

The role of traditions in cooperation

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Abstract

The main objective of current work is to analyse to what extent the collaboration habits of researchers overlap with the requirements set in EU Framework Programme 6 (FP6), and how the choice of partners is balanced between coordinating countries.

1 Introduction

Several research studies and reports on national and European science and technology indicators show an intensification of international scientific cooperation in practically all areas of science. Considerable quantitative and structural changes have occurred, especially during the last decades of the 20th century. As Wolfgang Glänzel has stated (Glänzel 2005), these changes can be attributed not only to the universal trends of globalisation, but also to the political and economical restructuring of several countries and world regions as well. The extent of international cooperation differs significantly between small and large countries (Moed, 2005). Small and less developed economies engage more actively in international collaboration (about half of all outcomes are the result of international cooperation). At the same time, large countries report the greatest expansion in the field of international collaboration. In France, for example, international collaboration increased from 8% in 1991-93 to 16% in 2001-03 (OECD 2007).

Collaborative research will constitute the bulk and the core of European Union research funding and promoting international research cooperation will be the main guarantee of success.

The main objective of current work is to analyse to what extent the collaboration habits of researchers overlap with the requirements set in EU Framework Programme 6 (FP6), and how the choice of partners is balanced between coordinating countries.

2 Methods

The basis of our study is the FP6 funded projects' database provided by the European Commission. The database enables us to select data from the period 2003-2006 by country, organisation type, partner countries, programme and type of projects. Our aim was to find out the principle actions of researchers so we only selected the data of research projects from the FP6 database (integrated projects = IP, network of excellence = NoE, and Specific Targeted Research Projects = STREP). For samples we used the data of *Life sciences, genomics and biotechnology for health* programme (= LIFE), which is oriented for life scientists. For comparison we used the ISI Web of Science for the period 2000-2007 to find out the collaboration routines of project coordinators.

3 Results

3.1 Research projects in FP6 LIFE programme

Research projects (IP, NoE, and STREP) constitute the majority of the LIFE programme – 78.7%.

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Table 1. The number of projects and participations in FP6 LIFE programme.

| Programme | LIFE |
|----------------------|------|
| Total projects | 600 |
| Total participants | 6828 |
| IP - projects | 121 |
| IP - participants | 2259 |
| NoE - projects | 38 |
| NoE - participants | 1115 |
| STREP - projects | 313 |
| STREP - participants | 2559 |

Research projects engaged in cooperation with 6828 organisations around the world.

3.2 Coordinators

Table 2. Coordinators of the FP6 LIFE programme research (IP, NoE, STREP) projects by country.

| COUNTRY | LIFE |
|---------------------|------------|
| Austria (AT) | 16 |
| Belgium (BE) | 6 |
| Switzerland (CH) | 16 |
| Germany (DE) | 84 |
| Denmark (DK) | 16 |
| Greece (EL) | 8 |
| Spain (ES) | 20 |
| Finland (FI) | 11 |
| France (FR) | 66 |
| Hungary (HU) | 4 |
| Ireland (IE) | 2 |
| Italy (IT) | 50 |
| Netherlands (NL) | 42 |
| Norway (NO) | 7 |
| Poland (PL) | 2 |
| Portugal (PT) | 2 |
| Sweden (SE) | 28 |
| United Kingdom (UK) | 60 |
| TOTAL | 440 |

The LIFE programme involved coordinators from 24 countries. The following institutions were the most influential in their countries: Medizinische Universität Wien (31.25%), Kath-

olieke Universiteit Leuven and Universite Libre de Bruxelles (total 35%), Universität Basel and Universität Zürich (total 37.5%), Max Planck Gesellschaft zur Foerderung der Wissenschaften e.V., European Molecular Biology Laboratory, Ludwig-Maximilians-Universität München (total 25%), University of Copenhagen (25%), Foundation for Research and Technology - Hellas (50%), Consejo Superior de Investigaciones Científicas (25%), Helsingin yliopisto (72.7%), Institut National de la Santé et de la Recherche Médicale and Centre National de la Recherche Scientifique (total 45.5%), Istituto Superiore di Sanita and Università degli Studi di Milano (total 28%), Universiteit Leiden, Erasmus University Medical Center Rotterdam and Stichting Katholieke Universiteit (total 40.5%), Karolinska Institutet (35.7%), University of Oxford, University of Cambridge, King's College London and the Medical Research Council (total 31.7%).

3.3 Cooperation

The LIFE programme projects involved organisations from 80 countries. We have to stress that as FP6 was not open to the rest of the world, as is common in the case of ordinary research collaboration, the traditional partners from so-called third countries (Australia, Canada, Japan, and the USA etc.) were not reflected to the extent that they could have in the data received.

