

**FIVE YEAR ASSESSMENT REPORT**

**RELATED TO THE**

**SPECIFIC PROGRAMME:**

**IMPROVING HUMAN RESEARCH POTENTIAL**

**AND**

**THE SOCIO-ECONOMIC KNOWLEDGE BASE**

**COVERING THE PERIOD 1995 - 1999**

**The Panel:**

Claire Dupas (Chairperson)  
Katharine Elizabeth Barker  
Maria De Sousa  
Detlev Ganten  
Pierre Hausman  
Aidan Kennedy  
Françoise Thys-Clement  
Juan Luis Llorens-Urrutia (Rapporteur)

**June 2000**

## **1999 FIVE-YEAR ASSESSMENT REPORT RELATED TO THE PROGRAMME IMPROVING HUMAN RESEARCH POTENTIAL AND THE SOCIO-ECONOMIC KNOWLEDGE BASE**

### **1 EXECUTIVE SUMMARY**

---

#### **1.1 DESCRIPTION OF THE PROGRAMME**

The transition to a society of **knowledge** as the basis for an improved **quality of life** in Europe and the **enlargement** of the European Union are two of the big challenges facing Europe in a horizon characterised by the increasing **globalisation** of economic activities.

Hence, the forging of the *new* Europe requires a strategy to **strengthen basic research capabilities, education and technological development**. Differences among current and prospective member States and regions will also make **cohesion** one of the key concerns.

The assessment shows that the IHP programme has been a good instrument to cope with these challenges in the immediate past and will continue to be even more so in the immediate future.

The general objectives of this programme are “*to improve the human research potential and to strengthen the socio-economic knowledge base*”. It comprises three actions of a very different nature, which develop into the five lines:

A. Improving human research potential, on the basis of

- ◆ Supporting training and mobility of researchers through Marie Curie fellowships (MCF) and Research training networks (RTN)
- ◆ Enhancing access to research infrastructures and
- ◆ Promoting scientific and technological excellence.

B. Key Action: improving the socio-economic knowledge base

C. Support for the development of scientific and technology policies in Europe.

Action A focuses on researchers. Actions B on research. Action C on policy.

The monitoring of equality of access and the situation of women in science within the Framework Programme is also the responsibility of the management of the programme.

#### **1.2 CONCLUSIONS FROM THE ASSESSMENT**

##### **1.2.1 Main result: European mobilisation and networking**

Overall the panel believes that the programme has been a very effective mechanism for (i) creating a *small* but significant population of mobile, high quality young and experienced researchers with trans-national experience and for retaining these researchers within Europe; (ii) building inter-institutional links among research institutions and (iii) stimulating net-working and creating meeting points for European researchers (research networks, European infrastructures).

Results are less clear-cut for socio-economic research. On the basis of participation and coverage of the work programme, goals have also been attained, the main result being the stimulus to net-working and adding a clear European dimension to research on the socio-economic field. But the evaluation of the specific research output remains to be done.

##### **1.2.2 Other strengths**

- IHP is the only haven for non-oriented, basic research within FP4 and FP5, to a large extent guaranteed by its bottom up approach.

- The Marie Curie Fellowship has reached a prestige status
- The training activities generate a pool of well-trained young researchers which will contribute to the replacement of the retiring generations in the European research community and Universities.
- The *Access to infrastructures* activity shows how national infrastructures can become open and integrated into European research sites. The panel welcomes the extension of this activity to cover small, relevant infrastructures and centres of competence that provide essential services.
- The management of the programme shows some outstanding examples of *good practices* in confronting the issues with the research community, e.g., systematic mid-term reviews, seminars, conferences.
- The socio-economic dimension has been formally integrated into the thematic programmes in FP5.
- There are good practices of valorisation of socio-economic research through the clustering of projects and dissemination of results, i.e., via conference and seminars and a well designed website.
- ETAN has shown that its mode of convening experts to enter dialogues with policy makers is effective and efficient.
- The activity on women and sciences has begun well.

