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**PERSPECTIVES FOR INTERNATIONAL COOPERATION  
IN RESEARCH AND TECHNOLOGICAL DEVELOPMENT**

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## SUMMARY

This Communication of the Commission outlines the general orientation for international science cooperation policies for the years to come. The last Communication on this subject was issued in 1990. Since that time important developments have taken place. These include:

- \* the Community's new framework established with the Treaty on European Union,
- \* the developments in international relations, and
- \* the changing conditions of research policies in the international context.

The rapid geo-political changes of the past can be summarized by the disappearance of previous divisions characterized by the collapse of communism and the rapid industrial emergence of several developing countries. In this situation, the EU has an increased responsibility to ensure a stable environment in a wider Europe. Science cooperation, in this respect, is one important element. It will, in particular, help upgrade the economic potential for the mutual benefit of all partners.

The decentralisation of research activities is facilitated by the new technologies, and increases the possibility of meaningful long distance cooperation. With the trade liberalisation, the pressure for competitiveness is growing. Europeans fear losses towards low wage economies which could have severe consequences for employment. Emerging markets, on the other hand, offer new opportunities. Thus, the key task for future policies in international RTD is to establish a beneficial balance between cooperation and competition. Worldwide cooperation in S&T, sharing risks and efforts, is also necessary to meet the great challenges of the 21st century.

The overall goals and principles, the European Union should pursue in international cooperation in science and technological development are:

- \* **strengthen European competitiveness and develop technologies for future markets**
- \* **develop partnership in S&T with the neighbours of the EU**
- \* **share responsibility and conduct RTD on major problems of the 21 century**
- \* **promote RTD to foster sustainable economic growth for developing countries**
- \* **share S&T information and contribute to large scale and frontier science and technology**

These goals are to be achieved by following complementary approaches for RTD cooperation:

- a **global approach** for individual FP participation to advance the EU's competitiveness
- a **regional approach** as means for targeted improvements in S&T in selected regions,
- a **bilateral approach** to shape science and technology relations with particular countries,
- a **multilateral approach** for Community science and technology endeavour at world level.

These approaches are strengthened by: coherence and complementarity with other EU policies, an increased coordination with Member States and a close monitoring and evaluation of the evolution of the success of these approaches.

There will be particular emphasis on short and medium term actions:

1. Increasing industrial involvement in international science and technology cooperation.
2. Strengthening the external dimension in RTD policy
3. Promoting cooperation in global initiatives
4. Responding to needs of least advanced countries
5. Strengthening the role of the Community delegations in the international RTD cooperation.
6. Using external EU funds for RTD
7. Additional funding, - for the Mediterranean region from the revised 4th FP, and
8. for Central and Eastern Europe to support the pre-adhesion phase, as well as to encourage nuclear safety research, from the revised 4th FP and the EURATOM FP resources.

## PERSPECTIVES FOR INTERNATIONAL COOPERATION IN RESEARCH, TECHNOLOGICAL DEVELOPMENT

### 1. Introduction

The European Union's international scientific relations have developed considerably in recent years as part of a rapid response to extensive external pressure resulting from major upheavals affecting its geographical environment, the globalisation of the economy and the emerging information society.

International research and technology cooperation policy in general, is first and foremost an integral part of the Union's research and technological development policy. It must therefore seek to strengthen the competitiveness of the European economy, and its position in international trade, and help to create jobs within the Union. To this end, it must play a full part in supporting the ability of firms in the Union to innovate, strengthen the Union's scientific and technical base and develop European possibilities to monitor technology opportunities with third countries. On the other hand, as it is the custom in cooperation policies, it must take full account of the needs and priorities of the cooperating partners. The international RTD cooperation policy will therefore be conceived for the mutual benefit of both parties.

As immediate responses outside the 3rd Framework Programme (FP) the European Union with strong support of the European Parliament had launched new ad-hoc activities<sup>1</sup> of research and technology cooperation with partners in Central and Eastern Europe, in developing countries and in emerging economies. They altogether were integrated as a specific international cooperation programme (INCO) of the 4th Framework Programme. Moreover, a selective opening of other specific research programmes was decided<sup>2</sup> and bilateral cooperation agreements in Science and Technology were concluded. At the same time, scientific and technological cooperation developed into an important factor within the different instruments of external policy. While it is premature to have a detailed stocktaking of cooperation activities, given that the activities of the 4th Framework Programme are only beginning, there is a need to map out a clear and precise framework for action in the years ahead.

Research and technological development investments today are increasingly exploited in a wider international context. The activities of international cooperation within the 4th Framework Programme have therefore been extended and diversified. However, the financial resources for international cooperation in the 4th Framework Programme, have been substantially reduced compared to previous years<sup>3</sup>. This paradoxical situation demands strategic choices: efficient management, coherence and complementary with other EU funds and increased coordination with the policies of the individual Member States.

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<sup>1</sup> PECO, COPERNICUS, INTAS, see: COM (94) 420 final

<sup>2</sup> Partners from Central and Eastern Europe may participate in all specific programmes of the 4 FP, partners from other third countries in those programmes or parts of programmes open for cooperation according to the rules of participation defined in Council Decision 94/763/EC,

<sup>3</sup> Central and Eastern Europe for approx. 50% and Developing countries for approx. one third

## 2. Changes and challenges

### 2.1. The new international context

Since the last Commission communication to the Council on this subject<sup>4</sup>, the international situation has changed considerably with important consequences for the European Union's international scientific cooperation policy. These changes provide both challenges and opportunities for the EU's international R&D policies.

- The first change concerns the European continent itself, with the **disappearance of the Eastern bloc**.

The countries of Central and Eastern Europe and the Baltic states have regained their sovereignty and have set up democratic institutions, while the Yugoslav Federation has disintegrated and new independent States have emerged from the former Soviet Union. These upheavals have had a major impact on the European Union, and its scientific cooperation policy.

First of all, because many of the States in question are turning towards the EU. Their trading patterns have already been redirected to a large extent from the east to the west. In order to meet the expectations of the associated countries, the Community has already developed a pre-accession strategy. Scientific and technical cooperation with the EU is one of the components of this move towards integration and can operate to the mutual advantage of both parties.

Secondly, because the scale of the changes in these countries, with a speedy transition from a controlled economy to a market economy, has inevitably affected their research potential which increasingly is redirected towards the new industrial demands.

Thirdly, the scale of the pollution problems with which they are faced, with scant resources, is gradually becoming clear. These problems may directly affect the European Union, whether as a result of the pollution of seas, groundwater, rivers or air, or the risks entailed by a certain type of nuclear power plants.

