COUNCIL DECISION

of 23 November 1994

adopting a specific programme of research and technological development, including demonstration, in the field of marine science and technology (1994 to 1998)

(94/804/EC)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 130i (4) thereof,

Having regard to the proposal from the Commission [1],

Having regard to the opinion of the European Parliament [2],

Having regard to the opinion of the Economic and Social Committee [3],

Whereas, by Decision No 1110/94/EC [4], the European Parliament and the Council adopted a fourth framework programme for Community activities of research, technology development and demonstration (RTD) for the period 1994 to 1998 specifying *inter alia* the activities to be carried out in the field of marine science and technology; whereas this Decision takes account of the grounds set out in the preamble to that Decision;

Whereas Article 130i (3) of the Treaty stipulates that the framework programme shall be implemented through specific programmes developed within each activity under the framework programme and that each specific programme shall define the detailed rules for its implementation, fix its duration and provide for the means deemed necessary;

Whereas the amount deemed necessary for carrying out this programme is ECU 228 million; whereas the appropriations for each financial year shall be laid down by the budgetary authority, subject to the availability of resources within the financial perspectives and the conditions set out in Article 1 (3) of Decision No 1110/94/EC;

Whereas marine resources are economically significant for Europe;

Whereas it is necessary to promote knowledge of the marine environment and its interaction with the other components of the biosphere, with a view to understanding the fundamental processes governing global change and the climate, and to strengthen the technological basis of European industry with regard to the exploration, monitoring and sustainable expoitation of the oceans;

Whereas this programme may make a significant contribution to the stimulation of growth, to the strengthening of competitiveness and to the development of employment in the Community, as indicated in the White Paper on 'Growth, competitiveness and employment';

Whereas the content of the fourth framework programme for Community RTD activities was established in accordance with the subsidiarity principle; whereas this specific programme specifies the content of the activities to be carried out in accordance with this principle in the area of marine science and technology;

Whereas Decision No 1110/94/EC lays down that a Community action is justified if, *inter alia*, research contributes to the strengthening of the economic and social cohesion of the Community and the promotion of its overall harmonious development, while being consistent with the pursuit of scientific and technical quality; whereas this programme is intended to help meet these objectives;

Whereas the Community should support only RTD activities of high quality;

Whereas the efficient use of capital facilities is important;

Whereas the rules for the participation of undertakings, research centres (including the Joint Research Centre (JRC)) and universities, and the rules governing the dissemination of research results specified in the measures provided for in Article 130j of the Treaty, apply to this specific programme;

Whereas provision should be made for measures to encourage the involvement of small and medium enterprises (SMEs) in this programme, in particular through technology stimulation measures;

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[1] OJ No C 228, 17. 8. 1994, p. 96 and OJ No C 262, 20. 9. 1994, p. 16.
[2] OJ No C 205, 25. 7. 1994.
[3] Opinion delivered on 19 September 1994 (not yet published in the Official Journal).
[4] OJ No L 126, 18. 5. 1994, p. 1.

Whereas the Commission's effort to simplify and accelerate the application and selection procedures and make them more transparent must be continued in order to promote the implementation of the programme and to facilitate the action which firms, particularly SMEs, research centres and universities have to undertake in order to participate in a Community RTD activity;

Whereas this programme will help to strengthen synergy between the RTD activities carried out in the field of marine sciences and technology by research centres, universities and enterprises, in particular SMEs, in the Member States and between these and the corresponding Community RTD activities;

Whereas it may be appropriate to engage in international cooperation activities with international organizations and third countries for the purpose of implementing this programme;

Whereas this programme should also comprise activities for the dissemination and exploitation of RTD results, in particular towards SMEs, notably those in the Member States and regions which participate least in the programme, and activities to stimulate the mobility and training of researchers within this programme to the extent necessary for proper implementation of the programme;

Whereas an analysis should be made of possible socio-economic consequences and technological risks associated with the programme;

Whereas progress with this programme should be continuously and systematically monitored with a view to adapting it, where appropriate, to scientific and technological developments in this area; whereas, in due course, there should be an independent evaluation of the progress with the said programme so as to provide all the background information needed in order to determine the objectives of the fifth RTD framework programme; whereas at the end of this programme there should be a final evaluation of results obtained compared with the objectives set out in this Decision;

Whereas the JRC may participate in indirect actions covered by this programme;

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

HAS ADOPTED THIS DECISION:

Article 1

A specific programme for research and technological development, including demonstration, in the field of marine science and technology, as set out in Annex I, is hereby adopted for the period from the date of adoption of this Decision to 31 December 1998.

