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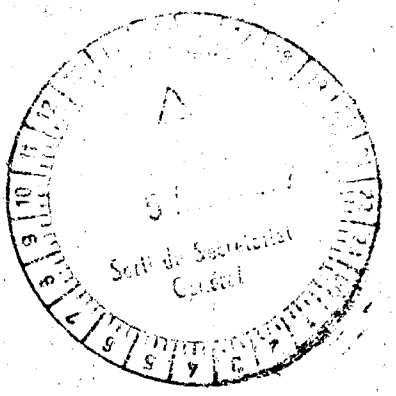

PROPOSAL FOR A COUNCIL DECISION ADOPTING A PROGRAMME OF RESEARCH AND DEVELOPMENT FOR THE EUROPEAN ATOMIC ENERGY COMMUNITY ON URANIUM EXPLORATION AND URANIUM EXTRACTION

(submitted to the Council by the Commission)

ANNEX 1

PROPOSAL FOR A MULTIANNUAL R & D PROGRAMME IN THE FIELD OF URANIUM EXPLORATION AND URANIUM EXTRACTION

(indirect action)

(1978-80)

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1. INTRODUCTION

The Commission is at present engaged in various actions to ensure adequate and secure supplies of natural uranium for the Community.
These include actions outside the Community to facilitate the supply of uranium to the Member States by improving the conditions for the Communities' industry to operate abroad in uranium exploration and production. Inside the Community, the Commission is partially funding uranium exploration, under article 70 of the Euratom Treaty.

To complement these measures, the Commission and experts from the Community consider that support of research and development in uranium exploration and uranium ore-processing is needed at Community level as provided by the Council resolutions of 14 January 1974 on an outline programme in the field of science and technology.

The need to finance R & D should be seen in the light of the Community's expanding requirements for natural uranium and the need to develop more advanced uranium exploration methods and uranium extraction and recovery technology to evaluate and exploit potential uranium resources.

1.1. URANIUM NEEDS

By 1985, it is projected that the natural uranium requirement of the Community will have grown from its present level of 6.000 tonnes U to 18 000 tonnes U per year (see annex II) and this will represent about one third of the increasing world demand for uranium.

Even if there is further slight slippage in nuclear programmes and as it takes 7 - 10 years to discover and develop an uranium deposit, action to facilitate the discovery and methods of processing uranium deposits in addition to those already known is needed now to have an effect on the market in the mid-1980's.

1.2. URANIUM RESOURCE POSITION

Presently outlined uranium reserves (see annex III), at a cost of under 15 $/lb U_3O_8 are estimated at 1.250.000 tonnes uranium. Estimated additional resources in the same cost bracket are assessed at 980.000 tonnes uranium. Reasonably assured resources in the 15 - 30 $/lb. U_3O_8 category amount to 820.000 tonnes uranium and estimated additional resources in the same cost bracket to 890.000 tonnes.

These estimated additional resources still, in many cases, remain to be found. However, the potential for finding large new deposits throughout the world is good, provided R & D is carried out to provide adequate exploration methods.

Besides these estimated additional resources, it is considered that there might well be at least another 10 million tonnes uranium available at a cost under 30 $/lb., but at unknown locations. No reliable evaluation can be made at present for the category above 30 $/lb.

It has been estimated that the annual discovery rate to date for uranium is between 40.000 and 80.000 tonnes a year. Since by 1990 the world uranium requirement could be of the order of 120.000 tonnes, the annual discovery rate needs to be trebled if adequate forward reserves are to be maintained.

Many of the world's significant uranium provinces were discovered before the 1950's. Although there are still prospective areas where little uranium exploration has been carried out, more effort is required to discover new uranium provinces and deeply buried ore bodies.

Recent increases in the price of uranium have augmented the number of possible targets both inside the Community and outside.

1.3. PRESENT SITUATION IN R & D IN THE MEMBER STATES

The Commission and experts from the member states have examined the state of research and development in uranium exploration and uranium ore processing.

The conclusion is that although considerable research has been undertaken in these fields, especially during the early 1960's, only limited work has been carried out since in the Community in the public of private sectors. To discover the

new uranium reserves required, it is vital that R & D into new uranium exploration techniques be stimulated. Moreover, R & D into ore-processing methods is needed to make it possible to exploit especially the small high-grade deposits present in the Community as well as lower grade ores. To do this work effectively and to avoid useless duplication of effort, co-ordination at the Community level is required. Financial help is needed as an incentive to industry to develop new advanced technology, carry out technical and economic studies and to develop potentially exportable technologies. This help would take the form of cost-sharing contracts whereby the Commission would provide part of the funds needed to carry out R & D projects as part of a jointly coordinated and managed programme.

