

COMMISSION OF THE EUROPEAN COMMUNITIES

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WORKING PROGRAM IN THE FIELD OF
"RESEARCH, SCIENCE AND EDUCATION"

(personal statement by Mr. DAHRENDORF)

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Corrections to the English text*)

*) The changes and complements are the results of talks with the services of the Commission and the most interested cabinets.

To part A. Education, training and cultural activities

1. Page 3, 1st §, 2nd phrase reads now:

The main provisions are contained in Articles 57 (mutual recognition of diplomas), 118 and 128 of the EEC Treaty (vocational training), Article 7 (sections on training of the research and training programme) and article 9 Euratom Treaty (European university).

2. Page 3, 3rd §, 2nd phrase reads now:

Since 1967, 40 proposed directives concerning this matter ...

3. -

4. Page 5, last §, 8th line.

Add following phrases after "technologies":

A Community education policy must complement the other Community policies. It depends to some extent on progress in the other fields of Community activity, and in particular in that of social policy.

5. Page 7, 1st §, reads now:

Comprehensive quantitative and qualitative statistics on education will be built up by the Statistical Office of the European Communities.

6. Page 8, 2nd §, now begins:

It is important to make progress with the realisation of free movement of teachers. Moreover, the effect of ...

7. Page 8, point F, last phrase, reads now:

The retraining of redundant workers should be promoted by Community rules which improve the efficiency of the Social Fund.

8. Page 9, last §, last line, reads now:

... demands will be made for conferences and studies.

To part B. Science, Research and Development

1. Page 10, 3rd §, 5th line.

Add following foot-note 4.500 Mua:

This overall amount embraces the entire 1972 public funds
(military and non-military research).

2. Page 13, 2nd §, 5th line.

Cross out: "from the organizational point of view".

3. Page 14, 2nd §, 6th line, begins now:

This puts in evidence ...

4. Page 23, 3rd §, 2nd line, underline: industrial policy.

5. -

To part C. Scientific and Technical Information

1. Page 31, letter h), begins:

Medecine: creation of an information system relative to ...

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General introduction

In organizing the structure of its operations, the Commission has set up a special department with responsibility for "Research, Science and Education", and there was political purpose in this decision: problems in research, science and education, which up to now have been separate, distributed over several fields and thus assigned to different objectives, are, now that they have been grouped together, to be tackled as an independent sector of a coherent Community policy.

To this department have been added those responsible for scientific and technical information and for statistics. In so far as problems dealt with here do not concern general service-rendering functions of the Commission, these fields are related in a variety of ways to research, science and education.

All these functions are governed by the Paris Summit Conference declaration to the effect that "Economic expansion ... is not an end in itself". Economic growth will continue to be an important aim in the future, and among other things demands continuous improvement in the standard of research and training. Expansion must, however, be to the good of humanity and enhance the quality of life: science and education have a special part to play here.

The tasks prescribed in the Treaties and the existing powers for carrying them out have been developed further by decisions of the Council of Ministers and communiqués from the Summit Conferences at The Hague and Paris. On this basis, short-term projects are to be initiated. Nevertheless, particularly in this field of activity, the timetable of action does not come to an end with the dates specified in the final Paris communiqué. For Europe, research, science and education are activities aimed at the medium- and long-term future. In this connection it must be borne in mind that not everything is improved by being done on a European scale. Rules have to be worked out for determining which aspects of policy are to be

.../...

approached on the Community level. Without prejudicing in any way the general formulation of these rules, the present work programme confines itself to three types of project:

- (a) projects in the fields of research, science and education and scientific and technical information, for which the Treaties prescribe Community action or which arise from Community policies in other fields;
- (b) projects which are inherently suited to the furtherance of European cooperation and thus aid the Community in achieving its general aims;
- (c) projects which can be carried out better at the European Community level than at the national level or that of international organizations.

In its three sections, this work programme covers five closely interlinked areas of Community policy: education; science; research and development; cultural questions; and scientific and technical information.

.../...

A. EDUCATION, TRAINING AND CULTURAL ACTIVITIES

I. Starting position

The Treaties have assigned to the Community only very limited tasks in the fields of education, training and cultural activities. The main provisions are contained in Articles 57 (mutual recognition of diplomas), 113 and 128 of the EEC Treaty (vocational training), and in the sections on training of the research and training programme pursuant to the Euratom Treaty. The final communiqués issued in The Hague and Paris stress the cultural quality of a unified Europe.

The Community's work in the field of vocational training has so far been carried out as part of social policy. The most important landmarks are the Council decision of 2 April 1963¹ and the "general guidelines for preparing a Community programme of work in the field of vocational training"² adopted by the Council on 26 July 1971. On this basis the Commission proposed a programme for action, whose 1973 instalment was adopted by the Council on 26 March of this year.

The work on the mutual recognition of diplomas has so far been pursued under the heading of freedom of establishment. Since 1967, 40 proposed directives have been placed before the Council. Till now none passed. The proposals concerning dispensing chemists, physicians and architects are currently being dealt with by the institutions of the Council.

