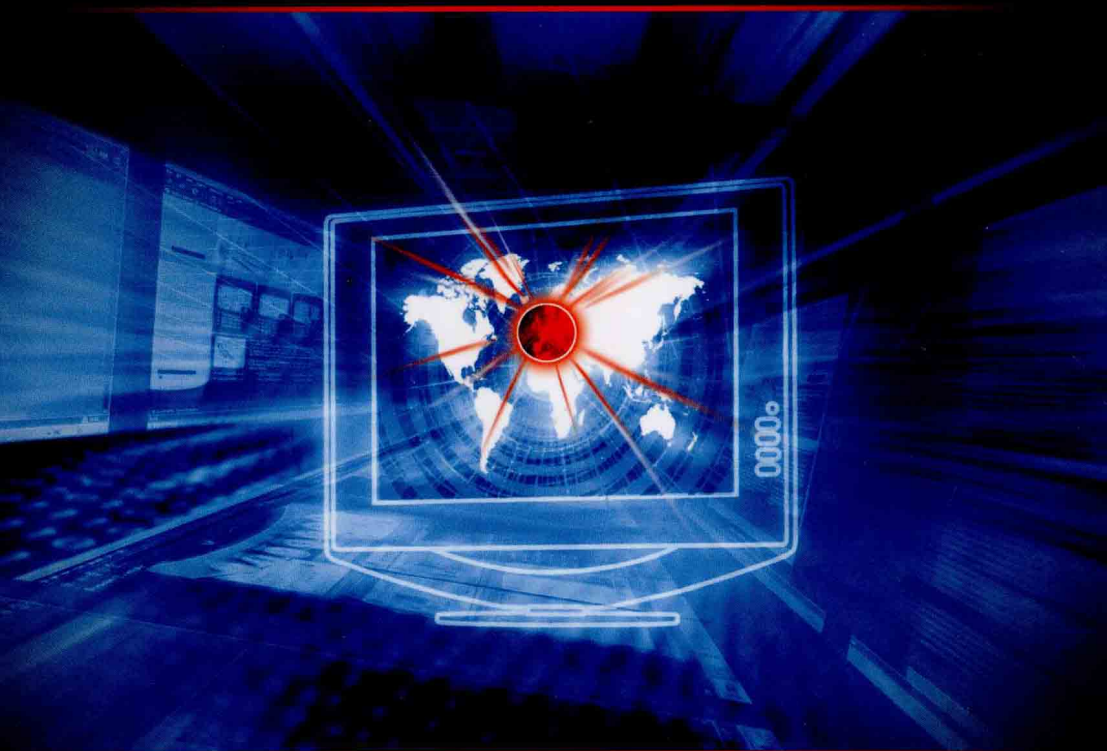


International Science and Technology Cooperation in a Globalized World

THE EXTERNAL DIMENSION OF THE
EUROPEAN RESEARCH AREA



EDITED BY
Heiko Prange-Gstöhl

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Published by
Edward Elgar Publishing Limited
The Lypiatts
15 Lansdown Road
Cheltenham
Glos GL50 2JA
UK

Edward Elgar Publishing, Inc.
William Pratt House
9 Dewey Court
Northampton
Massachusetts 01060
USA

A catalogue record for this book is available from the British Library

Library of Congress Control Number: 2009941287



ISBN 978 1 84980 164 5

Typeset by Cambrian Typesetters, Camberley, Surrey
Printed and bound by MPG Books Group, UK

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Preface

The focus of this book, which comprises contributions from both academics and policymakers, is to deepen the analysis of the external dimension of the European Research Area (ERA). It is unique in doing so by arguing that in a globalized knowledge-economy the European Union (EU)¹ needs a new approach to its international science and technology (S&T) policies by, first, focusing on better coherence of S&T policies across the different tiers of government and, second, by demonstrating leadership in tackling major global challenges.

The need for an enhanced external dimension of the ERA was recognized in the European Commission's Green Paper 'The European Research Area: New perspectives' of April 2007. The Green Paper acknowledged that the ERA has to develop deep relations with the outside world as it cannot act as a 'self-sufficient entity' for reasons of, *inter alia*, growing internationalization of science, research, development and technology, new global S&T players, and an increased need to tackle global challenges.

The Green Paper addressed two key questions when it comes to international S&T cooperation: 'how best to coordinate the international S&T policies of the Member States and the Commission' and 'how best to address global challenges through international S&T cooperation'. First answers to both of these questions were given in the European Commission's Communication on 'A Strategic European Framework for International Science and Technology Cooperation' in September 2008 and in the Conclusions of the Competitiveness Council of December 2008 on a 'European Partnership for International Scientific and Technological Cooperation'.

