

**Title**

National and European programming in the case of the French public research organizations: competition or complementarity?

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Extended abstract

### **Motivation and context**

In 1992, the economist Baldwin tried to measure the impact of the economic integration on the European single market. A few years later, other economists questioned the existence of a European research system as a result of the economic integration (Gregersen, Johnson et Kristensen in 1994 and Caracostas and Soete in 1997). The issue was taken forward with the concept of the European Research Area first and of the European research and innovation system secondly.

Our belief is that the existence of a European Research Area is strongly dependent on the coordination between national research policy and between these policies and the EU research policy.

Coordination between research funding remains a pervasive issue as national systems of research and innovation are becoming increasingly intermingled. The issue of national research policies coordination at the EU level has recently been raised by Barré et al. (2012) who noted that coordination of policy design and budgeting between governments is increasingly important to the Europeanization of research, with integration not as predominant as it once was. Public funding is considered as a multilevel and multi-actor system, where stable patterns are generated by the collective interaction between actors like the beneficiaries, the research performers and the policy makers (Lepori, 2010). The number and type of actors varies according to the research fields.

This paper is based on a study performed for the French Ministry of research in 2011. The study was aimed at investigating whereas the French decreasing participation of French actors in the FP was due to a competition between national and European programmes. In this context, this paper pursues three main goals to investigate the tensions between research space, research field and the strategy of the organization (Nedeva 2012). An assumption was that the national programmes offer a more natural (and easier) source of funding for research units.

Conclusion that often emerges from studies focusing research programmes of individual countries or those of the European Commission: how researchers are dealing with multiple sources of funding such as the national programmes and those of the European Union and how might this be strengthened to increase synergies between the two levels?

From the researchers point of view, the question of the funding balance between programmes is threefold. Firstly, it is related to the strategic level, which corresponds to the positioning of policies (European and national). Secondly, it is related to the thematic level, which is about the coverage of research themes at national and European level. Thirdly, it is related to the operational level, which is made at the level of the research projects and which implies the research teams/the researchers.

Our thesis is that the positioning of national and European level that is required depends on the thematic fields. Some thematic fields request a public action at the thematic level between the national research programmes and the programmes of the European Commission's research programmes, while other fields request an action at the strategic level.

### **Approach**

The analysis is based on a survey undertaken in 2010 and completed by 186 Heads of Research Unit of French public organizations or universities. In our case, research unit should be understood as research teams which can be part of institutions. The questionnaire was aimed at understanding the motivations for applying for competitive research funding, both national and European. Comparative statistical analysis of public funding received from the EU through the FP7 and the programmes managed by the French national research agency (ANR) was

performed on the results produced by the survey. To our view, this work is a complement to the sociological studies on the scientific practices of individual researchers (see for example Tricoire, 2011 on the impact of the criteria of selection on the scientific practices).

Further to the analysis of determinants (decision factors) for participation in a research programme (Section 1),. This section provides evidence regarding the factors that explains the participation of the public research institutions in competitive funding. Then, we propose a typology of research laboratories according to their participation in EC/national research programmes (Section 2). We will show how the size of the public research institutions and their thematic field explain the types of competitive funding for which they apply. In Section 3, we conclude by the presentation of the main variables to take into account by policy makers (national and European) to position their programmes... It will present the different tools that exist for articulating national and EC strategy. .

### **The prominent determinants of participation in European programmes**

The availability of alternative sources of funding is strongly linked to the research field and represents an important decision criterion for research teams. The National research agency (Agence nationale de la recherche) covers roughly the same scope as the framework programme. In case of coverage at national level of a research fields already covered at European FP, research teams may prefer to request funding to the national programmes. Furthermore, there is the growing importance of regional authorities in research and higher education that provide research teams with further alternative funding. In 2009, regional councils in France allocated 187 million Euros to support research activities. These allocations can diminish the need for the research teams to seek extra funding at the European level. Our analysis shows that at the research team level, the coexistence of both national and European programmes/funding has different impacts: some research teams participate evenly in both programmes while others only participate in the national programmes or in the regional programmes.

