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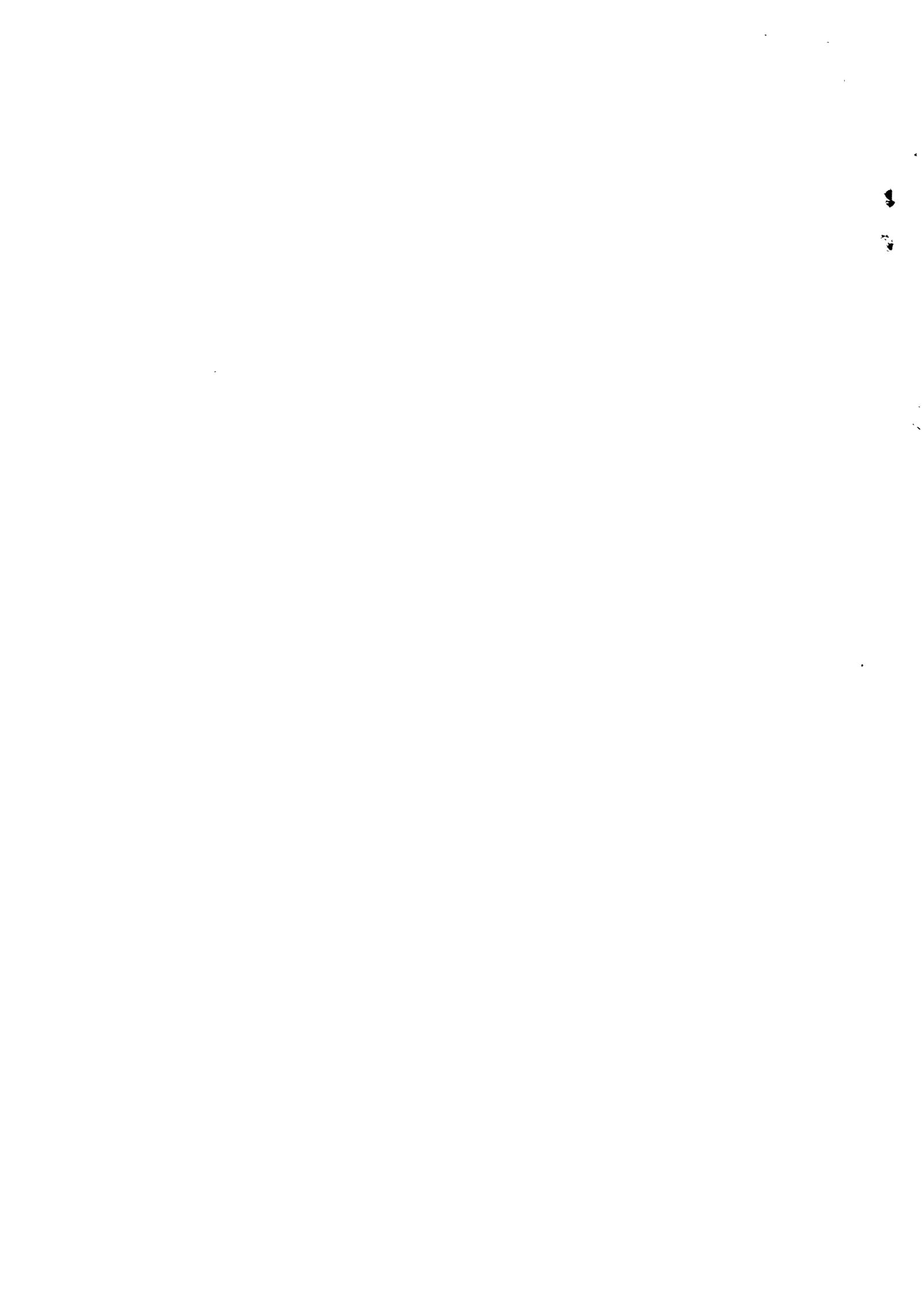
## PROPOSAL FOR A COUNCIL DECISION

on the adoption of a programme of assistance for the  
development of indigenous scientific and technical  
research capacities in the developing countries

1984-1987

(presented by the Commission to the Council)

COM(83) 354 final



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## SUMMARY

The proposed programme concerns the Community's contribution towards creating and extending scientific research capacities in the developing countries so that the necessary foundations are laid for the establishment of a genuine research and development policy of their own. It is for this reason that the programme is aimed in particular at strengthening the developing countries' research institutions ; as such, it is complementary to the programme adopted by the Council on 3 December 1982, which is aimed at increasing the stock of knowledge of the Member States and the developing countries in a number of areas.

The Community action will concern mainly the operation and equipping of research centres, the training of technicians and research workers, access to scientific information and the dissemination of the results.

Initially the emphasis is to be placed on agriculture, food and health. The amount estimated to be necessary for carrying out this initial phase is 60 MECU, comprising 40 MECU for agriculture and food and 20 MECU for health.