- The second change concerns **the Mediterranean basin**.

The signing of the peace agreement between Israel and the PLO has reduced the risks of military conflict in the Middle East, but virtually all the southern and eastern Mediterranean countries are confronted with difficulties. As the Essen European Council has established, bringing about peace, stability and prosperity in the Mediterranean region is one of the European Union's first priority. Some of the region's problems have a direct impact on its inhabitants and their activities, as e.g. water pollution. The increased aridity in the region has contributed to the problems: the lack of water has become urgent and must be addressed by enlarged research efforts. The Union, neither can ignore the indirect consequences of the contradiction between population growth and economic difficulties, in terms of immigration pressure.

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<sup>4</sup> Communication from the Commission to the Council "Cooperation in Science and Technology with Third Countries" COM (90)256 final, Brussels, 13 June 1990

It is in the interest of the Union to reinforce its scientific cooperation aimed at helping the Southern Mediterranean countries to control their development and thus, albeit modestly, help to stabilize the region.

- Third change: **the diversification in the Third World**

Recent times have also seen the take-off of new industrial countries in Asia and the economic revival of several Latin American nations. Most of these countries are thus in a situation characterized by remarkable industrial and commercial dynamism combined with persistently large social, environmental and health backlogs.

It has become essential for European industry to get involved in RTD cooperation with these countries. It needs to penetrate these new markets as early as the research and technological development stage, and to this end should seize all the new opportunities resulting from the opening-up of the R&D framework programmes to involve these countries in research partnerships.

However, these changes simply serve to underline the marginalisation of other Third world countries.

The economic difficulties, and the malnutrition and drought problems have been compounded by the development of new or re-emerging pandemics. Although the situation on the spot is often difficult, targeted scientific cooperation with these countries is still more necessary than ever as these countries have shown themselves increasingly capable of using RTD approaches.

One imperative will be to provide for the participation of the least developed countries in the emerging global information society, thus to prevent the risk of increasing the gap to advanced economies:

To summarize the quintessence of the international changes: The vanishing of the communist Eastern Bloc and the economic improvements of several developing countries, widely diversified the former concept of 'Third World', and it led to the dissolution of the world division in three 'blobs'. Diversification also increased within countries: economically less developed countries are setting up high tech research facilities seeking international cooperation, while still in need of basic development support.

## 2.2: Changes in the conditions of research and technological development

In the globalizing economy the cycles of technological innovation are shortening. The pressure for competitiveness increases as world trade liberalisation especially through GATT/ WTO<sup>5</sup> gains momentum. Emerging economies with lower wage levels are competing today for industrial locations with highly industrialized countries. The economic performance of nations and their position in the world rankings are accordingly shifting. In particular, European industry and advanced services are in danger of losing their relative competitiveness, with severe consequences for employment. On the other hand, new emerging markets in other regions offer new opportunities.

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<sup>5</sup> One result of negotiation in these fora is the possibility of granting, under defined conditions, assistance for research activities.



In the first place, there is a new approach to cooperation with other industrialized countries, based on reciprocal access to each other's research efforts. The bilateral agreements so far reached with Australia and Canada create new opportunities for EU industry and contribute to the strengthening of its R&D base.

Secondly, as science and technology is often the motor of the innovation process, many countries with growing economies are investing more in S&T. Thus, centres of excellence have developed all around the world. Although the concentration of relevant RTD centres within the so-called triad is still predominant, there is a growing tendency towards a wider dispersion and decentralisation of S&T infrastructure.

This tendency for increased decentralisation and the proliferation of information was facilitated by the increased application of information and communication technologies. Much of what was possible before only by physical cooperation in organized research centres can today be achieved by information exchanges from different locations through computer networking: The development of the information society advances the possibility of fruitful long distance cooperation.

How to benefit from the cooperation with commercial competitors from other regions and how to profit for the improvement of the EU employment situation? The crucial question at this moment is for international RTD: how to find the best balance between cooperation and competition?

### 2.3. Global problems of the 21st century

Some of the important problems of global nature which will remain on the agenda for the 21st century are environmental problems<sup>6</sup>, such as global climate change, desertification, earthquake damage prevention, air and water pollution, maintenance of biodiversity, nuclear safeguards and increasing UV radiation, etc. Research on threats to the environment is often linked to new industrial approaches. For example, RTD on clean transport technologies and on policies for guiding transport demands could contribute to the enhancement of the competitiveness of European industry for the growing international markets while at the same time improving the global environment. Research cooperation can very often constitute a first stepping stone for industrial cooperation.

The trend towards an increasing global cooperation in S&T is due to the general necessity to share costs, technical and human resources and the risks of major RTD innovations for the 21st century. Areas of joint cooperation in "mega-sciences" include biotechnology, astronomy, deep-earth drilling, space, particle-physics and radiation sources.

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<sup>6</sup> Compare the Agenda 21 and other follow-up activities of the UNCED Conference in Rio which include substantial research tasks to which the EC subscribed.

### 3. Objectives, guiding principles and goals

RTD activities at Community level are undertaken according to Article 130f of the EC Treaty with the objectives

- \* to strengthen the international competitiveness of the Communities' industry and
- \* to support other EU policies.

These quite general goals provide the frame for the international cooperation in S&T with third countries. International cooperation, if it is to be successful and sustainable and be able to bring wider benefits, must first and foremost be in the mutual interest of the RTD partners, bringing benefits to them in scientific and technical terms.

#### 3.1 Guiding principles

The first principle is that of **subsidiarity**. The Community's international scientific cooperation policy is not intended to replace that of the Member States. It must seek to enable Europe to respond in a coordinated fashion to the pressure for cooperation from third countries, or to the requirements of the international situation, on the basis of cooperation between Member States.

The second principle is that of **consistency** with Community policies. An integral part of the Community's scientific and technical research policy, international scientific cooperation must be in step with the Union's external policy objectives.

The third principle is that of **efficiency**, so as to avoid dispersion of efforts and the spreading of financial resources too thinly, and to guarantee the continuity of the measures carried out.

