

industry research and technology

WEEKLY

REPRODUCTION AUTHORIZED

Brussels, 28 November 1972

No. 167

** The work carried out by the Forrester team at the Massachusetts Institute of Technology, under the auspices of the Club of Rome, has demonstrated the RISK OF EXPONENTIAL GROWTH of a number of interdependent factors in a world which continues largely to be a closed system where evolution must abide by the rules of a dynamic balance.

A SOCIO-ECONOMIC MODEL OF THE EUROPEAN ZONE, set up using systems analysis techniques, which would simultaneously examine the mutual influences of population, consumption, urban growth, investments, energy and pollution, should enable long-term forecasts to be made of socio-economic trends in the Community, thus avoiding any risk of crises. For this reason the European Commission intends to have a mathematical model of EUROPE made for the countries of the enlarged Community. For further details see ANNEX 1.

** THE TREND OF PUBLIC SPENDING ON RESEARCH AND DEVELOPMENT IN THE COMMUNITY between 1968 and 1972 reveals considerable stability in the importance conferred on the DEFENCE, NUCLEAR, SPACE AND INDUSTRIAL TECHNOLOGY sectors, despite the much-voiced political moves towards new measures in favour of health and the environment.

This bulletin is published by the Directorate General Press and Information of the Commission of the European Communities

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The information and articles published in this Bulletin concern European scientific cooperation and industrial development in Europe. Hence they are not simply confined to reports on the decisions or views of the Commission of the European Communities, but cover the whole field of questions discussed in the different circles concerned.

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This stagnation, which tends to hold up any attempt to change present priorities, clearly emerges from a detailed study of the report drawn up by statisticians from the member countries of the Community under the Working Party on Scientific and Technical Research Policy which the Commission has just published under the title "Public Funding of R&D in the Community Countries (1968-72)" (this report is on sale at the Office for Official Publications of the European Communities, PO Box 1003, Luxembourg).

A brief analysis of the figures supplied in this report can be found in ANNEX 2.

** BUILDING COSTS in the countries of the Community have increased by more than 10% a year over the last three years, whereas the general increase in the cost of living has been about 5% a year. The Member States are examining the situation in this sector and the Commission also feels that the moment has arrived to carry out a detailed analysis of technical and economic developments in the construction sector, which employs seven million people throughout the Community (i.e., 7-8% of the working population) and makes an important contribution towards social welfare. A brief note on this subject can be found in ANNEX 3.

** The steps taken at a Community level in order to put a stop to "leapfrogging bids" in the field of REGIONAL AID have led to the definition of principles of coordination which came into force on 1 January 1972 in the "central regions" of the Community. This was pointed out by the Commission in a reply to a written question by Mr Vredeling, a member of the European Parliament. An appropriate solution based on the same principles of

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coordination will be drawn up for the peripheral regions at a later date and will take account of the specific problems involved in each of the regions.

According to these principles, the regional aid in the "central regions" is limited to 20% net of the total investments of the beneficiary. This ceiling applies to all regional aid granted to a given investor for a given investment within a specified aid zone. Departures from this ceiling may be sanctioned by the Commission on receipt of the necessary supporting evidence.

In addition, the coordination of regional aid means that the aid must be clearly defined and its level must vary depending on the nature, seriousness and urgency of the regional development problems which the public authorities intend to solve. Finally, the principles of coordination also provide for the setting-up of a procedure for forecasting the effects which regional aid might have - at a sector level - on competition and trade.

The principles of coordination were the subject of a note from the Commission to the Council of Ministers and of an initial resolution adopted by the representatives of the Governments of the Member States, meeting in the Council.

** The European Community is in possession of all the essential facts required to draw up a programme of action on EUROPEAN SOCIAL POLICY. This is the substance of a statement made by Mr Coppé, the member of the Commission with special responsibility for social affairs. The final declaration of the Conference of the Heads of State and Government held in Paris on 19-20 October 1972 and the Council of Ministers of Social Affairs held in Brussels on 9 November (see IRT No. 166) have

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given the Commission the satisfaction of seeing that the work it has carried out during the last two years has led to extremely encouraging prospects.

