

Mapping the European Landscape of Joint Programs; Methodological Issues and Preliminary Results

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1 Introduction

This paper will present the design and implementation of a system of indicators to map joint programs at the European level and, based on the collected data, analyze the organizational settings of these programs, as well as their implication for funding of research in the European Research Area (ERA). The paper is based on work performed in a contract on mapping joint and open programs financed by the European Commission, Directorate General Research (JOREP project).

The paper will, first, outline the current policy debate on joint and open programs and the emerging analytical questions. Second, based on recent work in the field, it will draw a comprehensive theoretical framework to analyze these programs, which provides also guidance on how to design suitable indicators. Third, we discuss the possible indicators which are foreseen, methodological issues concerning descriptors, as well as concerning data collection on funding flows (as related to on-going work at Eurostat and OECD). Finally, we provide some preliminary evidence based on a qualitative mapping exercise performed in the 11 JOREP countries, as well as on first systematic data collection on two pilot countries. In the final paper, this section will be extent to provide complete and systematic information on all the participating countries.

2 Joint programs: policy debate, emerging trends and open questions

Historically, the first examples of joint programs between European countries have been programs managed by a supranational agency, like the European Space Agency, where participating countries transfer resources to this agency which funds then performers (*real common pot model*); in programs like COST, Eureka and most European Science Foundation schemes only the design and selection functions have been delegated to a supranational agencies, while funding is managed (mostly *à la carte*) through national funding agencies and thus there are no trans-border flows of funding (*national pot model*).

Available data show that the share of total public funding for research channeled through these schemes progressively increased to reach about 15% of publicly funded R&D and this should be considered as an underestimate since it does not include programs without cross-border flows of funding and European structural funds ((European Commission, 2008)). Data collected in the PRIME project show that at least in medium-size European countries international sources account for between 15% and 35% of total project funding volume and clearly display the very strong increase in the last three decades ((Lepori et al., 2007)).

The most recent generation of joint research programs at the European level follows the introduction of the open method of coordination in 2000 and shifts the focus from the creation of European programs and agencies to the development of the cooperation between national agencies in specific fields. ERA-NET initiatives have been explicitly conceived as variable geometry tools for coordinating national funding through joint calls between national agencies; 71 ERA-NETs were

launched under FP6, which resulted in about 85 joint calls totaling over 800 mio. euros ((European Commission, 2008)). Article 185 initiatives and, more recently, Joint Technological Platforms go in the same direction, but develop towards stronger institutionalization through the creation of European-level Dedicated Implementation Structures.

From this cursory review, we conclude that joint and open research programs constitute a highly differentiated domain, which has develop over a long of period of time and tries to answer to very different political and scientific requirements. The domain is characterized by an increasing diversity, not only concerning the type of programs and their characteristics, but also the role and involvement of different actors, including the European Union, national states and the funding agencies themselves, and the organizational settings in place for managing these programs.

Despite efforts of data collection in some areas – e.g. ERA-NET -, there are hardly any systematic sources which allow answering to some of the central analytical questions, like those on the functions which are integrated, on how integration is organizationally managed and on the role of different actors in these processes. Moreover, joint programs are not well covered in official R&D statistics and thus evidence of the quantitative importance of the phenomenon is, at best, partial.

3 Background and theoretical framework

Open and joint programs have to be seen in the context of the broader setting of research funding systems in developed countries and of their increasingly layered and differentiated organization during the last decades ((Lepori, 2010)). Thus, our model of research funding systems is based on four layers - representing different functions in research funding - namely policy, funding agencies, performing organizations and research groups, as well as two main allocation modes, namely institutional and project funding.

In this context, we consider a research funding programs as organizational settings which allow distributing project funding to research groups ((Lepori, van den Besselaar et al., 2007)) on a regular and organized basis. Joint programs are defined as research funding programs where at least one of the main functions – design of the call, submission and selection, funding decisions, contract management – is shared between more than one country. Accordingly, in most cases, these functions are managed by different agencies, e.g. the call and selection to a European-level agency, while the contracts and payments by national agencies of the participating countries.

Thus, joint programs are complex organizational structures – what we could call *crystallizing agents* ((Luukkonen & Nedeva, 2010)) -, tying together political authorities, funding agencies and performers in different countries according to a highly variable geometry. A preliminary mapping exercise performed in JOREP allowed to identify a few major organizational settings, including supranational agencies managing all program functions (ESA), transnational programs centrally managed by a supranational agencies, but where funding is controlled at the national level (Eureka), transnational programs where joint coordination between national agencies takes places, but without the creation of an agency at the supranational level (most ERA-NET), as well as bilateral program jointly coordinated between national agencies. A further emerging mode of organization is *lead agency* between research council, where most program functions (except funding) is delegated to an agency in one of the participating countries (e.g., D-CH-A agreement)

In terms of the construction of an indicator system, these preliminary results imply the need to shift the focus from the measure of funding flows towards the construction of descriptors to characterize the organizational setting of joint programs. At the same time, given the proliferation of these programs, their diversity and the number of countries involves, case studies can hardly allow a comprehensive analysis and it becomes essential to devise the production of standardized indicators.