The chapters in this book will provide theoretical insights and practical options on how to equip the ERA with policies and instruments to successfully 'go global', and on how to implement policy measures for international science and technology cooperation effectively and efficiently. The authors base their analysis on sound empirics and take particularly the multi-level character of S&T policies in Europe into account.

This project is part of a series of initiatives organized by the International Cooperation Directorate of the European Commission's Directorate General for Research (DG Research) to support a more coherent international S&T cooperation strategy at European level. Some of the ideas presented in this

book have been debated and developed at the workshop ‘Strengthening the coordination of Community and Member States’ policies and programmes for international S&T cooperation: impediments and opportunities’ organized in September 2007 by the International Cooperation Directorate of DG Research. Later on, drafts of most of the chapters were presented and discussed at the Second Global International Studies Conference ‘What keeps us apart, what keeps us together? International order, justice, values’ in Ljubljana in July 2008. Participation at this conference was financially supported by DG Research. I wish to thank in particular Ms Mary Minch and Ms Sigi Gruber of DG Research for their continuous support in realizing this project and the contributors for their enduring commitment throughout the process of producing this book. The final responsibility of the content rests of course with the authors and does not reflect the official position of the European Commission.

Heiko Prange-Gstöhl
Brussels, April 2010

NOTE

1. As the manuscript for the book was finalized before the entry into force of the Lisbon Treaty, some chapters still differentiate between ‘European Community’ and ‘European Union’.

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1. The European Research Area ‘goes global’: an introduction

Heiko Prange-Gsthöhl¹

This introductory chapter will provide the framework for the two parts of the book that will deal with ‘global challenges and the external dimension of the ERA’ and ‘policy coordination in the external dimension of the ERA’. This chapter will first give an overview of the different phases of the development of the European Research Area (ERA) more generally. It will then present the evolution of the international dimension in the Community’s science and technology (S&T) policies and will explore the reasons why the external ERA dimension should be fostered. The chapter will conclude with some conceptual considerations on two of the core pillars of the external dimension of the ERA: research policy coordination and tackling global challenges effectively. These two issues are closely interrelated: on the one hand policy coordination has the potential to enable actors to address major problems more effectively (under certain circumstances that will be discussed in this book), on the other hand the ever more pressing need to address global challenges more effectively (and efficiently) has the potential to ‘motivate’ actors to closer coordinate their individual (that is regional, national, European, international) policies.

THE EUROPEAN RESEARCH AREA: A NASCENT INTEGRATION CONCEPT

An Emerging European Research Policy

Research policy in Europe is considered as a typical multi-level policy area (Borrás 2003; Grande 2000). Consequently, different territorial levels own autonomous decision-making capacities in research policies (Grande 2001). While early attempts of European states to cooperate in research policies started with the EURATOM Treaty of 1957, a true Europeanization of research policy was realized only with the Single European Act (SEA) of 1987, when competences for a common research policy were partly transferred to the European Community (Lawton 1999; Peterson and Sharp 1998).

A multi-annual Framework Programme (FP), which is so far the main instrument of a common European research policy, was implemented for the first time in 1983 with a budget of 3.75 billion Euro and focusing on eight strategic technology fields such as information and communication technologies, materials, energy and environmental technologies. Basically, the first FP only integrated those technology programmes of the Community that already existed at that time. While the second (1987–1991; 5.4 billion Euro) and third (1990–1994; 6.6 billion Euro) FP remained modest in terms of budget, with FP4 (1994–1998) research expenditures at the European level were doubled to 12.3 billion Euro. The main driver for this development was the Maastricht Treaty which further ‘communitarized’ research policy. The Treaty allowed pursuing research activities at the EU level that were necessary to achieve other than research-related goals of the Treaty. The following two FPs saw a further concentration of major programmes but only a moderate increases of budgets, with the fifth FP (1998–2002) providing an amount of 13.8 billion Euro and the sixth FP (2002–2006) of 16.2 billion Euro (both without EURATOM).

