

## LEGAL REGULATION OF INNOVATION ACTIVITY IN FRANCE<sup>111</sup>

In France the innovation policy was traditionally characterized by a relatively strong influence by public authorities. This conception of innovation policy underwent changes, particularly under the influence of economic theory. The report on National Policies of Research and Higher Education of 2010<sup>112</sup> explains that the freedoms, which universities enjoy concerning the organisation of research, and the support schemes available for the private economy in research aimed at the strengthening of the innovative powers of the French industry: the new measures announced in 2008 permit the improvement of support mechanisms, which are complex and differentiated, and they support R&D in the private economy at an unprecedented level at a moment when the socio-economic and environmental context imposes even higher demands at research and innovation. For this reason the Council of Ministers launched a plan on the elaboration of a national strategy for research and innovation - **Stratégie nationale de recherche et d'innovation (SNRI)**. This strategy aims at creating a framework, which is favourable to creativity and innovation and to position the discussion about research and innovation at the centre of the public interest.

### 1. The French Political Structure

The French governance system is centralized. The local administrations, departments and regions enjoy only limited competences. However, in recent politics the French regions have assumed a more important place, which is also due to EU policies.<sup>113</sup> This tendency seems to be evident in the establishment of important competitiveness clusters, which the French government provides with considerable financial support and which seem a particular success of the French innovation policy.

The creation of the National Research Agency - **Agence Nationale de la Recherche (ANR)** and the National Agency for the Evaluation of Research and Higher Education - **Agence d'Evaluation de la Recherche et de l'Enseignement Supérieur (AERES)** as well as universities' autonomy enable the Ministry for Higher Education and Research to centre its role on strategic policy. The signing of contracts with public research organisations gives them greater autonomy, while the state control takes place subsequently. It also sets a clearer boundary between planning and research functions. These changes and the instruments contained in the latest laws must enable universities to define and implement their own strategy more freely.<sup>114</sup>

### 2. Legislation on Innovation

Legal analysis must differentiate between the subject of the innovation itself (e.g. a patented invention) and the conditions, which favour or boost it (e.g. research, industrial application, commercialization).<sup>115</sup> For example, the number of patents, which a national patent office grants within one year, can be indicators of inventive activity, but they are not indicative of the capacity to innovate. Four different levels may be identified, for which the subsistence of creativity is essential:<sup>116</sup>

- R&D;
- the invention;
- the marketing;
- the design.

<sup>111</sup> Prepared by Prof. Ph.D. Arnold Vahrenwald LL.M., International Legal Consultant, Vahrenwald Ltd.

<sup>112</sup> Rapport sur les politiques nationales de recherche et de formations supérieures, Annex to the project of the Law of Finances of 2010 (Annexe au projet de loi de finances pour 2010), p. 9.

<sup>113</sup> See Pasquier, R.: "EU Cohesion Policy and Territorial Capacities: The Case of France", European Union Studies Association, Biennial Conference, Boston, 03-05/03/2011, at 22.

<sup>114</sup> Ministère de l'enseignement supérieur et de la recherche (2009): National Research and Innovation Strategy, general report, p. 19.

<sup>115</sup> Morand, P., and Manceau, D. (2009): "Pour une nouvelle vision de l'innovation", p. 49.

<sup>116</sup> *ibid.*, p. 50.



Recent French legislation focused particularly on R&D tax credits, competitiveness clusters, public support for the establishment of enterprises and clusters of research and higher education (Pôles de recherche et d'enseignement supérieur - PRES).<sup>117</sup>

## 2.1. Evaluating the Necessity of Public Intervention

Political measures favouring innovation often focus on inventions or know-how itself, but it is recommended to view this issue in a broader manner. French policy takes particularly in account the interest to promote innovation with regard to the global market.<sup>118</sup> When considering appropriate measures to be taken, five indicators, which reflect the short time capacity of innovation should be taken into account:<sup>119</sup>

- the share of the turnover achieved by companies with regard to new products placed on the market;
  - the share of the turnover achieved by products or services marketed in the recent two years and in the recent five years by enterprises with more than 250 employees;
  - the share of enterprises, which place new products or services on the market;
  - the number of patent applications and exploited within the recent five years;
  - the number of French trademarks within the leading hundred trademarks worldwide.
- If these indicators prove insufficient results, public intervention may be recommended.

## 2.2. Fields for Political Action

In a general manner the French report "Pour une nouvelle vision de l'innovation" - For a New View of Innovation of 2009<sup>120</sup> suggested ten fields of action:

- (1) the stimulation of a public discussion concerning innovation in order to attract more attention for this subject (politics and media should increasingly view a broad concept of innovation; the role of particular innovators should be highlighted; the image of public services providing support for innovation should be improved);
- (2) the creation of a label for the innovative enterprise (essentially based on self-evaluation by companies);
- (3) the public procurement should develop procedures to favour innovative enterprises;
- (4) intellectual property capable of innovation should be more favourably evaluated in an attachment to balances of companies (presently, intellectual property developed within a company is not evaluated in balances unless in case of sale according to International Financial Reporting Standards -IFRS- 3 and International Accounting Standards -IAS- 38, Intangible Assets; it is proposed that an attachment should be made to a balance in order to permit the testing of an innovation);
- (5) particularly French qualities of innovations should be stressed ("made in France" should develop a particular meaning, taking account of recent tastes; the design should closely be related to the production; France should be understood as a place for innovation and creativity in all fields; a label for exploitation within the concept of trademarks);
- (6) European standards should be pushed on a global level;
- (7) the educational policy should have more regard to creativity, the taking of risks, project development and cross-disciplinary (teaching should include innovation as a broader concept; university teaching should regard innovation as motor of competition; teaching must aim at creativity, originality, the taking of risks and initiative, teamwork and project work);

---

<sup>117</sup> *ibid.*, p. 70.

<sup>118</sup> *ibid.*, p. 51.

<sup>119</sup> *ibid.*, p. 62.

<sup>120</sup> Morand, P., and Manceau, D. (2009): Pour une nouvelle vision de l'innovation, pp. 67 et seq.



(8) the establishment of the EU-patent;  
(9) the simplification of procedures by means of which enterprises may collaborate with public institutions and public research laboratories (legal support concerning contracts relating to the cooperation between enterprises and public research institutions and the subsequent exploitation of results; the establishment of an institution, providing information on and coordinating regional innovation centres);

(10) the establishment of an Institute for Competition and Innovation (promoting a broader view of innovation, including economic and management aspects).

The report of the Assemblée Nationale on Science, Society and Parliaments of 2008<sup>121</sup> identified the need for the scientific and technological dimension of public policies to be better taken into account. It was felt that parliaments should establish autonomous expertise. In particular, the conditions were analysed in which parliaments, which must remain heedful of the concerns of citizens but also be able to create confidence with scientists, can organize an interface between the scientific world and society.

### **2.3. Law on Innovation and Research, 1999 (Loi Allègre)**

The Law aimed at an efficient technology transfer from public research to private companies and the fostering of innovating firms. The Law dealt with:

- mobility of researchers employed by public authorities towards private companies;
- collaboration in public-private research;
- fiscal measures such as the Crédit d'Impôt Recherche or the Fonds

Communs de Placement dans l'Innovation;

- a legal framework for innovating companies through the introduction of a simplified status of the joint stock company for innovative companies (Société par Actions Simplifiée) to all innovative firms.

### **2.4. French Innovation Plan, 2003, Convention for Research and Law on the Program for Research**

The French innovation plan, which aims particularly at the facilitation of results of publicly funded research and its use for innovation, was established by the French Ministry of Research and the former Ministry of Industry.

The Plan envisaged the following measures:

- the status of business angels;
- favourable conditions for projects such as "new innovative enterprises";
- new measures for favouring innovations such as tax reductions;
- a simplified access to public funding by means of ANVAR (now OSEO Anvar)
- an improved exploitation of research results in enterprises;
- an improved role of innovation in the national and European perspective;
- the support of industrial strategic research.

#### **Convention for Research**

The Convention for Research<sup>122</sup> was a project issued by the French government, which was implemented in the following Law on the Program for Research. The concept is based on the idea that the necessity of research should be deeply rooted in society, taking into account of global challenges and the need to adapt to a changing environment. The motives of the Convention indicate: "The French system of research and innovation arrived at a turning point in its history."<sup>123</sup>

Three pillars will support this concept, namely basic research, research of public interest and research of economic interest. In France public research involves traditionally a multitude of actors, and this heritage has to be further developed. Finally, public research must develop with a view of a long term global strategy in order to strengthen the confidence of society in its research.

---

<sup>121</sup> Assemblée Nationale Sénat, rapport sur Science, Société et Parlements, 2008.

<sup>122</sup> Pacte de la Nation avec sa recherche, Part I of the Law on a Program for Research.

<sup>123</sup> See <http://www.inovasyon.org/pdf/France.La.loi.de.prog.pour.la.recherche.pdf>, download on 03/05/2011.



Amongst other five objectives the motives recall that it is the Convention's aim to intensify the dynamism of innovation and to enforce very close connections between public and private research. This shall be achieved by supporting new innovative enterprises by a reduction of taxation, by establishing large technological programs in key sectors for the French economy, by strengthening the support for SMEs through traditional means in order to stimulate R&D, and by developing interfaces between public and private research.

### **Law on the Program for Research**

The Law on the Program for Research, 18/04/2006<sup>124</sup> implemented the Convention for Research of 2005. Its aim is to modify existing national research and innovation systems by:

- developing three essential elements of the research system, namely basic research, research of relevance for society and research with economic implications;
- developing interfaces and cooperation between institutions and players involved in research;
- introducing a comprehensive and long-term strategy in order to establish confidence between research and society.

The Law established the **Haut conseil de la science et de la technologie (HCST) - High Council for Science and Technology** -, which takes over the task of choosing and financing particular research projects. This institution assists the French president and the government with the development of a scientific research policy, transfer of economy and innovation. This is particularly achieved on the basis of inter-ministerial activities.

Projects are also evaluated by the **Agence d'Evaluation de la Recherche et de l'Enseignement Supérieur (AERES)**.

The Law envisages a closer collaboration within public research institutions (in **Pôles de Recherche et d'Enseignement Supérieur and Réseaux Thématiques de Recherche Avancée - Clusters for Research and Higher Education and Networks of Thematic Advanced Research**) and between public and private players (**Pôles de Compétitivité - Competitiveness Clusters**). The Law focuses also on better links between science and society, on young researchers and their career opportunities and on new professional perspectives of researchers.