### **1.2.3 Some criticism**

- The evaluators data-base is not user-friendly and as yet does not cover adequately all the required fields of expertise. Hence the selection of experts in certain cases has not been completely satisfactorily.
- There is a serious lack of final evaluation and impact studies in each activity
- The bottom-up nature of the programme generates an imbalance which becomes evident in the breakdown of participants by country/region of origin, by discipline, involvement of private enterprises and gender. Some mechanism should be set up in order to correct this imbalance.
- Activities in action A include too many schemes that make the programme too complex.
- The length of time to complete the administrative process from planning to action is too long.
- The concept of *Euroconference*, as a label, is not consolidated.
- The new *Prizes* introduced in FP5 are not sufficiently well defined.
- The objectives of TSER -and of the Key Action- have been rather ambitious and spread over a wide number of issues. Although the process of consultation is good, there have been changes in the work programme which are confusing for the research community and may lead to a dilution of the impacts of the research.
- In the first calls of TSER insufficient attention was paid to methodology and the development of common databases. However, the panel welcomes the fact that the second call of the Key Action makes explicit reference to the comparative methodological approaches and the third call will contain social science infrastructures including the development of common databases and methodological research.

## **1.3 RECOMMENDATIONS FOR THE FUTURE**

### **1.3.1 Recommendations on socio-economic research**

1. The panel recommends that socio-economic research (SER) becomes (again) a separate thematic programme in the future framework programme, as it has (intrinsically) very little in common with the training and mobility of researchers programme. It should be a thematic, horizontal programme made up of two main lines of research:
  - A) A central topic or closely related set of topics focusing on key European problems with an agenda for the whole length of the FP period. One element of this line of action would be the development

of a common set of socio-economic indicators (e.g., in the line of the Science, Technology and Innovation indicators).

- B) A set of research tasks dealing with socio-economic implications of S&T research activities included in the remaining thematic programmes.

### **1.3.2 Recommendations on improving human research potential**

2. The panel supports a **stronger** training and mobility of researchers programme that stresses the values of scientific excellence, multidisciplinary, cultural diversity, co-operation and administrative flexibility . The enlargement of the Community accentuates this need. Its share in the future Framework Programme budget should at least **double** the present level.
3. The **bottom-up** approach is a characteristic of the programme that the Panel values and wholeheartedly recommends retaining as a means of strengthening the basic research capabilities in Europe.
4. The panel also recommends that at the same time some attention be given to strategic considerations in order to **correct the observed imbalance**. A possible way could be to introduce a two-step selection procedure, involving scientific evaluators at each stage. The first step of the selection would be the same as it is now, the panel of evaluators ranking the proposals along criteria of scientific excellence only. In the second step, for which a dedicated percentage of the budget would be devoted by the Director of the programme, proposals with rank in quality above a definite threshold AND coming from less represented countries, disciplines, enterprise size ranges and gender would be selected. Such a procedure would be in contradiction neither with the bottom-up philosophy –which determines the first step- nor with the necessity of transparency.
5. Extend the **mobility** concept (by relaxing age-limits, encouraging the participation of women, experienced researchers, new countries, and developing return grants from outside Europe) and increase the flexibility of the grants, in an attempt to consolidate an increasingly **open** research area in Europe. The panel believes that Europe should be an attractive, competitive, open research area. Mobility and training programmes must become attractive for researchers from any country and include co-operation with research teams in any country. Relations with other developed countries should be inspired by the principle of balanced financial co-operation; with developing countries, by the principles of co-operation for development (avoiding brain drain).
6. A more ambitious approach to European research infrastructures is needed, including financing for upgrading and **new** national and European research centres. The panel endorses a vision of European research **networks** linking relevant infrastructures and centres of excellence in a structured, coherent way. New rules for financial support, **continuous evaluation** of the centres and accession rules for users will be required. New European centres should adhere strictly to relevance criteria. In addition to scientific **excellence** for the immediate **future**, these components of relevance should include: **multidisciplinary**, contribution to **public awareness of Science**, have a multipurpose philosophy, i.e., **combine basic and applied approaches** to existing problems or innovative questions, and guaranteeing **European Added Value**.
7. The panel favours an increased emphasis in **multidisciplinary** on training through research.
8. The panel strongly recommends activities addressed to increase public awareness on the relevance of Science for the competitive development of Europe. With this end in mind activities on conferences and prizes should be used to project relevant European contributions to Science.