Article 2

1. The amount deemed necessary for carrying out the programme is ECU 228 million, including a maximum of 6,9 % for the Commission's staff and administrative expenditure.

2. An indicative breakdown of this amount is given in Annex II.

3. The budgetary authority shall lay down the appropriations for each financial year, subject to the availability of resources within the financial perspectives and in accordance with the conditions set out in Article 1 (3) of Decision No 1110/94/EC, taking into account the principles of sound management referred to in Article 2 of the Financial Regulation applicable to the general budget of the European Communities.

Article 3

1. The general rules for the Community's financial contribution are laid down in Annex IV to Decision No 1110/94/EC.

2. The rules for the participation of undertakings, research centres and universities, and for the dissemination of results are specified in the measures envisaged in Article 130j of the Treaty.

3. Annex III sets out the specific rules for implementing this programme, supplementary to those referred to in paragraphs 1 and 2.

Article 4

1. In order to help ensure, *inter alia*, the cost-effective implementation of this programme, the Commission shall continually and systematically monitor, with appropriate assistance from independent, external experts, progress within the programme in relation to the objectives set out in Annex I, as amplified in the work programme. It shall, in particular, examine whether the objectives, priorities and financial resources are still appropriate to the changing situation. It shall, if necessary, in the light of the results of this monitoring process, submit proposals to adapt or supplement this programme.

2. In order to contribute towards the evaluation of Community activities, as required by Article 4 (2) of Decision No 1110/94/EC and in compliance with the timetable laid down in that paragraph, the Commission shall have an external assessment conducted by

independent qualified experts of the activities carried out within the areas covered by this programme and their management during the five years preceding this assessment.

3. At the end of this programme, the Commission shall have an independent final evaluation carried out of the results achieved compared with the objectives set out in Annex III to Decision No 1110/94/EC and Annex I to this Decision. The final evaluation report shall be forwarded to the European Parliament, the Council and the Economic and Social Committee.

Article 5

1. A work programme shall be drawn up by the Commission in accordance with the objectives set out in Annex I and the indicative financial breakdown set out in Annex II, and shall be updated where appropriate. It shall set out in detail:

— the scientific and technological objectives and research tasks,

— the implementation schedule, including dates for calls for proposals,

— the proposed financial and managerial arrangements, including specific modalities for implementing technology stimulation measures for SMEs and the general lines of other measures, including preparatory, accompanying and support measures,

— arrangements for coordination with other RTD activities carried out in this area, in particular under other specific programmes, and, where appropriate, for ensuring improved interaction with acitvities carried out in other frameworks, such as Eureka and COST,

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

2. The Commission shall issue calls for proposals for projects on the basis of the work programme.

Article 6

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

2. In the cases provided for in Article 7 (1), the Commission shall be assisted by a committee composed of representatives of the Member States and chaired by the representative of the Commission.

3. The representative of the Commission shall submit to the Committee a draft of the measures to be taken. The Committee shall deliver its opinion within a time limit which the chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 148 (2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the Committee shall be weighted in the manner set out in that Article. The chairman shall not vote.

4. The Commission shall adopt the measures if they are in accordance with the opinion of the Committee.

5. If the measures envisaged are not in accordance with the opinion of the Committee, or if no opinion is delivered, the Commission shall, without delay, submit to the Council a proposal relating to the measures to be taken. The Council shall act by a qualified majority.

6. If, on the expiry of a period of three months from referral of the matter to the Council, the Council has not acted, the proposed measures shall be adopted by the Commission.

