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# COMMISSION OF THE EUROPEAN COMMUNITIES

COM(78) 307 final.

Brussels, 30 June 1978.

## PROPOSAL FOR A COUNCIL DECISION

reviewing the second multiannual research and development programme  
for the European Economic Community  
in the environmental field (indirect action)  
adopted by Decision 76/311/EEC

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(submitted to the Council by the Commission)

COM(78) 307 final.

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PROPOSAL FOR A COUNCIL DECISION ON THE REVISION OF THE  
SECOND ENVIRONMENTAL RESEARCH PROGRAMME  
- (INDIRECT ACTION) - 1976-1980

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I. INTRODUCTION

The Second Environmental Research Programme (indirect action) was decided by the Council of Ministers on 15 March 1976 ( O.J.n° L 74/36 of 20.3.76) for a five-year period (1976-80) with a EEC budget of 16 Mua. It includes four research areas :

1. Research aimed at the establishment of criteria, i.e. exposure-effect relationships for pollutants with regard to human health and the environment ;
2. Research and development on environmental information management, essentially on environmental chemicals (ECDIN project) ;
3. Research and development on the reduction and prevention of pollution and nuisances (including application of "clean" technologies) ;
4. Research and development concerning the protection of the natural environment.

Each one of these areas is subdivided into a number of topics and subtopics.

Article 4 of the Council Decision provided for a review and possible revision of the programme to take effect at the beginning of 1978, in order to adapt the programme to developments in research requirements and to the needs of the new Action Programme of the European Communities on the environment.

Accordingly, the programme was subdivided into two phases. The first phase was implemented with some delay due to the fact that the Council Decision took place only on 15 March 1976 and that the very large number of research proposals received afterwards required much time to be examined. Consequently most research contracts, which were limited to a maximum duration of two years, did not start until early 1977 committing funds until the end of 1978. The revision of the programme, therefore, cannot be implemented effectively before January 1979.

II. IMPLEMENTATION OF PHASE ONE OF THE PROGRAMME

A call for tenders was published in the Official Journal of the European Communities on 3 April 1976, setting the deadline of 30 June 1976 for the submission of proposals. A total of 732 proposals were received of which 145 were from the Federal Republic of Germany, 235 from France, 60 from Italy, 78 from the Netherlands, 47 from Belgium, 1 from Luxemburg, 127 from the United Kingdom, 16 from Ireland and 23 from Denmark.

The funds solicited in the proposals, adjusted for the duration of phase one, totalled 106,769,048 u.a. whereas only 7,425,000 u.a. were available for cost-sharing contracts.

An arduous task of selection had to be fulfilled, which took 6 months and 6 meetings of the Advisory Committee on Programme Management for Environmental Research (ACPM). As a result, many sound proposals had to be rejected or reduced considerably because of funding limitations.

Eventually 202 projects were financed for a total of 7,463,920 u.a.

Following the recommendation of the ACPM, about 80 % of total funding has been allocated to research areas 1 and 2. Funding breakdown per topic, up to 31 December 1978, is as follows :

RESEARCH AREA 1 (Exposure-effect relationships)

Topic 11 (Heavy Metals)	1,374,000
Topic 12 (Organic micropollutants) and 14 (New chemicals) combined	1,071,269
Topic 13 (Asbestos and Fibers)	177,051
Topic 15 (Air Quality)	863,200
Topic 16 (Water Quality)	963,300
Topic 17 (Waste Heat)	159,000
Topic 18 (Marine Pollution, including EURASEP)	663,236
Topic 19 (Noise)	511,000
	<hr/>
	5,782,056
RESEARCH AREA 2 (ECDIN)	376,720
RESEARCH AREA 3 (Pollution abatement)	374,000
RESEARCH AREA 4 (Protection of the natural environment, including ozone depletion)	916,544
Additional contribution to contracts 1st Progr.	14,600
	<hr/>
Total	7,463,920

Criteria for the selection of proposals were those recognized for the first programme, i.e. relevance to research programme and to environmental policy, scientific quality, possibility of coordination with other projects in the indirect and direct actions\*, prospects of success, and cost. Some priority was granted to those proposals

\* The current direct-action programme (1977-80) carried out at the Ispra establishment of the Joint Research Centre, includes four main projects (air, water, chemicals, natural resources).

which a) were the follow-up of promising research undertaken in the first programme, (e.g. screening tests for genetic effects of chemicals) b) would lead to cooperative projects involving research organizations in several member states (e.g. water quality and health, EURASEP (European Association of Scientists for Experiments on Pollution) project on remote sensing of coastal water quality, ozone shield depletion).

An increased effort is also being made to enhance the coordination of Community-sponsored environmental research (direct and indirect actions) and national research programmes in the same field. The various contact groups set up during the first programme have renewed their activities and several new ones have been created. An attempt was made to coordinate all publicly funded research in a specialized field, that of ozone shield depletion. A series of research seminars (each one to be organised jointly with a member state agency) have been planned on various topics of current interest to environmental policy. Their aim is to review work on hand in the member states and at Community level, define present and future research requirements and promote coordinated planning of national and Community research programmes.