2. R & D PROGRAMME CONTENTS

2.1. RESEARCH AND DEVELOPMENT IN URANIUM EXPLORATION TECHNIQUES

The challenge to find enough uranium reserves for the expanded future needs requires R & D, especially to improve geological and interpretive skills and insight. Various methods need to be supported, as the future range of techniques appropriate for different geological environments varies markedly from area to area.

It is considered that many future uranium deposits are likely to be deeply buried or covered with overburden and that improved methods of detection are needed to overcome the short-comings of gamma detection methods.

2.1.1. DISCOVERY OF URANIUM PROVINCES

2.1.1.1. Studies of uranium geology and metallogeny

Even though much attention has been given to problems of uranium ore genesis, there is still considerable uncertainty over determining the major controls of uranium mineralisation. Advances in this area are required to provide a better information base for uranium exploration planning. Evaluation of the favourable geological units for uranium in Europe should be carried out including their position in the metallogenetic cycle. The relationship of uranium mineralisation to sedimentological controls, tectonics and rock geochemistry should be examined. Some of this research could well be associated with the uranium exploration

support provided under article 70 of the Euratom Treaty.

2.1.1.2. Study of lead isotopes

The measurement of isotope ratios provides vital information on the conditions under which deposition has taken place. To assess the potential of using lead isotopes to indicate and identify uranium provinces, a one year feasibility study is proposed. This would involve rock sampling and analyses to determine Pb 204, 206 , 207 and 208 in conjunction with routine exploration campaigns.

2.1.1.3. Development of techniques for rapid routine geochemical analysis

In the field and laboratory, rapid, accurate, cost-effective analyses provide the information basis for exploration programmes. As exploration field seasons are often limited (e.g. in Greenland) it is vital to have a fast turn-around in sample analysis. In mass spectrometry the development of direct sample presentation at atmospheric pressure together with adequate sensitivity, ideally for a large number of elements, would be a worthwhile development.

2.1.1.4. Remote sensing

The benefits and limits of the information provided by remote sensing techniques, especially when applied to outlining specific uranium provinces and deposits, needs further investigation. Further evaluation of the information already made available should be carried out. The specific application of multispectral recording and side-looking radar, to aid in identifying uranium provinces, should be evaluated.

2.1.1.5. Airborne geochemistry

To be able to accurately interpret airborne radiometric measurements would add significantly to the usefulness of this tool in uranium exploration. Equipment and interpretive techniques need further development, especially in the areas of radon, Pb^{210}, Bi^{210} and Po^{210}, to determine their mobility patterns.

2.1.2. DISCOVERY OF SPECIFIC URANIUM TARGETS

2.1.2.1. Migration of gaseous daughter products of uranium

A study of the migration and measurement of gaseous daughter products from radioactive mineralisation in order to detect buried deposits, will be done with emphasis on radon, helium and argon. The usefulness of present techniques for measuring radon (pump monitors, static monitors, track-etch and solid-state detectors) and its effects (thermoluminescence) will be compared. A one-year pilot phase is foreseen which, if conclusive, will be followed by a two-year project.

2.1.2.2. Transportation and deposition of uranium from solution

Uranium is usually mobile in the hydrogeochemical environment. However, it is difficult to interprete anomalous uranium values as the controls acting in this environment are not fully understood. A study of the transportation of uranium and other accompanying elements in water, its transfer to soil, lake sediments and vegetation in known uranium districts is required, to determine the physico-chemical controls.

2.1.2.3. Direct measurement of uranium in-situ

The direct measurement of uranium in-situ would be of special use to the uranium mining industry where disequilibrium among uranium daughter products is a problem in drill-hole evaluation. The techniques available at present (X-ray fluorescence, Californium neutron sources and neutron generators) have yet to be fully developed. Assessment and development of the instrumentation available is required.

The interpretation of data from drill-hole logging also presents difficult problems which will be the object of a study by an expert group.

2.1.3. CALIBRATION OF INSTRUMENTATION

In order that exploration results can be accurately interpreted and compared with work carried out elsewhere, there is a need for the European Community to make generally available :

a) counting standards (radium, thorium, potassium) for the calibration of exploration instrumentation,

b) large diameter sources, for the calibration of field scintillometers and spectrometers,

c) test strips for in-flight calibration of aeroradiometric survey instruments.

