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## Technology Policy and the Regions

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**RESEARCH AND DOCUMENTATION PAPERS**

**TECHNOLOGY POLICY AND THE REGIONS**

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**Editor: Anthony COMFORT  
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## Introduction

This note is intended to inform Members of the Committee on Regional Policy and Regional Planning of the current situation in regard to the European Community's efforts to promote research and development activities in the less-favoured regions and especially those eligible under Objective 1 of the structural funds.

Great concern has been expressed at the large gap in performance between the Community's more and less-developed regions in regard to R & D. This gap far exceeds that of living standards and GDP per capita, which is already very large. Given the expected importance of technology for economic growth it has been found essential to take action to improve the performance of the less-favoured regions in the interests of the Community's future cohesion.

The Committee considered this issue in the context of the adoption of the STRIDE Community initiative (Science and Technology for regional innovation and development) on which it drew up a report in June 1990 (Doc. A3-143/90, rapporteur: Mr. Raffarin). The relevant resolution was adopted by Parliament on 15 June 1990<sup>1</sup> and the Commission's Notice to Member States laying down guidelines for operational programmes in the framework of the STRIDE Community Initiative was published in August 1990<sup>2</sup>.

The STRIDE initiative was preceded by various studies compiled for the Commission. In particular, a summary of a report entitled "Research and Technological Development in the Less-Favoured Regions of the Community (STRIDE)" and written by a group of external experts was published by the Commission in 1987<sup>3</sup>, a report to DG XVI of the Commission entitled "Science and Technology for Regional Development" by the Irish National Board for Science and Technology was published in 1988<sup>4</sup> and a background report on the impact of the Framework Programme [for research] on economic and social cohesion in the EC was prepared by "Tecnomics International Ltd, Dublin" in March 1990 for DG XII of the Commission (unpublished).

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<sup>1</sup> OJ C175 du 16.7.90

<sup>2</sup> OJ C196 of 4.8.90

<sup>3</sup> "Document" series, OPOCE, Luxembourg, 1987, ISBN 92-825-7852-6.

<sup>4</sup> "Document" series, OPOCE, Luxembourg, 1988, ISBN 92-825-7858-5.

## STRIDE

This initiative grew out of the recognition that research, innovation and technological development (RTD) were crucial factors in the process of regional development and that highly-developed regions had an overwhelming preponderance of these activities, while Objective 1 regions - with the exception of Ireland - were almost wholly lacking in qualified people and facilities for RTD.

Eligible measures to promote RTD which would attract Community financial support were listed as follows:

### Category A: Strengthening research facilities in Objective 1 regions

- evaluation of the needs of specific regions and of the potential of existing bodies

- equipment of research facilities and laboratories

- financing of operating costs for specific research projects, especially expenditure incurred in attracting staff to an Objective 1 region.

### Category B: Participation in international research networks

- dissemination of information about Community research programmes and networks

- preparation for taking part in international research, including equipment for access to networks

- demonstration of technological applications of significance to a regional economy

- twinning arrangements with institutes outside an Objective 1 region.

### Category C: Linkage between research centres and industry



- innovation in firms and reinforcement of their RTD activities
- links between firms and with research centres:
  - \* setting up and operation of consortia
  - \* in Objective 1 regions, aid schemes for firms to finance purchase of equipment, research projects in SMEs and evaluation of plans
  - \* technology transfer and innovation services for regional development to be run in partnership with the productive sector
  - \* inter-regional cooperation networks
  - \* vocational training for technicians, engineers, researchers, experts and managers
  - \* detachments for training purposes of staff between firms and research centres located in different regions.

STRIDE programmes are to be financed jointly by the Member State concerned and the Community, whose rate of participation varies in accordance with the provisions in the structural fund regulations. The total contribution from the ERDF and the Social Fund for the period 1990 to 1993 was estimated at 400 million ECU. The initiative may be extended.

The European Parliament's resolution of 15 June 1990 welcomed the initiative (while deploring the absence of a legal basis), but sought - unsuccessfully - the inclusion of Objective 5b regions. It also requested an evaluation after three years by the Commission, which has been agreed. Other points accepted by the Commission were the need to coordinate STRIDE with other Community actions in related fields, more emphasis on the needs of specific regions and of SMEs and a special approval procedure to counter the risk of "science tourism".