The first such research seminar took place in Berlin (West) on 7th to 9th December 1977. Sponsored by the Commission and the Umweltbundesamt its main purpose, which was fulfilled, was to review research needs for the ecological testing of chemicals in relation to the future implementation of a Community Directive on the notification of new chemicals to be marketed (O.J. C 260 of 5 November 1976).

The second seminar, scheduled for July 1978 in Guildford, UK, and co-sponsored by the UK Department of the Environment and Department of Health and Social Security, will deal with the health effects and pathways to man of trace metals.

Parallel to these activities, the evaluation of the results\* from the first Environmental Research Programme (indirect action) is progressively being carried out. For instance, data obtained on lead toxicity have been reviewed by an independant expert and their applicability to Community directives assessed\*\*.

Thus it may be stated that the last two years have seen a broad development of the endeavour initiated in 1973 to coordinate environmental research throughout the Community, by means of joint funding of projects, concerted research actions, joint evaluation of results and planning of future work, and that this was made possible through the increased involvement of the ACPM members in this enterprise.

Even though the results of the research undertaken during the first phase of the actual programme are, for obvious reasons, not yet final, it has been possible to derive from them some indication with regard to parts of the programme which should undergo a modification in the second phase. Furthermore, the progress in implementing the European Community policy on the environment suggests the addition of few new topics.

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\* A volume of final reports on research carried out during the First Environmental Research Programme is available. Doc. EUR 5970, 1978.

\*\* The report "Evaluation of EEC-sponsored research in view of Community's Directives : biological effects of inorganic lead", was prepared by an expert on the basis of results of contract research concerning one topic of the First Environmental Research Programme (in press).

### III. PROPOSED REVISION FOR PHASE TWO OF PROGRAMME

In proposing a revision for the second phase of the programme the following questions may be addressed :

- to what extent should the content of the programme be modified to take account of current research requirements ?
- is the total level of funding adequate or should it be increased ?
- how should the second phase be implemented in terms of project definition, submission of proposals and selection criteria ?

These points are discussed hereafter under the headings A. Programme Content, B. Total Funding, C. Implementation.

#### A. PROGRAMME CONTENT

The programme as a whole and its general motivation, as described in the communication from the Commission to the Council (Doc. COM (75) 353 final) are still considered as valid: in general, continued support should be given to research in all the topics now covered by contracts. However, examination of current trends in the environmental field, at national and Community level, has led the Commission services, after consulting the ACPM to propose that (a) greater emphasis be given to certain topics for which research is already funded ; (b) several new topics be introduced ; (c) shifts of emphasis be effected within some topics ; (d) support be somewhat reduced for a few topics or subtopics.

Specific proposals are given in the following review of the detailed programme, in which topics and subtopics are described as in Doc. COM (75) 353 final.

1. RESEARCH AREA 1 - Research aimed at the establishment of criteria (exposure-effect relationships) for pollutants with regard to their effects on health and on the environment
  - 1.1. Heavy metals
    - 1.1.1. methodology of monitoring metal contamination, especially in the marine environment,
    - 1.1.2. fate and transformation in the environment, with emphasis on physico-chemical state, sediment-water distribution and models, or descriptive parameters, of transport in water
    - 1.1.3. experimental research on direct and indirect health effects, with emphasis on metabolism, late and chronic manifestations and synergistic effects
    - 1.1.4. application of screening tests for late and chronic effects to a series of heavy metals, alone and in combination
    - 1.1.5. ecological effects in continental and marine environments, including base-line studies and methodological aspects.

Research orientations and objectives for 1.1.

Further research on health effects should include the study of pathways to man through food water and air, and on metabolism of metals which are given priority in the E.C. Action Programme for the Environment (e.g. Pb, Cd, Hg, Cr, V, As). The results of such research will be used to update, if already existing, or prepare those documents\*, called in general criteria documents, which are necessary as a scientific basis for Directives or for any measure decided at Community level to protect public health. The documents deal with the relationships between exposure/dose and health effects of pollutants.

Research on environmental effects of metals provide data which will be used, in an analogous manner, to draft ecological criteria documents.

Funding proposal : because of a relatively large support during the first phase, support for second phase might be slightly reduced.

1.2. Organic micropollutants and 1.4. New Chemicals

- 1.2.1. detection and measurement in water (to be carried out as concerted action, follow-up of COST Project n° 64b, see pages 18-19)
- 1.2.2. fate of organo-chlorine and organo-fluorine (freons) compounds in the environment (moved to topic 4.1.)
- 1.2.3. experimental research on metabolism and effects in mammalian systems in order to assess risks to human health derived from overall exposure to micropollutants (see also point 1.6.3.)
- 1.2.4. ecological effects in terrestrial, freshwater and marine environments
- 1.2.5. development of screening methodology to assess late and chronic effects (in particular carcinogenicity, mutagenicity, teratogenicity).

