). In the field of research, room for manoeuvre is even more restricted for the Region. Here, the state remains the privileged actor vis-à-vis public research facilities (CESR 2004: 10).

Notwithstanding this limited regional scope for action, regional innovation policy emphasises to take into account the enterprises' as well as scientific organisations' needs (CESR 2004: 24): The Rhône-Alpes Region sets out the goal to embed the actors of the regional economy into a transparent and well-coordinated supporting infrastructure (CESR 1999). For this purpose, it has established a regional development plan for the economy.[4] A declared priority has been the support of SMEs (CRRA 2005). In its effort to offer a well networked environment for the regional economy, the agency *Présence Rhône-Alpes* plays a key role (Larat 1996: 10). It organises a regional network for the technological support of SMEs. In addition, six regional technology transfer agencies[5] specialise in technology support for SMEs (CESR 2004: 24). Furthermore, the founding of two regional societies for the allocation of risk capital[6] to SMEs origi-

[2] OSEO and the *Directions Regionales de l'Industrie, de la Recherche et de l'Environnement* (DRIRE) act as agencies of the national Ministry of Industry in the field of technology support. The DRIRE supports the modernisation of SMEs; the services offered by OSEO are focused on innovation projects (Aniello, Le Galès 2001: 131). The state funds exceed regional resources clearly: OSEO for example offers interest free loans of up to 300.000 Euros for single development projects (Levy 1999: 219).

[3] Acting on the regional level is the CRCI (*Chambre Régionale de Commerce et d'Industrie*), while the CCI (*Chambres de Commerce et d'Industrie*) as well as the CMA (*Chambre de Metiers et de l'Artisanat*) are active on the local level.

[4] *Schéma Régional du Développement Économique 2005-2010*.

[5] These agencies are: *L'Agence Rhône-Alpes pour la Maîtrise des Matériaux* (ARAMM), *Le Pôle Productique Rhône-Alpes* (PPRA), *L'Agence Rhône-Alpes pour la maîtrise des Technologies de Mesures* (ARATEM), *Le Centre du Design Rhône-Alpes* (CDRA), *Agence Rhône- Alpes pour le développement des Technologies médicales et des Biotechnologies*, *Rhône-Alpes Numérique*. Funding of the technology transfer agencies is partly supported by the state.

[6] *Rhône-Alpes Création* and *Rhône-Alpes Amorcage* are partially financed by the Region.

nates from a regional initiative (Zimmermann-Steinhart 2003: 150). Recently the Region has begun to initiate support for the establishment of regional industrial clusters (Région Rhône-Alpes 2007).

Furthermore, in 2005, for the first time a development plan for higher education and research was drawn up, formulating the parameters of a regional research policy.[7] So far, the Rhône-Alpes Region has allocated funds to research projects and to universities in a rather general manner. The Region is now proposing a research cluster initiative aiming at a stronger regional framing of research activities. In the future, it shall serve as the sole instrument for the distribution of research funds (CRRA 2005).

Finally, the Rhône-Alpes Region also contributes some financial resources to national programmes of research and technology policy. The Region participates inter alia in public grants for a technology park in the Grenoble area, contributes money to the *pôles de compétitivité*, and finances partly the construction of facilities of higher education.

To sum up, the innovation policy of the Rhône-Alpes Region encompasses an array of ambitious activities in the field of research and technology. The question to be raised is, in which ways the Region makes successful use of its restricted means. With regard to planning and implementation, regional policy is analysed in detail by the example of the technology support network *Présence Rhône-Alpes* and the regional research cluster policy.

## 4.1 Concepts of the policy initiatives

Central ideas and organisational traits of the regional technology network and the research cluster initiative can be highlighted.

***The regional technology network***

Initiated at the beginning of the 1990s, the regional technology network *Présence Rhône-Alpes* is one of the most continuously operated policy instruments in the region. The main rationales for its founding are deficits, especially of SMEs, in technology development as well as fragmentation of structures in research and technology development (CESR 1999). The Rhône-Alpes Region tries to tackle these problems by orchestrating the build-up of a regional network. Focusing on systematic counselling activities, the objective of the Rhône-Alpes Region is to link

[7] *Schéma Régional de l'Enseignement Supérieure et de la Recherche*.

SMEs to the existing services for technology support and – ideally – the many research organisations in the region. In this process the Rhône-Alpes Region principally aims to act as a coordinator:

> "The Region tries to use a sort of 'layer of experts' (...) the diffusion of technology in the regional economy proceeds with support of this layer. The Rhône-Alpes Region doesn't possess the internal resources to do it. (...) Without it would be impossible." (Interview F4)

The organisation of the technology network relies on two pillars: Firstly, a region-wide cooperation with the Local Chambers of Commerce based on the principle of contractualisation and, secondly, the coordination of activities by a regional agency itself named *Présence Rhône-Alpes*.