Only the seventh FP brought about major changes. First, a significant budget increase was realized, providing an amount of 50 billion Euro for a seven-year period (2007–2013) for research policies, which means an increase of 40 per cent per year compared to FP6. Second, new instruments with the aim to better coordinate research policies and programmes in Europe have been introduced. The ERA-NETs, established under FP6 to coordinate national and regional programmes of member states, were complemented by so-called ERA-NETs-PLUS which provide Community funds as an incentive to build up ‘common pots’ amongst national and regional programme managers to finance joint calls for proposals. The final objective is to identify so-called Article 169 initiatives which integrate national programmes into new joint programmes with an additional financial contribution from the Community.² In general, these integrated programmes are large-scale projects where member states cooperate due to a common interest on the basis of variable geometry.³

A second instrument that is used more frequently under FP7 is the Joint Technology Initiatives (JTIs) based on Article 171 of the EC Treaty. In 2008 the EU launched five JTIs. JTIs constitute public–private partnerships between the Community, member states and private actors under Community Law. Each JTI comprises a large part of research activities in a specific area, such as innovative medicines, embedded computer systems, aeronautics and air transport and nanoelectronics.⁴ Expectations towards JTIs are high: the Commission and member states expect the development of closer links between public and private research efforts, an improvement of the coordination of national research programmes as well as an enforcement of Europe’s industrial technology intensity.

The Advent of the European Research Area

Research policy as described above rather reflects an 'instrument-driven' or 'programme-driven' approach. This started to change with the advent of the European Research Area in the year 2000 when the ERA became the main political concept of European research policies. While the initial ideas of a European research space were already developed during the 1970s (André 2006), the ERA as a concept gained more political weight and has been further developed only since former Research Commissioner Busquin pushed it from the year 2000 onwards (see Edler et al. 2003; European Commission 2000). The Lisbon European Council followed up on the idea of an ERA and made it a key component of the Lisbon Strategy.⁵ Today the ultimate aim of the ERA is the creation of an 'internal market for research' with the free circulation of researchers, knowledge and technologies.⁶

Initially, the ERA went well beyond scientific and economic objectives by additionally focusing on enhanced interaction between science and society as well as on the establishment of common scientific values. In order to implement the new concept the European Commission proposed different instruments which were expected to design a common European model for research. This model was meant to correct the different 'fragmentations'⁷ of the European research landscape (for example national/European, public/private, universities/enterprises) while at the same time respecting national idiosyncrasies.

Since the European Commission did not provide a definition of the ERA, the concept had to be narrowed down through the activities the Commission proposed in the ERA context. The 2000 Communication entitled 'Towards a European Research Area' brought the following seven fields of action forward (European Commission 2000):

- *A stock of material resources and facilities optimized at the European level (including the creation of 'virtual centres of excellence' and a 'European approach to research infrastructures');*
- *More coherent use of public instruments and resources (including better coordination of national and European programmes and closer relations between European research organizations);*
- *More dynamic private investment (including better use of indirect instruments such as fiscal measures and the development of tools to protect intellectual property);*
- *A common system of scientific and technical reference for policy implementation;*
- *More abundant and more mobile human resources (including the introduction of a European dimension into scientific careers);*

- A dynamic European landscape, open and attractive to researchers and investment (including a reinforced role for regions and making Europe attractive for researchers around the world);
- An area of shared values.

In order to achieve these objectives the Communication suggested a set of instruments ranging from informative, legally non-binding ones, to financial, legal and political ones. In fact, the Lisbon European Council supported the ERA concept as a means of economic reform and encouraged the Commission to pursue the ERA's objectives strongly. However, the Heads of States and Governments did not agree to use the entire set of instruments proposed by the Commission, but rather stressed that research policies in Europe need to remain flexible and decentralized. Generally, member states' governments accepted the ERA as an integration concept, however not conceived as a transfer of sovereignty based on national interest or functional imperative, but as a limited coordination venture at the EU level (Banchoff 2003). Consequently, member states preferred legally non-binding governance instruments, particularly the Open Method of Coordination (OMC), to implement the ERA objectives.

With preferring non-binding governance instruments, one could argue that member states did not want to go beyond the provisions of the EC Treaty since the political target of coordinating national and Community research policies is already codified therein. Article 165 of the Nice Treaty stipulates that 'the Community and the member states shall coordinate their research and technological development activities so as to ensure that national policies and Community policy are mutually consistent'. To implement this political target, in 1965 the member states had already established a committee to recommend areas of joint action and ways to compare and to coordinate national research policies. This need for coordination was recalled at the 1972 Summit, followed by the creation of the Commission's Directorate-General for Research in 1973 and the Committee on Science and Technical Research (CREST) in 1974. CREST's objective was to assist the Commission and the Council in defining 'objectives and ensure the development of a common policy in the field of science and technology involving the coordination of national policies and the joint implementation of projects of interest to the Community'. In 1995 CREST's tasks were redefined to identify strategic priorities for Community policy and promote coordination by the Community and the member states of their research activities.