A Community action in this area is required to establish these facilities.

2.2. RESEARCH AND DEVELOPMENT IN URANIUM EXTRACTION

The Commission, with the help of national experts, has analysed the state of R & D activities on uranium processing and recovery in the various member states.
The analysis has shown that there is a renewed interest in this field for the following reasons :

- increasing uranium world demand
- increasing uranium prices
- concern with regard to the prospect of a secure uranium supply from external sources

Knowing that the uranium reserves within the Community are limited, R & D efforts are needed at Community level to stimulate interest on the extraction of uranium from low-grade ores and other sources.

This is a vital necessity for the Community in order to ensure supply of this critical material.

Moreover, if advanced processes for recovery of uranium were developed, this would give to the member states the possibility of exporting advanced technology. That, together with the value of the recovered uranium, would thus reduce the balance of payment deficits.

The research topics selected would either result in significant reduction in processing costs or lead to uranium recovery from resources which have not so far been tapped.

Care was exercised to select the research topics which would develop into methods that have potential for significant cost reduction in uranium recovery processes. These research efforts would :

- be of direct or indirect interest to all member states
- complement or reinforce current national R & D efforts
- avoid useless duplication of national R & D efforts

The present proposal is structured along two major lines :

a) Studies of technico-economic feasibility

aimed at the improvement of the evaluation of uranium recovery from various sources

b) R & D activity projects

aimed at the improvement of processing and recovery technology with focus on low-grade ore and resources as possible alternative sources of supply.

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2.2.1. STUDIES OF TECHNICO-ECONOMIC FEASIBILITY

2.2.1.1. Recovery of uranium from phosphoric acid liquors

High uranium prices offer the phosphate industry an attractive opportunity to recover uranium as a by-product of fertilizer manufacture. Recovery from phosphoric acid liquors would mean keeping an important resource to augment the EEC's nuclear fuel supply while at the same time removing a radioactive contaminant from process residues and fertilizers. In order to assess the feasibility of recovering uranium from this source and the commercial and environmental implications, it is proposed to carry out a survey of phosphate processing plants in the EEC, in order to estimate tonnages and assess technical and economic problems likely to arise. In some cases it may be necessary to obtain analytical data on uranium concentrations in ores, process liquors and residues. This project will be complementary to project 2.2.2.3.1.

2.2.1.2. Extraction of uranium from sea water

Various countries of the Community have carried out extensive studies on the extraction of uranium from sea water and dilute solutions.
Many results obtained in this research have not been reported fully.

It is considered that the reporting of this work is an essential prerequisite for helping further studies on the absorption - elution process and on absorber selection and development so that unnecessary duplication can be avoided. It is proposed to carry out a detailed review of experience in this field.

2.2.1.3. Prevention of pollution from ore-processing operations

A problem of great concern is the prevention of pollution by wastes arising from present and future conventional mill operations. This is likely to be even more serious when low-grade ores are worked by in-situ leaching methods. A detailed review of the problems and their potential solutions will be undertaken.

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2.2.2. R&D ACTIVITY PROJECTS

2.2.2.1. Development of extraction techniques

2.2.2.1.1. In-situ leaching for the exploitation of deposits of limited size

In order to assess the possibilities of exploiting small (10 - 500 tonnes of uranium metal content) medium-to high grade ore deposits in the Community, tests will be carried out using in-situ leaching techniques with acid or alkaline solutions. Special emphasis will be placed on the preparation of the ore deposits:

(a) to prevent environmental pollution, particularly of groundwater

(b) to improve contact between ores and reagent

One or more suitable sites will be selected for field tests in order to evaluate uranium recovery and extraction costs.

2.2.2.1.2. Bacterial leaching

Bacterial leaching processes in various forms (vat leaching, stope leaching, heap leaching, bacterial regeneration of lixiviants) may have several advantages, such as savings in chemicals, reduced capital-cost, lowering of cut-off grade of ores and alleviation of environmental problems.

Laboratory and pilot plant tests will be carried out in order to compare the various possible approaches, with emphasis on the economic aspects in comparison with other processing techniques. So far the technique of bacterial leaching has been only applied to pyritic ores and it is proposed to apply it to other types of ores (e.g. sandstone) and to obtain information on engineering design parameters.