## I. DEVELOPMENT OF INDIGENOUS RESEARCH CAPACITIES

The purpose of Community action to establish and strengthen indigenous research capacities in the developing countries is to promote their development through research in the field of science and technology. The approach to the problems and the methods employed in such research must be suited to the peculiarities of the technical, economic, social and cultural environment of these countries. The results must lead to the implementation of practical schemes integrated into the development processes. No self-reliant and self-sustained development is possible unless it has the backing of scientific and technological research indigenous to the countries concerned.

### A. The research situation in the developing countries

Research in the developing countries is subject to a series of constraints which, in the long run, seriously hamper these countries' development.

Research carried out in the developing countries by foreign workers, although it is essential at present to solve priority problems of an urgent nature, must be of a temporary nature in that it must offset current shortcomings in the research field in those countries while helping to build up native teams to take over, either by means of direct training schemes and/or schemes linked to the research in hand.

National budgets are stretched to the limit coping with essential expenditure and little or no room is left for research. Even when the funds accorded by way of Community aid are allocated, the economic and social needs are so pressing that only the bare minimum can be given over to research, which is far too little to be of any help for the future.

In these circumstances the authorities, institutions and different persons engaged in economic activity in the developing countries are more or less obliged to borrow models, methodologies, techniques and, finally, products from elsewhere and these might not always be what the country, its undertakings and its people really need.

What is more, the "brain drain" continues in these circumstances; the country is deprived of its national capacity and the information on the country is concentrated abroad, which considerably reduces the possibilities for training up-and-coming native executive staff, research workers and technicians.

Lastly, there is little or no innovatory spirit which would enable future strategies to be evolved, because of the lack of research and native research workers in the country.

### B. How to step up indigenous research capacity

In order to help step up indigenous research capacity, concerted action will have to be taken at various levels.

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The most advanced scientific knowledge must be made available to developing countries. This goal is pursued in the programme recently approved by the Council, which calls upon the scientific community of the industrialized countries to work in close cooperation with Third World scientists in executing joint research projects with a high scientific content, the aim being to enable developing countries to make up the lost time which is condemning them to underdevelopment in the field of science.

It should also be pointed out that the most advanced technologies are often the most economical and the easiest to apply. However, this in itself cannot guarantee indigenous scientific development. It is therefore necessary, and even indispensable, for an additional effort to be made to strengthen scientific capacity in developing countries. This is the purpose of this proposal.

Finally, development aid should increasingly go towards covering the costs of setting up national and regional infrastructure (laboratories, centres, etc.) in the least developed countries and in the framework of cooperation agreements.

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By their very nature, the decision-making mechanisms chosen under these agreements, which correspond exactly to the initiatives of developing countries, do not give any special priority to scientific and technical development, so that further measures are required.

The first will be to tailor the research programmes financed by the Community to the prevailing situation and the priorities of the developing countries concerned. This is why these programmes will be chosen by reference to the inventory of the developing countries' research capacities. This is also why a dialogue will be opened up with the governments to determine their specific needs, taking account of local research capacity and national research objectives established on the basis of national development strategies. In the final analysis, the selection criteria for programmes will therefore be : urgency of needs (sticking-points in the development process which could be eliminated by scientific and technical research) ; consistency with the objectives and resources used in other forms of Community aid ; and scientific quality and efficiency.

Next, the methods employed for the programmes will be carefully devised so that research is geared permanently to three central themes, namely scientific and technical knowledge (agricultural, medical, etc.), the human environment (social, economic, cultural and other conditions) and the natural environment (ecosystem, natural resources etc.) In the absence of any thoroughgoing analysis of the interaction of these three themes, actual research schemes are all too frequently impossible to put into practice and can even prove counterproductive. Hence, the social, economic, cultural and ecological aspects of the problems will have to be taken into consideration at the same time as their technical aspects. The research will therefore have to be carried out not only in the laboratory but also, and especially, in the field, in specific human and natural contexts, taking account of traditional technical knowhow. It is in this context that it will be possible to call upon European institutes where their collaboration proves necessary because of their knowledge of the theory and practice of training methods or the use of particularly sophisticated scientific apparatus.

The priority fields for research (agriculture, health, population, environment, energy, underground resources) for the programme are described in detail below. They have been chosen to complement the country's own efforts and the Community's cooperation for development. They have been chosen in such a way as to guarantee synergetic effects, namely end-effects of the research on development schemes and counter-effects of current development schemes on research. Consultations with the developing countries will ensure that the financial resources are put to proper use by ensuring coordination with research already undertaken on the spot,

- (i) by the developing countries, including cooperation amongst themselves;
- (ii) by the Member States, in the context of bilateral cooperation with the developing countries;
- (iii) by the developing countries, with help from the Community;
- (iv) by certain international institutions.