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\* 1) Annex 1 to Directive 77/312/EEC of 29 March 1977 "Biological screening of the population for lead" ( O.J. L 105, 28 April 1977)  
2) Report prepared by a Working Group of experts for the C.E.C. "Criteria for Cadmium"(EUR-5967, Pergamon Press 1978)  
3) idem for mercury (in press)  
4) Directive under discussion by the Council concerning the air quality standard for atmospheric lead (O.J. C 151 of 7 July 1975).

Research orientations and objectives for 1.2. and 1.4.

The Commission has submitted to the Council on 21 September 1976 a proposal for a 6th amendment of the Directive of 27 June 1967 on dangerous substances\*. This amendment aims at introducing a notification procedure for "new chemicals" (this term is meant to cover also chemicals already on the market, if their pattern of use or the quantities produced change significantly).

Producers or importers will have to submit a base set of data on, among other things a) physico-chemical properties, b) toxic effects, including mutagenicity, c) ecological effects and d) biotic and abiotic degradability and bioaccumulation.

It is expected that, as a function of toxic properties and/or quantity produced, the base set will have to be complemented for many chemicals by further, more comprehensive testing ("Stufenplan").

On the other hand, a draft Directive on the control of certain industrial activities at present in elaboration, will probably require similar information on intermediary products, impurities and other by-products formed during the manufacturing process.

For the implementation of these regulations, an appropriate methodology will have to be established, in order to permit industry to comply with these requirements. In view of their importance in the regulatory process, these methods have to be carefully evaluated.

Consequently, the current research activities on the assessment of the impact of synthetic chemicals on health and the environment will be expanded. The research needs in the field of physico-chemical properties, degradability, accumulation and ecological effects of chemicals identified at the research seminar, organised by the Commission of the European Communities and the Umweltbundesamt, held in Berlin in December 1977 will be taken account of under point 1.2.4. Under point 1.2.5. the on-going effort on the development of screening tests for genetic effects (mutagenicity, carcinogenicity) will be amplified and a thorough evaluation of these tests will be attempted.

Due consideration will be given also to assess the feasibility of correlating structure and physico-chemical properties of chemicals with their effects and their behaviour in the environment.

Continuous attention should also be paid to pathways of organic micropollutants to man, via food, water and air.

Funding proposal : support should be substantially increased.

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\* O.J. C 260/4 of 5 November 1976

1.3. Asbestos

- 1.3.1. improvement of analytical methods
- 1.3.2. epidemiological surveys
- 1.3.3. experimental research on effects

Research orientations and objectives for 1.3.

In response to increasing concern about asbestos and other fibres in the general and working environment, research in this field will stress studies on detection and quantitative determination, on pathways to man, as well as experimental research on effects and epidemiological surveys. It will not be limited to asbestos but consider other inorganic fibres as well.

The European Parliament in its Resolution of 16th December 1977\* has also strongly recommended further research into dose/effect relationships for asbestos.

Detailed research requirements will be determined with the aid of experts on the basis of the Commission's report "Public Health Risks of Exposure to Asbestos"\*\*. .

Funding proposal : Support should be substantially increased.

1.4. New Chemicals : see 1.2.

1.5. Air quality

- 1.5.1. testing and application of remote sensing methods for the measurements of air pollutants (execution of joint field campaigns)
- 1.5.2. improvement of dispersion models for air pollutants in connection with field campaigns

Research orientations and objectives for 1.5.1. and 1.5.2.

Instruments developed during the first programme and the first phase of the 2nd programme have been tested in joint field campaigns (1975, 1976, 1977) around major sources of air pollution. These should be repeated in different pollution situations, possibly in conjunction with epidemiological surveys and with Concerted Action (see 1.5.3. and 1.5.4.), in order to assess the applicability of these techniques in monitoring pollution.

\* O.J. C 6/138 of 9 January 1978

\*\*Report-EUR 5653e, Pergamon Press, 1977

Developments of new instrumentation for remote sensing of air pollution should be continuously followed and assessed by the contact group, including the JRC scientists working on this subject.

Funding proposal : Level of support could be slightly decreased.

- 1.5.3. physico-chemical conversion of atmospheric pollutants : to be carried-out as Concerted Action (follow-up of COST project 61a, see pages 18-19)
- 1.5.4. epidemiological surveys

Research orientations and objectives for 1.5.4.

The results of the epidemiological survey on the relationship between SO<sub>2</sub> and suspended particulate matter and respiratory disease in children, conducted in the framework of the 1st Environmental Research Programme, could be better interpreted if additional information on health effects of air pollutants were available. Useful additional data could be obtained by means of another epidemiological survey conducted in two or a maximum of three representative study areas. The working programme, not necessarily the same as that of the first survey, might require measurements of additional air pollutants (e.g. NO<sub>x</sub>), an enlargement of population groups, i.e. inclusion of adults and the use of more than one method to detect lung function impairment. The data obtained would have application in updating or formulating Directives\* on air quality.