On 22 July 1971 the Commission set up a "Group for education and training", whose tasks have since 1973 passed to the new Directorate-General "Research, Science and Education". The Group for education and training has submitted a document to the Commission entitled "Review and prospects of the activities of the Group on education and training"⁴.

¹ OJ 1963, 20 April 1963, p. 1338/63
² OJ No C 81, 12 August 1971, p. 5
³ Doc. SEC (72) 3450 final, 25 October 1972
⁴ Doc. SEC (72) 4250

.../...

So far, the Commission has looked into questions of European cultural policy only once - in December 1972, on the basis of a report by its relevant departments ¹.

A first meeting of the Ministers of Education of the Community countries was held on 16 November 1971. Work has been continued by a group of officials from the Member States, with the Commission participating ².

The expert opinion which the Commission on 19 July 1972 requested from Mr. Jarne and which has been the fullest account so far of the Community's tasks and possibilities was submitted under the title "Towards a Community policy on education" ³ in February 1973 and will be published in accordance with a decision by the Commission.

The Community participates in the financing and administration of the six European schools; it is represented on the administrative bodies of the European University Institute in Florence.

II. Medium-term objectives

Today, the main problems of education are shared by all developed industrialized countries:

- (i) giving effect to the civil right to education and the equality of opportunity for all;
- (ii) coping with the problems of a new order of magnitude ("mass problems") in secondary and tertiary education;
- (iii) the relationship between education and job (subject matters of education, demand patterns, career prospects, etc.);
- (iv) exploration of new technical and organizational methods to open the road to "permanent education";

¹ Doc. SEC (72) 4250 "Towards Community action in the cultural field"

² Most recently, summary report "Cooperation in the field of education"

³ Doc. R/967/73 (EN 42)

Doc. SEC (73) 600

- (v) changes in the quality of the subject matters of education and in the organization of the educational system to take account of the demand for more democracy and the tendency towards a critical view of the economy and society.

The mere mention of these problems is enough to show that at the moment the European Community can make only a very limited contribution to their solution. This is partly because it is still incompletely developed, and partly because the Community is not necessarily the appropriate political framework for solving them. But the more modest action which the European Community may still take would from the start be a failure if it were divorced from general developments.

A number of international organizations help to meet the need for an exchange of experience felt by those responsible for educational policy. Without wishing to compete with these organizations, the Community will, in the interests of its own decision-making, have to collect the necessary information on the state and trend of the educational systems in the member countries and keep this information available to those interested in it (A)*.

Today, harmonization of the European educational system and of its structures and contents as a whole appears to be neither realistic nor necessary. On the other hand it is important to ensure that new developments in the educational systems do not cause the Community countries to drift further apart. In addition, there are tendencies in educational reform which are along the same lines as the Community's policies. This is particularly true of permanent education and the development of educational technologies. In major individual sectors (B) the aim consequently is to participate in the process of educational reform.

* The letters ABCDEFG in this part of the document refer to the relevant sections of the following part.

The variety of cultural traditions and forms is one of Europe's main assets, and it is the task of the regional, national and European institutions to preserve and develop them. The Community can make a direct contribution to the building of a united Europe by highlighting the "European dimension of culture". To introduce structures permitting open competition in the cultural field, use must in this context be made of the instruments provided for in the Treaty, and the conditions necessary for such action must be created (C).

In this field also, the Community's classical policies include the great objective of achieving full freedom of movement (D).

Educational policy can in many ways help to promote the process of European integration, for instance by increasing mutual understanding, eliminating prejudice, promoting initiatives for cooperation between institutions from different member countries, and by other suitable measures (E).

One of the Community's tasks is coordination of vocational training. This field is gaining in importance, given the more recent tendencies in the general educational system (linking theory and practice, "building block system", permanent education), and the needs of an industrial policy of continuous structural adjustment. Coordination and, sometimes, harmonization of job-orientated education are therefore an accompanying policy of importance to other areas of Community activity (F).

European cooperation in the fields of education and culture also has repercussions on the Community's external relations. Educational cooperation must be part of the range of cooperation offered to non-member countries, especially developing countries (G).

III. Short-term and medium-term measures

A. INFORMATION SYSTEM FOR EDUCATION

Comprehensive statistics on education will be built up by the Statistical Office of the European Communities.

B. THE COMMUNITY'S PARTICIPATION IN EDUCATIONAL REFORM

Possible Community measures to encourage permanent education, educational technologies and open universities at European level must be examined.

Furthermore, proposals should be put forward on the coordination and harmonization between Member States of the measures taken (legislation and collective wage agreements) with regard to leave for further training.

C. THE EUROPEAN DIMENSION OF CULTURE

Information and documentation programmes could be developed for the cultural institutes of Member States containing common cultural elements and other complementary methods of presenting national culture. The administrative, legal and social obstacles which stand in the way of the free movement of persons undertaking cultural work and the exchange of cultural products must be listed and abolished in the setting of the rules of the Treaty. A comparative analysis should be made of the structure of the mass media in the Member States.