Lastly, regarding the resources to be deployed, the programme will cater for all or part of the following components of the research programmes to be financed - training, and refresher courses for research workers from the developing countries and their participation in scientific symposia and joint research programmes; the dissemination of scientific and technical information, derived not only from publications and unpublished reports but also from data banks in the country or elsewhere, extension work on the results of research and operational aids and equipment for research centres. A study should also be made of the problem of repatriating, in certain circumstances, research workers currently employed in foreign research institutes. In particular, the improvement of research facilities in the developing countries will enable the proper tools of the trade to be provided for the research workers trained under the 1983-86 programme adopted by the Council on 3 December 1983.

In order to avoid duplication of labour and derive optimum benefit from the results of research carried out elsewhere, we must bear in mind that there is a constant need for intensive coordination of past and current research in the developing countries, in the industrialized countries and within international institutions; such coordination could be organized via existing public or private international bodies or by other means to be devised.

C. Guidelines adopted at international and Community level

The awareness of the role of science and technology in development found expression at international level first of all in the adoption of the "Vienna Programme of Action"<sup>1</sup> by the United Nations General Assembly, and subsequently in the adoption of the "Lagos Plan of Action for the Economic Development of Africa 1980-2000" by the Conference of Heads of State or Government of the Organization of African Unity<sup>2</sup>. Similar political stances have also been adopted in the Caribbean and Pacific regions and in the context of regional programmes such as that launched by ASEAN.

For its part, the Community has already stated repeatedly the importance it attaches to promoting indigenous research as part of its development cooperation policy. Its Memorandum on the Community's development policy<sup>3</sup> states that one of the main objectives for the eighties is "the development of independent capacities for research and technical applications". Option 5 of the "Proposals for a European Scientific and Technical Strategy - Framework Programme 1984-87"<sup>4</sup> sets out two complementary approaches for scientific aid to development, namely

- (i) "aid via international or Community organizations which contribute already and which guarantee immediate efficacy and the necessary continuity";
- (ii) "aid for the development of national and regional research systems in the developing countries".

On 3 December 1982 the Council adopted a "programme of research and development in the field of science and technology for development", to which 40 m ECU was allocated and which was aimed at enabling scientific institutions in the Member States or in the developing countries to carry out research in the interests of the developing countries. This corresponds to the first approach.

The programme now under discussion concerns the second approach of the framework programme and is aimed at the development of independent national and regional research systems in the developing countries. Parliament laid particular emphasis on the importance of this approach<sup>5</sup>.

The activities carried out under these two programmes will be coordinated among themselves and with any individual operations proposed in connection with development aid.

<sup>1</sup>Resolution 34/218 of 23 January 1980. Doc. A/CONF 81/16, notably pp. 65 - 67.

<sup>2</sup>Conference of 28 and 29 April 1980 - OAU edition, notably pp. 47 - 76.

<sup>3</sup>Memorandum on the Community's development policy, forwarded to the Council on 4 October 1982 (COM(82)640 final, p. 17).

<sup>4</sup>COM(82)865 final, p. 67 - forwarded to the Council on 22 December 1982.

<sup>5</sup>Resolution closing the procedure for the consultation of the European Parliament on the proposal from the Commission of the European Communities to the Council for a Decision adopting a programme of research and development in the field of science and technology for development 1982 to 1985 - OJ No C 182 of 19 February 1982, pages 84 - 86.

## II. PRIORITY RESEARCH AREAS

1. Given that the developing countries' needs tie in with present guidelines for the Community's development policy, the Commission feels that the programme of assistance for the development of indigenous research capacities in the developing countries should be conducted in the following areas<sup>1</sup>: agriculture, health, population, environment, energy and underground resources. These topics are interdependent and have their origins in the same set of development problems, which must necessarily be dealt with globally whatever particular area is involved.

In line with the Community's present policy of campaigning against hunger and mal-nutrition in the world and further to the research programme adopted by the Council on 3 December 1982, thereby encouraging application of the results, agriculture and health have been selected for the launching of this programme. The other four topics, which are described here in broad outline, will be the subject of a forthcoming proposal.

### 1. Phase one

#### A. Agriculture, fisheries and food

1. Agriculture has two primary roles to play in the developing countries: it has to feed the population - which is undernourished to such an extent that this constitutes the most serious challenge facing the world today - and it must form the basis for economic development, since it keeps 70% of the population busy and accounts for 30% to 40% of GNP.

Agriculture in the Third World is no longer fulfilling its dual task. Natural conditions go only part of the way towards explaining this situation because in those places where appropriate technology has been introduced into a favourable economic climate the results have been brilliant; this is the case in particular with certain export crops. Hence, there can be no talk of ecological inevitability and its effect on these regions, but rather insufficient mastery of techniques and an economic climate that offers few incentives.

Such technical progress can scarcely be achieved by transferring technology from agriculture as practised in the industrialized countries. There is a wealth of difference between them - the natural conditions (temperature, availability of water, length of the days, nature of the soil, etc.), the economic conditions (not sufficient industry to provide suitable inputs to equip and operate agriculture), peasant traditions which link production closely with a way of life (for example, the separation of stock farming and arable farming) and so on.

