II

(Acts whose publication is not obligatory)

COUNCIL

COUNCIL DECISION

of 7 June 1991

adopting a specific research and technological development programme in the field of marine science and technology (1990 to 1994)

(91/351/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 130q (2) thereof,

Having regard to the proposal from the Commission (1),

In cooperation with the European Parliament (2),

Having regard to the opinion of the Economic and Social Committee (3),

Whereas, by Decision 90/221/Euratom, EEC (4), the Council adopted a third framework programme for Community activities in the field of research and technological development (1990 to 1994), specifying *inter alia* the activities to be pursued for developing the scientific knowledge and technical know-how needed by the Community, in particular to carry out its role in the field of marine science and technology; whereas this Decision should be taken in the light of the grounds set out in the preamble to that Decision;

Whereas Article 130k of the Treaty stipulates that the framework programme shall be implemented through specific programmes developed within each activity;

Whereas basic research in the field of marine science and technology must be encouraged throughout the Community;

Whereas in addition to the specific programme concerning human resources and mobility, it might be necessary to encourage the training of research workers in the context of this programme;

Whereas, in the context of this programme, an assessment should be made of economic and social impact as well as of any technological risks;

Whereas, pursuant to Article 4 of and Annex I to Decision 90/221/Euratom, EEC, the amount deemed necessary for the whole framework programme includes an amount of ECU 57 million for the centralized dissemination and exploitation of results, to be divided up in proportion to the amount envisaged for each specific programme;

Whereas Decision 90/221/Euratom, EEC, provides that a particular aim of Community research must be to strengthen the scientific and technological basis of European industry and to encourage it to become more competitive at the international level; whereas it also provides that Community action is justified where research contributes, *inter alia*, to the strengthening of the economic and social cohesion of the Community and to the promotion of its overall harmonious development, while being consistent with the pursuit of scientific and technical excellence; whereas the programme in the field of marine science and technology should contribute to the achievement of these objectives;

Whereas small and medium-sized enterprises should be involved to the maximum extent possible in this programme; whereas account should be taken of their special requirements without prejudice to the scientific and technical quality of the programme;

(1) OJ No C 174, 16. 7. 1990, p. 48.
(2) OJ No C 324, 24. 12. 1990, p. 298; and OJ No C 158, 17. 6. 1991.
(3) OJ No C 332, 31. 12. 1990, p. 38.
(4) OJ No L 117, 8. 5. 1990, p. 28.

Whereas it is necessary, as Annex II to Decision 90/221/Euratom, EEC provides, to acquire a sound basis of knowledge and of reliable forecasting techniques in order to work out long-term strategies for protecting and managing the marine environment, directing research towards the understanding of the fundamental processes which govern both oceans and coastal waters;

Whereas the Scientific and Technical Research Committee (Crest) has been consulted,

HAS ADOPTED THIS DECISION:

Article 1

A specific research and technological development programme for the European Economic Community in the field of marine science and technology, as defined in Annex I, is hereby adopted for a period beginning on 7 June 1991 and ending on 31 December 1994.

Article 2

1. The funds estimated as necessary for the execution of the programme shall amount to ECU 102,96 million, including expenditure on staff and administration amounting to ECU 10 million.

2. An indicative allocation of funds is set out in Annex III.

3. Should the Council take a decision in implementation of Article 1 (4) of Decision 90/221/Euratom, EEC, this Decision shall be adapted accordingly.

Article 3

Detailed rules for the implementation of the programme and the amount of the Community's financial contribution are set out in Annex III.

Article 4

1. In the second year of implementation of the programme, the Commission shall review it and send a report on the results of its review to the European Parliament and the Council; the report shall be accompanied, where necessary, by proposals for amendment of the programme.

2. At the end of the programme, an evaluation of the results achieved shall be conducted for the Commission by a group of independent experts. This group's report, together with any comments by the Commission, shall be submitted to the European Parliament and the Council.

3. The reports referred to in paragraphs 1 and 2 shall be established having regard to the objectives set out in Annex I to this Decision and in accordance with Article 2 (4) of Decision 90/221/Euratom, EEC.