Annually, the Rhône-Alpes Region agrees upon contract-based management objectives with the Local Chambers of Commerce.[8] They define a certain number of SMEs that technology consultants of the Local Chambers of Commerce have to visit in their area. The technology consultants' task is to inform SMEs about the services and organisations for research, technology development, and innovation existing in the region.

> "We systematically refer to consultants that are most suitable to do this job, either because of their belonging to a certain area or because of their belonging to industry or craft." (Interview F2)

In case of an upcoming development project planned by an enterprise, the technology consultants are supposed to arrange contacts with organisations possessing the technological, scientific, or financial resources needed. For realising the quota of enterprises to visit, agreed on by contract, the Region pays subventions to the Local Chamber of Commerce.

The regional agency *Présence Rhône-Alpes* constitutes the other main instrument of the technology network. Financed in equal shares by the Region and OSEO, an important regional development agency of the state, its task is to animate the network.

> "We always have this interplay of actors between us and our financing bodies, but they delegate to us a great deal of things. They have a right to observe, but they don't get involved more than that. They trust us." (Interview F2)

Within this scope, *Présence Rhône-Alpes* is responsible for training and instructing the technology consultants of the Local Chambers of Commerce for their task in the field. For their activi-

[8] At the local, respectively the level of the department, there are 12 Local Chambers of Commerce, six Chambers of Craft and three "Regional Innovation- and Technology Transfer Centres" (*Centre Régional d'Innovation et de Transfert de Technologie*). They are all contractual partners of the Region. While in fact referring to all of these partners, for the cause of convenience, only the Chambers of Commerce, presenting numerically the most important contracting party, are mentioned in the analysis.

ties, *Présence Rhône-Alpes* takes into account the advice of an industrial committee, constituted by a dozen of heads from local companies.

To sum up, the technology network shall foremost serve to coordinate existing regional capabilities along the goals of regional policy. Regional subvention of contract-based management objectives with the Local Chambers of Commerce sets incentives and creates a framework for action aiming at regional collaboration. The local technology consultants' specific activities shall remain open for context based definitions according to the needs of the local companies.

***The regional research cluster initiative***

In contrast to the technology network, regional research cluster policy presents a recent initiative launched in 2005. Its objectives can be summarised as follows: A central intention of the Region is to mobilise researchers in public and academic research institutes in the region for the creation of regional scientific communities. By forming regional clusters, isolation of separate research sites shall be reduced. Hereby, a better positioning in national and European competition for funding shall be reached. Through positioning their activities towards applied research, the clusters are especially supposed to offer themselves as partners for the state driven *pôles de compétitivité* that regroup numerous enterprises in the region (Région Rhône-Alpes 2007).

Since 2005, the Region funds fourteen research clusters.[9] Covering a broad range of topics from natural sciences, to engineering, and to social sciences, clusters correspond to very different groups of researches. The Region annually provides a global budget of 15 million Euros for the cluster initiative. The allocation of resources varies only slightly from cluster to cluster.

The themes of each cluster were defined by representatives from research establishments as well as some actors from business organisations taking part in the planning process. The final

[9] 1 – *Microélectronique, nanosciences et nanotechnologies*, 2 – *Informatique, signal, logiciels embarqués*, 3 – *Maîtrise de la durée de vie des matériaux et des structures*, 4 – *Gestion et organisation des systèmes de production et de l'innovation*, 5 – *Chimie durable et chimie pour la santé, 6 – Environnement*, 7 – *Energies renouvelables, efficacité énergétique*, 8 – *Transports, territoires et société*, 9 – *Qualité des plantes, agricultures, acteurs et territoires*, 10 – *Infectiologie, immunologie, cancérologie*, 11 – *Handicap, vieillissement, neurosciences*, 12 – *Dynamiques sociales et territoriales*, 13 – *Cultures, patrimoine et création*, 14 – *Enjeux et représentations de la science, de la technologie et de leurs usages*.

definition of fourteen clusters represents a compromise among the actors that was supposed to account for a wide range of interests (CRRA 2005).

The organisation of the clusters itself shall mark a rupture with former practices by introducing the criteria of excellence for the distribution of funds. Breaking with a rather fixed scheme of granted funds at the disposal of each research establishment, the Region tries to shift broad responsibility for the final distribution of funds to the actors forming a cluster. The process leading to the definition of each cluster's research programme calls for joint decision-making between the actors forming a cluster.