The Law established the **National Agency for Research (ANR), which grants support** on the basis of calls for projects in specific themes.

### **2.5. Law Concerning Freedoms and Obligations of Universities of 2007**

Loi relative aux libertés et responsabilités de universités - the Law concerning Freedoms and Duties of Universities of 2007 established the independence of universities with regard to research, promoting the creation of companies exploiting intellectual property created with publicly funded means.

### **2.6. Code on Research and National Strategy of Research and Innovation**

The Code de la recherche - the Code on Research - takes into consideration the project of the Law on the Program for Research of 2006. The structure of the Code is explained in the Annex.<sup>i</sup> It covers in a comprehensive manner different legal aspects relating to research.

### **National Strategy of Research and Innovation**

On 03/09/2008 the Council of Ministers released the "plan d'élaboration de la stratégie nationale de recherche et d'innovation" (**SNRI**) - the National Strategy of Research and Innovation. This document should be conceived of as a first stage of a continuing process, which depends upon the input and ideas of participants and practice, which develops in the application of the programs concerned.<sup>125</sup>

Concerning the support of innovation by institutions of higher education the following practice will be applied:<sup>126</sup>

- communication of aims by the state (governmental authorities);
- external evaluation of the plan and budget by AERES;

---

<sup>124</sup> Loi de programme pour la recherche no. 2006-450 of 17/04/2006.

<sup>125</sup> Rapport sur les politiques nationales de recherche et de formations supérieures, Annex to the Project of a Law on Finances for 2010, p. 9.

<sup>126</sup> Rapport sur les politiques nationales de recherche et de formations supérieures, Annex to the Project of a Law on Finances for 2010, p. 21.



- start of dialogue between relevant ministers and the institution concerned;
- presentation of the project to the Direction Générale pour l'enseignement supérieur et l'insertion professionnelle (DGESIP) - General Office for higher education and professional activity;
- finalisation of the contract.

On the level of public support of research and innovation for public institutions the contractual practice permits a permanent control of the work and its results.

### **2.7. Loi de modernisation de l'economie, 04/08/2008 - Law on the Modernisation of the Economy of 04/08/2008)**

The legislation has an indirect impact upon innovation, insofar as it is part of the French government's policy to increase the economy's growth, the creativity of employees and the purchase power. The Law comprises some 30 different measures, which are essentially directed towards the facilitation of economic activity by liberalizing administrative requirements so that enterprises can concentrate their efforts in advancing their competitive position. So-called "micro-companies", that is to say companies with a very small annual turnover such as € 80,000 may benefit from a liberalization of administrative burdens concerning social payments and tax.

### **2.8. Intellectual Property Code (Patents)**

France has a comprehensive code, which covers comprehensively the subjects of intellectual property. Concerning innovations the legislation regulates particularly the patenting of inventions. However, the law covers in Book V also Designs and Models and in Book VI the Protection of Inventions and Technical Knowledge. The law covers also the rights of employee-inventors, Article L611-7. Special rules may be applicable in the case of inventions made by public research institutions.

### **2.9. Loi organique relative à la loi des finances (LOLF) - Institutional Act of the Finance Law and Budget Laws**

The Law aims at improving the transparency of public sector accounts, including for public financing of research programs.

#### **Budget Laws**

Each year the French government publishes finance laws respectively their drafts in support of an annual budget.<sup>127</sup> These laws provide an overview concerning the development of state financed programs and projects.

## **3 Administration Institutions**

### **3.1. Ministry of Higher Education and Research**

The **Ministry of Higher Education and Research** ("Ministère de l'Enseignement supérieur et de la Recherche") is responsible for coordinating the French research policy.<sup>128</sup>

### **3.2. Ministry for Economic Affairs, Finance and Employment**

The **Ministry for Economic Affairs, Finance and Employment** deals inter alia with issues of the economic development, companies, MSEs, SMEs and information technology.<sup>129</sup>

### **3.3. CSRT, EPST and HCST**

The **Conseil supérieur de la recherche et de la technologie (CSRT) - Higher Council for Research and Technology (CSRT)** was established in 1982 as a consultative body for research issues. To its tasks belongs the oversight of scientific and technological public institutes (**Etablissements publics à caractère scientifique et technologique, EPST**).

---

<sup>127</sup> See e.g. the Project for a Finance Law of 2011, <http://www.senat.fr/rap/110-111-312/110-111-3123.html>, download 05/05/2011.

<sup>128</sup> See <http://www.enseignementsup-recherche.gouv.fr/pid20002/ministere.html>, download 05/05/2011.

<sup>129</sup> See <http://www.economie.gouv.fr/themes/industrie/innovation/index.htm>, download 05/05/2011.



According to the Law on the Program for Research, 2006, the **Higher Council for Research and Technology** and the new **High Council for Science and Technology (Haut Conseil de la Science et la Technologie, HCST)** are responsible for scientific advice, with the **CSRT** working on research questions, and the **HCST** on national research and innovation strategies. The **HCST** advises the President of the Republic and the government with regard to science and technology matters, in particular with the development of a national policy concerning scientific research, technology transfer and innovation. The **CSRT** works on the coordination between research institutions and society.

### 3.4. EPIC, CRITT and CNRT

Technology transfer focuses on the validation and transfer of research results, which are generated in universities, public scientific or technological research organizations (**Etablissements publics à caractère scientifique et technologique, EPST**), and public industrial and commercial research organizations (**Etablissements publics à caractère industriel et commercial, EPIC**).

The law envisages interlinking and technology transfer between publicly funded research and the industry by means of competitiveness clusters, thematic advanced research networks or research and higher education clusters. Regional technology transfer centers **CRITT (Centres régionaux d'innovation et de transfert de technologie, Regional Innovation and Technology Transfer Centers)** appertain to the interface structure between public research and regional firms.

**CRITT** service (prestataire) focus on the technological needs of SMEs. **CRITT** connection mission (interface's mission) is to raise firms' awareness through specific advice by *Conseillers en développement technologique*. Both types of **CRITT** aim to support innovation and technological development in SMEs at the regional level.

**Centres nationaux de recherche technologique (CNRT) - National Centers for Technological Research** favor collaborations between public research laboratories and research centers of large industrial groups, whereas *Equipes de recherche technologique* are medium-term research teams established for specific technological questions.

Besides the region-specific organizations such as **CRITT** that interlink research and industry, knowledge transfer in France is organized through national institutions and/or – in some cases – their regional offices.

### 3.5. ANR, ANRT, ADEME, ADIT

Organizations of this intermediary structure are, for instance, the **Agence Nationale de la Recherche (ANR) - National Agency for Research** -, the **Association Nationale de la Recherche Technique (ANRT)**, the **Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME)**, or the **Agence pour la Diffusion de l'Information Technologique (ADIT)**. The creation of the **Agence Nationale de la Recherche (ANR)** at the beginning of 2005 was the first major change that affected the French institutional innovation system. Founded with the mission to allocate financial support for research projects, the **ANR** is in charge of supporting basic and applied research efforts. Financial support is allocated after a competitive procedure and evaluation; support can be granted to research institutes and to firms, but aims at projects managed by specific groups within the organization. The goal of the **ANR** is to stimulate the emergence and performance of research projects by participation in competitive projects for funding. As such, its philosophy is close to the **National Science Foundation (NSF)** practice in the US which reveals a shift in the way research will be funded in the future in France. Since both public and private laboratories can apply for funding, the actions of the **ANR** are expected to strengthen public-private partnerships in the French research landscape. In 2006 the budget was €800 million for research projects over 4 years, divided among response mode projects across all disciplines, specific programs, industry-academic collaboration and non-project funding. Together with the Ministry in charge of research and **OSEO**, **ANR** organizes a national competition for the creation of technology-based companies. In this context, technological projects of public research organizations or of the private business sector eligible for funding are identified in France. Particular tasks of the **ANR** within the field of support of innovation are:<sup>130</sup>

<sup>130</sup> See <http://www.kooperation-international.de/frankreich/themes/international/fub/laender/forschungs-bildungslandschaft/forschungslandschaft/> download on 04/05/2011.



- support of R&D projects of the competitiveness clusters (Pôles de compétitivité);
- support for the establishment of innovative enterprises;
- transfer of technology;
- support of regional research structures.

The ANR is charged with introducing a particular dynamism into French publicly funded research and innovation by:<sup>131</sup>

- favouring the creation of new concepts ("white programs", the content of which will only be established by the scientific community);
- increasing the efforts of research of particular relevance for the economy of society;
- increasing the collaboration between public research and the industry (incitation of partnership projects);
- development of international partnerships.

### 3.6. AERES

AERES, the **Agence d'évaluation de la recherche et de l'enseignement supérieur** - Agency for the Evaluation of Research and Higher Education - is charged with ensuring the systematic and objective evaluation of research institutes, programs, groups and scientists. AERES is an independent administrative authority, which evaluates scientific, cultural and professional public establishments and organisations for scientific cooperation just as the National Research Agency (NRA). AERES publishes the annual report on the situation of research in France.

### 3.7. OSEO

**OSEO** was established in 2005 by merging the innovation agency ANVAR with the SME development bank Banque du développement des petites et moyennes entreprises (BDPME). **OSEO**, which is a holding with public status, is related to the **Ministries for Economy, Finance and Employment**, and to **Higher Education and Research**. Its task is to provide assistance and financial support to SMEs at different critical phases, including innovation. OSEO innovation provides innovation support and funding in the fields of technology transfer and innovative technology-based projects. It shall improve public support for SMEs and support the development of innovative firms. OSEO's regional networks are present in all French regions. They support entrepreneurs and SMEs, and they foster their activities, especially in risky phases of development. OSEO organizes also technological platforms (Plate-formes technologiques), which connect with education organisations in support of SMEs. Networks of technological development (Réseaux de développement technologique) coordinate the different players in the innovation sectors at the regional level.

According to its website<sup>132</sup> OSEO, is a public-sector institution dedicated to economic development — and a key source of financing and other support for SMEs. Its **mission is to back innovation and growth of SMEs** at decisive phases in their development: start-up, innovation, growth and business transfer via buyouts or other structures. By sharing risks, OSEO makes it easier for SMEs to access bank and private-equity financing. **OSEO offers institutions and banks involved in SME financing both consultancy services and technical support**, drawing on its long and varied experience in the field.

#### **Investing for the Future a Program with a Budget of €35 bn**

Based on political decisions on the highest level the OSEO is charged with the implementation of a program, which is called "**Programme d'investissements d'avenir**" - a program for investing for the future. The program will be developed within the framework of an inter-ministry co-ordination under the guidance of the French Prime Minister.