- 1.5.5. experimental research on effects of air pollutants in mammalian systems : to be pursued : see also 1.1.3. and 1.3.3.
- 1.5.6. field and experimental research on effects of air pollution on vegetation especially on invisible damage (growth reduction)

Research orientations and objectives for 1.5.6.

Additional contracts as well as a coordination of on-going research in the member states could be envisaged to complement the few existing contracts in this area as well as work carried out at the Joint Research Centre. Emphasis should be placed on "epidemiological" studies under field conditions, if their feasibility can be ascertained. An ad hoc expert group will be called to determine detailed research needs. The objective is to obtain supplementary information needed to set up quality objectives in this area, especially with regard to interaction between air pollutants in their effects on plants.

Funding proposal : Moderate increase in support.

1.6. Water quality

- 1.6.1. improvement of characterization of water quality in relation to the implementation of the 1975 Council Directive \*\* concerning the quality required of surface water intended for the abstraction of drinking water in the member states.

\* e.g. A Resolution and a Directive under discussion are concerned with 1) the determination of criteria and 2) the health protection standards for SO<sub>2</sub> and suspended particulate matter in urban atmosphere (O.J. C 63/76 of 19 March 1976)

\*\* O.J. L 194 of 25 July 1975

- 1.6.2. epidemiological surveys on relations between water quality and health parameters
- 1.6.3. experimental research on health effects and water characteristics
- 1.6.4. microbiological pollution
- 1.6.5. assessment of risks resulting from newly identified pollutants including those resulting from treatment for the preparation of drinking water

Research orientations and objectives for 1.6.

Information on the relationship between the health status of selected population groups and trace substances (e.g. heavy metals, organic micropollutants) in the drinking water they consume is needed especially in view of measures to be adopted at Community level concerning the quality of drinking water on the basis of present or future Directives\*. The 5 epidemiological surveys (1.6.2.) initiated in 1977 during the first phase of the present programme probably will be extended for an additional year. Work under points 1.6.1. and 1.6.4. will be pursued. Special emphasis should be given to the assessment of risks under point 1.6.3. and 1.6.5. in relation to point 1.2., in particular 1.2.1. on the analysis of organic micropollutants in water.

Funding proposal : Level of support to be approximately maintained.

1.7. Waste heat (thermal pollution)

The advisability of coordinating national research in this area under a concerted action will be assessed.

Funding proposal : the current effort may be maintained

1.8. Marine pollution

- 1.8.1. development of methodology for monitoring sea water quality along the coasts and in the estuaries of the Community
- 1.8.2. R & D in chemical and biological sensors for pollution monitoring
- 1.8.3. research in situ and under controlled conditions on the effects of pollutants (heavy metals, organic pollutants, hydrocarbons) on marine life, including base-line studies and the identification and use of bio-indicators.

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- 1) Council Directive concerning the quality of surface water intended for the abstraction of drinking water in the member states of 16 June 1975 : O.J. L 194/26 of 25 July 1975
- 2) A Directive is under discussion by the Council concerning the quality of water for human consumption (O.J. C 214 of 18 September 1975).

Research orientations and objectives for 1.8.

Work should be actively pursued and expanded on the effects of pollution of all kinds in the marine environment. A special effort should be made to study hydrocarbon pollution (including degradation by bacteria, applications thereof and possible secondary effects of bacterial degradation products) in view of measures to be adopted at Community level\* following the recent major accidents. With regard to possible research to be sponsored in the Mediterranean environment, care will be exercised to insure coordination with the UNEP programme in that area.

The information obtained is to be used in the definition of quality objectives and for emission standards in relation to Resolutions, Directives etc.\*\*

Funding proposal : Substantial increase in effort.

Note that :

- a) the EURASEP (European Association of Scientists for Experiments on Pollution) project will be continued (NIMBUS-G satellite due to be launched in late 1978), additional funding is contingent on the results of OCS (Ocean Colour Scanner) - Experiment 77
- b) coastal-base line studies might be initiated as the result of current discussions in the framework of COST activities (COST project 47)

1.9. Noise pollution

- 1.9.1. epidemiological survey on noise and sleep disturbances and psychological performances

Research orientations and objectives for 1.9.1.

The pilot phase (77-78) results should be partly available by mid-1978 and allow the identification of certain specific effects to be studied further on enlarged samples of population.

Funding proposal : Level of support unchanged.

