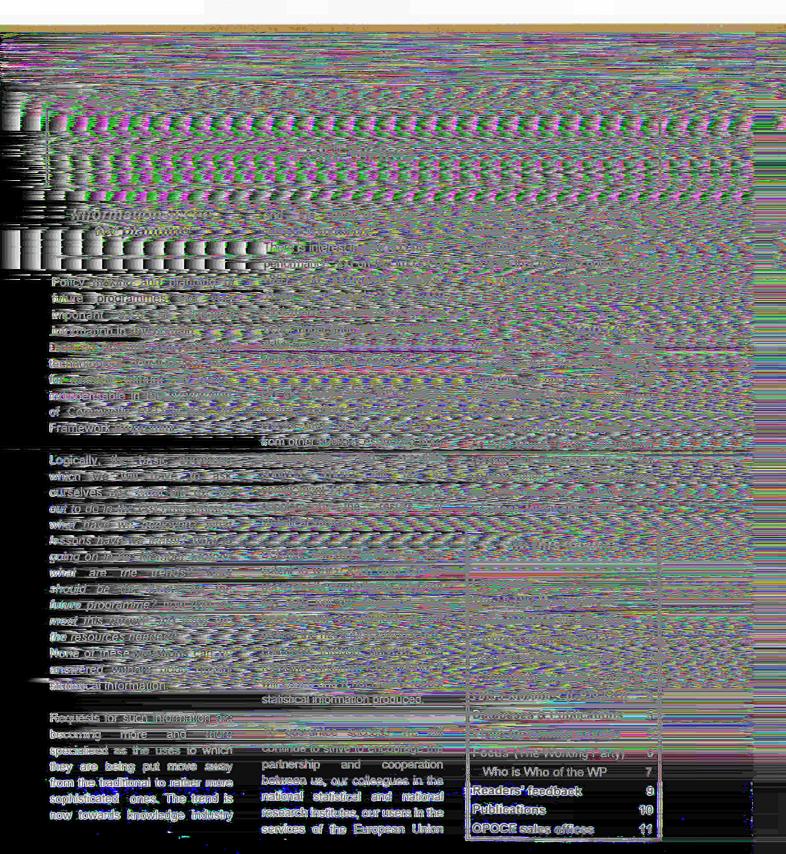


Theme 9
Research and development
Series B
Short-term statistics

## **Redis News**

1 

1997 Bi-annual





OFICINA ESTADÍSTICA DE LAS COMUNIDADES EUROPEAS DE EUROPÆISKE FÆLLESSKABERS STATISTISKE KONTOR STATISTISCHES AMT DER EUROPÄISCHEN GEMEINSCHAFTEN ΣΤΑΤΙΣΤΙΚΉ ΥΠΗΡΕΣΙΑ ΤΩΝ ΕΥΡΩΠΑΪΚΩΝ ΚΟΙΝΟΤΉΤΩΝ STATISTICAL OFFICE OF THE EUROPEAN COMMUNITIES OFFICE STATISTIQUE DES COMMUNAUTÉS EUROPÉENNES ISTITUTO STATISTICO DELLE COMUNITÀ EUROPEE BUREAU VOOR DE STATISTIEK DER EUROPESE GEMEENSCHAPPEN SERVIÇO DE ESTATÍSTICA DAS COMUNIDADES EUROPEIAS

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#### The REDIS Management

The REDIS (Research Development and Innovation Statistics) Project is one of the projects of the Directorate A. It is managed by Unit A4 (Research, Development, Methods and Data Analysis) headed by Mr. Daniel Defays under the director Mr. Photis Nanopoulos. Mr. Maurits Pino is responsible for the overall coordination and day-to-day running of the project. Activities on Innovation Statistics are coordinated by Mr. Mikael Åkerblom.