2.2.2.1.3. High temperature, high pressure leaching

Laboratory and pilot trials of this technique will be undertaken on ores such as sandstones and shales.

There is potential for reducing leaching contact time from days to minutes by using high temperature, high pressure leaching e.g. in tubular reactors.

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2.2.2.1.4. Extraction of uranium and other values from refractory ores and calcines

In some areas of the Community, there is evidence of large tonnages of uranium in refractory minerals, as well as in oil shales and lignites. A general approach for the treatment of these types of ores will include the application of leaching, roasting and chlorination processes. Consideration will also be given to the following:

- refractory ore from Greenland (steenstrupine) : laboratory investigations to stimulate hydrothermal alteration processes as a step in the development of extraction processes for this potential ore;

- oil shales and lignites: the application of fluidized bed roasting; recovery of uranium contained in the calcines, together with other values e.g. vanadium and aluminium, by alkaline extraction or by any other method;

- recovery of uranium from refractory ores as a volatile chloride.

2.2.2.2. Processing of low grade ores and wastes

2.2.2.2.1. Extraction of uranium from phosphatic sediments

The potential of phosphatic sediments located in Europe as host for uranium deposits is now attracting interest and some occurrences have already been identified. Mineralogical studies and laboratory tests will be initiated to identify the technological solutions to recover uranium as well as other valuable components (non-ferrous metals etc.)

Pilot scale work could follow the successful completion of laboratory work.

2.2.2.2.2. Extraction of uranium from phosphate rock treatment wastes

In the production of phosphoric acid and fertilizers in the Community, uranium is concentrated in certain wastes such as leach residues and phosphogypsum which present problems in disposal but at the same time contain valuable concentrations of uranium. It is proposed to examine methods of recovering this uranium and alleviate the disposal problem.

2.2.2.3. Recovery of uranium from low-grade resources

2.2.2.3.1. Recovery of uranium from phosphoric acid liquors

Phosphate rock containing 50 to 200 ppm of U is imported into EC countries for the production of approximately 2,500,000 tpa P_2O_5. A large part of the uranium is present in process liquors and there is potential for the recovery of 1000 - 2000 tpa Uranium. Solvent extraction processes which are very complex have been developed in the USA but have not yet been applied commercially because of difficulties associated with the handling of highly acidic liquors.

It is proposed to examine alternative processes involving the use of similar solvent extraction and ion exchange techniques but with novel reagents which should lead to simpler and more economic recovery.

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2.2.2.3.2. Extraction of uranium from sea water

A large amount of work has been and is carried out in some member countries on the extraction of uranium from seawater (see 2.2.1.2.). These studies indicated that recovery costs would be high. However, in view of uranium marketing activities producing concern over security of supply and the availability of this potentially large resource, there is renewed interest in this topic.

Specific suggestions and views from some EC countries indicate that uranium can be extracted from sea water using special systems which involve new types of inorganic and organic synthetic absorbers, other compounds and biological systems capable of entrapping uranium ions present in very dilute solutions. Research efforts should be undertaken at laboratory scale to be followed by pilot tests in order to re-evaluate the prospects for economic recovery.

3. FINANCING AND MANAGEMENT OF THE R & D PROGRAMME

3.1. The programme will be executed as a Community indirect action. For an initial period of three years (1978 - 1980), the total cost of the programme is evaluated at 9.3 Mua. Partial funding of this indirect action by the Community is estimated at a maximum of 4.65 Mua, i.e.:

1.40 Mua for R & D in uranium exploration

3.25 Mua for R & D in uranium ore-processing and recovery (see tentative breakdown in Annex I) of which 89% will go to funding contracts and 11% to management and coordination of the programme.

3.2. The Commission will execute the programme in close cooperation with the Advisory Committee on Programme Management in natural uranium R & D, to be established by the Council of Ministers.

The Committee will examine all R & D proposals submitted and advise the Commission on their relative merits. It will follow up the projects during their execution and evaluate them upon completion. It will also make recommendations on new research needs and priorities for the continuation of the programme.

Yearly reports will be made on the execution of the programme by the Commission to the Council and Parliament.

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3.3. The information resulting from the implementation of this programme shall be disseminated in accordance with Regulation (EEC) no. 2380/74 OJ no. L255, 20.9.1974 p. 1 decided by the Council on 17 September 1974.