- 1.9.2. effects of vibrations and low frequency noises  
and
- 1.9.3. effects of short and impulse noises

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\* e.g. Draft Council Resolution setting up an action programme of the E.C. on the control and reduction of pollution caused by oil spills at sea (COM(78) 184 final)

\*\*1) Council Resolution of 3 March 1975 concerning prevention of marine pollution of terrestrial origin (O.J. C 168 of 25 July 1975)

2) Proposal for Directive on the quality requirements of water for shellfish culture (O.J. C 283 of 30 November 1976)

Research orientations and objectives for 1.9.2. and 1.9.3.

These two subtopics have not been funded in the first phase although valuable research was proposed. An ad-hoc expert group should be called to recommend if and what research should be sponsored.

Funding proposal : modest support should be given .

2. RESEARCH AREA 2 (Environmental Information Management) ECDIN

Implementation of the 6th amendment to the 1967 Directive on dangerous substances\* will require a system to store and retrieve the data submitted in the notification procedure for new chemicals (see Research orientations and objectives for 1.2. and 1.4.) taking into account the confidential character of some data. Other Directives and draft Directives, such as those pertaining to toxic and dangerous wastes\*\* and the control of certain industrial activities (in preparation) will also necessitate the collection and handling of large amounts of data on chemicals.

ECDIN is suited to fulfill this function and may become an operational network in the future. It will have to establish working relationships with other information systems outside the EC (US and UNEP, United Nations Environmental Programme).

In view of the future need of such a Community information system, the current research effort should be maintained at the JRC and in the indirect action.

Funding proposal : the present level of funding should be maintained .

3. RESEARCH AREA 3

3.1. Water pollution abatement

3.1.1. Advanced biological and physico-chemical treatment of waste water

Research orientations and objectives for 3.1.1.

In view of the implementation of Directives on the reduction of pollution in the aquatic environment and on drinking water there is a need to test the performance of advanced water treatment methods and the relevance of existing parameters to test the effectiveness of treatment. In addition, a review of national R & D activities in this field should be made to ascertain whether a concerted action should be launched, taking into account existing international efforts.

3.1.2. Treatment and utilization of sewage sludges : (carried-out as Concerted Action, follow-up of COST project 68, see pages 18-19)

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\* O.J. C 260 of 5 November 1976

\*\* O.J. C 194 of 19 August 1976

3.2. Waste disposal : environmental implications

no change

Funding proposal for Research Area 3 : About 10% of available funds should be allocated to this area. Special attention should be given to the possibility of coordinating the development of clean technologies.

4. RESEARCH AREA 4

4.1. Ecosystems ecology and biogeochemical cycles

To be combined with 4.4. Ecological consequences of land use planning and 4.5. Ecological consequences of modern agricultural

Research orientations and objectives for 4.1.

The objectives are to predict the effects of environmental disturbances caused by man and to provide the basis for sound management of the "natural" environment.

It is proposed to subdivide 4.1. as follows :

4.1.1. Ecosystems studies

The Communities research effort should be intensified in view of increasing concern with global environmental disturbances and also of the need to improve environmental impact and assessment techniques. Besides basic ecological investigations on the function of ecosystems, supporting studies for the ecological cartography project of the Action Programme should be funded. A concerted action may also be envisaged.

4.1.2. Ozone shield depletion

There is still a considerable interest, and many questions still unanswered in the field of ozone depletion research. Not all the reactions involved have been assessed, nor the physico-chemical factors that govern them. The relative contributions of various chemical species such as the nitrogen oxides are not yet clear.

The coordination of on-going national research which has been effected will thus be pursued, taking into account the cooperation established in UNEP.

4.1.3. CO<sub>2</sub> accumulation

The atmospheric concentration of carbon dioxide has been steadily increasing since the beginning of the industrial era. As a consequence, there is a growing concern for its possible environmental impacts. CO<sub>2</sub> accumulation might have serious effects on climate ; its relevance to the overall carbon cycle deserves investigation ; its relation to fossil energy production and deforestation problems is evident.

However, preliminary to any impact assessment study, research is needed in order to obtain precise data about sources, sinks, levels

and transfer rates between the various compartments of the environment.

The national efforts will be reviewed in order to assess the feasibility and advisability of a Community-wide coordination and possible cooperation with the important US programme in this field.

Funding proposal : A substantial increase in funding is proposed for 4.1.

4.2. Reclamation of derelict land

Funding proposal : Current effort to be maintained.

4.3. Applications of remote sensing techniques for the study of environmental disturbances

No contract research will be sponsored in view of the JRC projects in this area.

4.4. Ecological consequences of land use planning : see 4.1.

4.5. Ecological consequences of modern agriculture : see 4.1.

4.6. Bird protection (new point)

Research orientations and objectives for 4.6.

The future implementation of the Directive\*, at present under discussion by the Council, on bird protection will require a research effort to clarify a number of points in population dynamics and habitat protection. The Directive stipulates that research in this field should be coordinated at Community level.

Funding proposal : To be funded at modest level.