The program aims at the modernisation and the strengthening of competitiveness the of France by favouring investments and innovation within five primary fields. These five fields, which are considered as generators of growth and employment, are the following:

- Higher education and training;

---

<sup>131</sup> Rapport sur les politiques nationales de recherche et de formations supérieures, Annex to the Project of a Law on Finances for 2010, p. 31.

<sup>132</sup> [http://www.oseo.fr/international/international\\_services2/our\\_mission](http://www.oseo.fr/international/international_services2/our_mission), download 05/05/2011.



- Research;
- Sectors of industry and SMEs
- Sustainable growth;
- Digitisation.

OSEO will undertake the following actions:

Within the program for investing for the future OSEO has to administer €2.44 billion within the field "sectors of industry and SMEs". OSEO will administer the financing of SMEs and enterprises of medium size, according to the following principles:

- Loans for SMEs and MSEs to increase stockholders' equity on the basis of participation contracts (€1 bn.);
- Financing of innovating enterprises (€500 million);
- Support for the re-industrialisation (€200 million);
- Calls for tender of structural R&D of competitiveness clusters (€300 million);
- Strengthening the competitiveness of SMEs and of strategic sectors of the industry, calls for tender (€ 300 million);
- Increase of OSEO's funds in order to improve its capacity to assist companies (€140 million).

### 3.8. DRRT<sup>133</sup>

The **Délégation régionale à la recherche et à la technologie (DRRT)** is the regional delegation for research and technology. It is an administrative department mission in charge of the decentralized work of the French government in research, technology and innovation, disseminating scientific and technical culture to the socio-economic world and the general public. The regional delegation for research and technology (DRRT) reports to the regional director for industry, research and the environment (DRIRE). Under the authority of the Prefect for the Region and adviser to the Vice-chancellor for Research, the DRRT works in close cooperation with the secretariat-general for regional affairs and has an interdepartmental role in connection with all the decentralized services of the Government and the vice-chancellorship.

The DRRTs report to the Ministry for Education, Research and Technology and have the following principal tasks:

- to inform the regional partners of national policy guidelines and the action plans set up by the ministry in charge of research;
- to inform the ministry of regional initiatives;
- to coordinate in the region the work of publicly-owned establishments and organisations under the supervision of the ministry in charge of research;
- to strengthen the regional technology centres and to bring research closer to the business and social world;
- to develop and organize technology transfer;
- to encourage the dissemination of scientific and technical culture;
- to provide informed reports about the policy of the ministry in charge of research in the region.

### 3.9. Support Organisations: ANR, OSEO, Pôles de Compétitivité, Instituts Carnot

Larger organisations, which are providing project support, are the ANR and OSÉO. Institutions, which support also the collaboration between public and private institutions are the Pôles de Compétitivité (competitiveness clusters) and the Instituts Carnot.

Presently, the ANR named some 33 Instituts Carnots, which aim at the development of research in public-private partnership.<sup>134</sup> The Instituts Carnots cooperate also with foreign institutions, for example with those of the Fraunhofer Institutes. Support organizations are involved in the implementation of large national programs, for example the program "Investissements pour l'avenir" - Investing for the Future, which has a budget of some €35 bn.

## 4. Large Research Infrastructures

---

<sup>133</sup> See <http://www.recherche-technologie-hn.com/en/fiche.php?id=260>, download on 05/05/2011.

<sup>134</sup> Rapport sur les politiques nationales de recherche et de formations supérieures, Annex to the Project of a Law on Finances for 2010, p. 32.



The French government supports also so-called "**Très grands infrastructures de recherche**" (TGIR) - large research infrastructures, for example in the fields of spatial or atomic research.<sup>135</sup> Of the bigger French institutions involved in research the most important is the **Centre National de la Recherche Scientifique (CNRS)**. Concerning innovation it is a particular task of these infrastructures to favour technology transfers and innovation of the participating industry concerned.

#### 4.1. Centre National de la Recherche Scientifique (CNRS)

The CNRS - National Centre for Scientific Research - has the general task to engage in knowledge creation and knowledge transfer for the economic benefit of society. In doing so it applies and promotes the results of research, it develops scientific information, and supports the formation of the national research policy. The laboratories of the CNRS are spread all over France. The laboratories undergo a permanent evaluation. Generally, CNRS researchers are civil servants.

#### 4.2. INRA, INRIA, INSERM

The **Institut National de la Recherche Agronomique (INRA)** - the French National Institute for Agricultural Research provides research in the agricultural field. The **Institut National de Recherche en Informatique et en Automatique (INRIA)** is the the French National Institute for Research in Computer Science and Control. The **Institut National de la Santé et de la Recherche Médicale (INSERM)** is the French National Institute for Health and Medical Research.

### 5. Organisation of Higher Education

In France higher education is done by universities, but there is a large number of institutions at the supra-university level, which aim at the rationalisation of higher education. In order to pool resources groupings were established, often in the legal form of a "groupement d'intérêt public", or GIP, which may themselves be called universities or university centers. The **Law on the Program for Research of 18/04/2006**<sup>136</sup> permitted the creation of tighter groupings called **Pôles de recherche et d'enseignement supérieur (PRES)**.

A cluster of research and education combines independent institutions. It may concern a structure of research or teaching, private or public, French or European. Legally binding is only the requirement that it must have at least one public scientific, cultural and professional institution (i.e. a university). Also an association or an enterprise may become an associate member of a PRES. A PRES may have different legal status: a Public Institution for Scientific Cooperation, a Grouping in the Public Interest, or a Foundation for Scientific Cooperation. Most PRES are organised as *Établissements public de coopération scientifique (EPCS)*, because such organisations may employ civil servants and they may grant national diploma.<sup>137</sup>

#### 5.1. Universities

In France reforms of the higher education around 1970 split large public universities into smaller autonomous successor universities (e.g. Paris I, Paris II, Paris III, to Paris XIII). Presently, there are some 83 universities in France. A recent analysis<sup>138</sup> achieves the result that the evolution at French universities towards an industrial friendly education. This could be based on the negligence of academic circles to adapt the teaching to social and technical conditions of life or on the indifference with regard to necessities demanding a change. According to tests much depends on initiatives by leading persons.

<sup>135</sup> Rapport sur les politiques nationales de recherche et de formations supérieures, Annex to the Project of a Law on Finances for 2010, p. 34.

<sup>136</sup> Loi de programme no. 2006-450 of 17/04/2006 pour la recherché.

<sup>137</sup> Law of 12/12/2010, LOI n° 2010-1536 du 13 décembre 2010 relative aux activités immobilières des établissements d'enseignement supérieur, aux structures interuniversitaires de coopération et aux conditions de recrutement et d'emploi du personnel enseignant et universitaire (1)

<sup>138</sup> Albero, B.; Linard, M.; Robin, J. (2009): Petite fabrique de l'innovation à l'université. L'Harmattan. Paris. p. 203.



Recent initiatives by the French government cleared tasks and competencies of personnel involved in teaching and research.<sup>139</sup> Universities and institutes of the CNRS establish mixed units ("unités mixtes"). Research is basically the task of professors ("enseignants-chercheurs"). On 25/09/2009 a decree modified the status of "enseignants-chercheurs". The decree fixes the annual working hours at 1607, and it introduces the possibility of modeling, which means that activities, which fall out of the field of teaching and research such as pedagogical tasks, distance learning or international cooperations with other universities) may be set off with the working hours. Additionally, an "enseignant-chercheur" has the possibility to collaborate with a research team, which does not belong to his institute. The evaluation of "enseignant-chercheurs" is done by the "**Conseil National des Universités**" (CNU) within four-year periods.

## 5.2. Specialized Schools and Out-of-University Research

France has a variety of mixed forms of more or less public research institutions:<sup>140</sup>

- 9 **Établissements Publics à Caractère Scientifique et Technologique (EPCST)** - public law institutions with financial autonomy;
- 15 **Établissements Publics à Caractère Industriel et Commercial (EPIC)** - in general privately organized public institutions of an industrial and commercial nature;
- 9 **Établissements Publics à Caractère Administratif (EPA)** - public law institutions with a limited administrative and financial autonomy;
- 125 **Établissements Publics à Caractère Scientifique, Culturel et Professionnel (EPSCP)** - public institutions charged with scientific, cultural and professional tasks (which includes French universities, but also the Collège de France, museums etc.);
- **Établissements Publics de Coopération Scientifique (EPCS)** - with numerous cooperating partners;
- **Fondations** - foundations;
- **Groupements d'Intérêt Public (GIP)** - groupings of a public interest;
- **Instituts fédératifs** - federal institutions.

## 5.3. Different Types of Collaboration of Public Research Institutions, Universities and the Industry

There is a large number of different types of collaboration between public research institutions, universities and the industry.<sup>141</sup>

- **Unité mixte de recherche (UMR)** - mixed research groups between public research institutions (e.g. CNRS) and/or universities;
- **Institut fédérative de recherche (IFR)** - mixed project groups established by different scientific collaborators from different research institutions at the site of a partner with additional financial means and staff of the other partners; own responsibility of the IFR with regard to research and use of finances;
- **Groupement de recherche (GDR)** - cooperation in research between different units of a research institution or with partners of other research institutions;
- **Réseau national de recherche et d'innovation technologique (RRIT)** - national research and technological innovation network, which is particularly financed within the framework of the Loi sur l'innovation - Law on Innovation of July 1999;
- **Action concertée incitative (ACI)** - special research with special public funding based on a recommendation by the **Comité interministeriel de la recherche scientifique et technique (CIRST)** - Inter-ministerial Committee for Scientific and Technical Research;
- **Groupement d'intérêt public (GIP)** - association of public or private institutions with scientific, technical, cultural or educational interests;
- **Très grands équipements (TGE)** - large public or private initiatives for research with a big equipment;<sup>142</sup>

<sup>139</sup> See <http://www.kooperation-international.de/frankreich/themes/international/fub/laender/forschungsbildungslandschaft/forschungslandschaft/> download on 04/05/2011.

<sup>140</sup> See <http://www.kooperation-international.de/frankreich/themes/international/fub/laender/forschungsbildungslandschaft/forschungslandschaft/> download on 04/05/2011.

<sup>141</sup> See <http://www.kooperation-international.de/frankreich/themes/international/fub/laender/forschungsbildungslandschaft/forschungslandschaft/> download on 04/05/2011.