#### 3.2 Specific goals

In order to apply these principles, the following more specific purposes for international scientific cooperation emerge:

1. To strengthen European competitiveness, the scientific and technological knowledge base must profit from cooperation with partners from foreign S&T backgrounds. Admitting foreign partners into the European model of RTD cooperation and providing for participation of European research centres in third country RTD, facilitates not only access to S&T results obtained elsewhere but also admission of jointly developed technologies to foreign markets. New opportunities arise as S&T consortia prepare future industrial and economic partnerships.
2. The coming period should strengthen the European region in the growing worldwide competition and enhance cohesion, not only between the present Member States. The EU intends to assist the associated countries of central Europe and the Baltic region to reach a competitive level. In order to foster a wider cohesion in the region, the New Independent States and the Mediterranean neighbours, within and also next to Europe, will be encouraged to participate with their specific needs and interests in European RTD activities.
3. In support of other EU policies, S&T must contribute to solving problems of a global nature and meet the challenges of the next decades. Joint efforts will make efficient

use of the human, technical and financial resources. Priority themes of multilateral cooperation are derived from the goals of achieving a worldwide sustainable development, a cleaner and healthier environment and more equitable societies in peaceful relations. Emphasis is laid on environmental issues, population growth, health problems of a cross-national nature, clean water supply, a sustainable use of energy sources, and transport and communication ( including the information society).

4. Improved access of developing countries to R&D and its results is becoming more important than ever as it is recognised as an instrument to accelerate development. Increasingly, S&T facilities in those countries enable them to carry out research work on their own needs, beneficial to the stimulation of their economies. Trained R&D personnel can thus stay in their own country while cooperating with EU institutions. In the long run, cooperative RTD will strengthen relations and will lead to a more equitable partnership whilst contributing to geo-political stability.

S&T cooperation thus underpins other policies of the European Union such as external relations (common foreign and security; common commercial policy; development cooperation policy) and economic cooperation policy with third countries.

5. Another essential objective of international RTD cooperation is to provide the international dimension to the European RTD communities. Contacts and exchange with other scientists is essential for the Union's RTD, both in strategic fields and on global issues. It is important to promote access to groups and associations engaged in new developments, thus linking high level RTD.

To summarize, the specific goals the EU will pursue in international RTD cooperation:

- \* strengthen European competitiveness and develop technologies for future markets
- \* develop partnership in S&T with the neighbours of the EU
- \* share responsibility and conduct RTD on major problems of the 21 century
- \* promote RTD to foster sustainable economic growth for developing countries
- \* share S&T information and contribute to large scale and frontier *science and technology*

**Examples of RTD activities in international cooperation:**

\* A project with Central and Eastern European Countries (CEEC) on earthquake probability investigates the Pannonian region where 4 first generation soviet nuclear powerplants of the are located. Research partners from I, HU, CZ, RO, SI and the UK cooperate in this geological investigation.

\* In the frame of the International Science and Technology Centre (ISTC) a project is launched to make use of high-temperature rocket technology to decompose and neutralize supertoxic materials. The project provides the opportunity for nearly 70 former military scientists and engineers to redirect their skills to new industrial exploitable tasks. Financed in equal parts by the EU, USA and Japan, research partners: the Russian Federation and Germany

\* Within the AVICENNE initiative, which is targeted to the 12 non-EU Mediterranean countries specifically on issues in water management, health and renewable resources, a project is focused on the binding of industrial water pollutants with combinants of regional availability to achieve a safe dumping procedures and protect the scarce water resources. Research partners from Cyprus, Egypt, GR, and UK are involved.

\* A medical research project with Venezuela aims to develop a better thrombosis medication by analyzing the molecular structure of the saliva of a particular Latin American species of bats. It contains a certain protein, named 'draculine' which hinders blood coagulation for hours. Pharmacological partners from NL, FR and Venezuela cooperate on the isolation of the protein.

\* A second follow up project on Computer Integrated Manufacturing (SECIM) will improve the activities of joint venture companies in China, which are facing difficulties implementing Advanced Techniques. Partners are European car industries and suppliers of electronic devices, Chinese Technical Institutes, automotive joint-ventures as well as textile industries.

\* Following two decades of increased aridity in the countries of the Sahel a research project on the study of the adaption of local nutritious plants to dry circumstances is conducted, including the acclimatization of foreign (e.g. beans from Latin American) plants to improve the nutrition base in the region. Research partners from several African countries including the CERAAS (Regional Center for Studies on the Improvement of Adaption to Aridity), Brazil, BE, FR and PT cooperate on the issue.

\* Under the European Scientific Fellowship Programme 73 research fellows from the Member States will take up their work in 1996 for up to 18 month in Japanese and Korean laboratories. Most of the projects are primarily basic research but they have a strong industrial potential and they are linked to particular concerns.

#### 4. The instruments available

The Union now has a number of specific instruments for scientific cooperation, the most prominent being: activity 2 of the framework programme and the opening-up of the specific programmes as well as a network of agreements with third countries covering RTD cooperation. However, it is necessary, in the light of experience, to clarify recourse to the other, very diverse, approaches to scientific cooperation (see Annex).

The Community is active in promoting RTD international cooperation through bilateral agreements with third countries. Some of these agreements dealing with overall relations with third countries have specific provisions providing for cooperation in RTD; there are also ad-hoc agreements on RTD cooperation. These agreements should tend to promote cooperation through facilitating reciprocal access to RTD programmes and projects and to RTD results, and providing for adequate intellectual property rights protection. In addition, the Community can promote, or participate in, specific RTD programmes involving several countries and aimed at dealing with priority global needs.

A coordinated use of various Community resources for these policy actions will be desirable to this end.

The PHARE and TACIS programmes already provide support for projects with important science and technology components which contribute to economic reconstruction and development. At the same time, the second action under the 4th Framework Programme is available to support the participation of PHARE countries in Community programmes. There is also the possibility for PHARE to provide support for infrastructure in connection with participation in such programmes in the context of additional protocols to the Europe agreements.

In addition to the opening up of Community programmes to the Associated countries in central and eastern Europe, the Union should look favourably on requests from national coordinators in the PHARE and TACIS beneficiary countries to approve projects which contribute to economic reconstruction and development and which have significant science and technology components. The objectives and procedures of MEDA, the European Development Fund, and the Union's assistance programmes for Asia and Latin America provide for support to such programmes at the request of beneficiary countries within the agreed framework for cooperation planning.

It is also necessary to mobilize the Community's human resources. Some of the Commission delegations in third countries could reinforce their scientific expertise, whether from the permanent staff or recruited locally, to carry out scientific monitoring and provide the Union with analyses of research developments abroad. This forward analysis function would make a contribution both for European research itself and for the development of international cooperation. It should be noted that, with its research personnel, the Union has at its disposal genuine expertise which might be redeployed.

## 5. Priorities for a proximity policy

It is essential to develop cooperation with the associated Central and Eastern European and Baltic countries in order to bring them closer to the Union through gradual economic integration.

Nuclear problems are particularly acute in this region. For institutional reasons, an extension of scientific cooperation in this crucial area, entailing increased financial resources, presupposes the availability of funds as a result of the supplementary financing for the Euratom framework programme to be decided upon in 1996.