B. TOTAL FUNDING

The coordination of environmental research in the European Community which was initiated in 1973 should be progressively developed to fulfill in the most efficient manner the research needs of environmental policies at national and Community level.

In the short term, i.e. until the end of the 2nd Programme (1980), there is a need, as stated above:

- a) to continue support at about the current levels for research on certain topics ; support for some topics should be somewhat reduced ;
- b) to expand substantially the current effort in several topics and to mount actions on new topics.

\* O.J. C 24 of 1 February 1977

Consequently, it is proposed to increase the maximum amount of funds allocated to the programme by 30 % nominally i.e. from 16 million units of account to an overall expenditure commitments estimated at 20.8 million European units of account.

This would make over 10 million eua available for research contracts in 1979-80, approximately half of which would be allocated to new research i.e. new topics or expansion in currently covered topics, and half to the follow-up of current contracts, i.e. completion of projects underway and/or new orientations for research by the same contractors.

As far as the distribution of funds within the programme is concerned, it will be determined by the Commission services in consultation with the ACPM, after examination of the proposals. The following guidelines are suggested :

Research Area 1 : about 65-70 % of total funds for second phase (1979-80)

- 1.1. Heavy metals : decreased funding in relation to 1st phase
- 1.2. and 1.4. Organic micropollutants and New Chemicals : substantial increase
- 1.3. Asbestos : increase
- 1.5. Air quality : modest increase
- 1.6. Water quality: no change or slight decrease
- 1.7. Waste heat : no change
- 1.8. Marine pollution : substantial increase
- 1.9. Noise : modest increase

Research Area 2 : about 4 % of total funds : no change

Research Area 3 : about 10 % of total funds : substantial increase

Research Area 4 : about 15-20 % of total funds : substantial increase

## C. IMPLEMENTATION

The experience gained during the last few years, as well as the advice and guidance given by the ACPM have led the Commission services to the conclusion that the basic rules applied in managing the programme should be maintained but that certain aspects should be stressed.

Thus :

- a) Detailed research requirements for new parts of the programme should be determined as much as possible by ad hoc expert groups, prior to inviting proposals for participation, either through published calls for tenders or by direct contacts with qualified research organizations.

- b) Discussion of preliminary results takes place on the occasion of regular meetings of contractors working in related fields. This "contact group system" will be continued and strengthened. Members of the ACPM and independent experts participate in such meetings during which the progress of the research work is evaluated and its scientific value assessed.
- c) More visits to contractors' laboratories will be made by Commission staff (and ACPM members, whenever possible) to get better acquainted with research on hand.
- d) The organisation of research seminars and workshops covering Community and non-Community research will enable better consideration of the significance of results of contract research and to establish priorities for further research. The publication of the proceedings will facilitate the dissemination of knowledge acquired also through Commission sponsored research.
- e) The evaluation of the results of contract research is effected on the basis of both preliminary and final reports submitted by project leaders. It required the analysis of such reports by the Commission services and the ACPM and, wherever possible, by independent experts. The correspondence between the research work proposed and that carried-out as well as the justification of possible modifications, are verified; furthermore the results are evaluated in relation to their relevance to the objectives and principles of the Community environment policy.

At the same time the publication by project leaders of the results obtained in the course of contract research in the open scientific literature has an echo (i.e. requests of reprints, citation of articles in the lists of bibliographic references) which is a measure of the scientific value of the research.

Besides a purely scientific evaluation of the research carried out, an assessment must be made of the applicability of the results for the implementation of the E.C. environment policy and conclusions must be drawn on new orientations for future work.

- f) Every effort should be made to increase the number of concerted actions in suitable areas.

Concerted actions, indeed, may provide efficient means of enlarging the scope of Community coordination of environmental research based on the indirect action.

Criteria for launching a concerted action in a given area should be as follows :

- a) there has to be a significant amount of research on hand in most member states,
- b) the member-states are willing to submit all their publicly-funded research to the coordination at Community level.
- c) the programme of the concerted action should be of a certain size

So far, in the environmental field, one concerted action\* has been formally decided by the Council and two\*\* more have been proposed by the Commission to the Council. All three are the follow-up of COST projects. A new COST project (n° 47) on base-line studies in coastal ecology is also under preparation. On the other hand, coordination of national research has been established informally within the framework of the present programme, in the area of ozone shield depletion.

It is now proposed to assess the advisability and feasibility of initiating concerted actions in several other areas (see below.) This will be done, although no firm commitments can be made at present, in view of possible limitations in staff and financial means for the proper management of such actions.

In most cases it may prove advisable to enhance the concertation of national research by allocating Community funds to well-defined, usually small, research projects which would fill identified gaps in the existing programmes.