Hence, some key questions to be addressed in a system of positioning indicators ((Lepori, Barré, & Filliatreau, 2008)) on joint programs are the following:

- Which is the role of different types of joint programs in the current landscape? Are there systematic differences in the involvement by country?
- Which is the role of different operators in managing joint programs? Are there differences by program function?
- Which kind of functions are integrated? Are there systematic differences between functions?
- Is there a concentration of joint programming on specific scientific areas? Does the model of integration depend on the scientific area?

- How are joint programs dealt with at political level? Which are the main authorities behind their establishment and the allocation of budget to this type of programs?
- How are funding flows organized? How are complex arrangements concerning funding – e.g. national pot plus European top-up funding as in some ERA-NETs – managed?

Funding volumes can be meaningfully used to build proxies of the importance of different settings, e.g. hence contrasting counts of programs and their budget, but there is some understanding that transnational funding flows will be less relevant than organizational setting for the impact of joint programs on the European Research Area.

4 Methodological issues: descriptors and data on funding flows

Based on the previous analysis, in the JOREP project we have constructed a set of descriptors to analyze the most important dimensions of the organizational setting of joint programs. While the selection of descriptors is relatively straightforward, the definition of a pre-defined set of categories for the answer is a complex task, which entails a delicate balance between standardization and ability to capture the essential elements of diversity in the reality.

For example, based on the mapping exercise, concerning the descriptor mode of integration, three categories have been envisaged:

- Creation of a specific agency, where joint activities are managed by a supranational agency with an enduring and long-term status (*agency*).
- Management of joint activities through non-permanent structures like joint committees, whose existence is specifically related to the program itself (*coordination*).
- Management of joint activities through the delegation to a national agency in one of the participating countries (*delegation*).

A fourth category has been added - independent evaluation and selection, where the project is approved only if both parties decide independently to finance it (*independent selection*) -, based on comments received by participating experts that this was a relevant case. The following table provides the final list of the descriptors which will be used for the data collection in the participating countries.

Descriptor	Categories and remarks
Name of the program	
List of establishing authorities	
List of participating agencies	With identification of the functions of each agency
Project duration	Less than 2 / 2-4 years / more than 4 years
Research topics	OST classification (DISC)
Beneficiary	Public/private/abroad
Program duration	Limited or unlimited.
Selection criteria	Scientific quality and relevance on 4 point scale.
Submission procedure	Single entry point/multiple submission/parallel submission
Funding mode	Real common pot vs. national pot
Program budget	For each country or overall (depending on funding mode).
National status	For each participating country.
Program foundation year	For the whole programme.
Year of participation	For each participating country.
Main program changes	For each country, referring to the previous descriptors.

Table 1. List of descriptors

Additionally, data collection on funding flows will be performed, limited to a subset of programs for which the funding volume is significant, in order to reduce the burden for data collection; as from the project framework, data collection will be divided in two distinct sets:

- Funding flows from the State to funding agencies for the purposes of the identified joint programs.

- Funding flows from the agencies to performers (national/international) for the purposes of the identified joint programs.

This division is needed given the complex structure of funding flows in the case of joint programs. Moreover, there is evidence that in many cases national contributions for joint programs cannot be identified at the level of State budgets, as these are decided directly at the level of national agencies (e.g. research councils). This implies also that resources devoted to joint programs cannot be monitored adequately by using budgetary data only, as foreseen by the Frascati manual. Collecting data for the period 2000-2009 is envisaged.

Before starting data collection, each participating country has been requested to provide a list of programs to be included; additionally, a list of joint programs at the European level has been developed. In the 11 countries participating to JOREP, about 180 joint programs have been identified, to which 41 European-level programs should be added. By excluding the less significant programs and cleaning double accounts, the final perimeter for the data collection should include between 100 and 150 programs.

5 Expected results and conclusions

The data collection scheme is currently being tested in two countries (Norway and Switzerland) for its feasibility and possible inconsistencies; preliminary results show that collection of descriptors is generally feasible and there are few ambiguous cases; concerning data on funding flows, most data could be collected rather easily on money transfer to agencies, but information on flows to performers appears more problematic.

The entire data collection on the eleven participating countries (Czech Republic, Denmark, France, Germany, Italy, Netherlands, Norway, Poland, Switzerland, Spain and the United Kingdom) will be performed in spring 2011 and will allow for the first time a comprehensive and systematic analysis of the phenomenon of joint programs in the European Research Area. In the paper, preliminary results on the characteristics of joint programs will be presented, according to the research questions highlighted, as well as a possible refinement of the envisaged typology. Besides their political interest, the specific focus on modes of integration and organizational settings will provide high interesting data for science policy analysis.

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