D. FREE MOVEMENT OF PERSONS

Consultations should take place with the groups and organizations concerned with the freedom of establishment for professional persons, so as to make rapid progress towards mutual recognition of qualifications with the aim of realizing freedom of establishment. For this reason we should begin this year, and with an exemplary case. Furthermore, the possibilities

.../...

must be looked into for mutual recognition of final and intermediate examinations for the purposes of further education. The idea behind this is for a "European educational passport" which should indicate the "convertibility" of diplomas and qualifications.

The effect of restricted admissions on the free movement of students in the European Community should be examined. The educational opportunities for children of migrant workers should be improved through basic Community rules.

Encouragement of an "active second language, and a passive third language" can also make freedom of movement easier, and can advance the integration of Europe at a practical level.

E. FURTHERING THE PROCESS OF EUROPEAN INTEGRATION

In 1974 a "pilot" conference for teachers from Member States should provide the initial impulse for a series of teachers' conferences on European questions in the Member States. Exchanges of teachers within the EEC and endeavours to set up lectureships in European affairs, as well as cross-frontier projects to link educational establishments, deserve to be encouraged. Models of European elements to be included in the curriculum should be evolved for use in schools in the Community, taking into account the experiences of the European schools.

F. VOCATIONAL TRAINING

A European Centre for Vocational Training must be set up which should encourage research, the exchange of information, approximation of standards of education, and the formulation of educational programmes. The retraining of redundant workers should be promoted by Community rules.

G. EDUCATIONAL AND CULTURAL COOPERATION WITH THIRD COUNTRIES

Cooperation should include a greater number of grants and the provision of experts.

IV. Organization, Methods, Financing

Many of the projects in the field of educational and cultural policy, especially those which are connected with reforms and can only be put into effect in the medium term, exceed the capabilities of the Directorate-General for Research, Science and Education responsible for day-to-day routine work.

It is therefore recommended:

- (a) that a high-ranking European personality be found to advise the Commission on educational and training questions;
- (b) that a certain number of well-known experts be chosen in the Member States who would be at the Commission's disposal in an advisory capacity and who would be able to meet periodically for joint discussions.

The advisers should examine in particular whether a European Educational and Cultural Committee should be set up, following Henri Janne's proposal, and, if so, how. The role of the "Advisory Committee on Vocational Training", which has existed since 1963, should be taken into consideration here.

The Council of Ministers of Education has met only once so far. He has now in hand the results of the preliminary study of the Guichard proposal for the foundation of a European Centre for Educational Development. These results are in many respects conform with the guidelines of this programme; in other respects they need to be complemented. The Council should meet therefore at the latest in autumn 1973 to decide upon the realization of the cooperation in the field of education within a common frame. Regular meetings of the Council could follow. A question to be examined is that of the circumstances in which the Council might deal with cultural matters as part of this programme.

The measures should be financed under the current budget, and greater demands will be made for conferences.

.../...

B. SCIENCE, RESEARCH AND DEVELOPMENT

I. The present situation

Whereas a general European science policy is still at the stage of development in all its essential parts, other research and development programmes of the Community could already be materialized from the very outset of the Community on the basis of the Treaties of the ECCS, EEC and, in particular, the Euratom Treaty.

The Joint Research Center with its research establishments at Ispra, Geel, Petten, Karlsruhe, was founded in the early days as an instrument for execution of common research and development policy in the nuclear energy field. After two five years' programmes the JRC underwent a crisis lasting from 1968 to 1973, which was not overcome till February 5, 1973, date at which an agreement was obtained on the Commission's four years' programme proposal.

The public investment for Community research, however, represents only a small proportion of the total expenditure of the member States for their national research and development efforts. Thus in 1972, for instance, the total expenditure made by the (at that time six) member States was about 4,500 MUA, of which only about 91 MUA were spent on Community research (76 MUA for Euratom).

The needs and the importance for a coherent Community research and development policy were felt ever stronger since 1967, and were stressed at several occasions during the last years, by the Heads of States and Governments, the Council of Ministers and the Commission.

The Council of Ministers and the Commission were supported in their corresponding tasks by the Group "Policy for Scientific and Technical Research" (PREST), composed by senior national officials as well as by representatives of the Commission. Moreover, the Commission for its advice created the "European Committee for Research and Development" (CERD) consisting of experienced personalities (experts) from Science and Industry. This Committee held its first meeting in Brussels on April 5, 1973.

The present discussions concerning the future R & D policy of the European Community are based in particular on the following two principles:

The first principle is contained in document COM(72)700 "Objectives and Instruments of a Common Policy for Scientific Research and Technological Development" forwarded by the Commission to the Council of Ministers on June 14, 1972.

The second principle is constituted by the final declaration of the Paris Summit Conference (October, 1972), according to which objectives have to be set in the fields of science and technology and the gradual realization of a common policy be guaranteed. Such a policy incorporates the coordination of national policies within the frame of the institutions of the Community as well as the common realization of procedures of Community interest. To this end the Community institutions have to elaborate, before January 1, 1974, a programme of actions including a precise schedule for the execution of such policy, and to indicate the necessary budgetary means.