<sup>142</sup> See e.g. "Le Rôle des très grands équipements dans la recherche publique ou privée, en France et en Europe", Assemblée Nationale, Rapport de l'Office parlementaire d'évaluation des choix scientifiques et technologiques, Cuivilliez, C. and Trégouet, R.: Rapport sur les



- **Pôles de compétitivité** - Competitiveness Clusters (research within the framework of regional structures) since 2005;
- **Instituts Carnot**, associated within the "Fédération Carnot" - particular scientific institutions.

## 6. Applied Innovation Policy

### 6.1. Jeune Entreprise Innovante (JEI) - Young Innovating Entreprise and Jeune Entreprise Universitaire (JEU) - Young University Enterprise

#### Jeune Entreprise Innovante (JEI) - Young Innovating Entreprise<sup>143</sup>

The Finance law of 2004 established the institution of the **Jeune Entreprise Innovante (JEI)** - Young Innovating Company. This status is granted to SMEs or MSEs with a business life of less than 8 years and which have expenditures for R&D of at least 15% according to their balance provided the following 5 conditions are fulfilled:

- **To be an SME within the concept of EU law (e.g. less than 250 employees)**
- A company can request the statute of JEI until its eighth birthday but at the end of its 8<sup>th</sup> year the company will lose this status.
- A **Minimum expenditure for research must amount to at least 15% of the company's annual expenditure, see Article 244 quater B of the Basic Tax Code.**
- The company must be independent. The condition of detention of the capital must be observed throughout the exercise with the title of which the company concerned wishes to profit from the special statute. At least half of the capital of the JEI must be held by the following shareholders:
  - physical people;
  - an SME;
  - recognized public scientific institutions;
  - institutions of research and teaching and their subsidiaries;
  - particular investment institutions, provided that there is no dependency between these institutions and the company claiming the status of a JEI, namely:
    - companies of venture capital;
    - investment funds with a risk such as the investment funds in innovation (FCPI);
    - regional development companies;
    - finance companies of innovation;
    - unipersonal companies of investments at the risk (SUIR).

#### Nature of the granted advantages

A JEI will benefit from tax reductions. For example, no profit tax will be payable for a duration of 3 years and during the following 2 years the tax rate will be only 50%. Also other taxes such as the tax on land and buildings may be waived for a period of up to seven years.

The JEI is exonerated from the obligation to pay the employer's shares of social security. This concerns payments for researchers, technicians, managers of project of R&D, lawyers employed to safeguard interests in industrial property or agreements related to the project and the personnel in charge of pre-competing tests. The total exemption of the employer's shares of payments for social security cannot be cumulated with other subsidies such as the state's aid for employment. However, the JEI may accumulate advantages from the exemption from profit tax with tax credit schemes.

#### Jeune Entreprise Universitaire (JEU) - Young University Enterprise<sup>144</sup>

##### Conditions for obtaining the status of a JEU

The concept of the Jeune Entreprise Universitaire was introduced in 2008. Its aim is to encourage the creation of companies by those who participate in the research within institutions of higher education.

---

conditions d'implantation d'un nouveau synchrotron et le rôle des très grands équipements dans la recherche publique ou privée, en France et en Europe, vol. II, 2000.

<sup>143</sup> See <http://www2.enseignementsup-recherche.gouv.fr/technologie/mesur/jei.htm>, download 05/05/2011.

<sup>144</sup> Ministère de l'éducation supérieur et de la recherche, direction générale pour la recherche et l'innovation (2009): Recherche et développement, Innovation et partenariats, p. 53.



The JEU constitutes a variety of JEI. Apart from the requirement concerning the minimum expenditure for research all other requirements applicable to a JEI are also relevant for the JEU. The JEU must answer two cumulative conditions:

1. it must be managed or at least 10% of its shares must be held by students or graduates who received their degree or who performed teaching activities no more than 5 years ago;
2. it must have as principal activity the valorization of research tasks in which the managers or shareholders participated during their education within an institution of higher education entitled to deliver a diploma conferring at least a master degree.

The terms of a JEU are established in a convention agreed upon between the institution of higher education and the company. A Decree of the Conseil d'Etat defines the nature of the research tasks, which must be regulated by the convention, and it defines the kind of services beneficial to the company or the methods of remuneration of the institute of higher education.

### **Advantages related to the status of a JEU**

The companies, which enjoy the status of a JEU will benefit from the same tax and social payment reliefs, which are currently applicable to the JEI.

## **6.2. Crédit d'Impôt Recherche (CIR) - Tax Credits on R&D<sup>145</sup>**

The CIR program gives claimants cash refunds and/or tax credits for their expenditures on eligible research. Since 2008 the applicant may receive a tax credit of 30% of R&D expenditure up to €100 million, respectively 5% of R&D expenditure in excess of this sum. In the case of startups the tax credit may even amount to 50% of expenses for R&D

Eligible expenses are:

- expenditure for goods with depreciation assigned to operations of R&D;
- staff costs concerning researchers and technicians;
- administrative expenditures fixed at 75% of the staff costs;
- the expenditure of R&D entrusted to approved organizations by the ministry for Research both in France and in a EU Member State.

Other expenditures may qualify for eligibility:

- expenses for the deposit, maintenance and defence of a patent;
- expenses arising from standardization in relation to products of the company;
- expenses arising from the costs of a technological survey up to €60,000.

To be sure that the expenditure of R&D can be taken into account within the framework of the CIR, the applicant may deposit a preliminary request for an opinion with its tax authorities, with the OSEO or the ANR. In the absence of response of the administration or an organization within 3 months, a positive opinion is deemed to be given.

In general the tax credit for R&D will be charged to the tax, which the applicant has to pay, provided that his taxable profits were sufficient. Failing this, and for companies of more than 250 employees, the tax credit can either be refunded by the State after three years, or it may be liquidated with the Banque National de Paris Paribas, the Société generale or OSEO. An immediate refunding by the state will be made in the case of new companies and SMEs. By immediate refunding applied in 2009 and 2010 the state suffered considerable tax losses evaluated at nearly €5 billion per year.

## **6.3. Fonds de Capital-Armorçage - Funds of Start-up Capital<sup>146</sup>**

Fonds de Capital-Amorçage are funds for start-up capital. Launched in 1999 the French government decided to devote some €22 million to funds which invest in companies related to public research. The plan for 2011

---

<sup>145</sup> See e.g. [http://www.oseo.fr/votre\\_projet/creation/guides\\_de\\_la\\_creation/credit\\_d\\_impot\\_recherche\\_cir](http://www.oseo.fr/votre_projet/creation/guides_de_la_creation/credit_d_impot_recherche_cir);  
<http://www.industrie.gouv.fr/enjeux/innovation/credit-impot-recherche.php>, download on 05/05/2011.

<sup>146</sup> See <http://www.enseignementsup-recherche.gouv.fr/cid5734/les-fonds-capital-amorçage.html>, download 05/05/2011.



envisages the payment of €399.8 million.<sup>147</sup> The funds of start-up capital are privately organised funds, which are specialised in the contribution of capital in innovating companies. They participate in these companies from their start-up phase onwards when R&D are not completed and the companies cannot offer products or services. Research organisations or universities are natural partners of these funds, insofar as projects for the establishment of companies exploiting technologies, which result from laboratory work seem promising. Start-up financing thus represents a specific stage of the financing of the company. It is very different from venture capital, taking into account that much time and expertise is necessary and investments will still be relatively low.

Subsequent stages of financing may be organised by more traditional venture capital funds. Contributions of these funds will enable a company to complete the industrial development of its product and to cover expenditure for manufacture and marketing. The financing of start-up capital was not wide spread in France, taking into account of the absence of business angels schemes and a lack of financing of companies, for which prospects of profitability appeared dubious. Therefore, it was considered necessary that the State gave an impulse in this field. Public start-up capital is provided for institutions of research and higher education, refundable at the end of a maximum of 12 years.

#### **6.4. Fonds Communs de Placement à Risque (FCPR) + Fonds Communs de Placement dans l'Innovation (FCPI) + Fonds de Fonds Technologiques (FFT)<sup>148</sup>** **FCPR and FCPI**

A venture capital company (FCPR, or Fonds Commun de Placement a Risques) is an entity whose purpose is to invest in, promote and develop other corporations (provided those corporations are not involved in the provision of financial services). This is usually achieved through the venture capital company taking a participating shareholding in the target company. The law is set out in article 34 of the General Tax Code.<sup>149</sup>

The FCPR legislation was initially enacted in 1983 at a time when the venture capital industry in France was in a way in its infancy. Since then, given the considerable changes in the French venture capital environment, the legislation has been significantly modified to encourage private equity financings. The FCPR can now be used as a master feeder fund, can be a fund divided into different series and can also be a fund of funds.

Recent regulations now confirm an FCPR to be an easy and tax efficient structure for the carried interest for the managers. Furthermore, not only is the FCPR itself not subject to any taxation in France, but also, French investors pay tax when the gains are distributed and not when the FCPR realizes capital gains. This makes the FCPR a very specific, unique and attractive investment vehicle and explains the big increase in the number of FCPRs formed in France over the past few years. As of January 1, 2006, corporations subject to corporate income tax benefited from the newly-introduced progressive capital gains tax exemption on the sale of their shares in FCPR and/or related to the capital gains made by the FCPR on the sale of their own shares.

In order to qualify in France as an FCPR and therefore obtain the favorable fiscal advantages available a company must meet the following criteria:

- 50% of the FCPR assets must consist of shares, convertible bonds or participating interests in target companies.
- The target companies must be resident in a member state of the EU. The FCPR investment in a target company must not exceed more than 40% of the voting capital of the target company and its total investment in any target company must not exceed 25% of the share capital of the FCPR. If it exceeds these figures the target company may be considered a subsidiary and different tax rules will apply.
- The target company must not be quoted on the French or any foreign stock exchange.
- The target company must be involved in industrial or commercial activities and not in banking or insurance services (as defined in article 34 of the General Tax Code).
- Not more than 30% of the FCPR's shares can be held by any one individual.

<sup>147</sup> See <http://www.senat.fr/rap/110-111-312/110-111-3123.html>, download 05/05/2011; see also *Projet de loi de finances rectificative pour 2010*, présenté au nom de M. François FILLON, Premier ministre, et par M. Éric WOERTH, Ministre du budget et comptes publics de la fonction publique et de la réforme de l'État, p. 61.

<sup>148</sup> See <http://www.lowtax.net/lowtax/html/offon/france/fravent.html>, download 05/05/2011.

<sup>149</sup> See <http://www.lowtax.net/lowtax/html/offon/france/fravent.html>, download 05/05/2011.