> "The Region assigns a general organisational framework (...). But inside this framework each cluster can function according to its original scientific culture, to its basic practical way of doing things, and can choose different orientations." (Interview F3)

In order to establish regional research collaborations, actors of a cluster shall follow the criteria of "transregionality" in the distribution of research funds. A research project shall always include several research teams, each originating from different research sites in the region (Cluster 2007a; Région Rhône-Alpes 2006a).

Summing up, the Region proposes a framework that shall incite researchers to organise themselves at the regional level. Regional clusters shall foremost function as a platform to become more visible in the context of national or European, public or private funding structures.

## 4.2 Implementing the policy initiatives

This section analyses how the policy concepts become practice.

***The regional technology network***

The structuring of a regional network, bringing together crucial actors and their resources in the field of technology development, proceeds as follows: consulting activities evolve from close discussions between the regional coordinating agency *Présence Rhône-Alpes*, the industrial committee and the technology consultants from the Local Chambers of Commerce themselves.

> "(...) we proceed in a cooperative manner with the consultants who are interested in the subject that they will tell us what they are really in need of. And, on the other hand, we have an industrial committee (...) we ask them regularly to formulate their demands with regard to the consultants. This process enables us to know what kind of service to provide." (Interview F2)

In addition, the Rhône-Alpes Region successfully realises cooperation with the central state. The Region jointly builds up the technology network with OSEO, the state agency for regional development. Due to the contribution of OSEO in terms of subsidies and organisational capacity, regional innovation policy can offer access to a broader range of resources.

> "The Region has the intelligence to include the people, the experts from the state in every project, this works out well. At the level of the people, it works fine." (Interview F1)

Thanks to the activities of the technology network, a significantly growing number of SMEs is informed about the existing services offered to support innovation in the region. In 2006, the technology consultants visited about 3,500 companies. Over 1,000 enterprises were brought in contact with an organisation in the area of innovation support, research or technology development (Présence Rhône-Alpes 2007b). A survey confirms that companies in the region are very satisfied with the services of the technology network (CESR 1999: 31).

At the same time, developments around the technology network also reveal shortcomings. Pointing at their alleged strong fragmentation, the Rhône-Alpes Region declines to implicate more closely the numerous trade and business organisations active in the region. On the other hand, from the business actors' side it is added that their interest and capability to take actively part in planning turns out as limited.

> "It is true that if someone says for example, 'okay, please, Chamber of Commerce or Chamber of Craft, propose some industrialist', it is difficult to mobilise them, because those entrepreneurs already in touch with the Chamber of Commerce, their time is not boundless... it is very difficult to mobilise the people." (Interview F1)

Isolated efforts have recently led the Regional Chamber of Commerce to try to run its own initiative for a technology network.

Also, in the course of planning activities within the regional technology network, representatives of research organisations are not actively involved. Lacking integration of research institutes into the network, is also reflected on the ground. While SMEs are brought in contact with organisations offering services related to more practical questions of technology development, the aim of a stronger link up with research centres in the region cannot be achieved.

> "I am not even sure if this offer really exists. This means that there is something like the Berlin Wall. (...) Indeed, the big wall to break through is there." (Interview F4)

Summing up, despite limited financial and legal capacities of the Region, a regional network evolves assisting a significant number of SMEs in finding services and funding for technology development. This is primarily due to a regional policy that initiates broad counselling activi-

ties, and successfully realises cooperation with local actors as well as the central state. Shortcomings remain with regard to integrating regional actors from business organisations and especially research into the technology network.

***The regional research cluster initiative***

Two different clusters are analysed: one addresses a research field of engineering science, where researchers have traditionally counted on resources from the Region. The other aims at a very cost-intensive research field of the natural sciences, where researchers are highly interwoven with national and international research networks.

The integration of research groups into regional research clusters crucially depends on financial requirements and network opportunities. A regional cluster indeed takes shape in the field of engineering science. Here, the cluster regroups researchers from different research sites in various projects. Researchers from four or more different research sites take part in single projects (Cluster 2007b). However, the cluster does not only function as a platform for internal but also for external cooperation. Successful cluster organisation pays off with generally better positioning of rhône-alpine researchers with regard to funding.

> "We observe that the communities that have already gotten used to work together in a cluster replied much more easily to funding and finally with more success. So even if they only exist for a short time, we already see positive effects of this structuring" (Interview F5).