The Ministers of Social Affairs of the Member States have, in particular, decided that a TRIPARTITE CONFERENCE, to be attended by representatives of the governments, the Commission and both sides of industry, will be held in April 1973 in order to discuss a genuine programme of action for a European social policy.

In May 1973 the Commission intends to organize a SYMPOSIUM ON PROBLEMS RELATING TO MIGRATION as an adjunct to this Conference with the object of (a) examining current problems of organizing the free circulation of labour within the Community along lines which are acceptable in social and economic terms and (b) to stimulate a broadly based scrutiny of the underlying motivation and consequences of migration as a phenomenon linked with economic growth.

** INTRA-COMMUNITY TRADE IN ELECTRICAL ENERGY is relieved of restrictions in conformity with the provisions of Articles 30 et seq. of the EEC Treaty. However, there are still administrative controls, exercised by certain States via licences and authorizations. In the light of the recent ruling by the Court of Justice of the European Communities with regard to the extent to which automatic licences and similar procedures relating to intra-Community trade are compatible with the terms of the Treaty, the Commission will take the necessary steps to ensure that the States obey this ruling, as it recently stated in a reply to a written question by Mr Glinne, a member of the European Parliament.

** At the request of the French Government the Commission will participate in two studies by DATAR (Delegation for Regional Planning and Action) concerning THE PROMOTION OF INDUSTRIAL AND SERVICE ACTIVITIES ON THE ATLANTIC COAST and also THE FUTURE OF THE INDUSTRIAL DEVELOPMENT OF THE ADOUR BASIN (Basses-Pyrénées).

The aim of the initial study is (a) to pinpoint the positive aspects of the Atlantic coastal regions likely to appeal to investors, workers and their families, and (b) to gain a clearer picture of what industrialists would expect from the Atlantic coast with a view to setting up shop there.

The second of these two studies will examine the industrial development potential of the Adour Basin within its regional context. This is one of the most important problems facing south western France at present, for both the Bordeaux and Toulouse regions.

** The projects proposed by the EEC Commission with a view to implementing a common energy policy include the granting of loans as A COMMUNITY CONTRIBUTION TO THE FINANCING OF NUCLEAR POWER PLANTS. In July 1971 the Commission submitted a proposal along these lines to the Council of Ministers (see IRT No. 109).

In a reply to a written question from Mr Glinne, a member of the European Parliament, the Commission recently pointed out that, according to the terms and spirit of its proposal, loans for the construction of nuclear power plants would be granted not to constructors but to electricity utilities at a rate of interest corresponding to the cost to the European Atomic Energy Community of the loans it obtained on the capital market. As a

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result, no specific charge would be made against the Euratom budget; thanks to the high credit rating of this organization, the electricity utilities would be able to take advantage of the most favourable terms ever by obtaining indirect access to wider or more varied money markets.

The Commission also feels that it would be highly desirable if the coordination of decisions to invest in electricity production were increasingly accompanied by greater trans-frontier link-ups between grids. The Commission has already raised this problem in its Second Illustrative Nuclear Programme for the Community (see IRT No. 161).

** The Commission will have a study carried out on the possibility of applying automated techniques to the acquisition, storage and analysis of medical and dosimetric data in the field of INDUSTRIAL MEDICINE AND RADIATION PROTECTION. This study will be carried out by the bio-data processing laboratory of the National Centre for Scientific Research (CNRS) in Paris.

In order to improve radiation protection in nuclear installations and to enable industrial medicine to benefit from the latest developments in medical data processing, this study will lay down a programme aimed at consultation of the medical file used in radiation protection and industrial medicine and will also formulate a language with which easy access to all conventional statistical investigations into the data in the medical file would be possible from a terminal. In addition, this study will include the experimental use of a data processing system in the medical service of the JRC's Ispra establishment.