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\* Concerted action on sewage, sludge decided by the Council on 27 September 1977 (O.J. L 267 of 19 October 1977)

\*\* 1) Concerted action concerning the analysis of organic micropollutants in water (O.J. C 54 of 3 March 1978)

2) Concerted action concerning the physico-chemical behaviour of atmospheric pollutants (O.J. C 55 of 4 March 1978)

List of current and possible concerted research actions in the environmental field :

On-going

1. Treatment and utilization of sewage sludge (O.J. L 267 of 19 October 1977)

Submitted to Council

2. Physico-chemical behaviour of atmospheric pollutants, submitted on 1 February 1978
3. Analysis of organic micropollutants in water, submitted on 30 January 1978

On-going, informal

4. Ozone shield depletion
5. EURASEP (remote-sensing of coastal water quality) with the JRC.

Under preparation

6. Base-line studies in coastal ecology (COST 47)

Under consideration

7. Effects of atmospheric pollution on plants
8. Asbestos : exposure and effects
9. Thermal pollution
10. Advanced waste water treatment technology
11. Clean technologies (in specific industrial branches)
12. CO<sub>2</sub> accumulation in the atmosphere.

Opinion of the Advisory Committee on Programme Management for Environmental Research on a proposal of the Commission regarding the revision of the Second Environmental Research Programme (indirect action : 1976-80)

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During its meetings of 30 November 1977, 26 January 1978 and 6 March 1978 the Advisory Committee on Programme Management for Environmental Research has examined in detail the proposal of the Commission regarding the revision of the Second Environmental Research Programme (indirect action : 1976-1980). It has also reviewed the management of this research programme, and in particular the steps taken to achieve an increasing degree of coordination between national and Community activities in this field.

It agreed unanimously that the scientific content of the proposal is based on a sound assessment of the current and foreseeable research requirements of the Community Action Programme on the Environment, with regard both to the new topics proposed for introduction in the programme and to topics earmarked for expansion.

The Committee concurred that significant progress has been achieved in coordinating national and Community activities in environmental research since the inception of the 1st indirect action programme (1973-1975) by means of research seminars, working group meetings, and also through informal contacts among its members, etc... This effort, together with the systematic evaluation of results which has been initiated, should be intensified in the future, in order to increase research productivity both in quantity and quality and to facilitate the application of its results by potential users throughout the Community.

In conclusion, the Committee recommends :

- 1) that many projects in the existing programme should be extended for a further period to enable their successful completion, others should be terminated within the first phase ;
- 2) that research should be expanded considerably on several specific problems already under investigation ;
- 3) that new topics should be included in the programme taking into account national research activities ;
- 4) that co-ordinating activities should continue to be strengthened and broadened with consideration of concerted action where appropriate ;
- 5) that evaluation procedures should be developed (e.g. critical analysis of research results, assessment of their applicability for the implementation of the Community environment policy).

In view of these existing and additional requirements the Committee considers it necessary to expand the overall programme as suggested by the Commission and recommends the adoption of the proposal regarding the revision of the Second Environmental Research Programme (indirect action : 1976-1980).

PROPOSAL FOR A  
COUNCIL DECISION

reviewing the second multiannual research and development programme  
for the European Economic Community  
in the environmental field (indirect action)  
adopted by Decision 76/311/EEC

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The Council of the European Communities,

HAVING REGARD to the Treaty establishing the European Economic  
Community, and in particular Article 235 thereof;

HAVING REGARD to the proposal of the Commission;

HAVING REGARD to the opinion of the European Parliament;

HAVING REGARD to the opinion of the Economic and Social Committee;

WHEREAS the Council, in application of Article 235 establishing the  
European Economic Community, in its Decision 76/311/EEC adopted a  
multiannual research and development programme in the environmental  
field (indirect action);

WHEREAS Article 4 of the abovementioned Decision provides for the  
review of the said programme;

WHEREAS it therefore seems appropriate to review the programme;

HAS DECIDED AS FOLLOWS :

Article 1

The Annex to Decision 76/311/EEC shall, with effect from.....  
be replaced by the Annex to this Decision. The Annex shall form  
an integral part of this Decision.

Article 2

The overall expenditure commitments estimated at 16 million units of account shall  
be replaced by the overall expenditure commitments estimated at 20.8 million  
European units of account, the European unit of account being defined in  
accordance with the financial regulations in force. The staff assigned to  
the programme remains fixed at 10 Community servants.

Annex II

Done at

Date

For the Council

The President

Annex to the proposal for a Council decision  
reviewing the second  
Environmental Research Programme (1976-1980) indirect action

The topics included in the four research areas of the programme are as follows :

Research area 1 (research aimed at the establishment of criteria, i.e. exposure-effect relationships for pollutants and environmental chemicals)

1. Heavy metals : especially pathway to man through food, water and air and their metabolism
2. Organic micropollutants and new chemicals : especially evaluation of the effects on health and the environment of synthetical chemicals
3. Asbestos and other fibrous materials : detection methods and health effects
4. Air quality : application of techniques for the remote sensing of air pollution ; effects on health and vegetation
5. Water quality : especially epidemiological survey on health status of selected population group in relation to drinking water quality
6. Waste heat : ecological and microclimatic effects
7. Marine pollution : especially effects of hydrocarbons and decontamination methods
8. Noise pollution : continuation of the epidemiological survey on the noise effects on sleep ; effects of vibrations and low frequency noises.