There has been no change to the REDIS team itself since the last issue of this newsletter. Nevertheless, the recent reorganisation of Eurostat has put the old Unit D3 in the new Directorate A (for Statistical Information Systems: Research and Data Analysis: Technical Cooperation with the PHARE and TACIS countries).

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It is an important part of our mission to continue serving you to the best of our ability. This newsletter is a mere summary of some of our activities. If you would like some more information, or if you have questions or comments on any of the issues mentioned in it, please do not hesitate to contact us. To ensure that you receive future issues of REDIS News, please notify us of any changes to your address as soon as possible.

Your attention is drawn particularly to the reader's feed-back form on page 9. We will appreciate your completing the form and mailing it back to us as soon as possible.

**REDIS News** is prepared by Unit A4 of Eurostat as a service to users of statistical information on R&D and Innovation.

Please note that the opinions expressed are those of the authors alone. Neither the European Commission nor any person acting on its behalf is responsible for the use which might be made of the information contained in this newsletter.

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## **R&D STATISTICS IN EUROSTAT**

#### Achievements and Results in the Second Half of 1996

## Human Resources in Science and Technology (HRST)

The pilot HRST stock data collection survey, launched in late 1995/early 1996, has raised a number of issues relating to comparability of data, and how it can be used for purposes of measuring HRST and providing basic stock indicators. Some of these problems are well documented - for example, problems with comparability of education systems. Other problems faced were less obvious - the actual ability of countries to use the international classification systems in order to cross-classify education with occupation were unknown to a large extent, as this HRST exercise had not been attempted to the same extent previously.

As far as European countries are concerned (the OECD secretariat deals with their non-European member countries), eleven countries have responded to some extent, with several other countries still considering the issue. Problems such as the costs of supplying the data, both in terms of money and labour, as well as coordinating the exercise with other departments have been encountered. (In many cases, the R&D department will not have direct access to education and occupation data.)

The countries which have responded are Belgium, Denmark, Germany, Spain, France, Luxembourg, Netherlands, Finland, United Kingdom, Norway and Switzerland.

Being a pilot survey, the intention was to examine the feasibility of data collection, and to solve problems at an early stage of the HRST exercise. Availability of (comparable) data, is one limitation which is currently under examination. The provision of detailed descriptions of HRST stocks throughout OECD countries, as envisaged in the Canberra Manual, will require further work. However, the basic stock indicators, in other words the numbers of HRST (those who qualify by

education, by occupation, the core of the HRST stock and so on) as a percentage of some population figure, as originally foreseen, are largely possible.

A paper describing indicators measuring certain key flows of HRST - inflows via education and migratory flows of HRST - was presented to the National Experts on Science and Technology Indicators (NESTI) group of the OECD in Paris. It was well received and comments made will be incorporated into a revised version. The results of the pilot data collection were presented to the Working Party on Research and Development and Innovation in Luxembourg at the end of November. Proposals were also put forward including the use of stock data together with flows data in order to obtain a more complete picture of HRST.

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### Regional R&D Indicators

#### Current state

The situation of regional R&D data improved compared to the previous year. The whole range of regional R&D data (R&D expenditure, R&D personnel in Head Count and in Full Time Equivalent) is provided by Denmark, Greece, Spain, France, Austria, Portugal, and the UK. For Germany, regional data on R&D expenditure for all sectors is available for the first time, and the regional figures on R&D personnel have been updated. Currently, the German R&D data is provided at NUTS level 1 with investigations underway as to the possible extension to NUTS level 2. For Sweden, regional data on R&D personnel is now available, and Sweden is working on a methodology to deliver regional R&D expenditure data. Belgium promised regional data for 1997, at least at NUTS level 1. Italy is about to fill its gaps, mainly in the Higher Education Sector, and will deliver the whole range of data this year. For Finland and the Netherlands, there is still no

regional data available but both countries are working on the regionalisation of their R&D data. We are looking forward on the results!