The development of a common policy has to develop from present realities, and will have to coordinate, within the frame of a common coherent R & D policy, the Community programmes already existing in the fields of Coal and Steel as well as in the nuclear and non-nuclear sectors, with the considerations expressed in document COM(72)700.

II. Science

Science policy embraces public measures aiming at the general promotion of science, research and education as well as the promotion of R & D oriented towards the objectives of socio-political and industrial nature.

The broadening of the horizons of knowledge as well as the training of those who make this process to progress, are correlated. So the science policy of the Member States is in part related to the institutions of tertiary education, and in this way to cultural policy.

More than in Education, it becomes apparent in the field of science policy that the national frame is too limited to satisfy today's requirements for the development of scientific research and training. This applies to the general promotion of science to provide an adequate capacity of science on a broad scale, as well as to the subject oriented research and development policy for the materialization of concrete objectives as well as to fulfil the prevailing needs. The European Community could and ought to make its contribution to overcome the limits of national thinking in the development of science and to create an effective single area for European science in which cooperation and competition complement each other in a sensible way.

The difficulty of this task is underlined by the facts that:

- it would be wrong to ignore the existence of national science policies;
- especially in the fields of general science promotion, the natural and material field of cooperation often extends beyond the borders of the European Community;
- the European Community represents more and more the political place where relevant decisions are being taken in the fields of science policy.

The development of a common policy requires also the promotion and, hence, the increase of efficiency, of cooperation between member States in the field of fundamental research. The following sub-objectives are evident:

- Facilitate the mobility of searchers within the Community;
- Facilitate international meeting in the Community;
- Stimulate European cooperation by concerted actions and projects;
- Finding laboratories qualified for developing into special areas of research on a European level; set up a "professional network" of such laboratories;
- Coordination of costly long-term projects;
- Common use of expensive big instruments.

In view of the special characteristics inherent in fundamental research needing support rather than organization and promotion rather than programming, and considering that cooperation often exceeds the European Community, a special solution ought to be found from the organizational point of view, on Community level, to resolve the problems of this type of research.

The Community is favorable to a West-European cooperation starting up just now between the research councils and academies, and should be able to promote such cooperation by participating financially to an appropriate extent in Community projects, emerging from a future European Science Foundation for fundamental research.

Many problems of the general science policy, e.g. the dialectics between public financing and the freedom of science (State and science), the relationships between research and education at universities, the trends for a stronger democratization of decisions in the fields of science policy and scientific research are under discussion at the moment in the member States.

Though fundamental research developing quite independently already contributed to the solution of socio-political problems in the past, the question in which way it could possibly contribute efficiently to the solution of such problems in the future without giving up its "free research" character is becoming of growing interest.

To avoid divergencies within the European Community in this respect and in order to promote the exchange between member countries, the European Community should create a permanent discussion and information forum for science policy.

III. Research and Development

Objective-oriented research and technological development are the direct or indirect condition for rational solutions of the majority of political problems of the present time. They are the pioneers and precursors also to the solution of future problems. The readiness of the member States for a European R & D policy demonstrates the preparedness to act in common. Such a horizon puts in evidence the importance of an R & D policy for the European Community.

Its application is to contribute to achieve dynamically a set industrial economy and to materialize a more human European society.

1. Medium-Term Objectives

The primary task of any R & D policy consists in determining fields (topics, subjects) where research is needed, i.e. needs to be satisfied with priority at short, medium or long term. This is a difficult procedure where motives of priority and feasibility and -- as is the case with the Community -- motives relating to the specific needs and possibilities of the European Community are interacting.

Community activities in the fields of R & D shall neither represent a copy of nor be in competition to national activities. Certain selection criteria apply to such activities, which the Commission outlined already in document COM(72)700.

Thus the Community, prior to defining any objective or prior to starting any action, has to answer to the following questions:

- Is there a need justifying work on a given subject?
- Which are the results expected from the suggested action, which consequences are to be foreseen?
- Why should the Community take up that subject?
- Is there already somebody else working on the subject (which are the results?), or should somebody else do it?
- Should the subject be investigated by the Community, its own institutions and means, or rather via national organizations and installations?

At this point it becomes perceptible that R & D centers around two basic themes:

- innovation satisfying social needs in such fields like preservation of environment, health, education, urban developments, i.e. in general the improvement of the quality of life;
- innovation of industries to ensure and to increase this efficiency to raise the general technological level.

Here priority should be granted to the syndrom of problems (development of population, energy supply, preservation of environment, urban and rural life conditions, resources for man and industries, recycling, questions on human behaviour), which the Club of Rome characterized as problem areas without taking over the "pessimism by uncontrolled extrapolation" that makes part of the approach used in the studies of Meadows et al.

2. The main topics

a) Europe in 30 years - a Task for the Research of Research

The formulation of a research and development policy for the Community is a task of high complexity. Its preparation requires the systematic consideration of all data in the fields of research and development.