New funding opportunities for research projects have arisen for these researchers from the possibility to integrate themselves as a visible and coherent regional platform into other funding structures. The cluster has become a member in corresponding European research networks, assembling researchers and enterprises. Furthermore, the cluster has begun to collaborate with several *pôles de compétitivité*. Today, the number of actors, forming this regional cluster in the engineering science, has risen up to 100 research establishments and enterprises. They take part in more than twenty research projects affiliated to the cluster.

On the other hand, mobilisation turns out weak in the cluster concentrating on research in the field of the natural science. Cluster activity remains rather insignificant with a maximum of two, and in most cases, only one research site participating in a research project (Cluster 2007c). In light of huge financial resources demanded in this research field, regional funding does not reach a certain threshold to justify in the actors' eyes efforts of the cluster organisa-

tion, meaning the participation of various research sites in regional projects and broad consultation processes:

> "To work with the Region it's peanuts for nothing, it represents nothing, these are people who are used to apply to funding bodies exceedingly more important. (...) There are many other funding devices that are much more interesting." (Interview F3)

Above all, those researchers from the natural sciences already extensively benefit from much more profitable national and European funding structures. The number of current research projects remains below ten. Furthermore, due to weak activity, the cluster has not been used as a platform to establish ties with other networks as the *pôles de compétitivité*.

To sum up, given limited resources, the Rhône-Alpes Region only partly succeeds in implementing a regional research policy approach. Research groups, that have large financial demands and that are already strongly embedded in national or international networks, do not see the benefits to engage in the regional device. However, researchers that are less integrated in structures of national or European funding, respond to regional research policy. For them, cluster organisation can not only offer immediate benefits through some regional subvention, but, above all, it creates broader financial and network opportunities in European or national, public or private structures.

## 5. Conclusion

Analysis of the rhône-alpine key programmes in research and technology policy leads to the conclusion that French regional authorities still have limited capacities to mobilise regional innovation potentials. It confirms that possibilities of a systematic build-up of networked structures of a regional innovation system remain narrow. Firstly, restricted financial means and legal competencies reduce effects of a regional innovation policy. This remains particularly true in the field of research as analysed in both policy programmes. Also, the fact of limited resources shows that regional policy, therefore, can hardly reach actors both from business and research that are already well embedded in national or international networks of innovation. Secondly, the French multi-level system continues to be prone to the phenomenon of fragmentation of actors and programmes. Restricted coordination efforts in planning or a low capacity at all, lead to the risk that the regional authorities, the Regional Chamber of Commerce or the

state rather run initiatives isolated, than in a combined manner. This limits the broader build-up of well networked and transparent regulatory structures of a regional innovation system.

Nevertheless, our analysis reveals a specific role of the regional level for innovation. While it can hardly count on abundant financial resources and draw on broad legal competencies, regional innovation policy combines scarce resources with the promotion of more intangible collective competition goods. As a coordinator for the regional economy, the regional level influences regulatory processes by opening up network opportunities for actors to access new resources. As one interview partner resumes:

> "I believe that the device of the Region is very interesting and very intelligent. This means they have the means they have and you cannot blame them for that (...) but it works well how they distribute resources to this device: their idea is to have a leverage effect." (Interview F3)

This "leverage" effect of regional policy relies on two main characteristics: First of all, the main ideas of both policy programmes clearly aim at a cooperative and decentralized approach that allows actors to build up regional cooperation in a rather self-determined process. Secondly, for both policy programmes analysed, the Rhône-Alpes Region explicitly aspires cooperation with organisations and programmes that exceed regional resources by far. Especially cooperation with state run agencies and organisations in the region, like the regional development agency OSEO or the *pôles de compétitivité*, is a strategy, systematically chosen to exploit broader resources in terms of finance and expertise for regional innovation policy. This distinct policy style making use of cooperative and decentralized approaches can be summarized by the concept of experimental regionalism as explained in the second hypothesis.

Overall, regional innovation policy in France certainly has its limitations and can only reach a limited number of certain actors. At the same time, it reveals a crucial role: SMEs and researchers that are less embedded in national or European funding structures respond, in particular, to regional policy. The Rhône-Alpes Region succeeds in mobilising these regional actors along the lines of an experimental policy approach. Within the regional technology network for SMEs and the research clusters, intensified regional cooperation evolves from continuous exchanges and learning processes between different actors. These outcomes make it difficult to hold a dualistic perspective on regional development in France. While we cannot expect a complete overhaul of the French innovation system's main characteristics, change rather proceeds in the sense of institutional layering (Ebbinghaus and Manow 2001). Between central steering and local fragmentation, the regional level more and more takes up a distinctly

new and crucial intermediary role with regard to regulatory processes in an innovation-based economy. In the French multi-level system, this role has neither been fulfilled by the national nor the local level so far.

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