



Strategic management and promotion issues in international research cooperation



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ARTICLE INFO

Article history:

Received 14 December 2015

Accepted 21 November 2016

Available online 25 November 2016

Keywords:

Transport research
International cooperation
Research cooperation
Global cooperation
Strategic research management
Joint programming
Multilateral cooperation

ABSTRACT

This paper examines the issues involved in establishing multilateral, sustained and balanced international research cooperation activities with particular references to transport research.

First, the paper presents a review of the current practices and does this in terms of a number of “key – strategic issues” grouped under the headings of four basic functions that are later defined as the pillars of a more permanent and institutionalised international research cooperation framework. As part of the presentation of the current situation and practices, the paper also presents – as a case study in successful multilateral international cooperation – the experience from the *European Joint Programming Initiatives (JPIs)* that are taking place among European countries under the support of the European Commission. These initiatives provide a good example of a functioning framework for multilateral international cooperation that could be taken as a blueprint for such cooperation between other countries at global level.

The main conclusions and recommendations of the paper are that a truly multilateral and sustained framework for international research cooperation should consist of a number of well-established and documented functions as well as a number of organisations that would ensure its proper functioning and operation. The basic functions are the following four: Strategic Management/Research performing and capacity building/Programme monitoring and funding/Implementation and market uptake of research results. The suggested organisations include the creation of an independent and “trusted” organisation, which could be called the “*International Research Cooperation Council*” – IRCC. This organisation should be attached to a “trusted” global institution like the UN and will perform a number of functions such as issuance of guidelines, harmonisation of procedures, monitoring and governance functions, (international) research needs assessment and formulation, funding management, etc. It is also suggested, that a number of individual, research-performing organisations, the so called *International Cooperation Promotion and Networking Centres (ICPNC)* should be designated and encouraged to act as “*champion organisations*”, in promoting international cooperative work at global level.

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1. Introduction

Most of the current problems (in the field of transportation and many others) facing our societies have become global in nature and many governments today are seeking ways to face these problems together by jointly sponsoring research and innovation production. International research cooperation is increasingly looked upon as the key to producing global solutions to global problems such as greenhouse gas (GHG) emissions, energy consumption and oil dependency, traffic congestion, health and safety issues, etc. It is also seen as the means to reducing the disparities that exist among the various countries in facing these problems. Other factors

pointing to the need for more international cooperation in research production are: the need for global standards and interoperability (most notably in transport systems), the global economic and social dynamics that result from globalisation, the opening up of markets to free competition and the resulting increased international trade exchanges and so on.

The term “international research cooperation” refers to the establishment of robust, sustainable and well-balanced international partnerships to perform research in a specific subject and promote innovation production through the results of that research. Some, indicative, objectives of “international research cooperation” are, to:

- a) Create “economies of scale” in research production by pulling together the resources available;

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- b) Optimize means and modalities to achieve an alignment of national research strategies; programmes and activities and to improve the interoperability between such national research programmes;
- c) Increase the efficiency, productivity, and effectiveness of the research performed, through blending of different mentalities, experiences and data in analysing common problems of global interest and priority.

So far, the statutory basis for international research cooperation consists mainly of the various bilateral agreements (i.e. country to country) signed between interested governmental administrations. Through such agreements, the main types of international cooperation that has been taking place over the last 30 years or so consists of (EUTRAIN, 2012):

1. Technical visits and information (or in some cases also data) exchanges,
2. Participation in international committees and conferences
3. Participation of one country's research organisations in the research programmes of another.
4. Parallel running research projects and programs whose research activities are being intentionally coordinated (a practice known as "twinning").
5. Research and scientific personnel exchanges in the form of either technical fellowship exchange programs or simple scientist-to-scientist one-way or two-way exchanges.
6. Various forms of international information exchanges through "scanning" tours (i.e. technical fact finding tours), international "synthesis studies",² conferences, or other fact finding missions, technology assistance programmes, etc.
7. Exchange of data and statistics through (usually) commonly maintained databases.
8. Use of the research infrastructures of one country by researchers of another, sharing, or networking of such infrastructures.

As it is to be expected, there is considerable divergence of country attitudes and policies towards international research cooperation. A recent survey (EUTRAIN, 2012) identified two sets of countries and/or regions as regards these attitudes: those that are advanced in research producing capacity and are usually "exporters" of research related expertise and funding, and those that are not so well advanced and are usually the "recipients or importers" of such services and funding. The first group has tended so far to see international cooperation in the light of their own national interests and priorities, promoting it if it was towards the lesser-developed countries of the second group and restricting it when this cooperation was between countries of their own group. This attitude seems to be changing now and there is increasing willingness for international cooperation activities between the leading world transport research funding countries.³

² A typical example of those, being the OECD sponsored country studies (see e.g. Kennett and Steenblik, 2005).

³ A good example of this change of attitudes is the increased research cooperation between the European Union and the US. The countries and the EU are becoming now the primary science and technology partners for the US. The activities pursued, include formal science and technology cooperative agreements between the federal or the state governments of the US with individual European countries or the EU, installation of common programmes and networks that promote research cooperation between the two sides, and gradual installation of more open research-funding and planning frameworks. This new era started with the signing of the EU – US agreement for scientific and technological cooperation (EC, 1998) followed by many implementation agreements – the one of which for the Transport sector signed in 2012. Similar trends are evident between the EU and Japan and China (ISTAG, 2012).

On the other side of the spectrum, the countries with lesser developed research capacity show a generally positive predisposition for international cooperative work but remain the "followers" and recipients of research funding from abroad usually accepting the terms and conditions that are usually "attached" to the "incoming" research funding. The EUTRAIN project survey mentioned earlier defined a number of barriers that this group of countries experience regarding their international research cooperation capability:

- Lack of open, timely and reliable information about the various calls;
- Networking difficulties with international partners;
- Lengthy turnaround times (proposals – evaluation – contract signature);
- Imbalanced levels of research capacity (especially with regard to human capital);
- Low level of "co-funding" available in their countries; and
- Bureaucratic and cumbersome procedures associated with international research cooperative work.

The main "research" question which this paper attempts to answer, is what are the "key" elements of a multilateral (as opposed to bilateral) international research cooperation framework – with focus on the transport field – and what are the necessary conditions that will enhance and promote such cooperation. The current weak or non-existent structures and practices concerning these elements constitute the "research gaps", so to speak which this paper is addressing with practical suggestions and recommendations.

- a The methodology used to address the above issues is a combination of the following:
 - b Utilisation of data and results from relevant studies;
 - c Results and recommendations drawn from the author's own experience on international cooperation practices with which the author has been involved in the last 10 years or so, and
 - d Investigation as a case study of the experience from the application in European practice of the *Joint Programming Initiatives* or JPIs.

2. A summary view of the current situation

2.1. The global outlook

2.1.1. Current policies and top down initiatives

As already stated in the introduction, the main characteristic of current international research cooperation activities is their bilateral nature. In the case of bilateral cooperation between countries of the same or similar development of their economies and research capabilities, these activities are balanced exchanges or well-delineated cooperation work towards achieving a research result of common interest. In the case of bilateral cooperation between countries with differing degrees of economic and research and innovation development, the situation is characterised by the existence of a "donor" side that provides the financing and a "recipient" side, which receives the funding and performs the research most often jointly with the donor side. In such cases, the "donor" side usually sets the rules and conditions that govern the cooperation and supervises the structures for the specific cooperative research.

Multilateral cooperation is more seldom because it usually calls for more complex and cumbersome agreements between the participating parties and because the achievement of a common

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