Article 7

1. The procedure laid down in Article 6 (2) to 6 (6) above shall apply to:

— the preparation and updating of the work programme referred to in Article 5 (1),

— the content of the calls for proposals,

— the assessment of the RTD activities proposed for Community funding and the estimated amount of the Community contribution for each activity where this is equal to or more than ECU 0,35 million,

— any adjustment to the indicative breakdown of the amount as set out in Annex II,

— specific modalities for the financial participation of the Community in the different activities envisaged,

— the measures and terms of reference for programme evaluation,

— any departure from the rules set out in Annex III,

— participation in any project by legal entities from third countries and international organizations.

2. Where, pursuant to the third indent of paragraph 1, the amount of the Community contribution is less than ECU 0,35 million, the Commission shall inform the Committee of the projects and of the outcome of their assessment.

3. The Commission shall regularly inform the Committee of progress with the implementation of the programme as a whole.

Article 8

Participation in this programme may be open on a project-by-project basis, without financial support from the Community, to legal entities established in third countries, where such participation contributes effectively to the implementation of the programme and taking into account the principle of mutual benefit.

Article 9

This Decision is addressed to the Member States.

Done at Brussels, 23 November 1994.

For the Council

The President

J. BORCHERT

ANNEX I

SCIENTIFIC AND TECHNOLOGICAL OBJECTIVES AND CONTENT

This specific programme fully reflects the orientations of the fourth framework programme, in applying the selection criteria and in specifying its scientific and technological objectives.

Section 3.C of Annex III, first activity of the fourth framework programme, is an integral part of this programme.

Introduction

The MAST III programme extends, develops and refocuses the activities carried out under the first two MAST programmes, i.e. the pilot phase of 1989 to 1992 and the MAST II programme 1991 to 1994. For the period considered, it is a step in longer-term strategy which will enable Europe to make a full contribution to the knowledge and management of the oceans. The implementation of this programme will also help European scientists to maintain, where acquired, their leading position or to improve their position in the worldwide scientific efforts.

The programme comprises four areas of activity:

(1) marine science — while this topic generally covers all the seas surrounding the European Economic Area (EEA), much of the research will be organized in a multidisciplinary approach to problems which are specific to each regional sea and to some extreme marine environments;

(2) strategic marine research, with emphasis on the coastal zone, and on socio-economic impact;

(3) marine technology; and

(4) supporting initiatives.

OBJECTIVES OF THE PROGRAMME

The overall objective is to foster the scientific knowledge and technological development necessary to understand how marine systems function at basin scales, in order to prepare for sustainable use of the oceans consistent with the preservation of marine environmental quality and to determine their role in global change.

The programme implements various provisions of the Commission's working document COM(93)459 and the White Paper on 'Growth, competitiveness and employment' (COM(93)700).

1. It specifically addresses a number of problems, such as global change and coastal zone protection, which are considered to be priorities on a European scale. Close linkage with corresponding activities under the environment and climate programme and in the JRC should produce the necessary synergies and serve to highlight interactions between the major compartments of the biosphere (land, atmosphere and sea). In particular, synergy will be sought between the environment and climate programme and MAST III in the study of processes concerning the littoral environment. Where appropriate, common objectives could be formulated linking terrestrial environmental factors and marine processes in the two programmes.

2. In the section on marine technology, the programme acknowledges the importance of research into generic technologies and takes account of the gradual emergence of new needs, particularly in the sector of ocean and coastal observation and monitoring, with the aim of helping to promote growth in Europe. Enhanced synergy will be sought with Eureka, and especially with the umbrella project Euromar.

3. Through its coordination activities and supporting initiativs, the programme will help to enhance the profile and the cohesion of Europe's scientific community, streamline the integration of national activities with those undertaken at Union level and promote coordinated management of the infrastructures needed in research.

The research activities envisaged in the area of global change may be carried out within the framework of the European Network for Research in Global Change (Enrich) network, with a view to focusing the Community's research effort and giving it a higher profile in the context of world research in this area. Such activities will be pointed in a direction which ensures that the research effort will help meet the objectives of the IGBP (1), the WCRP (2) and the HDP (3), and certain aspects of the development of the GOOS (4). Appropriate collaboration will also be set up with other international bodies such as the IOC (5), the ICES (6) and the Icsem (7).