Table 3. Cooperation partners in FP6 by world regions.

| Programme | LIFE | |
|------------------|------|------|
| Country | No | % |
| EU ⁺¹ | 5753 | 97.0 |
| Asia | 39 | 0.6 |
| Africa | 43 | 0.7 |
| EECA | 35 | 0.6 |
| S-America | 24 | 0.4 |
| N-America | 30 | 0.5 |
| WBC | 9 | 0.2 |

From the LIFE programme 6 countries' coordinators' cooperated only within European Union

¹ These data include the EU 27 member states, associated countries and candidate countries

associated, candidate and member states, at the same time France seems to have bigger than usual cooperation interests with researchers in Africa, and Germany with Former Soviet Union and South America countries.

The largest collaborating partners from third countries were research organizations from Australia, Canada, China, Russia, South Africa and the USA.

So-called core countries, where the majority of cooperation was made by all coordinating countries, included Austria, Belgium, Denmark, Finland, France, Germany, Israel, Italy, the Netherlands, Spain, Switzerland, Sweden and the United Kingdom.

As stated, the extent of international cooperation differs significantly between small and large countries. In our study, we aimed to follow the cooperation balance between different countries. We can distinguish four different groups: a) equal partners countries, (Austria-Belgium-Norway; Austria-Belgium-Spain; Austria-Greece; Austria-Italy; Belgium-Netherlands; Belgium-Sweden; Germany-Netherlands; Germany-Spain; Germany-United Kingdom; Greece-France; Italy-Netherlands; Poland-Lithuania; Switzerland-Spain); b) contributing countries – in most cases these are smaller countries (for example, the percentage of UK partners in Irish projects is 20%, but in UK projects Irish partners only constitute 9.9%; in projects that are coordinated by Belgium, partners from France constitute 12%, and in French projects Belgium partners constitute 6.3% etc.); c) non cooperating countries (Austria-Portugal; Belgium-Denmark; Greece-Norway, etc); d) intra-cooperating countries, where the biggest collaborating partners are institutions from the same country – this is mostly the case in big countries (France, Germany, United Kingdom), but also in Norway and Switzerland.

That was not always the case here. For example: Belgium's biggest partners in FP6 were France, Hungary and the UK but, according to ISI data, the biggest collaborators were from France, Netherlands, the UK and the USA. The Netherlands' biggest partners in FP6 were France, Germany and the UK; by ISI data – Bel-

gium, France, Germany, the UK and the US.

Research collaboration is a long term activity and sometimes it occupies the whole productive period of the researchers. We can follow several cases where collaboration between researchers survives the exchange of institution, country and even continent; this is certainly true with the current case where the coordinators of the projects followed their traditional cooperation trends.

FP6 was an EU centred activity and we need to remember that, ordinary research cooperation would include the traditional partners of Australia, Canada, and the United States etc.

As example, in Table 4 we present a data of collaboration partners of LIFE programme coordinators from Germany, Italy, France, Belgium and Netherlands using FP6 and ISI Web of Science data. Overall collaboration trends overlap, bigger differences can be followed in case of North America (US and Canada) where traditional collaboration partners from these countries are in case of FP6 eliminated.

4 Conclusions

The European ideal of being the most successful knowledge based society in the coming years, requires, not only attracting European resources, but resources from around the world. The most beneficial results will be achieved by understanding the workings of existing collaboration trends and establishing how sustainable the collaboration links created during one project are.

References

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² <http://puck.sourceoecd.org/vl=4590287/ci=19/nw=1/rpsv/sti2007/>

Table 4. The proportion of LIFE programme coordinators collaboration partners (by data of FP6 and ISI Web of Science³ - in %).

| Region/Country Source | BE | | FR | | NL | | DE | | IT | |
|-------------------------------|------|------|------|------|------|------|-----|----------|------|------|
| | FP | ISI | FP | ISI | FP | ISI | FP | ISI | FP | ISI |
| Number of coordinators/Papers | 18 | 1659 | 20 | 2225 | 12 | 402 | 34 | 456 7 | 15 | 2091 |
| EU+ | 97.2 | 87.3 | 97.2 | 85.6 | 97.4 | 84.7 | 97 | 86.8 | 96.1 | 84.8 |
| Asia | 0.6 | 2.2 | 0.6 | 3.3 | 0.2 | 3.8 | 0.2 | 3.1 | 0.9 | 2.8 |
| Africa | 0.2 | 1.0 | 1.2 | 1.3 | 0.8 | 0.4 | 0.8 | 0.4 | 0.9 | 0.7 |
| EECA | 0.4 | 0.3 | 0.4 | 0.3 | 0.6 | 0.7 | 0.8 | 0.5 | 0.7 | 0.2 |
| S-America | 0.8 | 0.6 | 0.0 | 0.8 | 0.4 | 0.0 | 0.9 | 0.3 | 0.4 | 0.7 |
| N-America | 0.6 | 8.6 | 0.5 | 8.7 | 0.6 | 10.4 | 0.2 | 8.8 | 0.8 | 10.8 |
| WBC | 0.2 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.01 | 0.1 | 0.0 |

3 Time period 1995-2008.

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