#### Regional patent data

The regionalised data on European patent applications compiled in cooperation with the European Patent Office (EPO) now forms the forth main topic of our annual publication, next to the data on GBAORD, R&D personnel and R&D expenditure. The cooperation with the EPO will continue and the database will be up-dated yearly. As it was mentioned in the last REDIS news, data on European patent applications with a Finnish inventor is currently not included in our database. Finland became a member of the European Patent Convention in March 1996, therefore, the inclusion of data on European patent applications with a Finnish inventor was arranged. A concordance between Finnish post-codes and NUTS has been provided by Statistics Finland, this additional data will be available in the 1997 edition of our annual publication.

#### **New Methodologies**

In order to improve the knowledge base regarding R&D and innovation statistics at the regional level, two feasibility studies were launched in 1995. The final reports have now been delivered. The results can be summarised as follows. One study is concerned with the "Measurement of Employment in High Technology Sectors at the Regional Level". The study proposes the use of the Community Labour Force Survey (LFS) as data source. At least for NUTS level 1, reliable results can be received. After the discussions on this issue at the EEA Working Party Meeting on R&D and Innovation Statistics in November 1996, the methodology developed in the study might be continuously implemented.

The second feasibility study is concerned with the "Measurement of the Institutions of Technological at the Regional Infrastructure Technological infrastructure is considered to be one important component of the framework inside which R&D and innovation take place. How to identify and measure the technological infrastructure, however, has not yet been surveyed in a harmonised way. Therefore, the study gives an overall definition of institutions of technological infrastructure. Secondly, it develops and tests a list of indicators to measure them. The study was also discussed at the EEA working party meeting. Some pilot surveys in selected regions are envisaged.

For more information please contact Sabine Gagel (Tel.: +352-3410.4039 Fax: +352 347 029).

## Community Innovation Survey (CIS)

Preparatory work has now started on the next round of the Innovation Surveys CIS-2. In parallel with this, tables are being prepared for the publications and the CD-ROM on the CIS-1.

The second harmonised community innovation survey (CIS-2) will be launched in early 1997. A number of events have preceded this. Following the first CIS, a conference was held and an evaluation was undertaken. The methodology of innovation statistics has been reviewed leading to a second edition of the Oslo Manual.

A working party meeting was held late January 1997 to agree on the core questionnaire and settle the sampling issues. Efforts are being made to ensure that CIS-2 is more comparable between Member States than CIS-1 through (nearly) identical questionnaires and sampling techniques. For more information please contact:

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### Other Activities

#### **GBAORD**

At the November Working Party Meeting, a set of recommendations were adopted for the harmonisation of the so-called GBAORD indicator (Government Budget Appropriations or Outlays in Research and Development). These recommendations are sufficiently general to be of interest for all OECD member countries, not just for the European Economic Area.

GBAORD is the oldest R&D variable collected by Eurostat with time series going back into the 1970's. Its collection is well dealt with in the so called Frascati Manual of the OECD. This manual deals with the measurement of scientific and technological activities. Despite the long tradition of collecting data on government appropriations, methods are not completely harmonised.

The recommendations answer a number of questions, such as:

- how should one treat receipts from other sectors?
- how should one deal with different types of government support (direct, indirect, fiscal incentives)?

- what should one do with university funds which has an educational as well as R&D aspect?
- how should one treat means to be spent abroad?
- what are the limits of government?
- how should one deal with long term projects?

A proposal to exclude Value Added Tax from expenditure figure was not acceptable for some

Member States and was therefore left out of the recommendation for the time being.

There are plans to organise a regular survey of GBAORD methods in the Member States as a means of exchanging views and monitoring convergence.

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### Database and Publications

### The indicators report

The work on the second edition of the European Report on Science & Technology Indicators is in full swing. This DGXII publication sets out to analyse the situation of S&T in Europe in its wider economic context and to compare it with major developments in other parts of the world. Therefore the geographical scope of the Report is not restricted to EU or OECD member countries, but includes also several Eastern European, Asian and Mediterranean countries. For a total of about 60 countries data are gathered with different degrees of detail.