R & D policy has above all to be oriented toward the future, i.e. those problems must be investigated upon which depends a free and wealthy life of tomorrow. Therefore a study on the possible alternative developments expected within the Community, from a given reference year on in 30 years' time, covering the most essential sectors of Society (education, environment, city-planning, health, information, transports, agriculture, leisure), constitutes an indispensable element for the formulation of a long-term R & D policy.

Additional elements for the development of an R & D policy can be found by analysing systematically the following problem areas:

- possibilities of a rational and well informed planning,
- study of national objectives and the national decision-making,
- rational elaboration and performance of programmes,
- organization of research and development in the fields of complex social systems,
- behaviour of scientists, efficiency of scientists.

Finally it will be needed to determine the priorities of the Community as well as the creation of appropriate instruments for its permanent control and extension. It appears as vital in this context to find appropriate procedures to avoid the waste of money in accidental, idiosyncratic or merely inherited projects, as it is vital to perform research itself. Here the European Community could serve as an example, since it is less immediately exposed to pressures by interested parties than any national political organism.

b) Contributions to the Sectorial Policies of the Community

Even if the basis for the formulation of long-term objectives of the European Community has still to be elaborated, there are already today possibilities and needs for concrete R & D actions in support of the sectorial policies of the Community. For each

such policy, there is a global concept at hand, which enables to recognize and to define needs and problems to be satisfied and to be solved respectively, and to which R & D actions could make a contribution.

Possible actions are useful here to the immediate solution of problems and to the crystallization of medium-term objectives, as well as to the coordination of national activities.

Sectorial policies for that kind of actions are energy policy, development policy, industrial policy, information policy, agricultural policy, regional policy, social policy, and the environmental policy of the Community.

c) Scientific Public Services and Infrastructures

A third field, where the performance of Community activities promises to be more efficient than dispersed multinational competition, concerns scientific public services, and particularly the following sectors:

- data processing and dissemination of information
- data collection and processing
- standards.

Well-organized scientific public services provide a contribution to the rationalizing and the accelerating of the innovation process. The Community draws profit in all its parts from such development of already existing or the creation of new service centers.

3. Methods and Instruments

In virtue of the facts and the material objectives of a common R & D policy, and in accordance with the final declaration of the Paris Summit Conference, two basic types of activities are emerging.

a) Coordination of national policies

The resolution of the Heads of State and Government explicitly stipulates that the common research and development policy "includes the coordination of national policies". This decree is of the same importance as the intention to fix common objectives and to perform actions of Community interest, since the majority of the Community's research and development activities will for some years still be based on national decisions and be performed within the member States, even if the main R & D and sectorial objectives of priority will gradually be fixed in common.

The coordination of national policies will serve the following objectives:

- Continuous identification of research and development objectives of the Community countries following their main socio-economic objectives and thus identification of gaps and lacks. Laying down of Community objectives to be fixed according to the analysis.
- Laying down of such original objectives and options from which the countries of the Community should benefit by taking them up in common, even if they did not correspond exactly to the sum of their national interests or to a compromise of such interests.
- Maintenance of an entity between the objectives and the options of the member countries and the objectives and options of the Community or modification of the objectives in common agreement.
- Examination of value and benefit of pursued options, particularly in view of their human and social relevance and possible implications.

From a practical view point this should lead:

- to excluding unnecessary duplication of work;
- to an increase of the effectiveness of actions by distribution of work or, if the occasion arises, the concentration of resources or working groups; to efforts for a reduction of programme costs;
- to an improvement of the dissemination of information;
- to a progressive harmonization of the procedures in operation in the member States and in the Community in the fields of R & D.

b) Community Actions

Actions presenting a Community interest are performed as direct actions - i.e. within the establishments of the Community (i.e. today's JRC) - and as indirect actions - i.e. in the institutes, laboratories and centers of the member States.

The direct actions constitute the field of activity of the JRC. Which is the JRC's future role? Which tasks might guarantee its efficient working and the necessary stability?

The JRC, which was conceived as a nuclear R & D center, should within the next few years develop into an effective polyvalent tool for the common R & D policy to come, and receive the respective objectives and structures.

- In future, the R & D activities of the JRC will have to be centered on such fields which belong to established policies of the Community and which are characterized at the same time by the fact that:

- = they should rather be executed in common than on an individual national basis (e.g. environmental research, certain tasks in the data processing field and associated systems' analysis research, safety studies), or

- = that the fields of action imply high risk research still far remote from any industrial exploitation (e.g. production of hydrogen by water dissociation);
- The JRC should, to a larger extent, offer scientific services on European level;
- The JRC should assist the Commission through research which the Commission needs for its activities (as e.g. control of fissionable material, research for customs administration), as well as through the establishment of expert reports and systems' analyses (in support of the planning group to be created);
- The JRC should carry out a non-negligible proportion of its R & D work by order or on the account of third parties (public, semi-public and private organisms);
- In order to maintain the scientific level of the JRC, fundamental research should be done to a certain extent in parallel to the accomplishment of the afore-mentioned tasks (example: Trans-uranium Institute);
- The JRC should also become more and more a center of contacts and a place for the exchange of experiences made by European searchers and engineers.