Whenever necessary, the programme will be implemented in close coordination with other actions listed in the framework programme i. e. the programmes and activities mentioned in point 1, and also the programmes on 'agriculture and fisheries', 'biotechnology', 'non-nuclear energy', 'measurement and testing' 'industrial and materials technologies', 'telematics', 'transport', and 'targeted socio-economic research'.

SCIENTIFIC AND TECHNOLOGICAL CONTENT

Research Area A: Marine science

Objective

To study the fundamental processes determining the dynamics of marine systems in the seas, oceans and estuaries around Europe with a view to a better understanding of the marine environment and improved capability to model processes and forecast change.

1. *Marine systems research*

Objective

Observational and experimental studies, leading to the modelling of the physical, chemical, biological and geological processes and their interactions at basin and sub-basin scales, with emphasis on scientific problems relevant at the European level.

Research tasks

(a) Circulation and exchange of water masses: formation and exchanges of ventilated and non-ventilated water masses on the continental slopes and in the deep basins of the eastern North Atlantic, its northern marginal seas and the Mediterranean; change of the physical, geochemical and biological properties of these water masses during spreading and mixing.

(b) Practical and theoretical integrated ecosystem studies to model and define the resilience of pelagic and benthic ecosystems of marginal seas and ocean basins: structure and functioning of their living communities; energy and element cycling through foodwebs; processes controlling biodiversity, including effects of biotic and abiotic factors and the role of biodiversity in biogeochemical fluxes; characterization of marine organisms able to produce bioactive substances.

(c) Biogeochemical and physical processes including the role of waves and currents and fluxes across the air/sea interface: linkage of water and atmospheric processes and quantification of fluxes of energy, organic matter, inorganic nutrients, gases and metals involved in air/sea exchange.

(d) Flux of heat and organic and inorganic matter across the water/sediment interface: influence on ocean dynamics, energy balance, diagenesis of sediments and benthic and pelagic ecosystems.

(1) International Geosphere-Biosphere Programme.
(2) World Climate Research Programme.
(3) Human Dimension of Global Environmental Change Programme.
(4) Global Ocean Observing System.
(5) Intergovernmental Oceanographic Commission Unesco.
(6) International Council for the Exploration of the Sea.
(7) International Commission for the Scientific Exploration of the Mediterranean.

(e) Sedimentary processes in the deep sea, on the continental slope and on the snelf edge: transport and deposition on various time scales; role of chemical, biological and hydrodynamic processes.

(f) Marine biodiversity issues (genetic, population, species and habitat) as a basis for understanding ecosystem structure, dynamics and resilience in the context of sustainable exploitation, biological conservation and marine habitat restoration.

2. *Extreme marine environments*

Objective

To understand the functioning of ecosystems in extreme marine environments and to determine their role in the global environment by studying their characteristic physical, chemical, biological and geological processes.

Research tasks

(a) The deep sea floor in the North Atlantic and the Mediterranean: interdisciplinary studies at the base of the water column, of the sea-floor-water interface and of the sub-sea floor: quantification and long-term investigation in the spatial and temporal variability of biological, chemical and biogeochemical processes and fluxes (including hydrothermalism); geological, geophysical, and biogeographic processes at active plate boundaries.

(b) The ice-covered seas in the northern hemisphere: physical dynamics of sea ice, including interaction with man-made structures; deep water formation; large-scale circulation, eddies and shelf processes in the Arctic; biological dynamics of sea-ice-systems and their particular role in the Arctic food webs, life cycle strategies of marine organisms in Arctic seas; energy and mass exchange between sea ice and both the watercolumn and atmosphere; vertical biogeochemical transfer processes and the impact of variability in pack ice coverage on the sea floor communities; sedimet formation in ice-covered regions and the geological record as indicator of long-term ice cover change.

(c) The surf and swash zone of European coasts: study of sub- and intertidal ecosystems, including special regional habitats, in relation to the dominating physical forcing factors; morphological, physiological and ontogenetic adaptations of organisms; interactions of biological with physical, chemical and sedimentological factors which are relevant for formation, stabilization and alteration processes of the immediate shore line.