Massive use of the kind of inputs on which the expansion of European agriculture has been based is out of the question for farmers in most developing countries at the moment, both because of the cost and also because the inputs available are often not suited to local conditions. Even the use of water has to be regulated in such a manner as to produce the maximum amount of food for a limited quantity of water in many regions where lack of cultivable land is not a limiting factor, quite the opposite.

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<sup>1</sup> These points were presented by the Commission to the Council in its "Proposals for a European Scientific and Technical Strategy - Framework Programme 1984-87", Option 5 - COM(82)865 final, p. 68.

It is probable that processes that make wider use of biological mechanisms will be able to provide solutions which are efficient and economically acceptable. In this respect the requirements of agriculture in the developing countries coincide with the prospects offered by certain kinds of appropriate biotechnology.

Giving priority to biological processes does not mean that traditional tools should not be replaced by more efficient ones, suited to the requirements and purchasing power of the farmers. Neither does it preclude careful study of the relationship between the inputs, the natural resources (notably land tenure structures) and the people on the farms so as to help them progress along their complex social, technical and economic path.

2. As far as stock farming is concerned, certain regions have a definite advantage, which they are far from exploiting to the full. If a detailed study is made of the traditional pasturage methods it should be possible to suggest considerable improvements. The farmers must also learn to associate the capacity to produce young animals with the fattening capacity available in areas under cultivation by reason of by-products and certain fodder crops grown as part of an economic rotation system. Hence the use of draught animals can provide a market for stock-farming areas and a rational source of energy for higher productivity in agriculture.

Stock-farming has obvious connections with the environment; overgrazing, which is one of the causes of desert creep, can be cut down if the farmer is assured a profitable market in areas where arable farming is practised. In any case, improved stock-farming methods must go hand-in-hand with the control of desert creep.

Nevertheless, stock farming in forest areas should also be developed, not only for economic reasons but also because it could, in certain areas, help prevent forest fires.

The livestock is in great need of health protection, and this is where veterinary research can help. It should be aimed at devising methods suited to the economic, social and cultural conditions of the farmers.

3. Following a phase of exploitation similar to that of mineral resources, the forestry resources are playing a declining role in the economy. The forest is providing less and less workable timber, less and less firewood; it is affording less and less soil protection. Research can help improve this situation, particularly by drawing up an inventory of species and selecting suitable ones.
4. Man has not exploited varieties very fully, either in plants or in animals. He uses a limited number of species, compared with those about which he knows nothing or which he destroys. It is probable that there are other species, well suited to their environment, which could provide more products for man's use. To "domesticate" these species is a great challenge in those continents where genetic variety has not been sapped by man. Just exploiting certain species that are under-estimated at the moment would bring about considerable and rapid progress, notably small animal species.

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<sup>1</sup> See the results already achieved with the "green revolution" in Asia.

5. Fish should play a more important part in providing protein for man's diet. At the moment, fish production is not fulfilling this role at all successfully, except in a few large coastal towns and for fishermen, whether they fish at sea or in inland waters.

The main reasons for this are tradition and dietary habits, the great difficulties encountered with the preservation and transport of fish and - a relatively recent phenomenon - the fact that migratory fish have disappeared entirely from certain coasts because they are being caught on the high seas by foreign industrial fishing fleets.

Lastly, the drought that has been affecting certain areas - particularly the Sahel - for several years has cut down the flooding of rivers and lakes considerably, causing a sharp contraction of the spawning areas and hence reducing the possibilities of reconstituting the fish stocks.

Research must be carried out in the following main areas:

(a) in inland waters

- (i) opportunities for integrating a fisheries component into the development of large river basins and lakes;
- (ii) fish farming, based more on plant production in the water than on "importing" food for the fish;
- (iii) the association of fish farming and rice growing;
- (iv) production of fish, crustaceans and shellfish in developed mangrove swamps;

(b) at sea and in coastal waters

- (i) studies on simple techniques, suited to local conditions, for the preservation of fish, its transportation from the fishing area and distribution to the consumer, giving priority to meeting the needs of a customer with low purchasing power;

(ii) aquaculture.

6. As far as food is concerned, it is worth attempting to devise more effective processing techniques than the traditional ones, using locally available raw materials and taking account of dietary habits and the way they are evolving. An example here is the problem of bread; it is a product suited to a changing society but it is made generally of imported ingredients. Hence, appropriate technology should be brought into play to offer a similar service on the basis of materials produced on the spot, taking account of the psychological and social obstacles to be overcome. Similar problems arise with storage and preservation, which can be eased by improved or new techniques.

The entire action in the spheres of agriculture, fishing and fish farming and food preservation and processing should be aimed at ensuring not only greater food security and more abundant supplies but also providing food better suited to the nutritional requirements of the population.