According to the answers given by heads of research unit to the survey, the factors that determine the participation in a research programme are as follows:

1. The characteristics of research themes. Some research topics can be worked at national level because the national research community is large enough. Regarding the French case, transport is mentioned in the survey as a field where French researchers have less need to cooperate at European or international level. On the contrary, other themes are strongly internationalized (eg robotics is a research field where EU, USA, Korea and Japan are excellent).
2. The history of researchers. Researchers involved since the beginning of their careers in collaborative projects at the international level are keener on working with partners from other countries.
3. The occupational rate of research teams. Competitive research is a cyclic activity with a dedicated time to write proposals and another to perform the research. When teams are busy with one of these tasks, there is automatically less time to dedicate to the other. Once projects are won, research teams are less motivated to answer to calls for projects and focus more on research. Only when projects are finishing do teams again start to write proposals. The survey shows that the time spent to answer to calls for projects is divided into different programmes. A decision to participate in a call to a programme impacts on the time devoted to write proposals for other programmes.
4. The call success rate of the programme (or the proposal selection rate). Research teams can be discouraged in participating to a call for projects when success rate are considered too low (corresponding to an adverse selection process). On the other hand,

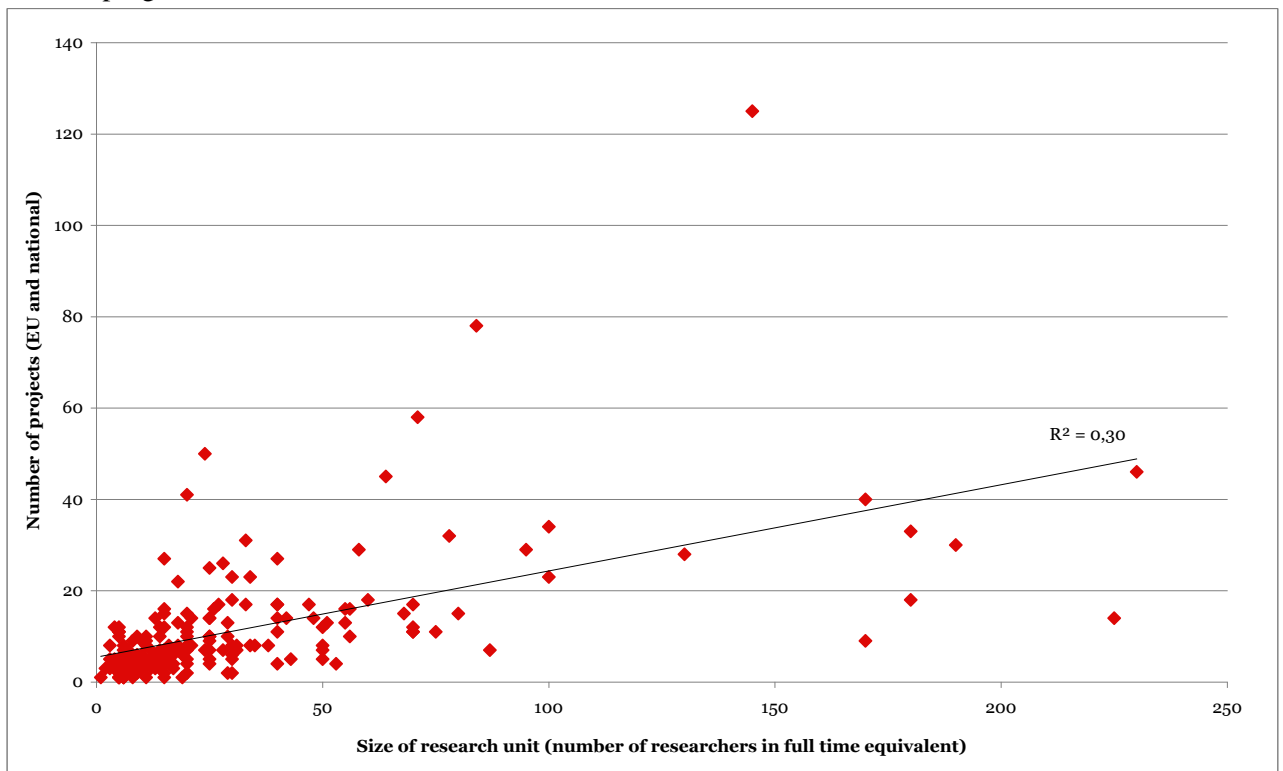
a low success rate reveals a programme which funds high quality projects. This contributes to the attractiveness of a programme but research teams often decide to participate in high selectivity programmes when they are able to provide a good proposal to minimize the risk of failure and save time for other sources of funding. The survey demonstrated that this is particularly the case for the Framework Programme, because of the time requested to prepare a good proposal. Researchers declare they only submit proposals when they are fully confident in their chance of selection.

5. Administrative burden concerning the follow-up and the reporting of projects. The burden is taken into account in the project writing. The survey and the interviews show that the administrative burden is taken into consideration by researchers. The impact of this non-participation factor is drastically diminished when research teams are supported the resources that have responsibility for administrative tasks.