### **1.3.3 Recommendations common to all activities under IHP**

9. There is a clear need to incorporate **impact indicators** (in addition to output indicators) to strengthen future monitoring and assessment exercises and have objective measures of quality. For this purpose 1%

of the budget of every activity might be used, as a minimum, to finance required methodological research and evaluation exercises.

10. There is a need to **simplify the components of the Programme**. Even though there has been a clear improvement in information dissemination and documentation, there are still ample possibilities to make the activities more attractive through simplification and flexibility. When long term activities are contemplated, there should be more flexibility to adapt the content of the original work programme.
11. There is also a need to **simplify the administrative procedures**. As time management is clearly the weakest point in procedures, the panel recommends a revision in depth of the role and procedures of executive and advisory committees taking part in the process. This revision should aim to achieve a substantial reduction in the time delay between an application's submission and contract signing. It might also include a study of the outsourcing of certain aspects of the programme management. However, the panel is not convinced that such outsourcing would be a better option. Moreover the panel strongly recommends that any outsourcing should **only** be transferred to European bodies and **not** to national institutions.
12. The Commission should promote actively the incorporation of additional evaluators in the areas weakly covered, establishing a feedback mechanism to detect where the problems are. The low proportion of women evaluators (15%) is one of these problems.

#### **1.3.4 Recommendations on the next Framework Programme**

13. In the coming stage of European research policy, a reinforcement of explicit co-operation and complementarity between European, National and Regional research policies (included funding) is strongly recommended. Increased co-ordination between Directorates within the EC, and between the EC and other European Science Bodies is also needed.
14. Given differences among national legislation, the development of a European patent system and a common European statute for researchers is needed to eliminate some of the inconveniences that presently hinder mobility of researchers and transnational team-working.

## 2 TABLE OF CONTENT

---

	<u>Page</u>
1 Executive summary.....	1
1.1 Description of the programme .....	1
1.2 Conclusions from the assessment .....	1
1.3 Recommendations for the Future.....	2
2 Table of content .....	5
3 Panel Members .....	6
4 Introduction .....	7
4.1 Objectives.....	7
4.2 Budgets.....	7
4.3 Evolution .....	8
4.4 Methodology and work plan of the panel .....	10
5 Assessment of Implementation and Achievements.....	11
5.1 Effectiveness.....	11
5.2 Efficiency .....	19
5.3 Major achievements .....	22
5.4 Lessons learned.....	23
5.5 Relevance .....	25
5.6 Gender issues.....	26
6 Conclusions .....	27
6.1 Conclusions from the assessment .....	27
7 Recommendations for the Future.....	29
7.1 Recommendations on socio-economic research .....	29
7.2 Recommendations on improving human research potential.....	29
7.3 Recommendations common to all activities under IHP .....	30
7.4 Recommendations on the next Framework Programme.....	31

### 3 PANEL MEMBERS

---

**Prof. Claire Dupas** (France)

*Chairperson of the Panel*

Professeur à l'Université Paris 11-Orsay

Directrice de l'Institut d'Electronique Fondamentale

**Ms. Katharine Elizabeth Barker** (United Kingdom)

Lecturer and Research Fellow, PREST

(Policy Research in Engineering, Science & Technology)