This qualitative aspect deserves special attention when making a choice of agricultural produce, to be sure it is rich in protein (here we should stress the role of food legumes, eggs and milk) and, when deciding on preservation and processing techniques, which must retain as much as possible of the nutritive value of the original produce while avoiding deterioration and the introduction of harmful substances.

## B. Health

A substantial proportion of diseases could be curbed by simple measures aimed at improving dietary habits or environmental hygiene, measures that could be taken either within the framework of the public health system or as part of agricultural policy or land-use planning (water, housing, etc.).

Moreover, it will be a long time before the advanced medical technology resulting from laboratory research can be widely applied in public health policies. The gap between certain types of advanced research and its application is bound to be wider the less developed the country and the more serious the structural problems it is facing.

Nevertheless, sweeping generalizations should be avoided. Some advanced medical technologies are not necessarily more expensive, nor are they difficult to apply (e.g. "colour strip" urine testing, which is a quick, simple and very economic technique compared with the traditional method where a specialized team is required).

Research in support of a development policy must be aimed, therefore, not only at expanding laboratory research potential but also, as a back-up measure, at improving the health services.

For the body of medical knowledge to contribute towards improved public health in the developing countries it must be set in relation to specific environments.

In order to use medical, biological, genetic and pharmaceutical science to develop public health practices it is essential that on-the-spot research be carried out in various fields such as human science (sociology, economics) or allied sciences (agriculture, veterinary science, ecology). Such a multidisciplinary approach reveals the many links between man, his health and his environment. It is this approach that should be adopted to identify, propose and apply public health practices into which certain types of advanced research has been integrated.

As an example of this, we can mention the obvious connection between research into protein or vitamin deficiencies and the chain of factors influencing dietary habits - agricultural potential, cultivation methods, cultural or religious taboos, cooking or eating methods, stock-farming methods, marketing systems or even family structures and population growth.

It appears, therefore, that although research into medical technology can be carried out with a view to applying it across the board, public health practices must be tailor-made to suit the actual state of man and his behaviour in his specific environment. Consequently, this programme complements the research programme already adopted by the Council on 3 December 1982 since it ensures that the latter's results will be put into practice.

## Priority areas

### (a) A given population's view of health

Not all peoples view health in the same way. Some identify diseases about which others know nothing; this is apparent for example in their language. Many specific public health campaigns need to be backed by better insight into the way in which the disease and its symptoms are viewed and it is up to the scientists to encourage this.

### (b) Improved nutrition

Nutritional problems call for studies of the most serious deficiencies affecting large population groupings and of the practical ways of reducing them. Emphasis will be placed on nutrition of young children at the weaning stage and on deficiencies that seriously or permanently damage their health. The agri-scientific, social and cultural aspects will be dealt with of necessity simultaneously.

### (c) Human health and the environment

Many people are in constant contact with the agricultural environment in their every-day lives. Since certain chain effects become established and lead to recurrent and serious diseases the programme will support research that makes the connection between medical, veterinary and human science, putting forward detection and control methods that suit the specific environment.

### (d) Traditional remedies and modern pharmaceutical resources

What possibilities does the range of traditional remedies have to offer modern therapy? Research carried out in specific environments should permit an inventory and, subsequently, tests to be made on traditional preparations to find more effective remedies among the country's own resources and assess the possibility of putting them on the list of products that can be used for therapy in conditions suited to the social and economic situation of the developing countries.

It should be noted in this respect that the deep-seated social unrest connected with explosive urbanization in certain developing countries means that traditional remedies are no longer supervised as they were in village life. An important part of the proposed R & D should be working out systems for dosing and standardizing products from traditional remedies, as serious damage is done as a result of their indiscriminate use.

### (e) Study and development of medical equipment

Medical equipment is designed, in many instances, to operate in conditions other than those frequently prevailing in the developing countries. The climate, culture and economy of such countries, together with the lack of skilled operators and maintenance staff means that this advanced technology cannot give satisfaction.

Hence it is essential that medical equipment be designed to suit the conditions in which it will be used in the developing countries. The essential criteria will be durability and low frequency and cost of maintenance.

## 2. Outline of the four areas covered by phase two

### C. Population

The population explosion and its corollary, the drift to the towns on a massive scale, have upset economic, social and cultural balances as well as disturbing the environment. Planners do not have the reliable and relevant data to hand for coping with these disturbances within a reasonable time span.

Hence, research should be centred on:

- (i) improving data collection and information processing systems;
- (ii) migratory movements and the changing balance between town and country;
- (iii) the relation between demographic and other factors determining the development process;
- (iv) the social and cultural aspects of family planning and its impact.

### D. Environment

The environment is a very appropriate example in the research programme since it is, by definition, global - the natural and human environments form a whole. Hence, each part of the programme described above will deal with those environmental issues that are inherent in it.

The prime areas for research here will be climatology and hydrology, for it is they which, so to speak, condition most of the others, particularly agriculture. Research into ecosystems naturally fits in here too.