On the other hand, several factors have a weak impact on the participation in programmes. These factors only partially explain the participation of research teams in competitive research programmes:

1. The size of research units appears as a secondary factor. The survey sent to heads of research units shows there is a weak linear relation between the size of the unit (counted in full time equivalent) and the number of projects funded by either European or national programmes (see graph 1) with a squared correlation coefficient ( $r^2$ ) of 0.30. This observation means that the number of projects funded by EU or national programme is weakly linked to the numbers of researchers of the unit.

Figure 1 Relation between the size of unit and the number of projects funded either by EU or national programmes



Number of respondents : 186.

Source : survey performed by Technopolis-group France in 2010 targeting head of research units

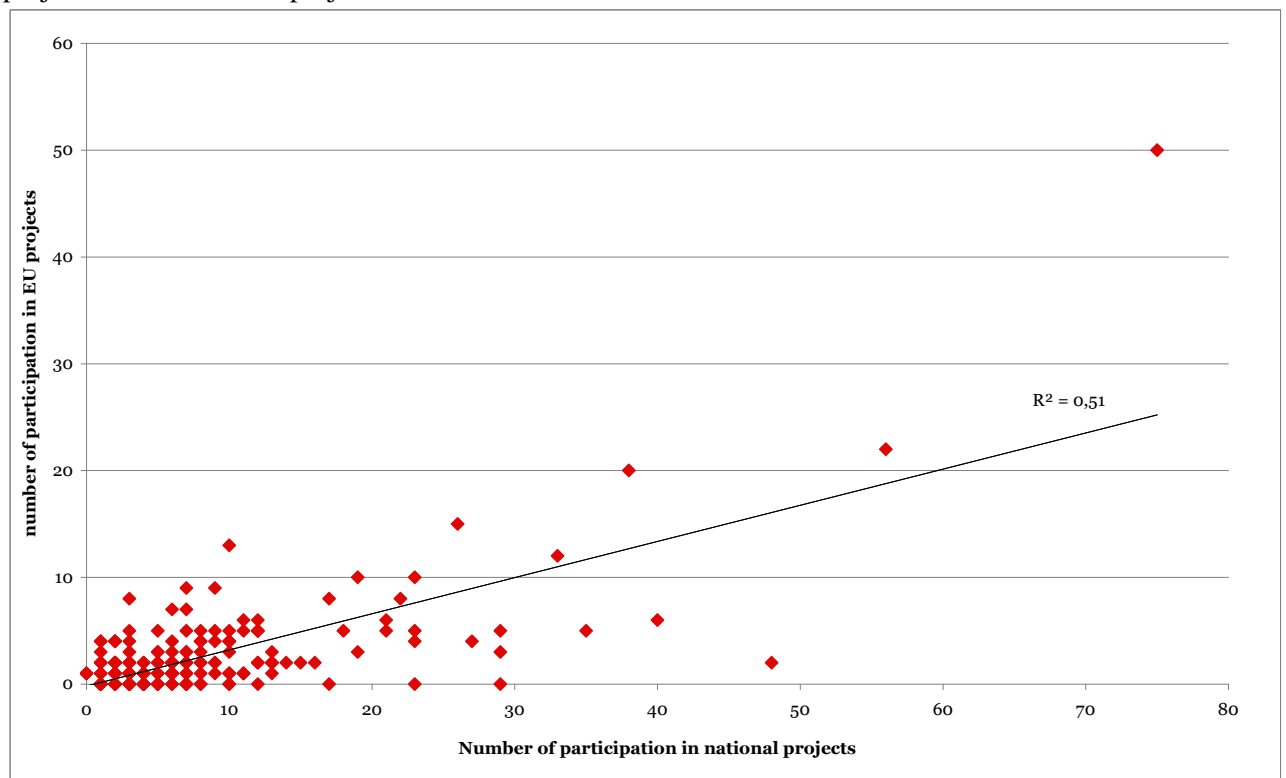
2. The funding rate is not a prominent participation factor in programmes either meaning the attractiveness of a programme is not driven by funding rate (at least for public bodies). This information is taken from the survey and interview of head of public

research laboratories, a different observation may come up if we address the same question to private bodies.

Research units behave differently as regards their participation in regional, national or European programmes. It is worth mentioning two remarks before presenting a typology of research units:

1. Research units do not have the same capacity to impose their strategy on their own researchers. In many public organizations, researchers have almost full independence to at least, join a project as simple participant (according to the Haldane principle). In many cases, heads of research units are informed of the involvement of their researchers in projects only when they start. Units do not have explicit strategies or at least a centralized decision process regarding calls for projects launched by either national or European programmes.
2. At the level of the research units, the number of projects funded by national programmes and the number of projects funded by European programmes follow a linear relation. The survey shows the squared correlation coefficient equals to 0.51. It means that the number of projects funded by national programmes on the one hand and by European programmes on the other hand evolves proportionally.