Article 5

1. The Commission shall be responsible for the implementation of the programme.

2. Contracts concluded by the Commission shall govern the rights and obligations of each party, in particular the arrangements for the dissemination, protection and exploitation of research results, in accordance with the provisions adopted pursuant to the second subparagraph of Article 130k of the Treaty.

3. A work programme shall be drawn up in accordance with the aims set out in Annex I and updated where necessary. It shall set out the detailed objectives and types of projects to be undertaken, and the financial arrangements to be made for them. The Commission shall make calls for proposals for projects on the basis of the work programme.

Article 6

1. The Commission shall be assisted by a committee composed of the representatives of the Member States and chaired by the representative of the Commission.

2. The representative of the Commission shall submit to the committee a draft of the measures to be taken. The committee shall deliver its opinion on the draft, within a time limit which the chairman may lay down according to the urgency of the matter, if necessary by taking a vote.

3. The opinion shall be recorded in the minutes; in addition, each Member State shall have the right to request that its position be recorded in the minutes.

4. The Commission shall take the utmost account of the opinion delivered by the committee. It shall inform the committee of the manner in which its opinion has been taken into account.

Article 7

1. The procedure laid down in Article 6 shall apply in particular to:

— the preparation and updating of the work programme referred to in Article 5 (3),

— the contents of the calls for proposals,

— the assessment of the projects provided for in Annex III and the estimated amount of the Community's contribution to them where this amount exceeds ECU 0,3 million,

— departures from the general rules set out in Annex III,

— the participation in any project by non-Community organizations and enterprises referred to in Article 8 (1) and (2),

— any adaptation of the indicative allocation of the amount set out in Annex II,

— the measures to be undertaken to evaluate the programme,

— arrangements for the dissemination, protection and exploitation of the results of research carried out under the programme.

2. Where, pursuant to the third indent of paragraph 1, the amount of the Community contribution is less than or equal to ECU 0,3 million, the Commission shall inform the Committee of the projects and of the outcome of their assessment.

The Commission shall also inform the Committee of the implementation of the accompanying measures and concerted action referred to in Annex III.

Article 8

1. The Commission is authorized to negotiate, in accordance with Article 130n of the Treaty, international agreements with third countries which are members of COST, particularly the member countries of EFTA and the countries of Central and Eastern Europe, with a view to associating them with the whole programme or a part of it.

2. Where framework agreements for scientific and technical cooperation have been concluded between the Community and European non-member States, bodies and enterprises established in those countries may, in accordance with the procedure laid down in Article 6 and on the basis of the criterion of mutual benefit, be allowed to become partners in a project undertaken within the programme.

No contracting body based outside the Community and participating as a partner in a project undertaken under the programme may benefit from Community financing for this programme. The body concerned shall contribute to the general administrative costs.

Article 9

This Decision is addressed to the Member States.

Done at Luxembourg, 7 June 1991.

For the Council

The President

R. STEICHEN

ANNEX I

SCIENTIFIC AND TECHNICAL OBJECTIVES AND CONTENT

This specific programme fully reflects the approach embodied in the third framework programme in terms of the scientific and technical goals and the underlying aims which it pursues.

Paragraph 3.C of Annex II to the framework programme forms an integral part of the present specific programme.

The new marine science and technology programme is presented as a direct development of MAST 1989 to 1992.

The general objectives of the new programme must, therefore, be similar to those of the pilot programme, namely to contribute to establishing a scientific and technological basis for the exploration, exploitation, management and protection of European coastal waters and the seas surrounding the Community Member States, and furthermore introduce the necessary Community dimension to various on-going research activities. This programme will also aim to achieve a balance in the marine scientific potential between the various areas of the European Communities. A special effort will be made to upgrade existing research.

The technical content of the proposed programme will be broadly the same as for MAST 1989 to 1992. Alterations are proposed as a result of the need for programmes of large-scale target research projects and the possible expansion of the geographical coverage.

The following presents an analytical description of the content of the programme, based on and taking account of the above elements.

AREA 1: MARINE SCIENCE

Community research in marine science has three main aims, which are as follows:

— to achieve a better understanding of marine processes,

— to improve our ability to predict change,

— to establish the scientific basis for management, protection and exploitation of the marine environment.