The order of magnitude of the direct actions remains necessarily limited. The JRC is unlikely to be substantially enlarged when taking into account the financial readiness as well as the prevailing needs. The expansion of the Community R & D policy will therefore in the first place lead to indirect actions. The following individual instruments may be used for the execution of indirect actions: scientific and technical research contracts, industrial development contracts, association contracts, common enterprises and concerted actions.

The JRC should if possible participate in the indirect actions as one partner amongst others, thus linking together with the common R & D policy of the European Community (avoiding isolation of the JRC).

4. Short- and Medium-Term Actions (*)

a) Coordination of national policies

A "Committee for the Coordination of Scientific and Technical Research" will have to be created by 1974, to ensure the permanent coordination of the national R & D policies. This Committee will have to be composed of senior national officials responsible for R & D policy in their respective countries, and of representatives of the Commission. In the period of 1974 up to 1976, the Committee will have to assume the following tasks in the following order:

- Comparison of programmes in sectors whose objectives and actions, by the end of 1973, were given priority by the Council of Ministers.
- First attempt to concert national R & D budgets prior to decisions on national level.
- Progressive extension of procedures to compare plans, programmes and projects.
- Attempt to harmonize national procedures concerning decisions with a view to concert R & D budgetary decisions.
- Attempt to harmonize pluriannual programmes on national and Community level.
- Systematic transmission of all national R & D plans, programmes and projects by the member States to the Committee of Coordination as soon as the first considerations are started.

(*) Actions of Community interest only roughly described in paragraph 4, will be elaborated in more detail in the proposal communicated to the Council of Ministers.

- Coordination of national and Community budget decisions in the fields of R & D.

COMMUNITY ACTIONS

b) Europe within 30 Years - A Task for Research of Research Study "Europe plus 30"

A concerted action of the Commission aiming at investigating the European developments in the most essential sectors of Society, toward a mobile horizon of 30 years, is suggested and in a first phase is developed methodically. The general orientations described by the topic of "Europe plus 30" could determine the Commission's attitudes in many fields.

Information System

The Community is in need for an R & D information system collecting and processing all necessary informations pertaining to scientific and technological infrastructures, and interesting the Community's research policies (financing, human resources, orientations, etc.).

It will prove useful to create, within the Commission a "Planning unit" for further development of the long-term technological forecast methodologies, the estimation of possible and desirable options (cost-benefit analyses, human and financial resources needed, etc.), as well as for setting of priorities, i.e. in toto what can be termed as research of research.

The "Planning unit" will in this context largely rely upon close cooperation with national institutes and centers. The scientific consultant of the Commission will be the external partner to the "unit". He is also the President of the CERD Committee.

c) Research Actions in Support of Sectorial Policies of the Community

In the following, only examples are given which in the important fields of development cooperation, agriculture, information and social affairs need to be developed in collaboration with the responsible services.

Energy policy remains a central area of research interest of the Community. Besides the thermonuclear fusion, two research subjects are of special importance in this respect: peripheral nuclear energy research, i.e. investigation into conditions resulting from the Community's supply of clean and cheap nuclear energy (environmental problems, material problems etc.); the extension of research to questions of non-nuclear energy sources and the problems of supply.

The Community's R & D policy is naturally closely linked to the industrial policy. Proposals are being elaborated by the responsible services. First of all, the following fields are concerned: aeronautics, data processing and new means of transport. Additional R & D actions are being elaborated in the fields of materials, pertaining e.g. to promote the compound-material technology.

It is moreover intended to initiate an action to promote the cooperation of the existing industrial research organizations in all fields, and especially the classical ones. Such cooperation should improve the exchange of information on R & D results achieved within the Community.

The objective of such a working programme makes it clear that research must pay a particular heed to the related problems for the creation of a life-worthy environment and to secure the natural resources. A research programme containing the most essential projects will be developed in the course of 1973 on the basis of the Commission's political guidelines and the views collected from competent consultative bodies.

d) Scientific services of the European Community

In the field of standards, the BCMN as well as the BCR represent first actions in this sector. It will have to be examined to which extent such developments could lead to the creation of a Community Bureau of Standards. Moreover, it will have to be found out whether or not such service centers do represent genuine objectives for the Community for testing pharmaceuticals, the extent of food additions, the secondary effects of insecticides etc., for which the necessary structures as well as the necessary instruments would have to be developed. In the fields of data collection, the Office of Statistics represents a first activity on this sector. The latter will be described in a separate programme.

IV. Organization, Procedures, Financing

The present R & D organization within the Commission is the result of the new distribution of competences carried out on January 6, 1973 (comprehensive competences attributed to the GD XII), as well as of the reorganization of the JRC dating back to January 13, 1971.