As these countries develop, bilateral agreements may be concluded to involve them in some of the Community's specific programmes.

Scientific cooperation should also underpin the Union's Mediterranean policy (Euro-Mediterranean partnership). Dialogue between the Union, the Member States and the Mediterranean partner countries should make it possible to identify joint research objectives based on problems common to the region: management of natural resources (problems concerning water resources), marine pollution, action to combat desertification, and agriculture, rural development and urban growth, for example.

The new MEDA regulation specifically provides for support to "integrated development of human resources, notably in education and vocational training, as well as improving the potential for scientific and technological research.

## 6. Eight Actions

The Commission presents its thinking for the different groups of countries more specifically in the Annex. The Council and the European Parliament are invited to comment on the suggestions. Detailed papers concerning specific areas of international cooperation have already been submitted or will be submitted in future.<sup>7</sup> The outcome of the debate and the practical experience of cooperation which will be acquired during the implementation of the current framework programmes will contribute to the preparation of the fifth framework programme.

In the immediate future, the Commission intends to pursue eight lines of action:

### 6.1 The research-industry dialogue

Industrial involvement in international RTD cooperation projects should be increased.

### 6.2 Strengthening the external dimension in RTD policy

A policy in favour of providing increased mutual access to RTD programmes and projects and to RTD results, providing for adequate intellectual property rights protection, and paving the way for the launch of RTD projects of common interest,

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<sup>7</sup> COM(95)190 final "Prospects for cooperation in science and technology with the new independent States" and SEC(95)814: Strengthening development research potential: a priority for the European Union.

should be pursued. This policy can be carried out through a more systematic inclusion of specific RTD provision in bilateral cooperation agreements with third countries and through specific agreements on RTD cooperation.

### 6.3 Promotion of RTD cooperation in specific projects

The Community should be active in promoting, or participating in, RTD programmes or projects involving third countries, aimed at dealing with specific needs of a global nature, and having an interest to European industry and research centres.

### 6.4 Priorities adapted to the needs of the least advanced countries

A dialogue between the European Union, the Member States and the least advanced countries is proposed

- to implement the Council declaration on the reinforcement of the research potential in developing countries (1 June 1995),
- to follow-up the objectives of the European initiatives on agricultural research for development.

### 6.5 Better communication with third countries

The European Union delegations abroad should be more concerned by RTD developments in the country in question. In certain countries delegations should aim to strengthen their scientific expertise.

### 6.6 The use of other European Union funds for RTD

The European Union will use the opportunities offered by PHARE, TACIS, MEDA, the EDF and assistance programmes for Asia and Latin America to support the participation of partners from third countries in projects involving research and technological development, upon the request of the competent authorities and within the objectives, priorities and procedures laid down under these programmes.

### 6.7 A new Mediterranean initiative

Specific calls for proposals for the Mediterranean countries could be envisaged. This would require additional funds from the revised resources for the fourth framework programme.

### 6.8 Support for the pre-accession phase for Central and Eastern Europe

If the supplementary financing for the fourth framework programme is decided upon in 1996, parts could be used to support the pre-accession phase. Priority should be given to making it easier for partners from the associated Central and Eastern European and Baltic countries to participate in specific programmes under the fourth framework programme in specific areas.

Part of the supplementary financing for the Euratom framework programme could be used to provide financial support for third country partners in the field of nuclear safety.

# ANNEX

## INTERNATIONAL COOPERATION IN RTD:

### THE COMPLEMENTARITY OF APPROACHES AND THE POLICIES TOWARDS REGIONS

#### I. Approaches

In order to achieve the goals laid out in chapter 3.2 a variety of approaches can be taken. Each of which usually serves more than one objective, as individual goals are also sustained by different approaches. The complementarity of means and methods shapes the overall approach of international RTD cooperation policy.

##### A. Global approach: Increasing competitiveness through S&T cooperation

In order to respond to the liberalisation of markets and to increased global competition, S&T cooperation is an efficient way to keep up the pace of technological and socio-economic advance. Within the EU, the increasing funds for the FPs demonstrated a growing appreciation of the cooperative RTD model for private and public research institutions. This European model of research cooperation has been widened by opening selected specific programmes to third country partners worldwide. Partners from third countries may participate in individual projects according to the rules of participation defined in Council Decision 94/763/EC<sup>8</sup>, in particular, when desirable for the pursuit of the programme. Such participation must not undermine the Community's position in respect of negotiations aiming at an international Agreement based on principles, inter alia, of reciprocity.

The new opportunity for collaboration with individual S&T partners from third countries does not intend to produce effects for specific countries or for a region. The access allows for partners who are able to contribute valuable knowledge to European consortia and who seek their own advantage in cooperating with European partners. In contrast to the regional approach described below, this approach is in general not supported by any financial means from the FP.

Wider S&T cooperation outside the EU, however, involves the risk of losing control over the exploitation of the results. Special attention, therefore, will be paid to the transfer of results and the utilization of knowledge and intellectual property rights<sup>9</sup> resulting from the participation of third parties. In respect of non-negotiated participation (under the "open Article 8"), the rules set out in the Model Contract will govern the ownership, transfer and utilisation of results. International cooperation in RTD must also not allow the bypass of any European norms, standards or ethical considerations. Mechanisms of implementation must be safeguarded, including the access to research facilities, to locations or natural resources of scientific interest. Free movement of scientists must be guaranteed.

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<sup>8</sup> Article 2 and 3 of Council Decision 94/763/EC of 21 November 1994, O.J. L306, 30 Nov. 1994 and article 8 of certain specific programme decisions.

<sup>9</sup> Joint declaration of Commission and Council concerning intellectual property rights applicable to S+T cooperation with third countries of 26 July 1992.



In order to benefit better from the international dimension, specific programmes should make active use of global cooperation. It is, however, necessary to monitor closely the effects of cooperation on the goals of the programme. If the global opening proves successful, the opening of further programmes should be envisaged. If not, the approach must be reassessed. The present selection of specific programmes open for cooperation with third country partners worldwide does not follow from coherent policy. Some of these decision even seem contradictory (for instance, to open the information technology and the communication technology programmes, and to keep the telematics and the industrial technologies and materials programmes closed). The opening of programmes should therefore be reviewed in the 5th Framework Programme and should follow a coherent decision-making process.

#### B. Regional approach: Means for targeted improvements in S&T

The regional approach of the EU international RTD cooperation policy addresses groups of countries and establishes RTD cooperation on targeted issues of particular regional interest. Regions are defined geographically and/or by economic indicators or by other shared characteristics. Priorities of mutual interest are identified, together with the representatives of the countries in the region concerned. Actions undertaken by INCO, the programme which implements activity 2 of the Framework Programme, concentrate in this context on subjects which are not covered or not sufficiently specified for regional purposes by the other programmes of the FP.