3. ***Regional seas research***

Objective

To combine comprehensive, interdisciplinary large-scale process studies under a common objective in order to understand the functioning of entire inland seas or specific sub-areas of the eastern North-Atlantic. If there is need for more scientific understanding, regional seas other than the ones listed may be considered.

Research tasks

(a) The Mediterranean Sea:

Investigation of the physical, sedimentological, geochemical and biological processes which determine the evolution of the Mediterranean ecosystem; exchanges between the continental margin and the open sea as well as through straits and channels; contribution of various sources (e. g. atmosphere, rivers, upwellings) of organic and inorganic matter, transport in the water column and sediment record; modification of biogeochemical equilibria by anthropogenic influences; influence of physio-chemical environment on biological and microbiological processes.

(b) The Baltic Sea:

Quantification of contemporary fluxes of matter and energy including exchange with the North Sea, for a better understanding of the susceptibility of the Baltic Sea to global changes; assessment of evidence for past and present, natural and anthropogenic, changes of the Baltic in order to develop

adequate models to explain biotic and abiotic processes which control the system. Objectives should be to achieve a balance between exploitation of resources and sustainability and conservation of the entire system; development of general strategies and tools for integrated (i. e. scientific, technical and socio-economic) coastal zone management. These reasearch tasks will be carried out in close cooperation with the environment and climate programme.

(c) The Canary-Azores region and the Alboran Sea:

Analysis and simulation of the exchange of energy, water, particulate and dissolved matter and organisms between the North Atlantic and the Mediterranean and between coastal and ocean waters through the Eastern boundary current; work on the Strait of Gibraltar and adjacent seas will focus on analyses and simulations of energy-, water-, and particle fluxes including their climatic, geochemical and biological implications.

(d) The Northeastern Atlantic continental margin:

Determination of the principal processes controlling fluxes of water and particles in geomorphologically contrasting shelf edge systems; study of water masses, currents, productivity, sedimentation processes, sediment transport and biogases at the ocean margin; determination of the sensitivity of these processes in response to global climatic change and sea-level rise and vice versa.

Research Area B: Strategic marine research

Objective

To study the dynamics of marine systems for application in the management of the marine environment as a resource and as human living space; to study the dynamics of exploited marine systems for which there is a substantial body of basic scientific knowledge (such as the North Sea) to permit cooperative management of such systems by European coastal nations; with regard to the North Sea, to develop high-quality monitoring in line with the recommendations of North Sea task force. Consideration will be given to the impact of socio-economic factors on the marine environment in coordination with the environment and climate programme.

1. ***Coastal and shelf sea research***

Objective

To understand the complex interactions of the physical, geological, biological and chemical processes and human impacts in shelf seas and coastal environments; to enhance through increased sientific knowledge medium- and long-term predictive capacity of coastal zone evolution with a view to sustainable protection and use the coastal and shelf environments.

Research tasks

(a) Coastal physical processes and morphodynamics:

Processes and their interactions in the shelf sea and coastal zone mostly related to sediment (cohesive and non-cohesive) transport and morphodynamics; dynamics of estuaries and of inter-tidal zones and salt marshes in their role as shore protection mechanisms; development of robust, integrated models, supported and validated by *in situ* observations and databases, for predicting the effects of medium-, long-term and extreme events; design of large-scale experiments for model validation and calibration and risk asssessment.

(b) Structure and dynamics of shelf and coastal sea ecosystems:

Interactions between the shelf and the various components of the coastal zone (neritic zone, estuaries, inter-tidal zone, lagoons and salt marshes); relative importance of autochthonous and allochthonous sources of matter for different types of near-shore ecosystems; origin, transformation and fate of organic matter in the coastal sea; the role of coastal biogeochemical cycling in global change; integrated process modelling and experimental validation with a view to providing tools for management of shelf sea resources (research tasks will be coordinated with the activities in the environment and climate programme and with global initiatives).

(c) Methods for monitoring, forecasting and management of shelf seas and coastal zones, with particular attention to requirements of intergovernmental bodies:

Methods for the operation of forecasting and monitoring systems for physical and non-physical properties in coastal waters and shelf seas; methods for integrating subsystems and for evaluating information fluxes and management options, including assessment of risks.