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** The Commission of the European Communities has just published:

THE PROCEEDINGS OF THE FIRST SYMPOSIUM ON NEUTRON DOSIMETRY IN
BIOLOGY AND MEDICINE held in Neuherberg/Munich on 15-19 May 1972.
(No. EUR 4896 d-f-e -- 2 volumes -- 1020 pages -- FB 1000).

APPLICATION OF ATOMIC ENERGY IN AGRICULTURE -- Annual report for
1970 (No. EUR 4868 e -- 90 pages -- FB 125 -- available in English).

These documents are on sale at the Sales Office for Official
Publications of the European Communities (PO Box 1003,
Luxembourg 1).

** PROBLEMS LINKED WITH THE TRANSPORTATION OF PLUTONIUM and
non-irradiated plutonium elements were the subject of an
exchange of views between the Commission and experts from the
Member States of the Community who met in Brussels on
10 November in order to pinpoint the sectors in which the
Commission might usefully take some action.

A SOCIOECONOMIC MODEL OF THE EUROPEAN ZONE COULD BE USEFUL FOR
DETERMINING LONG-TERM POLITICAL OPTIONS

The work carried out by the Forrester team at the Massachusetts Institute of Technology (MIT), under the auspices of the Club of Rome, has demonstrated the risks inherent in the exponential growth of a number of interdependent factors (population, investment, pollution, natural resources and food production) in a world which is still largely a closed system where evolution must abide by the rules of dynamic balance.

This work also showed that, in order to make long-term forecasts of socioeconomic trends, and thus to avoid the risk of a crisis, intuitive reasoning and traditional methods (extrapolation of statistical data, etc.) are inadequate, computer simulation on the basis of mathematical models being the only method of carrying out long-term analyses which take account of the dynamic interaction of the numerous factors involved.

The entity formed by the countries of the enlarged Community would appear to be well suited to a mathematical study. The European Commission hence intends to have a dynamic mathematical model, entitled EUROPE, set up for the countries of the enlarged Community using systems analysis techniques.

The information extracted would relate mainly to population, consumption, urban growth, investment, energy and pollution, for it is only by simultaneously studying the interaction between such different sectors that it is possible to make reasonable, long-term forecasts.

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Initially, however, the problem should be approached by studying a limited model which would analyse the behaviour of the interaction between two groups of variables representing classes of population (according to age groups) and classes of products, subdivided into capital, consumer and agricultural products.

The Commission recently awarded a contract for the model to the Science Policy Research Unit of the University of Sussex, directed by Prof. Freeman.

PUBLIC FUNDING OF RESEARCH AND DEVELOPMENT
IN THE COMMUNITY BETWEEN 1968 and 1972

The figures for public spending on research and development in the Community between 1968 and 1972 pointed up the great importance which continues to be attached to the defence, nuclear, space and industrial technology sectors despite the much-voiced political moves in favour of more aid to the health and environmental sectors.

This stagnation, which tends to hold up any attempt to reallocate priorities, emerges very clearly from a detailed study of the report compiled by statisticians from the Member States of the Community under the Working Party on Scientific and Technical Research Policy which the Commission has just published under the title: "Public funding of R&D in the Community countries (1968-72)" (this report is on sale at the Office for Official Publications of the European Communities, PO Box 1003, Luxembourg).

1. For the Community as a whole, public spending on research and development has grown as follows between 1968 and 1972:

	<u>Funds</u> ¹	<u>Increase over preceding</u> <u>year in%</u>
1968	3,800	5.1
1969	4,007	7.2
1970	4,437	10.6
1971 ²	5,013	12.9
1972 ²	5,685	10.9

¹in millions of u.a.

²provisional figures

On average this represents an increase of 47.2% over five years, although the rise in prices over the same period (over 25% on average) should also be borne in mind, of course.