The regional approach also provides financial support for partners from third countries in targeted RTD actions as defined under the INCO programme. Funds may also be granted to facilitate participation in joint research projects of the other specific programmes.

Cooperation funds for RTD can operate efficiently if RTD structures of partner countries are viable and they are able to make use of the cooperative R&T results for their further development. RTD projects must integrate end-users of results, such as industries or administrations, and take into account socio-economic conditions when specific research strategies are envisaged.

#### C. Bilateral approach: Shaping particular S&T relations

The EU may establish relationships with individual countries through the conclusion of bilateral agreements. There are three kinds of agreements:

- \* general commercial and economic cooperation agreements, including a section on cooperation in S&T, which aim at facilitating cooperation in a general sense;
- \* RTD cooperation agreements facilitating reciprocal access to specific programmes on a project by project basis;<sup>10</sup>
- \* RTD cooperation agreements associating a third country with full financial support to one, several or all specific programmes of a Framework Programme and providing for the corresponding contribution to the Community budget.<sup>11</sup>

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<sup>10</sup> Art. 2, para. 1c (ii), of Council Decision 94/763 EC of 21 Nov., Official Journal L306, 30 Nov. 1994

<sup>11</sup> Art. 2 of the above Decision.

The agreements specify ways and means of cooperation and Intellectual Property Rights (IPR) rules. In particular they should ensure comparable access of European RTD participants to corresponding programmes of the third country. Before engaging in new negotiations the potential mutual benefit and impact of an agreement should be evaluated against the already existing RTD cooperation possibilities.

#### D. The multilateral approach: Selected S&T participation

Extending the frontiers of scientific and technological knowledge requires increasingly centralised facilities or networks which exceed the ability of a single country or region. It is therefore important for the EU to cooperate at a multilateral level with competent partners either on independent projects, (for example ITER, HUGO, HSFP), to provide a coherent European coordination in worldwide research efforts, (e.g. ENRICH), or within the framework of international organisations covering a broader spectrum (e.g. with WHO, IAEA).

The Task Forces on industrial RTD cooperation, launched recently by the Commission combine different EU efforts and concentrate them on specific requirements of the future society (clean car, vaccines, etc.). These initiatives will have to assess the competition challenges on a world scale as well as the broader market opportunities. Concerning, for example, the development of the clean car, Japan and US have taken similar actions. Contacts and regular exchanges could be established with such initiatives. Moreover, such cooperation might be intensified, with adequate precautions, when of added value for know-how or for knowledge of foreign markets.

Regular exchange of views, at the highest level (e.g. Carnegie Group) or within the framework of international organisations (eg. OECD) is of great importance. The Commission will stimulate the coordination of the Member States' position within such organisations, e.g. CREST to coordinate MS positions ahead of major OECD meetings.

#### E. Coherence and complementarity with other EU policies

Instruments of external policies (i.e. PHARE, TACIS, MEDA, FED, Asia and Latin America regulations) contribute in the framework of their respective priorities and procedures to the development of RTD infrastructure (research capacity building, including human capital and educational infrastructure) in the beneficiary countries. RTD projects assist in the formulation and in the realisation of those policies. Results resorting from research in malaria vaccines or AIDS will have direct impact on the future perspectives of development policies. RTD projects have also been funded in cooperation with partners from EU Member States. In order to ensure optimal impact of these RTD investments, better coordination is needed between the EU external policies and the research policy. Such a coordination will increase coherence and compatibility between these instruments and the INCO programme in particular.

The European Union will use the opportunities offered by PHARE, TACIS, MEDA, the EDF and assistance programmes for Asia and Latin America to support the participation of partners from third countries in projects involving research and technological development, up to 50 % of the cost of the project participation<sup>12</sup>, upon the request of the competent authorities and within the objectives, priorities and procedures laid down under these programmes. Some associated Central European states have already made such requests as regards the utilisation of PHARE funds<sup>13</sup>.

In general, coordination will be ensured with all other EU policies relevant for international RTD cooperation. In particular with competition policies, as publicly financed initiatives for international RTD cooperation should not be in conflict with the state aid rules of the EC Treaty, EEA, the European Agreements, WTO and other agreements, but also with agriculture, environmental, energy and other policies.

Different types of coordination and complementarity with the other EU policies have been implemented. Firstly, in the AVICENNE Initiative in which joint research actions were fully financed by the Mediterranean funds; secondly, ISTC where the EC contribution is financed from TACIS; a third type is CERAAS, in which a joint research project is supported through the FP while the related infrastructures and training are funded under the Lomé Convention; a fourth is the ACP-EU joint initiative, in which the research policy for fisheries for ACP countries has been defined jointly and for which the two sources will be mobilised according to the situation; a fifth is the International Agricultural Research support, funded from and managed by the ALA regulation with scientific input from INCO. In all cases, the interventions from these funds, targeted to research capacity strengthening in third countries, improved the possibility and the efficiency of S&T cooperation.

Despite these examples, coordination still needs to be improved. To this end, appropriate interservice groups will be established. In addition, the EU delegations abroad will be requested to be more concerned by the country's developments in RTD and to play a more active role.

#### F. Coordination with Member States and other European Cooperation Fora

Following the recent Communication "Research and Technological Development: Achieving Coordination through Cooperation"<sup>14</sup>, more emphasis has to be laid on fully exploiting European potential through a more profound coordination with the Member States and their international undertakings. The exchange of views between the Commission and the Member States will therefore have to intensify, making use as fora of both CREST for general questions and more specifically the INCO committee.

Thematic or issue related coordination actions will be undertaken connecting national

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<sup>12</sup> In conformity with the general principles of the 4th Framework Programme.

<sup>13</sup> See conclusions of the presidency on the meeting of EU Research Ministers with the Research Ministers of the associated Central European and Baltic States on 9th June 1995

<sup>14</sup> COM (94) 438

initiatives and institutions with EU activities in order to synchronize objectives, complement the acquired know-how and better utilise the invested funds. Two of this new action types across different regions have already been launched: Agricultural research for developing countries and the Euro-Mediterranean Scientific Area.

As a step towards improving the instrument of coordination, the Commission will prepare an inventory on the international S&T cooperation policies of the individual Member States and the associated countries.

#### G. Monitoring and evaluation

Finally, it will be necessary to monitor and evaluate the instruments used across the different regions and across the approaches applied so as to assess the added value of international RTD cooperation<sup>15</sup>. Special attention will be given to effects on the competitiveness of European industry. Issues to be monitored as particular RTD conditions are the international dynamics of trade and industry. The international technology observatory of the JRC/IPTS in Sevilla will support this initiative.