ANNEX 1

R & D Programme in uranium exploration and extraction (1978-1980)

		Total Cost (Mua)	Maximum Community contribution (Mua)
2.1.	Uranium exploration		
2.1.1.	Discovery of uranium provinces	1.6	0.7
	- Uranium geology studies		
	- Study of Pb isotopes		
	- Techniques for rapid geochemical analysis		
	- Remote sensing applied to prospection		
	- Airborne geochemistry		
2.1.2.	Discovery of specific uranium targets	1.0	0.5
	- Migration of gaseous daughter products of uranium		
	- Transportation and deposition of uranium from solution		
	- Direct measurement of uranium in-situ		
2.1.3.	Calibration of instrumentation	0.2	0.2
	Sub-total	2.8	1.4

R & D Programme in uranium exploration and extraction

		Total Cost (Mua)	Maximum Community contribution (Mua)
2.2.	Uranium ore-processing		
2.2.1.	Studies of technical-economic feasibility	0.2	0.2
2.2.2.1	Development of extraction techniques - In-situ leaching - Bacterial leaching - High temperature, high pressure leaching - Extraction from refractory ores and calcines	3.7	1.8
2.2.2.2	Processing of low-grade ores and wastes - Extraction from phosphatic sediments - Extraction from phosphoric rock treatment plant	0.4	0.2
2.2.2.3	Recovery from low-grade resources - Phosphoric acid liquors - Sea-water	2.2	1.05
	Subtotal	6.5	3.25
	Total	9.3	4.65

of which 4.15 for cost sharing contracts and 0.50 for management and coordination

SITUATION AND ESTIMATES OF NUCLEAR GENERATING CAPACITY AND URANIUM DEMAND.

Line	Estimate		1976	1980	1985	1990
1.	EEC	GWe	19,1	47	90	160
2.	World AIEA (World Nuclear Power Growth, not included countries with centralized economics)	GWe		178	{350 {400	{550 {750
3.	EEC annual demand	000 tonnes U/year	6	12,5	18	28
4.	EEC cumulative demand	000 tonnes U	6	40	120	250

ANNEX III

Summarized world uranium reserves*

	Reasonably assured ressources		Estimated additional ressources	
	15 $/lb U_3O_8 (reserves)	15 - 30 $/lb U_3O_8	15$ lb U_3O_8	15 - 30 $/lb U_3O_8
Australia	312 (1)	41 (1)	80	Not known
Canada*	145 (2)	28 (2)	303 (2)	302 (2)
South Africa	186	90	6	68
U.S.A.	420 +	180 +(3)	500	312
Western Europe	54	423	35	131
Other	133	61	60	77
Total (rounded)	1250	820	980	890
Change over reference*	+170	+90	-20	+210

+ Categories are by reference to 'price' ranges $ 20 and $ 20 - 40 instead of 'cost'

+ Includes by-products of phosphate and copper production

* Figures taken from :

Nuclear Energy Agency and International Atomic Energy Agency Uranium : Resources, production and demand, including other nuclear fuel cycle data (Paris : OECD, 1976) 78 p.

unless otherwise indicated

(1) Gray A.J. Australian uranium - will it ever become available ? Reference 5. 28-37

(2) Canada, Department of Energy, Mines and Resources. 1975 Assessment of Canada's uranium supply and demand (Ottawa : The Department. June 1976).

(3) United States. ERDA. National uranium resource evaluation (Washington. D.C: ERDA. June 1976).

PROPOSAL FOR A COUNCIL DECISION ADOPTING A PROGRAMME OF RESEARCH AND DEVELOPMENT FOR THE EUROPEAN ATOMIC ENERGY COMMUNITY ON URANIUM EXPLORATION AND URANIUM EXTRACTION

(INDIRECT ACTION)

The Council of the European Communities,

Having regard to the Treaty establishing the European Atomic Energy Community, and in particular Article 7 thereof;

Having regard to the proposal of the Commission presented after consultation with the Scientific and Technical Committee;

Having regard to the Opinion of the European Parliament;

Whereas, under the common scientific and technological policy, the multi-annual programme of research and development is one of the Community's essential ways of contributing towards nuclear industries and towards the acquisition and dissemination of knowledge in the nuclear sector;

Whereas the Community, depends to a great extent from third countries for its natural uranium supply and thus that the Community's interest is to develop the existing resources on its territory;

Whereas a Community research and development action in the field of uranium exploration and extraction would contribute to the realization of the above-mentioned objective;

HAS DECIDED AS FOLLOWS :

Article 1

A programme of research and development on uranium exploration and uranium extraction as set out in Annex A , shall be adopted for a period of three years starting on January 1978. Annex A forms an integral part of this Decision.