Multidisciplinary research will be carried out on processes and fluxes, using mathematical modelling where necessary. Where modelling is used in the study of marine processes, it will include validation calibration and assessment of boundary conditions at various time scales.

Detailed and expanded studies of ocean circulation systems and dynamics of water masses will be carried out in order to determine the water movement and physical processes in European seas and adjacent oceans. Special attention will be given to the shelf edge and the intertidal zone, deep water formation and studies on ocean circulation.

Research will be continued and further work will be carried out on biogeochemical processes, in particular to understand and quantify the fluxes of carbon and other elements in the sea. Hydrothermal activity is also included as well as the global carbon cycle in coastal, continental and deep seas.

Studies will be undertaken to evaluate rates of exchange of substances at interactive sites (e.g. various interfaces: air-sea, sea floor-water column, land-sea, etc.), particulary during extreme environmental conditions.

Research will be aimed at deriving mathematical expressions and reliable models for biological processes and ecosystems. Particular attention will be given to projects which examine the link between physico-chemical influences and the corresponding biological responses at all trophic levels.

Research in marine geosciences will be expanded to include stratigraphy and geophysics as well as addressing specific problems relating to the behaviour of sediments in various marine situations (e.g. shelf, slope and deep sea). Investigations of the geological record and geophysical properties of deep-sea sediments are required to contribute to global change research and to assess the appropriate use of the seabed.

Coordination with and concertation of participation in ongoing international programmes (e.g. World Ocean Circulation Experiment, Joint Global Ocean Flux Studies, International Geosphere-Biosphere programme, etc.) will be encouraged. Work in this area will be carried out in cooperation with Community programmes on the marine environment (e.g. STEP, Epoch and JRC actions) and, possibly, renewable energy sources (tides, waves, etc.), aquaculture and fishing (FAR). In marine geosciences, overlap with work in the ocean drilling programme will be avoided.

AREA 2: COASTAL ZONE SCIENCE AND ENGINEERING

The objectives, which build on projects in the MAST 1989 to 1992 pilot phase, are: to gain an increased level of understanding of marine processes affecting the coastal zone and the behaviour of coastal structures, and of their interactions; to develop numerical modelling of coastal processes and the integration of process models for purposes of coastal management in Europe; and to harmonize on a European scale design concepts of coastal engineering works.

Research will, therefore, concentrate on the study of currents, waves, the behaviour of sediments (mobilization, transport, deposition, geotechnical properties), as well as changes in seabed and coastline morphology. Coastal engineering research will further develop work on the impact of waves and other coastal processes on the stability of breakwaters and other structures.

A particular aim is to promote Europe's lead in these fields by helping to formulate European guidelines for coastal engineering. Research to improve beach nourishment schemes and protection 'against the sea' will also be undertaken. Coordination with the climatology part of the new environment programme will be assured.

AREA 3: MARINE TECHNOLOGY

The objective is to encourage the necessary enabling technologies for the advancement of the marine sciences and related industrial development and to promote the development of existing and new instruments, particularly with a view to speeding up the introduction of automated long-term measuring systems and contributing to the development of operational observation systems.

The research will concern the development of new sensors (quasi) real-time data transmission and two-way communication links. Further work will be aimed at instruments for measuring and sampling in the water column and on and below the sea floor. Research in underwater acoustics will be aimed at self-navigation of vehicles, determination of the properties of the ocean environment and its substratum, acoustic communication, sub-bottom profiling and innovative acoustic measurements in particular. Selective actions in the development of new or improved enabling technologies, e.g. acoustic imaging and optics, will be undertaken. *In situ* design and demonstration work will be done on a system for monitoring the principal environmental parameters relating to coastal waters.

Studies on the identification and exploitation of natural substances in the marine environment will be carried out. Impact studies on the exploitation of marine mineral resources (sand and gravel, nodules, algae, substances useable in pharmacy) will be implemented. These studies are also aimed at achieving greater knowledge of the effects of the waste caused by human activities in the pelagic environment. Additional efforts will be made to reinforce technologies for the study and monitoring of the deep sea environment.