2. On an individual country basis this average increase breaks down as follows:

98.1% for Belgium
 77.3% for Germany
 62.9% for Italy
 58.2% for the Netherlands
 19.2% for France

3. Broadly speaking, the trend of public R&D spending indicates no great change in priorities, despite the general consensus on the need for action in the health and environment fields.

If an exception is made of the "general dissemination of knowledge" (which is assessed differently from country to country and thus produces figures which are difficult to compare), the sectors which soak up by far the greatest amount of funds are:

- defence,
- the nuclear sector,
- industrial productivity.

The defence, nuclear, space, data processing and industrial technology sectors have evolved as follows (as a percentage of total public spending on R&D):

	<u>1968</u>	<u>1972</u>
West Germany ¹	50	49
Belgium	41	39
France	65	59
Italy	45	48
Netherlands	29	23
Community	55	50

¹Provisional figures

The health sector has grown as follows (as a percentage of total public spending on R&D):

	<u>1968</u>	<u>1972</u>
Germany ¹	2.2	3.2
Belgium	15.4	16.9
France	2.7	3.0
Italy	2.2	3.1
Netherlands	5.6	7.1
Community	5.6	6.6

The "human environment" sector (construction, housing, transport, telecommunications, etc.) has grown as follows (as a percentage of total public spending on R&D):

	<u>1968</u>	<u>1972</u>
Germany ¹	0.8	1.3
Belgium	1.6	1.5
France	3.3	4.5
Italy	2.4	1.6
Netherlands	3.0	3.9
Community	2.2	2.5

4. This relative lack of change in priorities clearly indicates the level of administrative inertia, which affects research as much as other fields and hinders the translation of the highest political designs into actual deeds.

¹Provisional figures

THE CREATION OF THE COMMON MARKET IN THE CONSTRUCTION FIELD

Building costs in the countries of the Community have gone up by over 10% a year during the last three years, whereas the general rise in the cost of living has been of the order of 5% a year. This increase, apart from a rise in the price of land and higher interest rates, would appear to have two major causes, i.e., the special structure of the building industry, and the virtual absence of a common market in the construction industry, as regards not only public works but also, to a great extent, private building firms.

Although the building industry employs seven million people throughout the Community (i.e., 7-8% of the active population) and is thus one of its major industrial activities, 75-85% of companies in this sector employ less than 20 people and, as a general rule, are highly parochial within a local economic context.

The Member States of the Community are looking into developments in this sector, which is an important factor affecting social welfare, employment and the economy. For its part, the Commission feels that the time has come to carry out a detailed analysis of the technical and economic development of the building trade in all of the member countries.

Therefore the Commission intends to call on government experts to:

1. Provide a synopsis, at a Community level, of national forward studies concerning the economic and social outlook for the building industry (market for dwellings, industrial and commercial buildings and also for public buildings and works).
2. Draw up an inventory of the R&D projects under way or planned in the various Member States, with the aim, during a second phase, of coordinating these efforts.

3. Draw up an inventory of the technical and legal obstacles (codes, regulations, etc.) standing in the way of a common market for the building trade, with a view to their gradual removal.

The outcome of this work would enable the Community to "take the lid" off the building industry and assess its problems and limitations. Only when some light has been shed on the situation will the Commission be able to take the necessary steps to promote a true common market (these including the elimination of technical barriers, the harmonization of standards, the awarding of public contracts on a wider basis and the unrestricted rendering of services) and to enable the building industry to attain a European dimension.

The possible outcome is more economical building techniques, either as a result of an enlargement of the market or via the introduction of industrial management concepts in an area which is still largely run on piecemeal lines.

The clear insight thus acquired into the situation as regards this sector in all of the Member States of the Community will thus enable a truer assessment to be made of the usefulness of applying the various facets of industrial policy currently proposed by the Commission (such as the clearing house for companies wishing to cooperate, the statute law governing "economic groupings" or Community development contracts - see IRT Nos. 116, 154 and 158). Finally, it will also be easier to tackle environmental problems in their broadest sense, i.e., those of the human environment.