In order better to study climatology and its impact a network of data collection and processing is required. This must be created and developed on a regional basis.

Research into water resources and engineering should provide planners with guaranteed technical references, enabling them to avoid numerous errors, notably with hydro-agricultural development schemes and all the consequences they entail for human health and agricultural productivity.

### E. Energy

Having suffered the oil crises and faced with the gradual disappearance of their traditional fuel, wood, the developing countries are now obliged to establish energy policies enabling them to obtain the best possible return on their domestic resources and fully exploit ways of producing and distributing energy.

The research to be undertaken, therefore, covers the following areas:

energy saving (notably fuelwood); solar energy, wind, wave or tidal power; geothermal energy; improved use of human and animal power (appropriate tools); biomass (methanol - charcoal).

F. Underground resources

The development and management of the developing countries' mining resources is considerably hampered by the inability of the geological and mining departments to put together and implement properly coordinated research and prospecting programmes.

Therefore, in order to step up the developing countries' control over their resources, the establishment of research and prospecting methods and techniques within those countries must be encouraged; they must be in a position to evaluate the results of such campaigns and men must be trained to practise the methods and techniques.

### III. PROGRAMME MANAGEMENT AND IMPLEMENTING STRUCTURES

1. The Commission will be responsible for management of the programme. In order to implement it and run the scientific and administrative sides, the Commission will set up a small unit headed by an official as programme coordinator.

The Commission also feels that the execution of the programme will call for the services of an advisory committee to provide it with information on the estimated scientific and technical requirements of the developing countries.

It is proposed, therefore, that the Commission establish an advisory committee on the development of indigenous research capacities in the developing countries, to be chaired by the Commission and made up, in equal proportions, of experts from the developing countries, appointed by the Commission in consultation with the authorities responsible for them and experts from the Member States (two representatives per Member State).

The ACMC will be convened whenever necessary by the Commission. It will meet for the first time to help the Commission establish in detail the scientific content of the programmes it has selected. Another meeting will be held at the end of the second year of application of the programme to evaluate progress. Finally, the ACMC will meet again at the end of the programme to assess the results.

2. This proposal for the development of indigenous scientific and technical research capacities in the developing countries cover a period of four years starting on 1 January 1984. Any necessary adjustments will be made after the evaluation which will be carried out at the end of the second year.

3. In view of the specific nature and ultimate aim of this programme, which is being carried out in the interests of the developing countries, the Commission feels that special arrangements should be made for publishing the results of the research. Such arrangements should enable results of the research effected under the programme to be disseminated in the developing countries.

4. It is estimated that the staff requirements for the first phase of the programme will be four grade A, two grade B and three grade C officials.

#### IV. ESTIMATED FINANCIAL REQUIREMENTS

It is estimated that the funds required to implement the first two items - agriculture and public health - on the Community's programme of assistance for the development of scientific and technical research capacities in the developing countries will amount to 60 million ECU over four years.

The resources to be deployed and the relevant appropriations are shown in the following timetable. At this stage, the timetable is only provisional since the details of the action will depend on the inventory of requirements to be carried out in the developing countries themselves.

It is proposed that two thirds of the funds, or 40 million ECU, be allocated to the agriculture component and one third, 20 million ECU, to public health. This breakdown, too, is merely indicative. The final arrangements will be adopted by the Commission in consultation with the advisory committee as regards both the financial backing to be allocated to each component and the distribution of the resources to be deployed within each component.

INDICATIVE TIMETABLE

(million ECU)

Commitment appropriations	1984	1985	1986	1987	1988	1989
Staff	0,243	0,554	0,593	0,634	-	-
Administrative costs, studies, monitoring, experts' services	0,750	0,803	0,859	0,919	-	-
Refresher courses, seminars, exchanges of research workers	0,750	0,803	0,859	0,919	-	-
Financial and technical aid and contracts	10,257	15,840	18,689	6,528	-	-
<b>TOTAL</b>	<b>12,000</b>	<b>18,000</b>	<b>21,000</b>	<b>9,000</b>	-	-
<b>Payment appropriations</b>						
Staff	0,243	0,554	0,593	0,634	-	-
Administrative costs, studies, monitoring, experts' services	0,750	0,803	0,859	0,919	-	-
Refresher courses, seminars, exchanges of research workers	0,750	0,803	0,859	0,919	-	-
Financial and technical aid and contracts	2,257	9,840	14,689	12,528	10,000	2,000
<b>TOTAL</b>	<b>4,000</b>	<b>12,000</b>	<b>17,000</b>	<b>15,000</b>	<b>10,000</b>	<b>2,000</b>



Whereas one of the main objectives of development action proposed for adoption by the Memorandum on the Community's development policy, presented by the Commission to the Council on 4 October 1982, is "the development of independent capacities for scientific research and technical applications and the use of the whole range of science and technology in the service of development";