The strong organizational independence granted to the JRC brought about to some extent a separation of the direct, indirect and coordinating actions. The move of the JRC to its new tasks as described on page 19 will imply probably measures for an appropriate modification of structures for which proposals will be submitted taking into account the principle of a large independence. However, such proposals can be made only as soon as the Council of Ministers' attitudes are better crystallized. It will then be necessary to extend the already advanced discussions on the suggestions made by the Commission in 1972 to the whole field of science, research and development in the spirit of the present working programme. Quite obviously, the Commission should present to the Council, besides certain basic organizational and procedural decisions, above all

proposals on specific items for decision. Moreover, in the course of 1973, the first revision of the pluriannual programme, suggested by the Council of Ministers for the beginning of 1974, will require particular attention.

The body for contacts with member States will be the above-mentioned "Committee for the Coordination of National Policies" composed by senior officials responsible for the R & D policy in their respective countries. This Committee should replace the Group for "Policy of Science and Technological Research" (PREST) of the Committee for Medium-Term Economical Policy.

The Council of Research Ministers should meet in intervals of about 6 months at the most, in order to fix on the basis of the Commission's forecasts and proposals the objectives and programmes of the Community as well as the financial amount needed.

It is indispensable that a new flexible method for financing Community R & D actions be developed. Following first estimations, as from 1975 an amount of about 100 millions u.a. (including the credits for the pluriannual programme already decided) will be needed for the execution of the proposals put forward by the Commission on actions of Community interest.

C. Scientific and technical information

I. Present position

The Treaties give the Community a broad function of dissemination of information in the areas of coal, steel and nuclear energy.

The dissemination of results and of patents arising from Community research is the subject of precise obligations (art. 55 CECA Treaty, arts. 12 and 13 Euratom, art. 41 Common Market).

Furthermore, the Council adopted, on 24 June 1971, a resolution by which the Member States agreed to coordinate their activity with a view to the gradual creation of a European scientific and technical documentation and information network.

The JRC programme now contains a not insignificant number of activities relevant to scientific information or to information management, particularly the three information analysis centres and the research on automatic translation and documentation systems.

II. Medium-term objectives

Industrialised societies rely largely and increasingly on a wide range of information, from the original knowledge born of research to collections of facts which while simple are invaluable for decision making. Industry and agriculture depend on it to improve their techniques and to put on the market advanced technology-based products and so face up to competition. Medicine makes large use of it in the improvement of diagnosis, therapy and drugs. Information is needed in education, in rethinking its methods, in the extension to life-long education, and in the reform of teaching. In government, the preparation of decisions through the evaluation of facts and of their contexts, origins and interactions is on the verge of a radical transformation which will be born of the new methods of information handling.

In all these respects the European Community has a considerable capacity both with respect to the sources of scientific and technical information and to the users of it. It is therefore necessary that action should be taken in the course of the next ten years to equip the Community with an information infrastructure befitting a modern industrial society.

This requires in the first place the creation of an effective flow of scientific and technical information in Europe, a kind of common market for information. The efficiency of an information system depends on qualitative and quantitative conditions. Quantitatively the number of sources available to a single user and the number of potential users who have access to the same information are relevant. Qualitatively technical conditions have to be created which make availability of and access to any specific information feasible. Quantitative and qualitative conditions are the pre-requisites to be fulfilled for the creation of a common market for information.

Here as in other sectors the Community cannot and should not endeavour to conduct policies exclusively by itself or to duplicate the policies of member states. There is however a need for a better cooperation of member states at the European level and for the preparation of a concerted attitude towards third countries. Because of the overlaps between the various missions and discipline oriented information systems and even between scientific disciplines themselves, all must work together in a European network; in this network the systems should be functionally linked as far as possible so as to re-enforce each others efforts; for this they must be compatible with each other both in rules and principles and in the number of technical and structural features decisive for this purpose. Coordination is thus a major task of the Community's information policy.

Scientific and technical information are a part of many of the sectoral policies of the European Community. Within each of these policies provision has to be made for the appropriate development

of data banks and other networks of information on a European level. The early definition of relevant sectors is important because the development of large-scale information systems while not very costly is slow. It may well take two years to evaluate needs and a further two years of experiment and development to design an appropriate system. A selection of priorities at an early date is therefore necessary.

The creation of an effective system of information and documentation is particularly important with respect to the science and technology policies of the Community. A common policy for research and development can only succeed if it is accompanied by a policy for the active dissemination of results by rapid and diverse means over and above the traditional distribution of documents. The innovative process based on these results should be stimulated by permanent evaluation of new technical developments and a systematic effort to find firms able to use them. Such an action could gradually be extended to the results of all the research and development activities backed by public funds in the Community.