2. *Coastal engineering*

Objective

To provide the scientific and technical basis which will enable the development of innovative design tools and will lead to laying down authoritative design guidelines regarding the various shore-protection measures.

Research tasks

(a) Design of man-made coastal structures and maintenance of natural coastal structures: Hydrodynamic processes affecting the dynamic behaviour and stability of coastal structures, especially 3-D effects. Numerical modelling of artificial and natural structures. Morphological impacts.

(b) Development of new remote sensing techniques, increased use of satallite imagery for the detection, monitoring and analysis of coastal processes; field studies to calibrate physical and numerical models, taking into account multi-directional aspects of swell (research in this area will be coordinated with the environment and climate programme).

Research Area C: Marine technology

Objective

To promote research on generic technologies (including underpinning methodologies and systems development) and on advanced systems (platforms and instruments), in order to improve or create new capabilities for observing, monitoring and managing the marine environment and for exploiting marine resources. A crucial objective of this research is to help make European industry more competitive.

1. *Generic technologies*

Objective

To provide the marine community with the generic technologies for the future by the development of innovative technologies, further development of existing technologies (for example in underwater acoustics hydrodynamics, resistant materials and robotics) or adaptation to the marine environment of technologies from other fields.

Research tasks

(a) Non-disturbing techniques:

Research on non-disturbing techniques for oceanographic observations (biological communities, three dimensional physical structure of the oceans), including sound signal modelling and analysis.

(b) Underwater communication and orientation:

Development of precise underwater positioning navigation and communication systems for large-scale research, surveying and monitoring (including the use of satellite systems), which are effective over distances large compared with water depth.

(c) Underwater viewing:

Development of advanced underwater imaging systems (optics acoustics, tomography) for biological, chemical, physical and geological/geophysical and archaeological research, and for inspection of marine structures, includuing antifouling provision.

(d) Exploitation of marine biological resources other than fisheries and aquaculture:

Development of techniques for the identification and cultivation of marine organisms capable of producing bioactive substances; extraction, purification, structural characterization and analysis of bioactive compounds; evaluation of the application potential of these substances for basic research in ecology, pollution, chemical manufacture, biological process monitoring, marine engineering, food technology and medicine.

(e) Submarine geotechnics:

Improvement of geotechnical knowledge of soils, slope stability, pipeline burial, anchorage of floating structures, and foundation of structures with alternative loadings, taking into account the aspects of risk-assessment.

2. *Advanced systems*

Objective

To design and develop advanced systems and subsystems for measuring oceanographic, (including geochemical) parameters and sea floor characteristics (geophysical and geological), taking samples, and implementing technologies used in support of exploration, monitoring and marine exploitation activities. These advanced systems will make it possible to monitor and model regional, global, seasonal and long-term changes in the seas and oceans.

Research tasks

(a) Unmanned platforms and autonomous systems:

Development of advanced equipment and subsystems for ships of opportunity and for unmanned platforms such as ROVs or autonomous vehicles, benthic landes, benthic laboratories and buoys; this includes research on advanced materials, power sources and propulsion systems research vessel based handling systems and ROV inspection of structures.

(b) Oceanographic measurement and sampling equipment:

Development of intelligent, controlled and reactive sensors, instruments and samplers, including for geotechnical and geophysical investigation of marine sediments. The research will take into account the needs of the future possible GOOS (Global Ocean Observing System) and of other major international programmes and the requirement to support deep sea exploration and exploitation activities. The transfer of existing sensors from other domains to the marine environment will be encouraged.

(c) Biosensors:

Development of underwater biosensors for monitoring pollution, chemical manufacture and biological process monitoring.

AREA D: Supporting initiatives

Objective

To improve coordination, cooperation and the exchange of information amongst European scientists and to help increase the effectiveness of national and international programmes through better use of research facilities and the transfer of expertise and knowledge.

Topics for action

1. Advanced training (fellowships, courses).

2. Standards for training and work in specialized fields of ocean sciences (e. g. scientific diving, marine technicians).