The workload of the preparation of the Report is distributed among several research institutes as subcontractors, with Eurostat being responsible for the statistical annex. On 18 September 1996 a first plenary meeting with all subcontractors took place in Brussels, where the structure of the second edition of the Report was presented and the cooperation between the different partners organised. Eurostat presented a first set of data covering S&T variables as well as general economic indicators. Apart from Eurostat sources, data were drawn from other international institutions including the OECD, ILO, IMF and UN.

In the meantime, the contractors have sent in their first interim reports, explaining the details of their

planned work and specifying the details of the data necessary for the construction of the indicators. First sets of the data that are to be collected completely by the contractors, e.g. data on patents, bibliometrics or inter-enterprise cooperation, are to be provided to Eurostat in January 1997, together with first methodological notes.

To improve the usability of the data, Eurostat will try, together with the contractors, to close gaps in the data sets as far as possible. National sources will be contacted for further data or own estimations. Where appropriate, missing values will be estimated, including nowcasts for the most recent years.

For more information please contact : Ruth Magono (Tel.: +352-3410 4038 Fax: +352 347 029)

## Research and Development: Annual statistics - 1997

As at the time of going to press, work has started on preparation of the 1997 edition of the annual publication. Questionnaires are now being sent out to collect the necessary data. It is planned that this publication will be released earlier than for previous years.

(See information on the 1996 issue on page 10)

To help us in ensuring that this document continues to meet your need, we will appreciate if you could complete and return the readers feedback questionnaire on page 9 of this newsletter.

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## Plans for the coming months

A major action in the coming months will be the preparation of the statistical annex to the "Second European Report on S&T Indicators" to be published by the Commission in 1997. As noted above, the sole responsibility for the statistical annex of this issue will be that of Eurostat.

Important inputs to the annex will come from other REDIS sub-projects

On regional R&D data, a basic comparison of the national methodologies was carried out in 1996. This inventory will be the staring point for further investigations in the coming months of the experiences gained in the Member States with their special approaches.

Regarding regional data on European patent applications, to derive relevant data from the database of the European Patent Office (EPO), a concordance between post-codes and NUTS has been established. In the coming months, this concordance will be updated in order to improve the quality of information obtained.

#### ••••••

#### Abbreviations and Acronyms used

CIS Community Innovation Survey

DG General Directorate (of the European

Commission)

EEA European Economic Area

EPO European Patent Office

EU European Union

GBAORD Government Budget Appropriation or Outlays

on R&D

HRST Human Resources in Science & Technology

ILO International Labour OrganisationIMF International Monetary Fund

IPC International Patent Classification

NACE General Industrial Classification of Econo

General Industrial Classification of Economic

Activities within the EC

NESTI National Experts on Science and Technology

Indicators

**NUTS** Nomenclature of Territorial Units for Statistics

OECD Organisation for Economic Cooperation and

Development

R&D Research and development

REDIS R&D and Innovation Statistics

TACIS Technical Assistance for the Commonwealth

of Independent States

UN United Nations

UNESCOUnited Nations Educational Scientific and

**Cultural Organisation** 

## Focus.....

## ......The European Economic Area Working Party on Research, Development and Innovation Statistics

#### .........Moving into the 7th year

In the second half of 1990, the Working Party on REDIS was constituted with the main objective of providing a forum for discussions between the providers of statistical information in this field, and the users of such information especially in the European Commission (represented by Eurostat).

Such discussions would help to rationalise the use of resources both in the national statistical institutes and in Eurostat and to target such resources towards meeting the ever increasing needs for specialised comparable statistical information on the Member States and on Europe and its major trading partners.

#### .....The group

The group has traditionally been made up of delegates from research and technology ministries and national statistical institutes of the various Member States. While the chair and secretariat have always been Eurostat, a very close cooperation with, and involvement of other services of the Commission (especially DGXII, DGXIII and DGXVI) has meant that the users do take active part in the discussions.