Figure 2 Relation between number of participations by research unit in national funded projects and EU funded projects



Number of respondents : 186.

Source : survey performed by Technopolis-group France in 2010 targeting head of research units

### Typology of research units

On the basis of the determinants of participation, we propose a typology of research labs. The typology is as follows: the small research units not participating to EU programmes, research units participating occasionally to the FP and research units able to participate to all programmes.

1. Small research units mainly target national programmes and avoid as much as possible the Framework Programme. For these small research teams, we can conclude for a large extent to a competition between national and EU sources of funding. National programmes usually generates the largest share of their projects portfolio projects because their research fields are widely covered at national level. Regarding these units, an important involvement in a programme (national or European) does not completely eclipse projects of another programme, but justifies a persistent gap between the number of projects of one type (national or European) and the number of projects of the other type. Only some units have historically turned to the FP because their research theme is internationalized or because it is regularly covered by the FP. On the other hand, other;
2. Research units traditionally involved in many European projects but in recent years have shown an increase in projects funded by national programmes and lowered their participation in FP projects. The reasons for this transfer are twofold: it is the result of a change between the end of FP6 and the beginning of FP7 that makes topics well covered until 2006 and less in the FP7 or it is the result of a response to the FP bureaucracy, which has led teams to choose national instead of European programmes. In the latter case, it should nevertheless show that this change is not definitive because researchers are aware of the danger of departing from European projects and to work more at the national level. For these units, a return to the FP is obvious and a quest for more simplicity is not a strategy for medium or long term;
3. Research units with a project portfolio mixing national and European sources of funding. Regarding these units, national and European programmes have different logics and meet different objectives. A subject can be covered by several programmes consecutively or simultaneously. For example, a project supported at national level may be the result of an FP project for which the research unit wants to work with fewer partners (for IPR reasons for instance).

## Conclusion

In the conclusion, we propose variables for the combination of national and European programming in order to create as far as possible synergies between the two funding sources allowing an optimized use of public funding.

The combination of national and European programming is based on several variables with several modalities. For each theme, the choice of modalities depends on the characteristics of research communities.

The proposed variables are:

1. Combination between a thematic (top-down) approach and a bottom-up approach. The balance between targeting and non-targeting thematic approach can boost strategic governance in a theme while continuing the research at frontier of knowledge. The choice between these two types of programming can target a category of research operators rather than a type of research (academic and industrial research). This approach depends on the maturity of the research topic and implies a distribution between top down and bottom-up programmes such as those proposed by the national research agency (ANR) or by the European Research Council (ERC). This articulation is based on a distribution between national and European level of the thematic and non-thematic programming;
2. Combination between the upstream technological research and the downstream collaborative research involving public organizations and industry. The level taking into

account the whole of the research chain is an important variable of articulation. In general for obvious reasons of competition between actors interested in the results of the research, the more the research is close to the market, the more difficult is to build extensive partnerships (at European size for instance). On the contrary, basic research targeting mostly academic actors fits more to European consortia with less economic issues. The articulation model is based on a distribution between national and European support of the upstream research and the downstream collaborative research.

3. The timing of calls for national and European projects. The issue of timing of calls for projects for regional, national and European programmes begins by taking into account planning of calls for projects. This component is only a management issue but can be strategic if national calls are launched after European calls to support rejected participants or national calls for projects launched before European calls with the aim to structure the national research community. The articulation component is to schedule national and European calls according to expected outcomes.

The choice of combination of national and European programming depends on the characteristics of research communities, namely: the maturity of research topic (basic or downstream research, national or European technological platforms, etc.); the level of structuring of the national research community (intrinsically and in comparison with that of other European countries); the scientific level of the national research community (in comparison with other European countries); the degree of acculturation of the research community vis-à-vis transnational research and / or partnership; the existence of enhanced cooperation program with one or more countries.

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### Annexes:

Possible other references to be used:

- Mialhe A, et al. Profiles, motivations and expectations of participants to EC funded research in Health (2002–2010): A statistical analysis. *IRBM* (2012), doi:10.1016/j.irbm.2012.04.001
- Terttu Luukkonen et al, *Towards understanding integration in research and research policy* *Research Policy* 39 (2010) 674–686
- Isabel Maria Bodas Freitas, Nick von Tunzelmann *Mapping public support for innovation: A comparison of policy alignment in the UK and France*

### Questions and modalities of responses of the survey proposed to heads of research units in 2011

<ul style="list-style-type: none"> <li>▪ Research field</li> <li>▪ Number of researchers in the unit (in Full time equivalent)</li> </ul>	Number of researchers (in FTE)
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