3. Coordination of modelling, promotion of common structures, compatibility and standardization, ocean data handling and management, ocean data exchange and quality control for research and operational applications: initiation of European activities in the fields of modelling marine systems, ocean data and information exchange and of quality control. To provide assistance so that specialized centres, national institutions and undertakings, in particular SMEs, can participate in a coordinated manner.

4. Coordinated use of capital facilities, including research vessels, and large computing facilities on a regional and European scale.

5. Design of components and systems for heavy advanced experimental and operational equipment.

6. Calibration techniques and standards for marine instrumentation and observation methods.

ANNEX II

INDICATIVE BREAKDOWN OF THE AMOUNT DEEMED NECESSARY

	ECU million
Area A	
Marine science	91
Areae B	
Strategic marine research	51
Area C	
Marine technology	69
Area D	
Supporting initiatives	17
Total	228 (1) (2)

(1) Of which:
— a maximum of 3,3 % for staff expenditure and 3,6 % for administrative expenditure,
— 2 % for training,
— ECU 2 million for the dissemination and optimization of results.

(2) Community funding for operational costs of research ships and associated equipment will be approximately 5 % of the total budget.

This breakdown does not exclude the possibility that a project could relate to several areas.

ANNEX III

SPECIFIC RULES FOR IMPLEMENTING THE PROGRAMME

The programme will be executed through indirect action, whereby the Community makes a financial contribution to RTD activities carried out by third parties or by JRC institutes in association with third parties:

1. Shared-cost actions of the following types:

   (a) RTD projects carried out by undertakings, research centres and universities, including, where appropriate, basic research of an industrial relevance.

   Community funding will normally not exceed 50 % of the cost of the project, with progressively lower participation the nearer the project is to the market place. Those universities and other institutions which do not have analytical budget accountancy will be reimbursed on the basis of 100 % of the additional costs.

   (b) Technology stimulation to encourage and facilitate participation of SMEs in RTD activities:

   (a) by granting awards for carrying out the exploratory phase of an RTD activity, including the search for partners, during a period of up to 12 months. The award will be granted following the selection of an outline proposal to be submitted normally by at least two non-affiliated SMEs from two different Member States. The award will cover up to 75 % of the cost of the exploratory phase, without exceeding ECU 45 000 or ECU 22 500 in the exceptional case of a single applicant SME; and

   (b) by supporting cooperative research projects, whereby SMEs having similar technical problems but not having adequate own research facilities, engage other legal entities to carry out RTD on their behalf. Community funding for cooperative research projects, involving non-affiliated SMEs from at least two different Member States, will normally cover 50 % of the cost of the research.

   Following an initial call, in both cases proposals may be submitted at any time during the period covered by the work programme being implemented.

   These activities will be complemented by specific preparatory, accompanying and support measures.

2. Preparatory, accompanying and support measures, such as:

   — studies in support of this programme and in preparation for future activities,

   — support for exchanges of information, conferences, seminars, workshops or other scientific or technical meetings, including intersectoral or multidisciplinary coordination meetings,

   — use of external expertise, including access to scientific databases,

   — scientific publications and activities for the dissemination, promotion and exploitation of results, in coordination with the activities carried out under the third action; the factors liable to encourage use of results will be taken into account from the outset and throughout the duration of RTD projects, the partners in which will constitute a key network for diffusion and exploitation of results,

   — analysis of possible socio-economic consequences and technological risks associated with the programme, which will also contribute to the programme 'targeted socio-economic research',

   — training actions related to research covered by this programme in order to facilitate technology transfer and enhance employment skills,

   — independent evaluation of the management and execution of the programme and of the implementation of the activities,

   — measures in support of the operation of networks for increasing awareness and providing decentralized assistance to SMEs, in coordination with the Euromanagement auditing activity of RTD.

   Community funding may cover up to 100 % of the costs of these measures.

3. Concerted actions, consisting of the coordination of RTD projects already funded by public authorities or private bodies. The Member States will help the Commission to identify relevant laboratories or institutes, in order to ensure that no major activities are left out of this concertation process.

   The concerted action option can also be used under the programme as a way of establishing the feasibility and defining the content of proposals for shared-cost research activities.

   Community funding will cover up to 100 % of the costs of the concertation.