Research area 2 (R&D on environmental information management, concerning essentially environmental chemicals)

Continuation of collection and handling of data on chemicals in the framework of the ECDIN project.

Research area 3 (R&D on the reduction and prevention of pollutions and nuisances)

Tests of advanced methods for water treatment.

.../...

Research area 4 (R&D concerning the protection and the improvement of the natural environment)

1. Ecosystems ecology and biogeochemical cycles, especially studies of ecosystems (contribution to the establishment of an ecological cartography) ; ozone shield depletion in the stratosphere and CO<sub>2</sub> accumulation in the atmosphere
2. Reclamation of derelict land
3. Bird protection : population dynamics and habitat protection.

FINANCIAL DATA

1. BUDGET CHAPTER : 3354

2. HEADING OF THE BUDGET TITLE :  
Environment research

3. JURIDICAL BASIS :

- Application of Article 235 of the Treaty establishing the EEC
- Application of Article 4 of the Council Decision\* adopting the second research programme for the European Economic Community in the environmental field (indirect action)

4. DESCRIPTION, OBJECTIVE AND JUSTIFICATION OF ACTION

4.1. Description :

Implementation and amplification of a coordinated environmental research programme, carried out by means of shared-cost contracts concluded with bodies in the Member States. It will cover the following four research areas :

- 1) research designed to establish criteria (exposure/effect ratios) for pollutants and potentially toxic chemicals) ;
- 2) research and development on environmental information management with particular reference to chemicals likely to contaminate the environment
- 3) research and development on the reduction and prevention of pollution and nuisances
- 4) research and development related to the protection and improvement of the natural environment.

4.2. Objectives :

To ensure accomplishment of the task of the Community as set out in Article 2 of the Treaty establishing it, of promoting and developing economic activities harmoniously as part of a continuous and balanced expansion by providing scientific and technical support to the Action Programme on the environment.

4.3. Justification :

Coordination of the research carried out as part of the Environmental Research Programme will make it possible to optimize results by encouraging specialized national laboratories to find solutions to problems of common interest. A review of the abovementioned programme will make it possible to implement and improve that coordination.

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\* O.J. nr. L 74/36 of 20.3.76

5. TOTAL FINANCIAL INCIDENCE OF ACTION (in EUA)

5.0. Incidence on expenditure

5.0.0. Total cost during the term envisaged

- on Community budget

- by national administrations

- by other sectors at national level

{ 16.000.000  
4.800.000  
13.000.000  
4.800.000

Total

38.600.000

5.0.1. Multiannual schedule

Commitment

	1976	1977	1978	1979	1980	1981
Staff			508.500	544.000	574.000	
Manag.			121.000	130.000	137.000	
Techn.			25.000	27.000	29.000	
Contracts			1.652.000	4.800.000	---	
Total	328.420	12.081.585	2.306.800	5.501.000	740.000	

Payment

	1976	1977	1978	1979	1980	1981
Staff			508.500	544.000	574.000	
Manag.			121.200	130.000	137.000	
Techn.			25.000	27.000	29.000	
Contracts			4.702.100	4.800.000	4.800.000	296.764
Total	328.420	3.777.016	5.356.800	5.501.000	5.540.000	296.764

5.0.2. Method of calculation

a) Personnel expenditure

Needs were assessed on the basis of the officials required for the programme

6 category A officials

1 category B official

3 category C officials

Apart from these posts the calculations take account of the parameters set for the purpose of drawing up the preliminary draft budget for the financial year 1979. No increase in purchasing power has been provided for. A change in the weighting applicable to remuneration was the only alteration introduced to take account of the general trend in prices within the Community.

b) Expenditure for administrative and technical operations

They cover travel, mission and meeting expenses as well as the cost of scientific and technical assistance whenever it proves necessary for the implementation of the programme.

c) Expenditure in respect of contracts

Since the nature of the work and the qualifications of the contracting parties vary, it is impossible to introduce a standard method of calculation.

However, the Advisory Committee on Programme Management (ACPM) will always be consulted on the allocation of funds.

d) Multiannual forecasts

The rates fixed for calculating estimates are :  
1979 - 1.07 ; 1980 - 1.31 ; 1981 - 1.20

5.1. Implications in respect of revenue

6. Type of control to be applied

Scientific controls : Management Committees  
ACPM  
Officials appointed by DG XII

Administrative controls :

Budget implementation : Financial Control

Regularity of expenditure : Contracts Division of DG XII  
and Financial Control.

7.            FUNDING ACTION

7.0.

7.1.

7.2.

7.3.            Funds to be included in future (s) budget (s)