RTD cooperation evolves dynamically. A country by country review will be undertaken using indicators to distinguish between countries which should benefit from Community's financial support to cooperation partners and those which should rely on their own resources. This distinction is particularly relevant to the dynamic evolution of the emerging economies' countries.

## II. The Union's perspectives for S&T cooperation with its partners

In the following sections, groups of countries are presented separately, with regard to the specific policy interest of the EU, the objectives or guiding principles pursued and the approaches used.

The approach by geographic or economic regions is in line with the Union's external relations policy. It encourages neighbouring third countries to cooperate in networks and obtain economic added value from their neighbours in the same way as the Member States do from the intra-Community RTD cooperation. It emphasises the Union's model of regional integration and enables partners from a common background to benefit from the Union's experience of a profitable and peaceful regional cooperation. In this sense a mutual benefit for both the EU and its third country partners, is the essence of a dynamic RTD cooperation perspective.

### A. Europe and her neighbours

The countries neighbouring the Union are of particular significance since they share many problems and interests with the Union. With some of them, RTD cooperation is already at an advanced stage since Western European non-member countries traditionally maintained strong S&T cooperation links with the EU. Iceland, Liechtenstein and Norway are now fully associated with the 4th FP through the Agreement on the European Economic Area (EEA).

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<sup>15</sup> Elements are already included in the "European Report on S&T Indicators", Luxembourg 1994.

The eventual relationship of Switzerland with the Framework Programme will depend upon the outcome of negotiations underway.<sup>16</sup>

COST, as a traditional instrument of research coordination with the Member States and European neighbours on issues, themes or disciplines not covered by the FP, has grown extensively. Consideration should be given to enhancing the complementarity with the Community programmes, in particular the concerted actions, on a pragmatic basis. An assessment of COST's achievements and a more targeted definition of its role in the overall coordination effort are on the way.

Coordination with other existing RDT cooperation fora in Europe will be continued and strengthened. This concerns EUREKA, in particular for industrial RTD cooperation, and other fora dealing with specific RTD activities (CERN, EMBL, ESO and ESA, etc.). Furthermore, it relates to collaborating with ESF in activities such as the organization of European RTD conferences.

The EU has a particular interest in cooperating with its closest neighbours. Three groups of countries are of particular interest: central Europe and the Baltic states, the New Independent States of the former Soviet Union, and the Mediterranean Partner Countries.

#### A.1. Central Europe and the Baltic states

The broad objective of RTD cooperation with most of the Central European and the Baltic countries is to support their efforts and assist them to prepare for possible EU membership. Major efforts have been made to consolidate the return to democracy, the transition to a market economy and the achievement of a peaceful, stable and open society, although with differing rates of success. Some countries have returned to positive growth rates and optimistic perspectives for the future development while others still suffer from structural deficiencies.

In a bilateral approach, the EU has concluded association treaties, the additional protocols of which contain the opening of the specific programmes. The EU's interest is to support their progressive integration into the European RTD community and the attainment of full competitiveness. Joint RTD cooperation projects will aim to increase the efficiency and the speed of modernisation in the industrial sector. Improved environmental protection and the upgrading of production technologies to European ecological standards is part of the modernisation as these were often neglected under the previous regimes. Special relay centres will be created to promote industrial innovation by means of RTD and to facilitate technology transfer and the general utilisation of research. These centres will also diffuse information on Community activity.

A key element in achieving these goals is the opening of all specific programmes of the FP on a project-by-project basis for 'European third country' partners. Such participation could be facilitated by mobilizing funds of certain other EU policies. In addition, for targeted goals, RTD activities are foreseen under the INCO programme. Priority areas relate to the information and communication technologies, environment, health, energy, transport, and industry-oriented RTD. They will be more closely defined in consultation with the authorities of the countries.

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<sup>16</sup> Switzerland is already fully associated with the fusion research activities (EURATOM)

In view of the potential environmental and health threats posed by nuclear power plants and in nuclear safeguards in Central Europe and the NIS, the specific RTD programme on nuclear safety under the Euratom Treaty provides for cooperation with these countries. Paradoxically, however, this programme does not foresee funds for supporting the participation of partners outside the EU, which is essential in view of the financial problems in Central and Eastern European countries. As the INCO programme within the 4th FP is based on the EC Treaty, financial support of RTD cooperation in the nuclear domain is not permitted. Funds should therefore be made available for this purpose under the supplement of the Euratom FP to be decided in 1996.

In a longer perspective the development of these countries should evolve in such a way that the regional approach applied at present, will be complemented and gradually replaced by a bilateral approach in the form of S&T association agreements. This last step in preparation for EU membership presupposes a corresponding financial contribution to the EU research budget.

Further elements of cooperation are the general policy dialogue and means of coordination, to encourage national governments to give due priority to RTD and provide support for participation in the Community's specific RTD programmes. Regular meetings between the research ministers of the EU and of the associated Central European countries and the Baltic States, which are held in the perspective of adhesion, will strengthen the working relationship, as will ministers responsible for sectors with significant research requirements.

#### A.2. New Independent States

Future steps concerning the cooperation with the NIS have been presented recently in the 'Communication from the Commission to the Council and to the European Parliament "Prospects for Cooperation in Science and Technology with the New Independent States (NIS)".<sup>17</sup> The communication covers RTD with both the European and the non-European NIS.

The Russian Federation (RF) represents the greatest challenge with its huge economic and social but also military and scientific potential. Ukraine, Belorus, Moldova, the Caucasian and Central-Asian Republics also offer important cooperation possibilities of mutual benefit in specific fields. After six years of economic decline in the NIS, access to European trade, investment and technology, is a priority for all, the RF having the main impact on future options in the region.

The RTD sector as a long-term pacemaker for development must be encouraged to re-emerge in a more efficient structure and more speedily than the transformation process has allowed until now. Safeguarding the highly qualified RTD potential is therefore an important part of the RTD cooperation policy. Cooperation with the NIS in S&T will be oriented to cultivate the industrial prospects for technological developments and to identify cooperation partners

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<sup>17</sup> COM (95) 190 final, 16 May 1995.

for the newly emerging markets, to encourage sustainable development and overcome outdated structures while stimulating a reorientation of scientists towards research on new public and private needs.

All NIS are covered by INCO's regional approach with priority areas in information technology, environmental protection and health to be further defined in a policy dialogue. The European NIS, in addition, may participate on a project-by-project basis in all EU RTD programmes, while some programmes are also open to non-European NIS partners. The Partnership and Cooperation agreements, signed with some NIS, include a bilateral RTD component.