Article 2

For the implementation of this programme, the maximum amount of the expenditure commitments is evaluated at 4.65 million units of account and the maximum staff shall be three persons. The unit of account is defined according to financial regulations in force.

Done at Brussels

For the Council

The President

ANNEX A

2.1. Research area I : Uranium Exploration

2.1.1. Discovery of uranium provinces

- Uranium geology studies
- Study of Pb isotopes
- Techniques for rapid geochemical analysis
- Remote sensing applied to prospection
- Airborne geochemistry

2.1.2. Discovery of specific uranium targets

- Migration of gaseous daughter products of uranium
- Transportation and deposition of uranium from solutions
- Direct measurement of uranium in situ

2.1.3. Calibration of instrumentation

2.2. Uranium ore-processing and extraction

2.2.1. Studies of technical-economic feasibility

2.2.2.1. Development of extraction techniques

- In situ leaching
- Bacterial leaching
- High temperature - high pressure leaching
- Extraction from refractory ores and calcines

2.2.2.2. Processing of low grade ores and wastes

- Extraction from phosphatic sediments
- Extraction from phosphoric rock treatment plants

2.2.2.3. Recovery from low grade resources

- Phosphoric acid liquors
- Sea water

Research work will be carried out by way of contracts.

FINANCIAL DATA

1. BUDGET CHAPTER : 3364

2. HEADING OF THE BUDGET TITLE : Research programme in the field of uranium exploration and uranium extraction (indirect action 1978/80)

3. JURIDICAL BASIS : Article 7 of EAEC Treaty
Council Decision

4. DESCRIPTION, OBJECTIVES AND JUSTIFICATION OF ACTION

4.1. Description :

Uranium exploration and uranium extraction.

Research programme carried out by means of cost-sharing contracts with research organizations in the member states, in the following research areas :

1) Research and Development in uranium exploration

2) Research and Development in uranium extraction and ore-processing.

4.2. Objectives :

R & D aimed at :

1) Increasing the self-supply potential of the EC in uranium

2) developing new techniques for exploration and exploitations of uranium deposits.

4.3. Justification :

Actions carried out at Community level optimize the productivity of research undertaken in the member states, by avoiding useless duplication and filling gaps. They also make it possible to concentrate the potential of the research organizations in the member states on problems of common interest and facilitate the development of advanced technologies.

5. TOTAL FINANCIAL INCIDENCE OF ACTION DURING THE TERM ENVISAGED (in EUA)

5.0. Funded :

- on Community budget
- by national administrations
- by other sources at national level

TOTAL 6.850.000 EUA

5.0.0. Multiannual term

Commitment in EUA

	1978	1979	1980	1981
Staff	123.100	132.948	142.796	
Manag.	30.900	33.372	35.844	
Contracts	2.846.000	1.183.680	121.360	
TOTAL	3.000.000	1.350.000	300.000	

PAYMENT

	1978	1979	1980	1981
Staff	123.100	132.948	142.796	
Manag.	30.900	33.372	35.844	
Contracts	646.000	833.680	2.421.360	250.000
TOTAL	800.000	1.000.000	2.600.000	250.000

5.0.7. Evaluation method
(included multiannual previsions)

a) Staff expenditure

The needs are estimated to be 3 staff for this programme

1978-1980 (3 years)

2 category A staff
1 category C staff

3 staff

In addition to staff number estimates, the evaluation take account of the data of the Council Decision of 21.12.1976, on the adaptation of salary of European Community staff and applicable correction coefficients adding to it - on a hypothetical basis - possible needs originating from the general evolution of prices in the Community.

The rates adopted are those used for the calculation of the three-year forecast 1978/1980. The evaluation of expenditure increases up to 1981 has been made on the basis of the following indices : 1978-108; 1979-116; 1980-124; 1981-132.

b) Contracts expenditures

In view of the nature of the subject and the qualification of the contractors, a uniform method of the evaluation can not be established.

In any case, the Advisory Committee, will be consulted on the allocation funds.

Incidence on the funds :

- Community income tax on staff

- Functionaries contribution for retirement fund

6. FUNDING ACTION

6.0.

6.1.

6.2.

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