#### Implementation

All Member States with Objective 1 or 2 regions have responded to the invitation to submit operational programmes. It is known, however, that the whole concept of Community Initiatives has been strongly criticised by some Member States, who apparently feel that the measures concerned involve a lot of extra work for rather small sums of money and that the operational programmes could in any case have been financed through the Community Support Frameworks. This criticism would appear to be seeking to deny to the

Commission any role in bringing about new, innovative approaches to regional development, even where such innovation would not have been implemented without such initiatives.

The criticism may be less valid in the case of STRIDE because this pioneering role seems to have been widely accepted. Many Member States have asked for additional contributions from the Community, beyond the resources set aside initially, and the existing requests for specific initiatives far exceed the 400 MECU available. France, for example, has issued various calls for tenders for STRIDE projects in Objective 2 regions, based on the Notice published in the Official Journal, but adapted to French local conditions.

A "scientific" evaluation by outside experts has been set in hand by the Commission for the operational programmes of Member States which exceed 40 million ECU in value. Other programmes are being evaluated internally. International seminars have been held recently to examine the programmes in Valencia and Thessalonica.

In regard to Objective 1 regions, the Portuguese programme is largely concerned with the establishment of an "innovation agency" to promote technology transfer, whose efforts are directed towards improving innovation in private firms, as well as the establishment of two "technology parks", while the Greek programme has privileged existing skills and fields of interest by seeking proposals from organisations already engaged in R&D, but through a programme supervised by the Ministry of Industry.

In the Italian Mezzogiorno a detailed programme of specific projects has been approved which involves major multinational firms such as Olivetti, as well as large research institutes. (For Objective 2 regions of Italy, the operational programme is still under discussion.) The Spanish programme, on the other hand, is more diversified with a majority of the projects proposed by regional governments for a wide range of measures.

Ireland's operational programme concerns RTD in the marine, environmental, forestry and food sectors. It is primarily concerned with the exploitation of Ireland's natural resources. For Northern Ireland, on the other hand, the programme is designed to complement the existing Northern Irish Technology

Strategy and includes measures to promote current priorities there for technology and industry.

Most operational programmes for Objective 2 regions seek to address the problems of modernising and diversifying the existing industrial structure.

It is, of course, too early to tell how successful these various approaches have been. However, it is noteworthy that even Member States with severe budgetary problems, such as Greece and Portugal, have found the necessary counterpart funds from national sources for the operational programmes and have expressed the desire for an extension of the financial resources available from the Community budget.

#### Support for RTD through the Community Support Frameworks (CSFs)

Given the importance of RTD for regional development and, in particular, the need to encourage innovation and the introduction of modern technology in less-favoured regions, it is unsurprising that the CSFs approved by the Commission for individual regions and Member States also include large amounts of financial support in these fields. It is estimated by the Commission that 1300 MECU will be spent over the period 1989 to 1993 in Objective 1 regions and at least 300 MECU in Objective 2 regions on RTD actions. A further 500 MECU is expected to be spent in association with Objective 3, 4 and 5b programmes. Altogether the Commission expects that about 4% of the total resources of the structural funds or more than 2500 MECU will be spent in the period 1989 to 1993 to promote technological development and innovation in the regions.

These figures include support for the "CIENCIA" national RTD programme in Portugal (162 MECU), the Science and Technology Plan for Greece (67 MECU), the Scientific Infrastructure Programme for Spain (80 MECU), the Research and Development sub-programme of the Northern Ireland industrial development operational programme (16 MECU) and the Science and Technology sub-programme in the Irish industrial development programme (145 MECU). In Italy, the "RICERCA" programme for RTD in Objective 1 regions is also receiving about 150 MECU from the structural funds.

### Support for RTD through other Community Initiatives

In addition to the Community's funding of these national programmes through the CSFs and to the assistance to RTD in the less-favoured regions of Objectives 1 and 2 through the STRIDE programme, mentioned above, the Community is supporting RTD through other, more specific initiatives. Like STRIDE these measures are financed through the 15% of the structural funds set aside for measures at the initiative of the Commission - not individual Member States - which normally cover areas of concern to several Member States. Such initiatives, insofar as the ERDF is concerned, are supposed to help resolve serious problems associated with the implementation of other Community policies, to promote the application of these Community policies at the regional level or to help resolve problems common to certain categories of region<sup>5</sup>.