After the first phase giving support to a wide range of researchers in relatively small and academic projects, funds will be focused on a smaller number of projects promoting application and stabilising the more relevant parts of the RTD potential in the NIS. To improve project quality and application, more support measures are envisaged, including improved information and partner-finding systems. INTAS, a pilot project in the form of a private association established for specific cooperation with the NIS, primarily in basic science, has funded a large number of small projects. The concept of INTAS is, at present, under revision as it has failed to attract substantial funding from its members on an individual basis as originally foreseen, except the Community.

Two items deserve particular attention: the conversion of the huge military potential towards peaceful goals and the solution of environmental problems, particularly in the nuclear field. The first subject is being tackled with considerable success by the International Science and Technology Centre (ISTC) in collaboration with Japan, the US, Russia and other countries concerned. Regarding the second subject, attention will be paid to the environmental and medical consequences of major radioactive releases such as Chernobyl and Mayak. As for the Central European countries, funds must be mobilized for cooperative RTD research on nuclear safety under the Euratom Framework Programme.

### A.3. The Mediterranean Partner Countries

A high-level policy dialogue between the EU, its Member States and the Mediterranean Partner Countries (MPC) is the precondition to successfully promoting and encouraging RTD, with the aim of establishing a Euro-Mediterranean Scientific and Technological Area. This task is being given particular attention since the colloquium "l'Europe de la Recherche et la Méditerranée" held in Sophia-Antipolis in March 1995, and it will be pursued in the context of the conference of EU-Member States and the MPC in Barcelona in November 1995. The intensified dialogue should lead to a joint definition of mutually relevant objectives and priorities. They can, at a later stage, be reviewed and evaluated against the achievements. In the short and medium term, some specific measures are envisaged.

RTD cooperation with the MPC aims predominantly at contributing to the improvement of living standards. In order to stimulate a better basis for a sustainable development, the intended Euro-Mediterranean Scientific and Technological Area should promote free exchange of scientific information, materials and persons, and create Euro-Mediterranean RTD networks in order to ensure a full participation in the development of a Global Information Society. To strengthen the regional RTD capacities in particular, support will be also given to south-south cooperation and integration.

Results from the dialogue should focus on important regional, i.e. common mediterranean, problems. Many issues are related to resource water management, such as sea pollution, desertification and agriculture, the management of coastal zones, and rural and urban development, in particular in areas of water shortage. Other issues are related to population and health care.

Currently only Cyprus, Malta and Turkey can participate in all specific programmes of the FPs on a project-by-project basis. Israel should soon on the basis of a bilateral RTD association agreement, be able to participate in all non-nuclear activities of the 4th FP. For the other MPCs several specific programmes are open on a project-by-project basis.

Furthermore, these countries will be targeted by specific regional activities, both in RTD cooperation, in particular within INCO, and in RTD capacity building. For the latter, close cooperation of MEDA should be sought to enable MPCs to cooperate with EU institutions in a genuine partnership. A bilateral approach may be considered when and if in the interest of the EU and the MPC concerned.

#### B. Highly industrialized countries

An important feature of countries such as the USA, Japan, Canada and Australia is that they are both partners and commercial competitors of the Union. The objectives of cooperation with them are twofold: first, to maintain and develop access to RTD know-how in these countries in order to improve the performance of Community RTD and the competitiveness of European economies and, second, to develop the RTD contribution to world-wide challenges such as global climatic change, desertification, earthquake damage prevention, nuclear safeguards, public health, population growth and scientific literacy, and to projects such as controlled thermonuclear fusion or human genome research and to the recent global information society initiative in the G7 framework. In no case is a transfer of funds envisaged.

Given the wide range of potential areas for RTD cooperation, it will be necessary to enhance the dialogue on RTD policy and to identify the subject-matter for balanced and selective cooperation, taking into account the various EC policies and Member States' relations with these countries.

Where mutual interest is identified, cooperation agreements with third countries may be negotiated in the frame of the bilateral approach. Agreements of this nature are already in place with Australia and Canada. In such agreements, Community interests are strengthened by ensuring comparable access to research programmes of the third country concerned. Reciprocal access, indeed, be a key element in any cooperation agreement with these countries. Communities interest are safeguarded by ensuring that the results and the IPR of all the collaborating participants are both respected and exploited in accordance to Community rules.

Participation in specific programmes, opened on the basis of global approach, should be approved when and as far as they contribute to better achievement of the objectives of the specific programme in question.



Unilateral access should not weaken the overall negotiating position of the Community vis-à-vis third countries with which it may wish to conclude cooperation agreements, particularly concerning comparable and effective access to third countries' research programmes of interest to the European Union. In both these modalities of third country participation, wider Community interests must be considered in a coherent approach for all specific programmes.

Other means for stepping up cooperation with these countries are joint studies and projects and reciprocal access to scientific installations. Maintaining and expanding the RTD policy dialogue with these countries is essential.

### C. Developing countries

Developing countries (DCs) vary greatly in terms of level of development, resources and RTD potential; they suffer numerous development constraints, some of which are common and specific to the physical and biological characteristics of tropical environments. Many of these countries need a more effective RTD base which may contribute to lifting these constraints.

Cooperation with the group of DCs and emerging economies has for a long time formed a substantial part of EU external relations priorities (Lomé Convention, Asia-Latin America regulations). In many of these countries the EU as well as the Member States have long-established traditions of collaboration on economic and cultural issues, training and RTD as witnessed by the recently agreed increase in the European Development Fund for the next 5 years.

The objective of RTD cooperation, therefore, is to associate these countries with the generation of knowledge and innovative technologies relevant for solving their specific problems and to reach a sustainable economic development. Moreover, such cooperation facilitates the exchange of know-how and technology with these countries where a large part of the world's population lives and which constitute such an important potential market. In this way RTD cooperation is important for the economic mid- to long-term development for those countries and thus for European industry as potential commercial partners.

Environmental RTD, natural resources, sustainable agriculture and health constitute the main current priorities, although the possibilities for cooperation in other themes, relevant to basic economic and social developments and if in the EU's interest, are also ensured. For developing countries, RTD on these themes is central, and the level of research already established in many of them ensures that they can benefit from cooperation with EU teams. Further benefits in terms of general stimulation to the often isolated academic and research communities are also expected. For its part, EU scientists can benefit through cooperation which gives access to, for example, new physical, biological and social environments.