Virtually all expert projections agree that, within one to two decades, scientific and technical advances in information handling will be made that will greatly reduce the cost of this activity and enormously increase its application and applicability - to such an extent as to radically change the nature of society, even dominate it in certain respects and pose grave social, political and economic questions for the general management of information technology. These questions arise from science and technology, and any programme of action devoted to science and technology which did not respond to them would be seriously incomplete. But the implications are much wider: they include relations between citizen and government; between government and Community; questions of education, of transport, of medical care and records: of economic and social management at all levels: of retail distribution: of telecommunications: of leisure. Ten to twenty years is not a very long time in the perspective of the development of society: technological developments have a

distressing habit of telescoping projections in time: the problems are grave and difficult. Their study cannot be left until the last moment but they must be anticipated and examined well in advance; and at the Community level if unbearable disparities or delays are not to result.

Provisions for an effective and responsible system of information management and its development are therefore in themselves a major goal of a Community policy in this area.

III. Short- and medium-term actions

In the light of the above guidelines a certain number of actions should be pursued or initiated:

A. COORDINATION OF NATIONAL POLICIES FOR STID

This action has been started within the CIDST (Committee for scientific and technical information and documentation, set up by the resolution of 24.6.1971). It should be extended to the harmonisation of attitudes towards third countries (1973 and following).

B. INSTALLATION OF THE EUROPEAN STID NETWORK

The Council's resolution of 24.6.1971 stipulated the creation of a European network and thus implied the need for a considerable number of studies and pilot projects in order to solve the technological, linguistic, legal and normalisation problems involved (1973 and following); the exchange of new information techniques (1973 and following); the promotion of specialists' training through financial support, the recognition of diplomas and the free movement of these specialists (1975 and following); training and information of users (1973 and following).

C. SECTORIAL SYSTEMS

Sectorial actions need to be examined and developed in those fields where gaps have to be filled. The development of large-scale information systems is not very expensive but it is slow. Thus, the only actions which can be implemented soon are:

- a) nuclear science: management of the European nuclear documentation system (ENDS).

- b) space: cooperation with the Space Documentation System (SFS) of the ESRO organisation.
- c) metallurgy: management of the input to the SDIM systems ("système de documentation et d'information métallurgiques" - Council resolution of 24.6.1971).
- d) agriculture: permanent survey of agricultural research projects (AGREP) (1973); working out of a STID system in conjunction with the FAO projects (1973) and of an Agricultural Management Information System (AMIS) within the framework of the management of the Community's agricultural policy (1973-1974).
- e) environment: creation of the information system included in the draft action programme in the field of the environment (1974 and following).
- f) patents: follow-up of the survey undertaken by the PREST group on patent documentation (1973-1974) and development of an information analysis service on patents in support of the work of other departments of the Commission (1973 and following).
- g) education: studies of Community-wide information in conjunction with the EUDISED project of the Council of Europe (1973-1974).
- h) medicine: preparation of actions relative to personal medical files and to data banks (1973-1974).

D. SUPPORT FOR COMMON POLICY FOR RESEARCH AND DEVELOPMENT POLICY

The simple publication of the results of Community programmes is not sufficient. It is too slow and does not ensure privileged access for the enterprises of the Community. The following actions are therefore envisaged:

- a) dissemination of results: improvement of the rules and methods of dissemination in the Coal and Steel and the Euratom sectors and their extension to new fields; scientific meetings, staff exchanges, visits (1974).
- b) permanent analysis and evaluation of results (1973 and following)
- c) industrial utilisation of results: systematic search for firms which could commercialise new technical knowledge (1973 and following); survey of those organisations within the Community which are responsible for promoting the use of results of publicly funded research, and comparison of their needs and their methods (1974); creation of an information network for the supply and demand of new technical knowledge (1975-1976).

E. MANAGEMENT OF INFORMATION

Examination by the Commission in consultation with other institutions including representatives of the social partners and other interested groups and professions of the possible creation of a Committee for Information Policy.

IV Organisation, procedure, finance

The Directorate General XIII, at present entitled "Dissemination of Information" constitutes the natural nucleus of a new Directorate General of "Scientific and Technical Information and Information Management". This Directorate General should be responsible for the implementation of the above actions.

In the field of information and documentation the task of the Commission and its departments will be to study the problems, to propose and try out solutions and then to launch the corresponding projects rather than to take on a permanent and centralised function of management. In the long run, only the dissemination and management of the results of Community research should remain in the hands of the Commission.

Nevertheless, the Commission, acting on behalf of the Community, should maintain a technical competence and an influence sufficient to maintain the coherence of the common information policy and to ensure that the European network answers the real needs of the users.

In the short term, the mechanisms and the procedures laid down in the resolution of 24 June 1971 should suffice to realise most of the Community's objectives.

An effective information policy would have a rather low cost, in view of the economies and of the visible and invisible benefits which the Community would derive from it. The funds required for the actions and studies planned for 1973 and 1974 have been earmarked in the respective budget and draft budget. In future, the Community should be able to finance the planned actions, even if only in part, because only a measure of Community finance makes it possible to have partners accept precise obligations. A simple concerted action of the SDIM type does not permit the satisfactory operation of an information system.

Where funds are appropriated for research and development, it is indispensable that an adequate proportion of them should be earmarked for the proper dissemination of results (for Coal and Steel research a provision of 3 % has proved satisfactory).