The Commission's proposal for the Sixth FP again affirmed the necessity to apply both the OMC and legislative measures in order to realize the ERA. National and European policies were meant to complement each other and to offer the highest degree of coherence. Nevertheless, negotiations on the new

FP revealed that the member states were not prepared to follow the Commission's ambitions. While Brussels understood the FP as only one instrument amongst others to create the ERA, member states felt no imperative to take measures that go beyond the application of the FP and the OMC in order to build a coherent ERA (Elera 2006, p. 564). Shortly after adopting the Sixth FP the Council once more stressed the independence of national research policies proposing again the OMC to implement ERA policies while at the same time rejecting the possible use of legislative measures in European research policies.⁸ As a consequence the ERA, in fact, lost political weight. However, the FP offered certain instruments which helped to coordinate national and regional research programmes closer, such as ERA-NETs. Additionally, the mobility of researchers was simplified and the creation of the European Research Council (ERC) was seen as a milestone to boost the quality of European fundamental research.

The further development of the ERA since the year 2005 was shaped by two major changes in European research and innovation policies: first, through embedding the ERA into the relaunched Lisbon Strategy, and second through the Commission trying to re-enforce its role as 'research policymaker' rather than being a sole executor of the Framework Programme. I will explore these two aspects further in the following sections.

Linking the ERA Better to the Lisbon Strategy

In 2004 the Kok-Report (named after former Dutch Prime Minister Wim Kok who chaired a High-Level Group to review the Lisbon Strategy) required urgent action to increase Europe's attractiveness for researchers and scientists and to make research and development (R&D) a top priority (Kok-Report 2004, p. 6). Based on this and other recommendations the Commission proposed a relaunch of the Lisbon Strategy 'by way of a European Partnership for jobs and growth' (European Commission 2005a, p. 14). EU Heads of States and Governments agreed to this proposal at the 2005 Spring European Council.⁹

Since 2005 the implementation of the Lisbon Strategy 'is based on a close partnership between the Commission and member states, with a clear division of responsibilities and a strong emphasis on maximizing the synergies between the Community and the national levels and between different economic policy areas'.¹⁰ The Commission proposes Integrated Guidelines for reform which are then approved by the Council and form the basis for member states' National Reform Programmes. By putting forward a Community Lisbon Programme (CLP) the Commission tries to ensure that policymaking and funding activities at the European level best serve the growth and jobs goals. Integrated Guidelines, the CLP and the National Reform Programmes

are drawn up for a three-year cycle. The Commission monitors the National Reform Programmes on an annual basis and proposes changes, if necessary. The relaunched strategy focuses on three main pillars:

- ‘Making Europe a more attractive place to invest and work’ by extending and deepening the Single Market, ensuring open and competitive markets inside and outside Europe, improving European and national regulation, and expanding and improving European infrastructure;
- ‘Fostering knowledge and innovation for growth’ by increasing and improving investment in research and development, facilitating innovation, the uptake of ICT and the sustainable use of resources, and contributing to a strong European industrial base;
- ‘Creating more and better jobs’ by attracting more people into employment and modernizing social protection systems, increasing the adaptability of workers and enterprises and the flexibility of labour markets, and investing more in human capital through better education and skills.

This Communication was followed by several initiatives trying to make the Lisbon Project more tangible (see European Commission 2005b, 2006a, 2006b). In all these documents the proposals range from improving the legislation and framework conditions to foster new technologies, promoting a free employment market for researchers, improving the access to research funds for SMEs and intensifying industry–university links, to proposing a European patent strategy and linking the European cohesion policy better to research and innovation.

While the ERA has not been mentioned in the key document relaunching the Lisbon Strategy, the Lisbon Integrated Guidelines 2005–2008 speak of establishing a European Knowledge Area (European Commission 2005d), however, not addressing the ERA specifically. Only the Integrated Guidelines for 2008–2010 are more precise, calling for ‘more rapid progress towards establishing the European Research Area, including meeting the collective EU target of raising research investment to 3 per cent of GDP is needed’ (European Commission 2007b, p. 14).

Additionally, the ERA concept now features prominently in the Community Lisbon Programme. While the ERA is missing in the 2005–2008 CLP, the 2008–2010 CLP devotes a specific objective to the ERA. ‘Objective 6’ states that ‘the Community will make the “fifth freedom”, the free movement of knowledge, a reality and create a genuine European Research Area’ (European Commission 2007b, p. 9). For the first time in an official EU document, the objective also brings forward the need to realize a ‘fifth freedom’, the freedom of knowledge, and consequently presents the ERA as a nascent integration concept closely linked to the concept of an ‘Internal Market’.