### Fiscal Incentives

- No corporate income tax is payable by an FCPR on any dividend income remitted by a target company in which the FCPR has a participating interest.
- No capital gains tax is payable by the FCPR on any profitable sales of its shareholding in a target company. In France capital gains are normally taxed as corporate income.
- Dividends remitted by the FCPR to individual shareholders which represent income are subject to a flat tax rate of 16% (at the time of writing) in the hands of the individual shareholders instead of the progressive tax rates that apply in France. Dividend income remitted to FCPR shareholders on the profitable disposal of assets held for a minimum of 2 years is subject to the lower rate of capital gains tax (In France there are 2 rates of capital gains tax - a long term rate which is lower and a short term rate which is higher.)

Legislation in 2004 introduced Local Investment Funds. Such Funds have to use at least 60% of their capital to buy shares of enterprises or give current account advances, and at least 10% must be given to new enterprises created less than five years ago. Qualifying enterprises must be small or medium enterprises principally situated in a region or two or three adjoining regions, or otherwise have its registered office there. These enterprises should not be finance companies nor holding companies of finance companies but can be other risk capital mutual funds or risk capital companies, as well as companies giving guarantees in that region. No individual can hold over 20% of the fund, no enterprise can hold more than 10% of the fund, and all enterprises together cannot hold more than 30% of the fund. Tax benefits are similar to those for the FCPR.

A number of other changes were made to individual taxation in 2004 in order to improve the position of people investing in FCPRs and Local Investment Funds. These include the SUIR (Individual Risk Capital Company). Such a company invests in non-quoted shares at the time of an initial issue or an increase in capital of a taxable EU company, holding from 5% to 20% of the shares. The SUIR is exempt from corporate income tax for ten years. Dividends paid by the SUIR to its owner exempt from Personal Income Tax and from Withholding Tax.

The **Fonds Communs de Placement dans l'Innovation (FCPI)** is a special type of an FCPR available to individuals. Individuals are entitled to a tax deduction equal to 25% of the amount invested in the FCPI up to EUR12,000 (about USD14,525) per person. To qualify for favourable tax treatment, at least 60% of the assets of the FCPI must be invested in securities of non-listed companies that are:

- innovative;
- established in the European Economic Area (EEA);
- subject to corporate income tax;
- held predominantly (directly or indirectly) by individuals; and
- staffed by fewer than 2,000 employees.

However, determined to rein in fiscal expenditure, the government firmly set its sights in 2009 on addressing the issue of tax breaks. Provisions granting exemptions or reductions in taxation (niches fiscales) are set to cost the government an estimated €70.7 bn in 2009 (€75.5 bn including stimulus measures), much more than previously anticipated. According to the 2010 finance bill, this figure is set to rise again in 2010 to €72.2bn (€74.8bn). Regarding exemptions or reductions in social contributions, this figure was set to reach €42bn in 2008. Although a global ceiling on tax breaks for individual taxpayers was imposed in France in November 2008, limiting the total amount that can be claimed by any one individual to €25,000, plus 10% of gross taxable income, the system -- offering reductions, exemptions and tax credits -- is still proving too costly for the state. The Financial Bill 2011, presented in October 2010, announced that the government aimed to implement 10% cuts in tax breaks.

The Finance Law for 2011<sup>150</sup> envisages investments of some €10 million for the Fonds de co-investissement pour les jeunes entreprises (FCJE) - Funds of joint investments for new enterprises, which organizes investment in technological SMEs, the Fonds de promotion pour le capital risque 2000 (FPCR 2000) - Fund for the Promotion of Capital Risk 2000, and the Fonds de fonds technologique 3 (FFT 3) - Funds of Funds Technology 3: these funds, established within the concept of the FCPR, invest in Capital Risk Funds, which participate in the financing and establishment of innovating enterprises.

<sup>150</sup> See <http://www.senat.fr/rap/110-111-312/110-111-3123.html>.



## 6.5. Société Unipersonnelle d'Investissement à Risque (SUIR)

The SUIR or the **unipersonal investment company with risks** is a device created by the finance law 2004 in order to encourage the personal investment in start-ups. The SUIR is a simplified joint stock company (SAS) composed of only one shareholder. The sole purpose of the company is the subscription in cash for the capital of a company under certain conditions, which are explained in Article 208 D of the Basic Tax Code.

According to the legislation of 2004 the conditions were as follows:

- to hold at least 5% and not more than 20% of the capital of the company which is the object of the investment;
- no administrative duty could be exercised by the single associate or a member of his family;
- the single associate of the SUIR or his family members should not hold together directly or indirectly more than 25% of the shares and voting rights of a company in which the SUIR invests.

Subject to the fulfillment of these conditions the SUIR is exempted from the obligation to pay corporation tax during 10 years. The single associate is exonerated from income tax with regard to dividends perceived from the SUIR under certain conditions.

The Finance Law 2006 softened these regulations:

- the SUIR should hold a minimum of 20% and a maximum of 30% of the shares in the company in which it invests;
- the percentage of shares and voting rights by the single associate of the SUIR (or its family circle) in those companies in which the SUIR invests, should not exceed more than 30%.

## 6.6. Pôles de Compétitivité - Competitiveness Clusters

Based upon considerable analyses the French considered that the the process of innovation could particularly be favoured by the establishment of clusters.<sup>151</sup> The French government describes the roles and tasks of competitiveness clusters as follows:<sup>152</sup>

**Their tasks are: to strengthen the competitiveness** of the French economy and develop both growth and jobs in key markets:

- **Through increased innovation**
- **By encouraging high-value-added technological and creative activities**, principally industrial, at a regional level
- **By attracting businesses to France** thanks to a higher international profile

### Competitiveness clusters' strategy:

Each competitive cluster draws up a five-year plan, based on a vision shared by the various stakeholders. With the plan, the competitiveness cluster can:

- **Develop partnerships** between the various stakeholders, based on their complementary skills
- **Construct shared strategic R&D projects** that can benefit from public funding, particularly the Interministerial Fund (FUI)
- **Promote an overall environment favourable to innovation and the competitiveness cluster's stakeholders** via presentations, knowledge-sharing and mutual support among cluster members on topics such as training and human resources, intellectual property, private-sector financing, international development, and so on.

### Public support for clusters:

The French Government is particularly interested in promoting an overall environment favourable to enterprise and innovation, and in supporting R&D efforts within competitive clusters. It accompanies cluster development at both local and national levels in the following ways:

---

<sup>151</sup> See, e.g.: CM International et ARCessor (2008): Recueil des bonnes pratiques de gouvernance pour les pôles de compétitivité, rapport pour la Direction générale des entreprises (DGE) Ministère de l'Economie, des Finances et de l'Emploi, p. 9.

<sup>152</sup> See <http://www.industrie.gouv.fr/poles-competitivite/brochure-en.html>, download on 04/05/2011.



- **By allocating, through the Single Interministerial Fund**, financial support for the best R&D and innovation platform initiatives via calls for projects
- **Partial financing for cluster governance structures**, alongside local authorities and companies
- **Financial support for theme-based collective actions** initiated by clusters in a wide range of areas, via the various Regional Directorates for Industry, Research and the Environment (DRIRE)
- **By carrying out and publishing studies** such as "Les bonnes pratiques de gouvernance pour les pôles de compétitivité" ("Good governance practices for competitiveness clusters") and "Le guide pratique de la propriété intellectuelle dans les pôles" ("A practical guide to intellectual property in clusters")
- **By involving various partners**, such as the Caisse des Dépôts, or the French National Research Agency (ANR) and OSEO both of which finance R&D projects led by cluster stakeholders
- By bringing new means **from public research centres**
- Finally, by seeking assistance from local authorities, **who can also provide financial support for cluster projects (R&D, innovation platforms)**

Taking into account of the huge investments made for competitiveness clusters an inter-ministerial fund was established, the Fonds Unique Interministériel (FUI), which finances projects of R&D undertaken by a competitiveness cluster. Additionally, the ANR finances certain project, particularly those of a partnership nature, that is to say projects of public institutions with industrial partners. Also the Agence pour l'Innovation Industrielle (AII), and, subsequently, the program "Innovation Stratégique Industrielle" - Strategic Industrial Innovation (ISI) of the OSEO financed some projects with some €35 million each. But OSEO financed also smaller schemes within the framework of competitiveness clusters, for example some 1,300 projects of SMEs.

Beyond the financial support of partnership projects the competitiveness clusters achieve a great success by combining the worlds of the university and industry, which had been encouraged by the Convention for/on Research.

There are some special advantages of competitiveness clusters, which appeared only after first experiences were made.<sup>153</sup>

- the experience with competitiveness clusters brought about a closer collaboration between regional parties, which up to then did not have the need to collaborate with each other and to develop common aims in order to improve the regional economy, in particular industrialists, researchers, teachers, regional authorities and representatives of the state;
- public services were mobilized on the local and on the state level with the support of some 120 experts in any subjects relating to innovation;
- local authorities and organizations participated in their efforts for the financing of projects and carrying out collective actions.

A study, which was carried out in 2008, and which analysed the then operative competitiveness clusters, envisaged that already from 2009 onwards the financial support of clusters could be reduced in many cases, in particular where partnership projects developed successfully, where new products were developed and new employments.

**With a view to the successful implementation of the first phase of the competitiveness clusters the French government decided to spend some €1.5 billion on competitiveness clusters during a second phase from 2009 to 2011.**<sup>154</sup>

The public interest in spending this large amount of taxpayer's money will be safeguarded particularly by:

- enforcing the strategic aims of competitiveness clusters, namely by drafting "agreements on performance";
- new methods of financing, particularly for plates-formes d'innovation - innovation platforms;
- the development of an ecosystem of innovation and growth, with special ways for private financing and the use of an optimum of regional synergies.

<sup>153</sup> Rapport sur les politiques nationales de recherche et de formations supérieures, Annex to the Project of a Law on Finances for 2010, p. 50.

<sup>154</sup> Rapport sur les politiques nationales de recherche et de formations supérieures, Annex to the Project of a Law on Finances for 2010, p. 51; DATAR et Ministère de l'Économie, des Finances et de l'Industrie: Les pôles des compétitivité, see <http://competitivite.gouv.fr/index.php?id=478>, download 05/05/2011.