Close cooperation with international organisations such as the OECD and UNESCO has meant participation at a very broad international level. So has the presence in the meetings of such countries as the USA, Canada, Australia etc.

The team has grown in size from the total of nineteen participants at the first meeting to over sixty at the most recent one. This is an indication of the interest shown in the work of the group by the various governments represented both as members and as observers.

#### .....Achievements

The achievements of the group are clearly manifested in the growth of the REDIS project, the amount of quality statistical information produced today (as compared with that of the earlier years) and the number of methodological work done and currently being done.

These achievements are due mostly to the great interest shown by the participants at the meetings coupled with the resourcefulness of the REDIS team. From a very humble beginning, the EEA Working Party can today boast of having helped to formulate or direct methodological development which set the pace and standard on various topics ranging from GBAORD to NABS classification and from regional R&D statistics to statistics on human resources in S&T.

Below is the *who is who* of the group (compiled from the list of current delegates). In the next issue, we shall list *who is who* of the current observers on the working party.

For more information on the activities of this working party, please contact any of the members of the secretariat.

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# - REDIS News - Readers' feedback

It is important that we receive from time to time, feedbacks from our readers to find out how far the information we provide meet their needs. We aspire to continue to tailor our services and products to the needs of our users and in addition need to rationalise the circulation of our newsletters.

To assure us of your continued interest, we will appreciate if you could kindly complete the form below and fax or mail it to us.

Only those from whom we receive a feedback will be considered to be interested enough to be kept on our priority list.

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or mail to:

The project secretary, REDIS, (Eurostat A4),

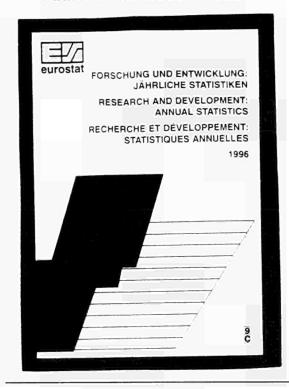
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### **Publications**

## Research & Development: Annual Statistics - 1996



#### The REDIS annual publication

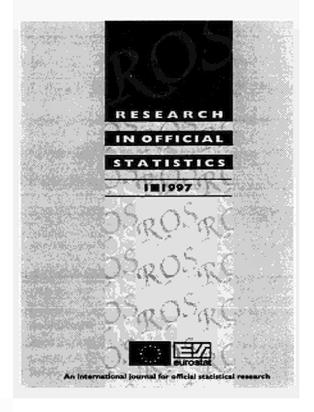
The latest edition of the publication 'Research and Development: Annual statistics 1996" is now available. While it retains its traditional format, this is a much expanded issue with a lot more information than was contained in the earlier ones. The main contents of the publication are the principal indicators of the REDIS database. Figures for Government R&D appropriations are available for Norway and 14 European Union Member States (Luxembourg not being included) for the period starting 1985 to 1995. The publication contains data for the period 1986 up to 1994, on R&D personnel broken down by regions and by sectors (the Business Enterprise sector, Government sector and Higher Education sector). Data is also available in full time equivalent as well as in head count. The publication also contains for the same period, R&D expenditure data broken down by regions and by sectors. For the first time, data is also made available on patents (from 1989 to 1994).

To obtain a copy of this document, please contact your nearest sales office (as shown on the following page) for official EU publications. You may also obtain further information on this and other REDIS publications from the project secretary or by contacting:

The Eurostat data shop (Tel., +352-433-522-251 Fax, +352-433-522-221 or any of the distribution agents on page 11.

## Research in Official Statistics

An international journal for official statistical research



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Preparation is being finalised for the first issue expected out in the first quarter of 1997. This issue will not be for sale but distributed for review purposes only. Those interested may request for a free copy from:

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