Thus, TELEMATIQUE promotes the provision of advanced telecommunications systems and services (following up the earlier STAR programme) and provides 200 MECU over the period 1991 to 1993, while PRISMA (preparing firms for the internal market), ENVIREG (environmental problems) and VALOREN (development of renewable energy resources) also provide support for improved technology in the less-favoured regions.

The Integrated Mediterranean Programmes are another source of assistance for technology in the case of Greece. The "Information Technology" programme in this context provides for Community support amounting to nearly 90 MECU for the period 1986 to 1993.

### Regional Participation in the EC Research Framework Programme

Tables are annexed showing the situation for the Framework Programme for Research in July 1991 in regard to:

- A - total Community contributions to research and development by Member State (thousand ECU)

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<sup>5</sup> Council Regulation No 4254/88 on the European Regional Development Fund, OJ L 374 of 31.12.88, Article 3.2.

B - total Community contribution to R & D in Objective 1 regions (insofar as these can be separately identified)

C - number of companies involved in Community-supported R & D projects and the number of contracts in which they take part (by Member State).

These figures may be interpreted as a rough indication of the strength of R & D capacity in the countries and regions concerned. However caution should be exercised: other sources indicate, for example, a rather low level of R & D activity in Northern Ireland compared to that in the Republic of Ireland, while the figures obtained from DG XIII of the Commission, on which these tables are based, indicate that companies and institutes in the North of Ireland have been more successful in obtaining research contracts, in acting as co-ordinators and in the financial value of the contracts obtained than their counterparts in the South. No correlation of the figures with regional population or levels of GDP has been attempted here; the figures by region apply to NUTS level 1 and are in any case incomplete in the sense that some contracts are concluded with contractors outside the Community or with contractors whose regional identification is uncertain.

#### National differences in regard to technology and regional development

The level of public support for R&D is of course a different matter from the real strength of this sector of a national economy and its participation in the Community's framework programme. However, the results of the framework programme and the national reactions to the Community's support for RTD through the structural funds do indicate very different national attitudes and behaviour. Amongst Member States with Objective 1 regions, Greece, Spain and France are spending between 1% and 1.5% of their total allocations from the structural funds on RTD. Ireland, Portugal, Northern Ireland and the Italian Mezzogiorno are spending between 4.5% and 6% - a clear strategic choice in favour of RTD in their regional development plans.

Portugal's commitment to this approach is outstanding. The "CIENCIA" programme will spend 227 MECU to help create a limited number of research laboratories, associated with universities, in seven priority domains. In addition, 77 MECU will be dedicated to training researchers and technical staff (1900 new

researchers by the end of 1993). The "PEDIP" programme for the development of Portuguese industry will spend 232 MECU to support technology transfer as well as demonstration, industrial research centres and 'incubators'. The training of researchers in firms will also receive 18 MECU. These programmes will combine with STRIDE in financing two technology parks in Lisbon and Oporto and in the creation of an Innovation Agency (see above).

Another interesting example is the Heraklion Technology Park, which should be a show-case for co-operation between the Community's structural funds and its research framework programme. It will receive a large share of the 18 MECU set aside for Technology Parks in Greece in the Science and Technology Plan and some of its research institutes are also active participants in several Community-funded R&D programmes. In this case, at any rate, the pursuit of "excellence" in the framework programme has been shown to be compatible with the regional development objectives of the structural funds.