The sum of € 1.5 billion will essentially originate from the Inter-Ministerial Fund (some € 600 million) and from the three organisations ANR, OSEO and CDC (some € 850 million).<sup>155</sup>

### **6.7. Réseaux Thématiques de Recherche Avancée (RTRA)**

The Réseaux Thématiques de Recherche Avancée (RTRA) - Thematical Networks of Advanced Research are based on scientific collaboration.<sup>156</sup> The establishment of RTRA was envisaged by the Convention of Research of 2006 with the aim to promote advanced research on the internationally highest level. Some 13 projects were chosen for financial support by the state,<sup>157</sup> taking into account their excellence, their value and their originality of the project within a procedure.

### **6.8. Pôles de Recherche et d'Enseignement Supérieur (PRES) - Clusters of Research and Higher Education**

The clusters of research and higher education constitute the French response to the necessity to compete with highly ranking research institutions of other nations on a global level.<sup>158</sup> The ensuing collaboration between universities and institutions of highest education (grands ecoles) will unleash a movement towards a intensification of research. In fact, a PRES will often combine different universities within a new organization. For example, the universities of Borgogne and the Franche-Comté established a PRES with the name "Bourgogne-Franche-Comté Universities".<sup>159</sup>

Alongside changes in legislation governing the focus and organisation of research programs, due to take effect from 2005 and conforming to directives previously defined at the Conference of University Presidents, French universities are undergoing a restructuring process. The aim is to improve their competitive status in the European and international arena, making them major players in the future of French education, research and innovation.<sup>160</sup>

Various groupings of higher education establishments are assigned to PRES. The existence of PRES has led to various cooperation and management strategies between the various units. These strategies, selected and adopted by the establishments concerned, direct university activities to sectors of variable size, but which are nevertheless important: the definition of a common teaching strategy; determination of a common management policy for human resources; establishment of real communal services; individual doctoral schools, a common committee for strategic directives, a common research strategy, etc. Putting these policies into effect require the delegation of the establishments' competencies and will be achieved through collaborations between the partners and by their surveillance.

#### **Example: UniverSud Paris<sup>161</sup>**

Administrative advisors from the three founding establishments had voted for the inaugural convention of UniverSud Paris with a large majority. The convention details the competencies delegated to PRES, the themes concerned and the Etablissement Public de Coopération Scientifique (EPCS) - public establishment for scientific collaboration - statute. The UniverSud Paris establishment and statute proposals were put forward to the Direction Generale de L'Enseignement Superieur - National Board of Higher Education - in October 2006 and 15th December 2006, respectively. UniverSud Paris was officially created by decree on 21 March 2007, conforming to EPCS structure.<sup>162</sup>

### **6.9. Conventions Industrielles de Formation par la Recherche (CIFRE) - Industrial Agreements on Training by Research and Conventions de recherche pour les techniciens supérieurs (CORTECHS) - Agreements on Research for Highly Qualified Technicians**

<sup>155</sup> See <http://competitive.gouv.fr/les-financements-des-poles-356.html>, download 05/05/2011-.

<sup>156</sup> Ministry of Higher Education and Research: Présentation du concept de réseau thématique de recherche avancée (RTRA), 23/05/2006.

<sup>157</sup> See <http://competitivite.gouv.fr/les-soutiens-d-e-l-anr-oseo-et-la-cdc/les-reseaux-thematiques-de-recherche-avancee-rtra-370.html>.

<sup>158</sup> Cytermann, J.-R., refers in his report of 2007, La mise en place des pôles de recherche et d'enseignement supérieur (PRES), p. 3, to the universities of Oxford, Munich and Barcelone, and he draws a parallel to the German concept of universities of excellence.

<sup>159</sup> Cytermann, *ibid.*, p. 12.

<sup>160</sup> See <http://www.u-psud.fr/en/research/pres.html>, download 05/05/2011.

<sup>161</sup> See note above.

<sup>162</sup> See Article L. 344-1 of the Code of Research and the Regulations to Articles L. 344-4 to L. 344-10 of the same Code.



The Association Nationale de la Recherche et de la Technologie (ANRT) - National Association of Research and Technology - explains.<sup>163</sup>

Since nearly 30 years, the Conventions Industrielles de Formation par la Recherche (CIFRE) - Industrial Agreements of Training by Research - brought together some 6,000 companies, 4,000 laboratories and 12,000 PhD students grouped around innovation and research projects. The companies, half of which are SMEs, declare in 70% of the cases, that they obtained results usable for their products or processes. Some 15% of the conventions resulted in the deposit of at least one patent. Some 12,000 conventions were carried out in the long term and in 90% of the cases they led to the defence of a PhD thesis, constituting a sound basis for a professional career.

Since its origin CIFRE, which is entirely financed by the Ministry charged with research, is a continuing success. Its vocation is to contribute to the process of innovation at companies and their competitiveness. It supports exchanges between government research laboratories and private, large or small companies. The Ministry in charge of research entrusted to the ANRT the implementation of device CIFRE. Its objective is to support the development of public-private partnership research and to place PhD students under condition of uses. It rests on the association of four actors:

**The company** employs a post-graduate to whom it entrusts a mission of strategic research for its socio-economic development. His annual gross salary must not be lower than €23,484. His work must correspond with his PhD thesis. The employment is registered with the post-graduate's academic institution. The post-graduate has to devote all of his working time, which can be shared with the work at the laboratory or the company, to the research tasks. By doing this the post-graduate receives also a vocational training.

**The ANRT** concludes with the company an agreement on industrial training by research (CIFRE), on the basis of which the company receives a subsidy. For example, in 2010 the annual subsidy amounted to €14,000. This subsidy is increased by the tax credit (CIR), which is calculated on the not subsidized share of the employee's costs. The company may thus receive annually at least €14,294.

**Within the six months, which follow the conclusion of the CIFRE the company and the laboratory** establish a contract on collaboration in research, which stipulates for example the conditions of the partnership and in particular the methodology of research, the places of work of the post-graduate, issues of confidentiality, intellectual property. An annual progress report, signed by the company, the research laboratory and the post-graduate, is submitted to the ANRT.

Conditions for the application of the scheme are:

**The company** must be established according to French law.

**The candidate** must be a post-graduate (no matter of which nationality) with a diploma of level M. The post-graduate must not have worked for more than 12 months on his thesis at the beginning of the collaboration under the CIFRE and the request for a CIFRE has to be made no more than 9 months after the date of recruiting of the post graduate and after the first inscription in the doctoral education.

**To be recognizable the academic research laboratory** may be that of a university, a higher school or of a public organization of research. It may also be a foreign laboratory. In this case, the **joint supervision** by a recognized French laboratory is required.

The decision on the acceptance of a CIFRE be made throughout the year. In general, the decision will be communicated within two months after the deposit of the complete file. No data transmitted to the ANRT must be of confidential quality.

A Committee of evaluation and follow-up which is supported by two experts will prepare the decision:

---

<sup>163</sup> See [http://www.anrt.asso.fr/fr/espace\\_cifre/mode\\_emploi.jsp](http://www.anrt.asso.fr/fr/espace_cifre/mode_emploi.jsp)



A socio-economic expertise will be carried out by the relevant regional delegation for research and technology (DRRT). This expertise will take into account the company's financial strength, its market position and its capacity provide a "professionalising" education to the post-graduate.

A scientific expertise will appreciate the adequacy and relevance of the partnership and the doctoral education.

Criteria of evaluation are:

- the correspondence with a general strategy of the company: the subject of the research must correspond with the intended development of the company;
- the effective training in company: at the end of the agreement the doctor must be able to present a professional experience of research;
- the proposal of a subject of interest to the business world: at the end of the doctoral education, the graduate must be able to develop and apply his methodological and scientific knowledge;
- the presentation of a complete file: the experts in charge with the scientific expertise and the socio-economic expertise must be able to base their findings on the file: documents presenting the company, cv of the candidate, the developed subject of research.

The opinion relating to the scientific expertise will focus on:

- the interest and the scientific quality of the subject of research like its technico-economic interest;
- the engagement of the company with respect to the candidate and the research project;
- the coherence and relevance of the company's activity in relation to the research project;
- the coherence and adequacy of the candidate's training relating to the research project;
- the relevance and competence of the laboratory to provide the research results;
- the preparedness of the laboratory to collaborate with the company.

### **Conventions de recherche pour les techniciens supérieurs (CORTECHS) - Agreements on Research for Highly Qualified Technicians**

Public support is given to young technicians and Ph.D students by conventions de recherche pour les techniciens supérieurs (CORTECHS)<sup>164</sup>, agreements on research for highly qualified technicians.

The aim of this program is to incite SMEs and MSEs to entrust a young technician with a higher education of project of the development of technology within one year in collaboration with a centre of competence. The agreement CORTECHS has three partners: the SME or MSE, a graduated technician and a centre of competence. The centre of competence may be a research institution, a university, a school of engineers, a technical and professional school, an institution for the transfer of technology (CRITT, CRT, PFT), preferably in the proximity of the company. the working contract between the company and the graduate technician must have a minimum duration of one year. During the agreement the technician receives a complementary training in order to manage the innovation project with a duration of at least 80 hours.

The agreement between the company and the ANVAR is of a duration of one year. It envisages a subsidy of the company of €13,000, which covers a maximum of 50% of eligible costs (salary and expenses, contribution to the centre of competence). Such agreements are financed by the Ministry charged with research and new technologies. The ANVAR manages the CORTECHS on behalf of the Ministry.

## **7. Observing Regional Interests**

Reduction of policy measures to set the formal framework, ensuring that decision making can happen supported by a "facilitating state" ("etat facilitateur"). Accordingly, the efficiency of the research system and the maximization of economic returns in the investment of R&D is ensured by a strengthening of the regional level.

### **7.1. Délégué régional à la recherche et à la technologie (DRRT) - Regional Delegate of Research and Technology**

The délégué régional à la recherche et à la technologie (DRRT) - the Regional Delegate of Research and Technology acts as the public authority for regional affairs in the fields of research, technology, innovation and the

---

<sup>164</sup> See <http://www2.enseignementsup-recherche.gouv.fr/technologie/mesur/aides/cortec.htm>.



scientific and technical culture.<sup>165</sup> The Regional Delegate has the task of supervising regional initiatives with regard to national policy concerning programs relating to research and innovation. In particular, the Regional Delegate co-ordinates activities relating to clusters of research and technology, and he develops activities concerning the evaluation and transfer of technologies resulting from public research to businesses and he encourages the distribution of new technologies towards SMEs and MSEs. Additionally, the Regional Delegate makes proposals concerning the grant of subventions in his fields of activity, which shall be considered by regional administrations.