Whereas the European Parliament has recommended (1) that field research be stepped up in the developing countries, account being taken of cultural identity and the economic, social and cultural environment;

Whereas the developing countries have frequently expressed their awareness of the major role of indigenous scientific and technical research in economic and social development;

Whereas in consequence the Community should help the developing countries to strengthen and extend over the long term their scientific and technical research capacities;

Whereas the development of research capacities, in order to take account of the guidelines of Community development assistance policy, must cover six sectors (2): agriculture, environment, health, population, energy and underground resources;

Whereas it is desirable to devote an initial phase of the programme as a matter of priority to improve research capacities in the areas of agriculture and of food and health, where the gravity of the situation has already been recognized, notably in the abovementioned Council Decision 82/83 EEC of 3 December 1982;

Whereas a second phase of the programme will have to cover the other four areas referred to above;

Whereas, having regard to the object and the specific nature of this programme, special rules should be established to provide access for the developing countries to knowledge resulting from implementation of the programme;

Whereas the Treaty does not provide for the powers of action required to these ends,

HAS DECIDED AS FOLLOWS:

- (1) Resolution closing the procedure for consultation of the European Parliament on the proposal from the Commission of the European Communities to the Council for a Decision adopting a programme of research and development in the field of science and technology for development 1982 to 1985 (OJ C 182, 19.7.1982, pages 83-88).
- (2) Proposals for a European scientific and technical strategy. Framework programme 1984-1987. COM(82) 865 final, p. 67.

Article 1

A programme of assistance for the development of indigenous scientific and technical research capacities in the developing countries, as set out in the Annex, is hereby adopted for a period of four years beginning on 1 January 1984. The programme shall comprise two phases, the first of which shall be concerned more particularly with research capacities in agriculture, food and public health.

Article 2

The money needed for implementing the first phase of the programme, estimated at 60 million ECU including expenditure required for a staff of nine, which is necessary for the Commission to administer the programme, shall be provided from the appropriations for this purpose in the general budget of the European Communities. These figures are purely indicative.

Article 3

The Commission shall carry out the programme. It shall be assisted in its task by an advisory committee, established by Commission Decision and made up of experts from the Member States and the developing countries.

The Committee's function shall be to keep the Commission informed of the scientific and technical needs of the developing countries and to help it establish and subsequently evaluate the guidelines and results of the programme.

Article 4

At the end of the second year of operation of the programme, an evaluation shall be carried out for the purpose of adapting it to specific needs which may become apparent.

Article 5

Knowledge and inventions, whether or not patentable, resulting from implementation of the programme shall be made available to the Community and to the developing countries which have played a part in undertaking the research. The Commission shall see that they are protected. It shall communicate this information both to the Member States and to the developing countries which require it and are in a position to use it.

ANNEX

PROGRAMME OF ASSISTANCE FOR THE DEVELOPMENT OF INDIGENOUS SCIENTIFIC  
AND TECHNICAL RESEARCH CAPACITIES IN THE DEVELOPING COUNTRIES

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(1984-87)

A. The aim of the programme is to assist the developing countries to strengthen and expand their own scientific and technical research capacities, thereby fostering indigenous and self-reliant development taking account of their cultural identity and their economic, social and physical environment.

B. The programme covers six main sectors:

1. agriculture in the broad sense, including forestry, the campaign against desertification, fisheries (and fish-farming), and favouring those topics relating to self-sufficiency in food and rural development;
2. health, notably problems of nutrition and tropical diseases;
3. population: demographic trends;
4. the environment, notably hydrogeology and climatology;
5. energy: renewable sources of energy appropriate to developing countries' economies;
6. underground resources: geological prospecting.

C. An initial phase of the Community operation will concentrate on sectors 1 and 2 of the above.

D. The programme will be implemented in agreement with the beneficiary countries, following an assessment of needs.

The details of research operations proper will be decided when the Advisory Committee on Management and Coordination has given its opinion. They will be executed locally, in accordance with the social and economic priorities of the countries concerned and in line with the Community's development policy guidelines.

E. The Community's aid may cover the following:

- (i) the training and advanced training of research workers;
- (ii) training and refresher courses for technicians;
- (iii) North-South and South-South exchanges of research workers;
- (iv) scientific and technical information;
- (v) the supply of means of operation and equipment for the developing countries' research centres and, if necessary and on a selective basis, aid for the repatriation of highly qualified research workers currently engaged in research abroad.

FINANCIAL MEMORANDUM

1. NUMBER OF RELEVANT BUDGET HEADING: 7308 Research linked to development
2. TITLE OF PROJECT

Development of indigenous scientific and technical research capacities in the developing countries.

3. LEGAL BASIS

Article 235 of the EEC Treaty  
Proposal for a Decision on a four-year programme (1984-87) for the development of indigenous scientific and technical research capacities in the developing countries of , published in OJ

4. AIMS, JUSTIFICATION AND DESCRIPTION OF THE PROJECT

- 4.1 Objectives and justification

In accordance with the objectives of the Memorandum on the Community's development policy, this programme is aimed at the development of independent capacities for scientific research and technical applications<sup>1</sup>.