#### Further Action

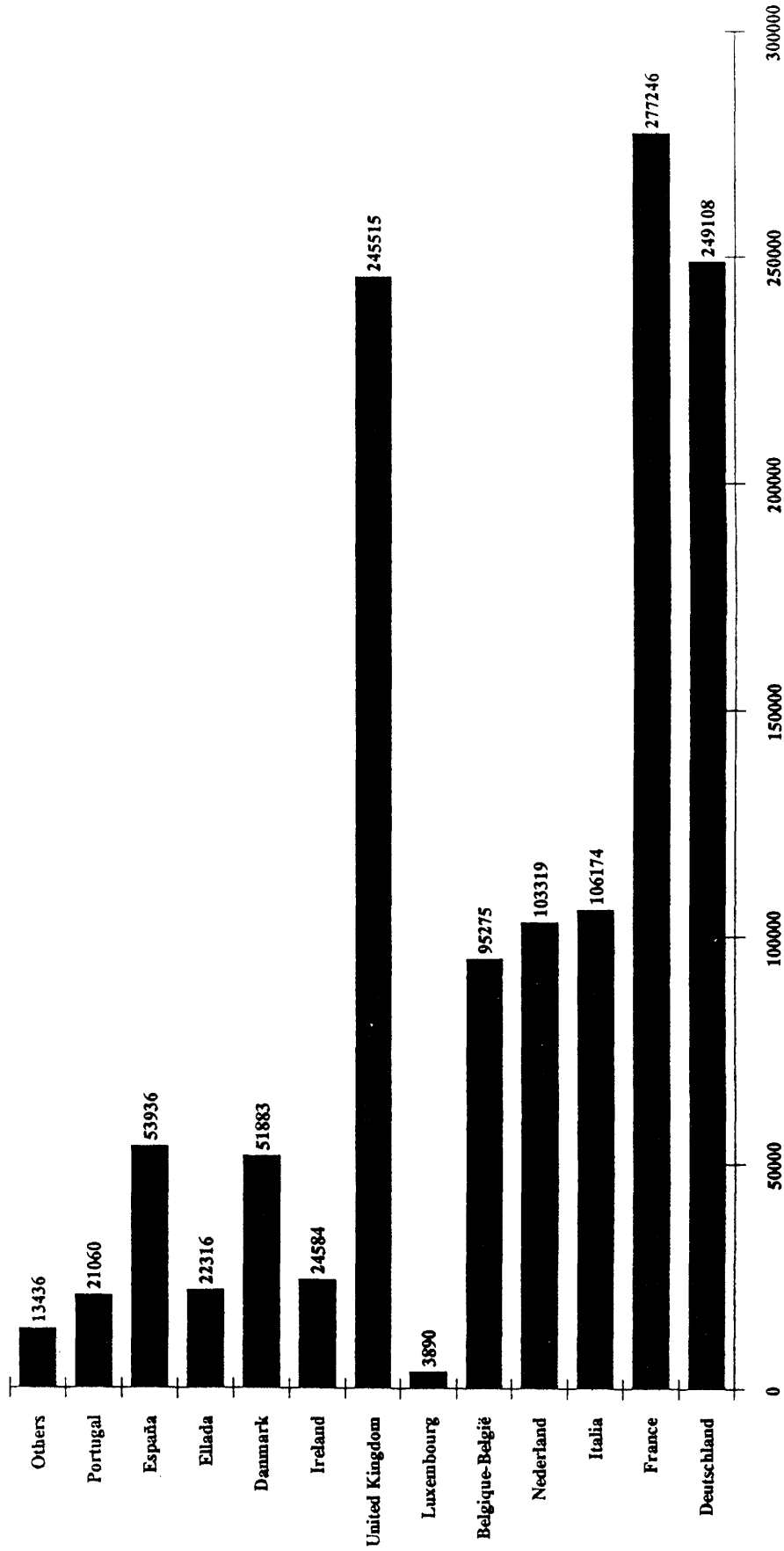
A report from the Commission on the implementation of STRIDE is not due for another two years. It seems likely that an extension may be sought beyond 1993 if the general review of the Structural Funds will permit this and that an increase in the amount available may be sought before then. At present the Committee on Regional Policy and Regional Planning is not called on to draw up a report in this field, but the issue will need to be borne in mind when examining proposals for the reform of the structural funds and in the debate on cohesion.

It is however evident that performance in regard to R & D cannot be divorced from other factors, such as the degree of a region's industrialisation, quality of education, rates of productive investment and general cultural attitudes. Some of these are amenable to improvements through public policy, but others are not. The good performance of Ireland - when compared, for example to Greece - may indicate that language and culture are at least as important in promoting technological development as fiscal capacity. Efforts to improve basic education and to promote investment in industry and services, thereby creating new enterprises and jobs, may therefore be an essential prerequisite for the successful development of R & D capacity in the least-developed regions.