Research will not qualify for Community support unless it is compatible with the Community's policy on protection of the environment.

This research will be coordinated with the Eureka initiatives in marine sciences and technology and will supplement work in Brite/Euram and Esprit in the materials testing, robotics and informatics aspects of instrument development.

AREA 4: SUPPORTING INITIATIVES

The supporting initiatives which commenced under the MAST pilot programme will be continued, and will thus include the following:

— the establishment of a European ocean data and information system, including a system on the management of data on remote sensing,

— the preparation of norms and standards for marine science and technology,

— a modelling coordination initiative which includes modelling for management purposes,

— development of a pilot communication system for exchange of information on research cruises and research facilities,

— studies on the scientific and design requirements for new large-scale facilities,

— advanced training,

— new approaches to mapping and bathymetric/hydrographic surveying.

New ideas for supporting initiatives may be added as the need arises.

AREA 5: LARGE-SCALE TARGET PROJECTS

Target projects will be developed to address particular problems which require large-scale multidisciplinary coordinated research effort. These problems could be defined on the basis of scientific and technological requirements or established on the basis of the scientific requirements of a particular geographical area. The need to balance the deficit of scientific capabilities in some countries will also be taken into account when defining the target projects.

ANNEX II

INDICATIVE BREAKDOWN OF THE AMOUNT DEEMED NECESSARY

(in million ecus)

Area	Breakdown
1. Marine science	37,06
2. Coastal zone science and engineering	15,40
3. Marine technology	29,80
4. Support initiatives	5,20
5. Large-scale targeted projects	15,50
	Total 102,96 (1) (2)

(1) Including expenditure on staff which comes to ECU 5,14 million and administrative expenditure totalling ECU 4,86 million. At least 2% of the total will be allocated to training and 3% risk evaluation.

(2) A sum of ECU 1,04 million, not included in the ECU 102,96 million, will be earmarked as the contribution from the specific programme in the field of marine science and technology to the centralized scheme for the dissemination and exploitation of results.

The breakdown between different headings does not exclude the possibility that projects could come under several headings.

ANNEX III

RULES FOR IMPLEMENTING THE PROGRAMME

1. The Commission will implement the programme on the basis of the objectives and of the scientific and technical content described in Annex I.

2. The rules for implementing the programme, referred to in Article 3, comprise research and technological development projects, accompanying measures and concerted actions:

   — *Research projects*

   The projects will be the subject of shared-cost research and technological development contracts. Selection of projects must take account of the criteria listed in Annex III to Decision 90/221/Euratom, EEC and of the objectives set out in Annex I to this programme.

   For shared-cost projects, Community financial participation will not normally be more than 50 %. Universities and other research centres participating in shared-cost projects will have the option of requesting, for each project, either 50 % funding of total expenditure or 100 % funding of the additional marginal costs.

   Shared-cost research projects must, as a general rule, be carried out by participants established within the Community. Projects in which, for example, universities, research organizations and industrial firms, including small and medium-sized enterprises, may participate must, as a general rule, provide for the participation of at least two partners, the one being independent of the other and established in different Member States. Contracts relating to shared-cost research projects must, as a general rule, be concluded following a selection procedure based on calls for proposals published in the *Official Journal of the European Communities*.

   The Commission will publish a vade-mecum setting out all the rules applying to the selection of projects, in order to guarantee full transparency.

   — *Accompanying measures*

   The accompanying measures referred to in Article 7 will consist of:
   - — the organization of seminars, workshops and scientific conferences,
   - — internal coordination through the creation of integrating groups,
   - — advanced technology training programmes, with emphasis being placed on multidisciplinarity,
   - — promotion of the exploitation of results,
   - — independent scientific and strategic evaluation of the operation of the projects and the programme.

   — *Concerted actions*

   Concerted actions consist of action by the Community to coordinate the individual research activities carried out in the Member States. They may benefit from funding of up to 100 % of coordinating expenditure.

3. The knowledge acquired in the course of the projects will be disseminated both within the specific programme and by means of a centralized activity, pursuant to the Decision referred to in the third subparagraph of Article 4 of Decision 90/221/Euratom, EEC.