The programme is complementary to the Community's programme of "science and technology for development", adopted on 3 December 1982, which concerns essentially increasing the Member States' and the developing countries' stocks of knowledge; it also responds to Parliament's request to the Commission in its Resolution closing the consultation procedure on the programme that field research be included "as an equally valid part of its [the Commission's] programme of work ...". Faced as they are with serious and urgent problems, the developing countries can afford, even in the framework of their contractual relations with the Community, to devote only scant financial resources to creating research capacity. This is slowing down their development considerably. Hence, specific budget resources are required if the Community is to support the development of indigenous scientific research.

- 4.2 Description

The content of the particular programmes will be decided by mutual agreement with the recipient countries, depending on their social and economic priorities. Given the present line being taken by Community cooperation in the developing countries, priority will be accorded, in the first phase, to programmes in the spheres of agriculture, food and health.

A large proportion of the research will have to be carried out on the spot in specific contexts.

The developing countries' research infrastructure will be used and expanded, with the appropriate aid, to cover the equipment and running of national or regional centres.

Exchanges of research workers and specific schemes to train and inform them and the dissemination of information on the results of the research to potential users will also be included in the programme.

5. FINANCIAL IMPLICATIONS OF THE PROJECT IN RESPECT OF EXPENDITURE  
(including staffing costs and administrative and technical operating costs)

- 5.1 Total cost for the period envisaged 60,0 m ECU

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<sup>1</sup>Memorandum on the Community's development policy (COM(82)640 final, p.17.

5.2 Proportion of the financing

- from the Community budget	60,0 m ECU
- from national budgets	-
- from other national sectors	-

5.3 Multiannual timetable

5.3.1 Commitment appropriations

(m ECU)

Type of expenditure	1984	1985	1986	1987	1988	1989
Staff	0,243	0,554	0,593	0,634	-	-
Administrative operating costs	0,750	0,803	0,859	0,919	-	-
Training	0,750	0,803	0,859	0,919	-	-
Financial and technical aid, contracts	10,257	15,840	18,689	6,528	-	-
TOTAL	12,000	18,000	21,000	9,000	-	-

5.3.2 Payment appropriations

(m ECU)

Type of expenditure	1984	1985	1986	1987	1988	1989
Staff	0,243	0,554	0,593	0,634	-	-
Administrative operating costs	0,750	0,803	0,859	0,919	-	-
Training	0,750	0,803	0,859	0,919	-	-
Financial and technical aid, contracts	2,257	9,840	14,689	12,528	10,000	2,000
TOTAL	4,000	12,000	17,000	15,000	10,000	2,000

#### 5.4. Method of calculation

##### 5.4.1. Expenditure on staff

Requirements have been calculated on the basis of a staff of nine, consisting of four grade-A officials, two grade-B officials and three grade-C officials.

The calculations take into account the trend of salaries of Commission personnel as used for estimating the appropriations entered in the 1984 budget, applying for subsequent years an increase equivalent to the general price trend in the Community, which is used for the three-yearly forecasts, namely 7 % per annum. For the first year only two grade-A officials, one grade-B and one grade-C official are to be recruited.

##### 5.4.2. Administrative operating costs

This expenditure covers notably the cost of missions, experts' services, studies and monitoring, and meetings. It has been estimated on the basis of average requirements.

##### 5.4.3. Expenditure on training

This expenditure covers in particular advanced training courses for research workers and technicians, information seminars and refresher courses, and exchanges of research workers between scientific institutions. The estimate has been made by referring to comparable training schemes financed by the European Development Fund.

##### 5.4.4. Financial and technical aid and contracts

This expenditure covers the Community's financial contribution towards research carried out under contracts (study or research contracts, etc.) to be concluded with specialized institutions and the cost of scientific apparatus. Since the specific nature of the subjects dealt with and the qualifications of the contractors are variable, no standard method of calculation can be established. Consequently, the estimate of requirements is based on a hypothetical number and scale of financial and technical assistance schemes and contracts to be negotiated. In any case, the Advisory Committee on Management and Coordination will be consulted regarding allocation of these funds.

#### 6. FINANCIAL IMPLICATIONS OF THE PROJECT FOR STAFF APPROPRIATIONS AND CURRENT OPERATING COSTS

(see point 5 above).

#### 7. FINANCING EXPENDITURE

Financing from the annual budgets of the Commission.

#### 8. IMPLICATIONS IN RESPECT OF REVENUE

- Community tax on officials' salaries
- Officials' contributions to the pensions scheme.

#### 9. TYPE OF CONTROL TO BE APPLIED

Administrative checks by the Financial Control DG as regards implementation of the budget and the regularity and conformity of expenditure, and by the financial departments of DG VIII

Scientific control :

- Relevant Commission officials
- Experts from the APMC.