To attain the objectives, several approaches are being pursued. First, in the regional approach, INCO concentrates on a limited number of selected research themes in order to avoid dispersion of effort relative to the resources available. Second, under the global approach, certain specific programmes are and will be open to participation by developing countries on a project-by-project basis. Third, in the frame of cooperation activities under EU external policies, RTD-related activities can be undertaken with financial support from the Lomé Convention and Asia and Latin America regulations.

The EU will need a common approach which ensures overall coherence on the basis of complementarity and synergy. Priorities on the basis of the regional structures or geographical areas will be sought through political and technical dialogue with DCs. A specific action has been initiated by a Council Decision on enhancing Development-Oriented Research Potential<sup>18</sup>.

#### D. Emerging economies - NICs

After the experience of the debts crisis in the 1980's several developing countries in Latin America and Asia reformed their economic policy successfully. As a result, a new inflow of private capital, partially replacing public loans, led to profitable investments and spectacular growth rates. This development was paralleled by the already longer-lasting active government policies of, for example, the "Four Tigers": Hong Kong, Singapore, Taiwan and South Korea. More countries are moving towards the status of Newly Industrialised Countries (NIC). They have become a target for foreign investment from industrialised countries and a meeting place for global competitors ( e.g. China, India, Brazil etc.). Strongly export-oriented, these countries enter the markets of industrialised countries as well as of other NICs or DCs.

In spite of their economic success, significant parts of their societies still share general development deficiencies. RTD operations sometimes lack refinement or environmental and health requirements, while, on the other hand, they have proved able to leapfrog traditional steps in technological development. Thus, emerging economies appear as partners for RTD cooperation under two different aspects. Objectives for EU cooperation with these countries therefore refer, on the one hand, to those valid for developing countries and, on the other hand, to the acquisition of knowledge relevant for an improved production of environmental and socially sustainable technologies. To increase also European competitiveness, cooperative RTD will focus on emerging markets.

The different approaches which the EU is offering are able to comply with these contrasting requirements. As with developing countries, participation is open to the actions described in the previous chapter. A special line of themes in INCO is aimed particularly at the emerging economies, consisting of information and communications technologies (including Global Information Society), non-nuclear energy, biotechnology, and materials and production technologies. These themes should be given greater prominence in the future. The global approach, in addition, opens the opportunity to cooperate in EU RTD consortia on a project-by-project basis in programmes which are open for international participation. The development of some of these countries may evolve in such a way that it might become interesting to conclude bilateral RTD agreements providing for project-by-project participation on a reciprocal basis.

It will be necessary to provide European scientists with the means of seizing cooperation opportunities, particularly through greater mobility and access to research and technological environments, and in this way to spearhead the pursuit of market openings, so providing complementarity of the public and private sectors.

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<sup>18</sup> Development Council of 1 June 1995, and Commission Services Working Paper SEC (95) 814.

#### E. International organizations and intergovernmental associations

Over the last decades, Western Europe has developed several international ventures, besides the EU RTD activities, to pursue RTD goals beyond the reach of individual countries. The same has happened at world level through international organizations, particularly in OECD, the UN family and through large-scale megascience activities. At global level, the EU participates in ventures created to construct and operate large RTD installations or research networks.

Examples are ITER, for the design of the next experimental tokamak fusion reactor; HFSP, for the support of international research networks in molecular biology and the neurosciences; and Post-Chernobyl Research Actions and ISTC, for the conversion to civilian activity of military scientists in Russia and some other NIS. Another example is IMS, aiming at establishing an initiative for industrial collaborative RTD in advanced manufacturing. When relevant, the Community will take initiatives to launch new research ventures requiring a worldwide effort.

An active dialogue is carried out at world level with international organizations involved in RTD, such as the OECD on science policy, WHO on health, ITU on telecommunications, UNESCO on scientific information, IAEA on nuclear-related research and the World Bank on RTD infrastructure or within the G-7 framework (e.g. Carnegie Group).

## ABBREVIATIONS

AVICENNE	Research initiative to promote cooperation between EC and Mediterranean countries.
ACP	Africa, Caribbean and Pacific
CERN	European Organization for Nuclear Research.
CERAAS	Centre d'Etudes Régional pour l'Amélioration de l'Adaption à la Sécheresse (Regional Center for Studies on the Improvement of Adaption to Aridity)
CFSP	Common Foreign and Security Policy
COPERNICUS	Community action in support of the countries of central and eastern Europe and, from 1994, the New Independent States of the former Soviet Union in the field of research, outside the five specific programmes open to third countries (cf. PECO).
COST	European Cooperation in the field of Scientific and Technical research.
CREST	Scientific and Technical Research Committee
DC	Developing Countries
EAEC or EURATOM	European Atomic Energy Community
EEA	European Economic Area
EFTA	European Free Trade Association.
EMBL	European Molecular Biology Laboratory.
ENRICH	European Network for Research on Global Change
ESA	European Space Agency.
ESF	European Science Foundation.
ESO	European Southern Observatory
EUREKA	European technological initiative to encourage cooperation between member countries and promote industrial competitiveness.
4th FP	4th RTD Framework Programme 1994-1998 (EC).
FED	European Development Fund
GATT/WTO	General Agreement on Tariffs and Trade/World Trade Organisation
G7	Group of the seven most industrialised nations
HFSP	Human Frontier Science Programme.
HUGO	Human Genome Organisation
IAEA	International Atomic Energy Authority.
IMS	Intelligent Manufacturing System
INCO	S+T cooperation with third countries and international organizations.
INTAS	International Association for the promotion of cooperation with scientists from the New Independent States of the Former Soviet Union.
IPR	Intellectual Property Right
IPTS	Institute for S&T Forecasting in Sevilla
IRDAC	Industrial R&D Advisory Committee of the European Commission
ISTC	International Science and Technology Centre, aiming to reorientate former Soviet Union military scientists to civil applications.
ITER	International Thermonuclear Experimental Reactor.
ITU	International Telecommunications Union
JRC	Joint Research Centre
MEDA	new budget for 1995-99 within the European Mediterranean partnership
MPC	Mediterranean Partner Countries
NIC	New Industrialised Countries
NIS	New Independent States of the former Soviet Union.
OECD	Organization for Economic Co-operation and Development.
PECO	Countries of central and eastern Europe; and Community support to participation of these countries in the five open specific programmes.
Phare	EU initiative to support the development of central Europe.
RTD	Research and Technological Development, in the sense of the EC' programme
S+T	Science and Technology, in a general sense.
Tacis	EU initiative for the NIS states and Mongolia to develop economic and political links.
WHO	World Health Organization
UNCED	United Nations Conference for Environment and Development
UNESCO	United Nations Science, Culture and Education Organisation

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