According to Article 3 of the Decree the Regional Delegate is responsible for the regional delegation of research and technology and with this regard the Regional Delegate may avail himself of financial means and of the staff of the Minister charged with research or of other relevant ministries, or public institutions and offices in the fields of higher education and research. Regional Delegates will be employed after a vacancy note has been made by the Minister charged with research and the candidates for the post are communicated to the Commissioner or the relevant region, Article 4 of the Decree. Candidates for the post must have a high position in the civil service.

The Decree thus ensures that the interests of the French regions are reconciled with the policy of the central government. Since French innovation policy focuses on particular French qualities with a view of the global market, the position of the Regional Delegate will ensure that regional concerns can adequately be taken into consideration when developing the national innovation strategy.

## 7.2. Contrat de Projet Etat-Régions (CPER) - Contracts on Regional State Projects

During the period between 2007 and 2013 the French government will invest some € 639 million for particular research programs of institutions of higher education in the regions.<sup>166</sup>

## 7.3. Regional Chambers of Commerce

Regional chambers of commerce received particular powers in order to support creative and innovative activities of companies. A Decree no. 2010-1463 of 01/12/2010 - Article 24 - modified the Commercial Code with this aim. A regional chamber of commerce and industry issues an opinion upon the request of the regional council on issues concerning the support of those who establish businesses and of businesses of which the region wishes that they would be created. According to Article R711-33 II clause 6 of the Commercial Code the chambers of commerce and industry support regional clusters specialised in economic activities, economic intelligence, innovation, the environment and the international development.

## 8. New Initiatives

### Chamber of Commerce and Industry of Paris (CCIP): Methods for Ways to Recover Growth for Medium Sized Enterprises (MSEs)<sup>167</sup>

MSEs are undertakings with 250 to 5,000 employees with a turnover below €1.5 billion and a balance, which does not exceed €2 billion, as defined in the Law on the modernization of the economy of 04/08/2008. MSEs represent only 0.2% of the companies in France, but they employ some 25% of the workforce. Important: some 40% of the MSEs are industrial companies, whereas in the case of SMEs this percentage is much lower.

The CCIP arrives at the result that three strategic aims should be pursued.

**- Stimulating the ability to innovate in order to strengthen competitiveness;**

1.2) Promoting the development on the international level;

<sup>165</sup> Article 1 of the Décret no. 2009-589 du 25 mai 2009 relatif au délégué régional à la recherche et à la technologie - Decree no. 2009-589 of 25/05/2009 concerning the Regional Delegate of Research and Technology.

<sup>166</sup> Rapport sur les politiques nationales de recherche et de formations supérieures, Annex to the Project of a Law on Finances for 2010, p. 39.

<sup>167</sup> Chambre de commerce et d'industrie de Paris: Entreprise de taille intermédiaire - Mode d'emploi pour retrouver la croissance (2010). Rapports et études de la Chambre de commerce et d'industrie de Paris. La Documentation Française. Paris.



1.3) Encouraging external growth through mergers and acquisitions (M&A).

Question: Should public support available to SMEs also be made available for MSEs?

### **Protection and Promotion of Innovation by Patents<sup>168</sup>**

Different from anglo-saxon companies, French MSEs and SMEs **make little or insufficient use of the patent system and, in general, of intellectual property**. Several factors explain this situation:

- insufficient information about the importance of intellectual property for the management of businesses;
- high costs related to the obtaining and the defense of intellectual property rights;
- the idea according to which the intellectual property system is too restrictive and requires too much time.

For the CCIP it is essential that the EU should establish a true intellectual property policy, which improves particularly the patent system. (e.g. establishment of a EU patent and a pan-European jurisdiction). The CCIP would appreciate if the method for the calculation of employee-inventors would be improved so that employees would be encouraged. According to the French Intellectual Code employee inventors should receive a particular remuneration, even if they are employed to invent; the law should define the amount of the remuneration. The CCIP suggests also an improved financing of the JEI (Jeune Entreprise Innovante) - Young Innovative Enterprise - and the Europeanisation of its status.<sup>169</sup>

## **9. Efficiency of Implementation of legislation in innovation field**

The French Industrial Innovation Agency (Agence de l'Innovation Industrielle, "AII"), established in 2005, was particularly charged with the measuring of the efficiency of innovation projects. However, the traditional French policy of supporting exceptional R&D efforts of large French companies was reviewed after the election of President Sarkozy in 2007. There was a marked shift in the national innovation policy. In 2008 the AII was abolished, and the new policy favours particularly regional support and support of SMEs. In its report "France: Innovation System and Innovation Policy" the Fraunhofer Institute (Emmanuel Muller, Andrea Zenker, Jaen-Alain Héraud, Fraunhofer Institute for Systems and Innovation Research, 2009, at 24) indicates:

New forms of public intervention, budgetary constraints, particularly in relation to university infrastructure, and the importance of the European project have coincided to strengthen the regional dimension of science and research. The reinforced importance given to the regional level is also driven by the need to increase the efficiency of the research system and to maximize economic returns from investments in R&D through spatial clustering and geographic proximity. **New forms of public intervention have become dominant, with policy looking less substantial and more procedural. While the state still defines the rules of the game, it does not specify implementation mechanisms, leaving a vacuum between strategic direction and necessary and available policy instruments.**

Public intervention may be characterized as the model of the "facilitating state":

In the French context, key examples include the pôles de compétitivité and the réseaux thématiques de recherche avancée (RTRA). The pôles de recherche et d'enseignement supérieur (PRES) represent a slightly different initiative, insofar as these are bottom-up developments, not subject to national competition and with no initial dedicated funding attached. The PRES are largely academic collaborations and poorly connected to local actors, although regional/local authorities express their interest in the design of such initiatives and are ready to support them by their own means and policies. **Despite significant differences in the scale, scope, funding and governance of these initiatives, they all represent varying attempts to bring combinations of academic, industry and local economic actors together within geographical proximity.** The emphasis on clusters and networks as tools for economic and scientific development builds on existing regional scientific competencies and innovation infrastructures.

---

<sup>168</sup> Ibid., p. 95.

<sup>169</sup> Ibid., p. 105.



**Efficiency is a pre-condition for selection within the public support programs.** Rani Jeanne DANG (“Economics and Management of Innovation, Technology and Organizational Change”, paper for the DRUID-DIME Academy Winter 2009 PhD Conference, at 8 and 9 explains):

However, the efficiency of French Competitiveness Clusters in the definition of the R&D projects will certainly determine the cluster that will be ultimately selected. This is clearly a “hidden” incentive of the strategy that the French Competitiveness Clusters will have to internalise soon. Again the label is not an end; it is the beginning of the process.

Concerning Competitiveness Clusters it was observed (Rani Jeanne DANG: “Economics and Management of Innovation, Technology and Organizational Change”, paper for the DRUID-DIME Academy Winter 2009 PhD Conference, at 8) that **the very low number of R&D projects submitted for financing support by most of French Competitiveness Clusters shows “that they have not necessarily understood the basic process at stake in the new industrial policy. Or, that the pre-existing configuration of the interactions in the French Competitiveness Clusters, shaped by years of centralization, implies some time to invent and implement new efficient local governance”.**

Taking into account of the fact that the French Competitiveness Cluster represents the essential element of innovation policy, it appears surprising that “very few papers explain how they work and the difficulties they are confronted with, particularly concerning SMEs integration” (DANG, as above, at 27). The author indicates (ibid.):

The question of SME’s involvement into the French Competitiveness Clusters does not only come from technological capabilities, but from the nature of the interaction systems in which they evolve and how they get inserted in territorial networks. In order to foster SMEs integration into collaborative projects of Competitiveness Clusters **it is necessary to understand the sector specific nature of the relations between SMEs and different local actors** rather than simply focusing on the weaknesses of SME management or on the complexities of existing support programmes, as it is usually claimed. A knowledge exchange between firms and institutions are the main drivers of spatial agglomeration of the nature of knowledge - i.e. codified-tacit /architectural-specific/ as well as the way knowledge is managed, structured, diffused and with what degree of formality play a key role in our analysis of territorial cluster dynamics.

**Accordingly, the efficiency of the implementation of French innovation policy seems to depend largely on factors, which are difficult to measure and which depend to a considerable degree on the ability of leading or responsible persons within a Competitiveness Cluster to establish a team spirit amongst its different collaborators.**

## 10. Conclusions

The report shows that French policy concerning innovation is a highly dynamic process. The French government understands the regulation of research and higher education as decisive for the future role of the French industry in a global market. Accordingly, the measures, which are taken, reflect the search for the optimum rule in the public interest which is understood with a view to the performance of the French industry. This understanding of the public interest is determined by economic success.

An interesting factor: There seems to be little opposition against this quickly changing framework for innovation in France. Whereas in the last century French students were particularly known for their often critical position towards governments there is hardly any serious critique from academic circles, which would oppose these adaptations of research and innovation policies.

A third observation: the French national policy supports strongly regional interests. The development of a network of competitiveness clusters within the national territory takes into account historically grown particularities of the French industrial landscape and of France's research institutions, which developed in the regions. It appears that a centralized government could be in a better position to balance regional interests than a government, which has handed over relevant powers to regional authorities. The efficiency of measures taken by a centralized government could be an advantage in comparison to the unavoidable process of negotiation between different regional authorities if the latter had more competencies for the regulation of innovation policy.



Particular implications of the report for Ukrainian policies could lie in aspects of educational and regional policies. The support of JEI - Young Innovative Enterprises - and JEU - Young University Enterprises - does not only have an impact on those enterprises, which receive such a support. The public interest in these new instruments is likely to have a general impact upon students and their approach towards their academic education and vocational training. It will broaden the next generation's view towards their professional activity by strengthening the social-economic element. The regional support measures taken by the French government are susceptible to create confidence in the ability of a centralized government to appropriately reflect regional interests. Therefore, a close analysis of the operation and success of competitiveness clusters in France could be of interest for Ukrainian innovation policy.



## Literature

Albero, B.; Linard, M.; Robin, J.-Y. (2008): *Petite fabrique de l'innovation à l'université*. L'Harmattan. Paris. Assemblée Nationale Sénat, rapport sur Science, Société et Parlements, 2008

Baraize, F. (1996): L'entrée de l'enseignement supérieur dans les contrats de plan Etat-Régions: la mise en réseau de la décision universitaire. In: Gaudin J.P. (ed): *La négociation des politiques contractuelles*. Paris: L'Harmattan, 133-67.

Baudelles, G.; Peyrony, J. (2005): Striving for equity: polycentric development policies in France. In: *Built Environment* 31(2), 103-111.