**A N N E X**

Table A

Total CEC contribution to R&D (KECUs)

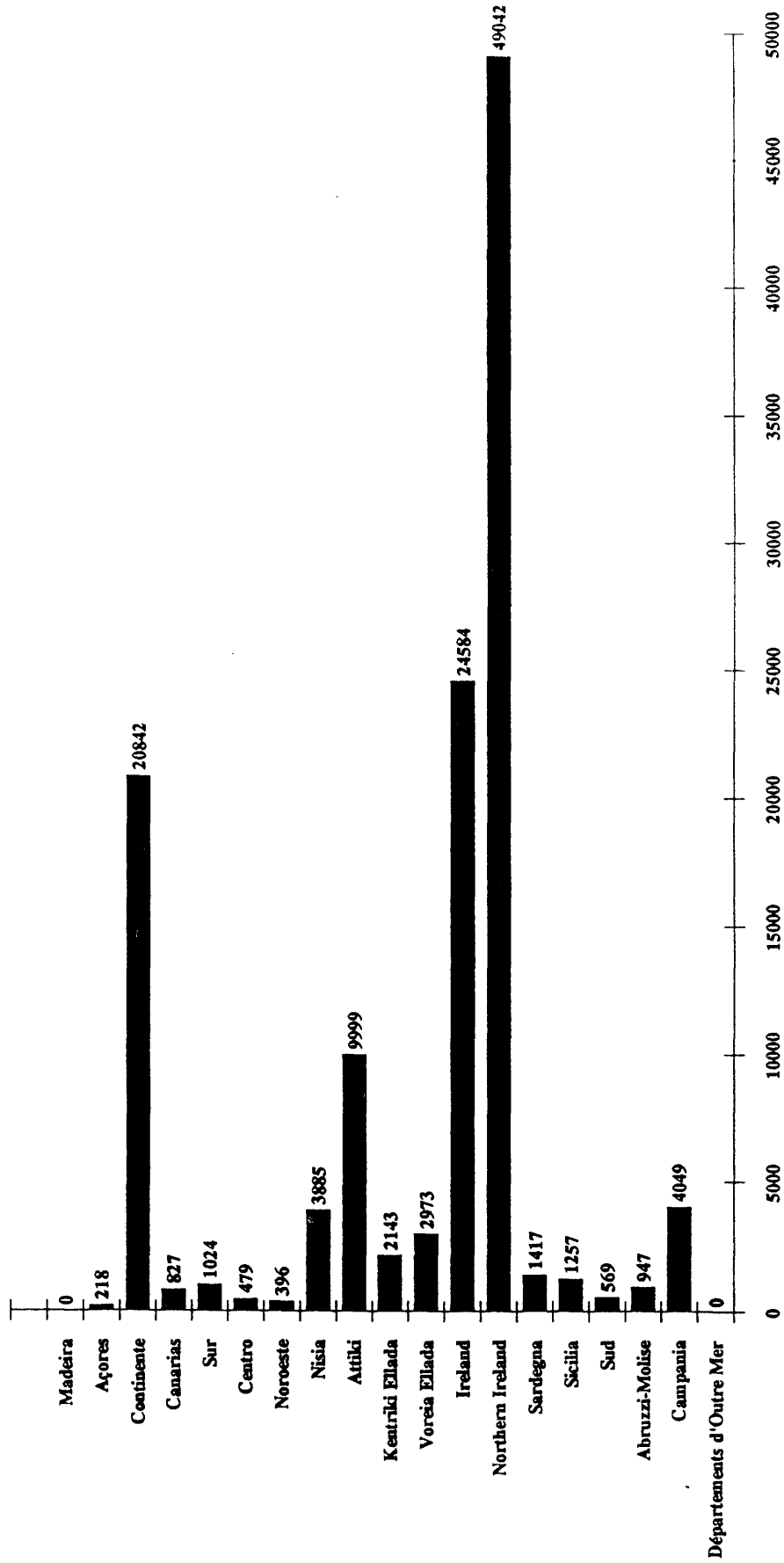


"Source: Commission of the European Communities, DG XIII, July 1991"



Table B

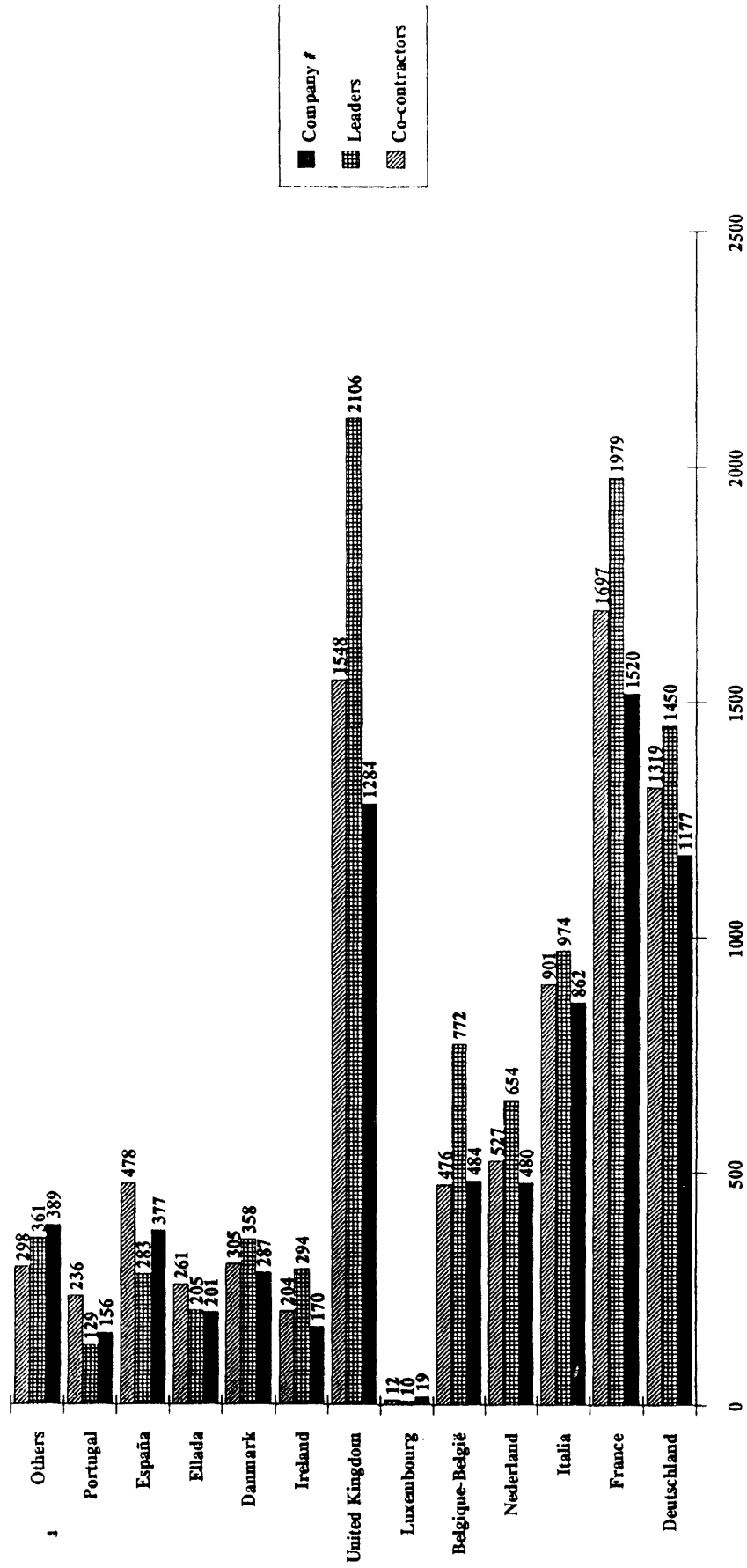
**Total CEC contribution (kECUs) to R&D in the 'Objective1' regions**



"Source: Commission of the European Communities, DG XIII, July 1991"

Table C

**Number of companies involved in Community R&D and number of contracts in which they take part**



"Source: Commission of the European Communities, DG XIII, July 1991"