Chambre de commerce et d'industrie de Paris: *Entreprise de taille intermédiaire - Mode d'emploi pour retrouver la croissance* (2010). Rapports et études de la Chambre de commerce et d'industrie de Paris. La Documentation Française. Paris.

Chesnais, F. (1993): The French National System of Innovation. In: Nelson, R.R. (ed.): *National Innovation Systems. A Comparative Analysis*, New York, Oxford: Oxford University Press, 192-229.

Chevalier, M.: La politique industrielle est de retour. In: *problèmes économiques* no. 3003. La réindustrialisation en marche (2010) 3-7.

CM International et ARCESSOR (2008): *Recueil des bonnes pratiques de gouvernance pour les pôles de compétitivité*, rapport pour la Direction générale des entreprises (DGE) Ministère de l'Economie, des Finances et de l'Emploi.

Cole, A. (2006): Decentralisation in France: central steering, capacity building and identity construction. *French Politics* 4, 31-57.

Crespy, C.; Héraud, J.-A.; Perry, B. (2007): Multi-level governance, regions and science in France: between competition and equality. In: *Regional Studies*, 41(8), November 2007.

Cytermann, J.-R. (2007): *La mise en place des pôles de recherche et d'enseignement supérieur (PRES)*, report for the Minister of Higher Education and Research, Paris.

<http://media.education.gouv.fr/file/92/8/6928.pdf>

Edler, J.; Georghiou, L. (2007): Public procurement and innovation – Resurrecting the demand side. In: *Research Policy*, 36, 949-963.

European Commission, Directorate-General Competition, Industry and Services, *Competitiveness clusters in France*, (04/05/2011), <http://www.industrie.gouv.fr/poles-competitivite/brochure-en.html>

Ferrandon, B. (2004): *Croissance et innovation*. Cahiers français no. 323. La Documentation Française. Paris.

Gauron, A.: Désindustrialisation et choix politiques. In: *problèmes économiques* no. 3003. La réindustrialisation en marche (2010) 27-32.

Héraud, J.-A.; Lévy, R. (2005): University-industry relationships and regional innovation systems. In: Llerena, P.; Matt, M. (eds.): *Innovation policy in a knowledge-based economy*. Berlin, Heidelberg: Springer-Verlag, 193-219.

Lanciano-Morandat C.; Verdier E. (2004): Dynamiques des régimes sociétaux d'enseignement supérieur et d'innovation. *Revue internationale de politique comparée*, 11(3), 369-87.



Larédo, P.; Mustar, P. (2001): French Research and Innovation Policy: Two Decades of Transformation. In: Larédo, P.; Mustar, P. (eds.): Research and Innovation Policies in the New Global Economy. An International Comparative Analysis. Cheltenham, UK, Northampton MA, USA: Edward Elgar, 447-496.

Ministère de l'enseignement supérieur et de la recherche (2009): National Research and Innovation Strategy, general report.

Morand, P.; Manceau D. (2009): Pour une nouvelle vision de l'innovation. Rapport officiel, Ministère de l'Economie, de l'Industrie et de l'Emploi. La Documentation Française. Paris.

Muller, E.; Zenker, A.; Héraud, J.-A.; France: Innovation System and Innovation Policy, report, Fraunhofer Institute for Systems and Innovation Research (Fraunhofer ISI), Karlsruhe, April. 2009.

Mustar P.; Larédo P. (2002): Innovation and research policy in France (1980-2000) or the disappearance of the Colbertist State. In: Research Policy, 31(1), 55-72.

OSEO (2010): PME et brevets. La Documentation Française. Paris.

Pasquier R. (2003): La régionalisation française revisitée: fédéralisme, mouvement régional et élites modernisatrices (1950-1964). In: Revue française de science politique, 53(1), 101-25.

Pasquier, R. (2011): "EU Cohesion Policy and Territorial Capacities: The Case of France", European Union Studies Association, Biennial Conference, Boston, 03-05/03/2011.

Portnoff, A.: Quand les délocalisations deviennent des erreurs stratégiques. In: problèmes économiques no. 3003. La réindustrialisation en marche (2010) 20-26.

Postel-Vinay, O.: Les critères d'un système de recherché performant. In: problèmes économiques no. 2869. La R&D à l'épreuve de la mondialisation (2005) 2-6.

Pouyet B. (1998): Une réforme de l'université par les moyens. In: Développement universitaire et développement territorial. L'impact du plan U2000. La Documentation française, Paris.

Quéré, M. (1999): The French Innovation System: Some Insights into the Analysis of the Institutional Infrastructure Supporting Innovation. International Conference "Knowledge Spillovers and the Geography of Innovation. A Comparison of National Systems of Innovation" July 1-2, 1999, Château de Goutelas.

Rapport sur les politiques nationales de recherche et de formations supérieures, Annex to the project of the Law of Finances of 2010 (Annexe au projet de loi de finances pour 2010)

**Legislation online available at the LEGIFRANCE search machine - [www.legifrance.fr](http://www.legifrance.fr)**

**Code général des impôts (CGI) - Basic Tax Code**

**Code de la propriété intellectuelle (CPI) - Intellectual Property Code**

**Code de la recherche (CR) - Code of Research**

**Loi de programme pour la recherche no. 2006-450 of 17/04/2006**

<http://www.inovasyon.org/pdf/France.La.loi.de.prog.pour.la.recherche.pdf> (03/05/2011).

**Loi relative aux activités immobilières des établissements d'enseignement supérieur**, aux structures interuniversitaires de coopération et aux conditions de recrutement et d'emploi du personnel enseignant et universitaire (1) no. 2010-1536 du 13 décembre 2010



Projet de **Loi de finances pour 2011**: Engagements financiers de l'État - compte d'affectation special: participations financières de l'État (Draft Budget for the Year 2011)  
<http://www.senat.fr/rap/110-111-312/110-111-3123.html>

**Décret no. 2009-589 du 25 mai 2009 relatif au délégué régional à la recherche et à la technologie** (Decree Concerning the Regional Delegate for Research and Technology)

<sup>1</sup> **Annex**

**Code of Research**

**Book 1: General organisation of research and technological development**

Title I: Orientation of research and technological development

Chapter 1: Policy of research and technological development

Section 1: National policy

Section 2: Regional policies

Chapter 2: Aims and institutional means of public research

Chapter 3: Development of the means of public research and activities for the technological development

Chapter 4: Evaluation and control of research and the technological development

Section 1: Aims of the evaluation

Section 2: Agency for the evaluation of research and higher education

Section 3: Provisions relating to the evaluation and control

Title II: Consultative institutions of research and technological development

Chapter, introductory: Higher council of science and technology (Le Haut conseil de la science et de la technologie)

Chapter 1: Interministerial committee for scientific research and technology (Le Comité interministériel de la recherche scientifique et technique, CIRST)

Chapter 2: Council of national science (Le Conseil national de la science, CNS)

Chapter 3: National council for the coordination of human sciences and society (Le Conseil national de coordination des sciences de l'homme et de la société)

Chapter 4: Higher Council for research and technology (Le Conseil supérieur de la recherche et de la technologie, CSRT)

Chapter 5: National council for higher education and research (Le Conseil national de l'enseignement supérieur et de la recherche, CNESER)

Chapter 6: Consultative institutions for scientific and technical information

Chapter 7: Committees of concertation and coordination

Title III: Means for encouraging research and technological development

Chapter 1: R&D tax credits

Chapter 2: Funds for investments in innovation (Les fonds communs de placement dans l'innovation, FCPI)

Chapter 3: Funds for research and technology and Funds for national science

Chapter 4: Support for innovation

Chapter 5: Donations

(...)

**Book II: Practice of Research**

Title I: Ethics of research

Title II: Research of human medicine and biology

Title III: Research with animals

Title IV: Modifications of genes in organisms

(...)

**Book III: Institutions and Research Organisations**

Title I: General rules

Chapter 1: Public research institutions



Chapter 2: Public institutions of higher education and research

Chapter 3: Evaluation of results of research (La valorisation des resultats de la recherche)

Title II: Public institutions of an administrative nature

Chapter 1: Common rules for public institutions with a scientific and technological nature

Chapter 2: Centre national de la recherche scientifique (CNRS)

Chapter 3: Institut national de la recherche agronomique (INRA)

Chapter 4: Institut national de la santé et de la recherche médicale (INSERM)

Chapter 5: Institut de recherche pour le développement (IRD)

Chapter 6: Institutions of exact sciences and technologies

Chapter 7: Institutions of research of human and social sciences

Chapter 8: Academy of technologies

Chapter 9: Agence nationale de la recherche (ANR), Articles L. 329-1 to 329-7

Title III: Public institutions with an industrial and commercial nature

Chapter 1: Centre national d'études spatiales (CNES)

Chapter 2: Commissariat à l'énergie atomique (CEA)

Chapter 3: Institut français de recherche pour l'exploitation de la mer (IFREMER)

Chapter 4: Institutions of research in exact sciences and technology

Section 1: Agence nationale pour la gestion des déchets radioactifs (ANDRA)

Chapter 5: Institutions in support of the evaluation of research

Section 1 Agence de l'environnement et de la maîtrise de l'énergie (ADME)

Title IV: Structures of cooperation

Chapter 1: Groupings of public interest

Chapter 2: Industrial centres of technology

Chapter 3: General rules

Chapter 4: Clusters of research and higher education, special networks of advanced research, special centres of research, public institutions for scientific cooperation and foundations of scientific cooperation

(...)

#### **Book IV: Research Staff**

Title I: General Rules

Chapter 1: Tasks and basic rights

Chapter 2: Professional education

Chapter 3: Participation of research staff in the establishment of enterprises and in existing enterprises

Section 1: Participation of research staff in the establishment of an enterprise

Section 2: Scientific work for an existing enterprise and participation in the capital of an existing enterprise

Section 3: Participation of research staff in the management or in the supervisory board of a corporation

Section 4: General rules

Chapter 4: Rights of researchers<sup>1</sup>

Title 2: Rules applicable to staff of public institutions of a scientific and technological nature

Chapter 1: General rules

Chapter 2: Researchers

Chapter 3: Engineers and technical research staff

Chapter 4: Administrative research staff

Chapter 5: General rules for engineers, technical and administrative research staff

Chapter 6: General rules for civil servants of public institutions of a scientific and technical nature

Title 3: Rules applicable to scientific staff

Chapter 1: Employees

Chapter 2: Associated researchers and teachers

Chapter 3: Days of leave for researchers and teachers