Victoria University of Manchester

**Prof. Maria De Sousa** (Portugal)

Professor and Head, Molecular Immunology, Abel Salazar

Institute for Biomedical Sciences and IBMC

(Institute for Cell and Molecular Biology), Oporto University

**Prof. Detlev Ganten** (Germany)

President, Helmholtz-Association of National Research Centers

Director of Max Delbrück Center for Molecular Medicine, Berlin

**Dr. Pierre Hausman** (Luxemburg)

Directeur Scientifique, Centre d'études de populations,

de pauvreté et de politiques socio-économiques,

CEPS/INSTEAD

**Dr. Aidan Kennedy** (Ireland)

Materials Technologist with Enterprise Ireland, Dublin

**Prof. Françoise Thys-Clement** (Belgium)

Pro-Rector, Université Libre de Bruxelles

**Dr. Juan Luis Llorens-Urrutia** (Spain)

*Rapporteur of the Panel*

Consultant on SME Development Strategy

Director and partner of LGEA

Lecturer, University of Mondragón

## 4 INTRODUCTION

---

### 4.1 OBJECTIVES.

The specific programme on improving the human research potential and the socio-economic knowledge base for the period 1999 to 2002 (hereinafter referred to as IHP) was approved by Council Decision of 25 January 1999, which recalls<sup>1</sup> its general objectives:

*“To improve the human research potential and to strengthen the socio-economic knowledge base. To this end, actions will be undertaken:*

- ◆ *To develop the Community’s human research potential, making special efforts to ensure equality of access and a better balance between men and women, notably through the training and mobility of researchers so as to contribute, inter alia, to efforts for creating new jobs,*
- ◆ *To enhance access to research infrastructures,*
- ◆ *To help make the Community an attractive location for researchers and to promote European research in the international arena and to promote a European scientific and technological culture,*
- ◆ *To strengthen, through a specific key action, the socio-economic knowledge base for a better understanding of key problems facing European society,*
- ◆ *To help develop scientific and technological policies and other Community policies.*

These objectives are not exclusive to this programme. Hence, they are to be met through (i) actions specific to the programme and (ii) through co-ordination with and support given to related activities in other FP programmes. Thus co-ordination becomes a very relevant **new feature** of IHP. The monitoring of issues such as equality of access and the situation of women in science is also a *task* of this programme.

IHP contemplates three **actions** specifically set up to meet these objectives, which develop into the following five **lines**:

- A. *Improving human research potential*, on the basis of
  - ◆ Supporting *training and mobility* of researchers through Marie Curie fellowships (MCF) and Research training networks (RTN)
  - ◆ Enhancing *access* to research infrastructures and
  - ◆ *Promoting* scientific and technological *excellence*
- B. *Key Action*: Improving the socio-economic knowledge base
- C. *Support* for the development of scientific and technology *policies* in Europe.

Each of these lines is implemented through a set of different **activities** and **schemes**.

### 4.2 BUDGETS

IHP is a significant component of the Community research programme, both in qualitative and quantitative terms: its share out of the total budget amounts to 9%<sup>2</sup>. Furthermore, this share shows a significant 42% increase from the 904 MECU allocated in the 4<sup>th</sup> Framework Programme (FP4) to the €1,280 of FP5, far greater than the 13% increase in the overall research budget.

If the importance of each line is to be measured in terms of budget allocation, the paramount relevance of the first of the five lines of activity in FP5 becomes clear: *Training and mobility* absorbs two thirds of the budget (67%). *Access* (14%) and the *Key Action* (13%) come next, and, further away, *Promoting excellence* (4%) and *Support for policies* (2%) complete the distribution of funds. This internal breakdown of the budget was

---

<sup>1</sup> In its Annex II (“The general outlines, the scientific and technological objectives and the priorities”).

<sup>2</sup> Including Joint Research Facilities, Community research budget for the whole of the FP amounts to 14,960 € million.

roughly similar in FP4. Table I in the annex gives a simple breakdown for the main activities in both FP4 and FP5.

But the Commission's activity in the field covered by IHP is larger than indicated by these figures, as the other programmes also include similar activities. In some cases, funds allocated within the thematic programmes are as large or even larger than those in IHP. Moreover, that share is increasing over time. Hence, co-ordination becomes extremely important, not only to have a comprehensive view<sup>3</sup> of the overall activity but to ensure efficiency and coherence and thus contribute to the successful implementation of the framework programme.

### **4.3 EVOLUTION**

One significant change in FP5 is common to all programmes: the enlargement to include associated countries and accession candidates, thus raising the total number of participating countries to 30. FP5 -as was the case for FP4- is also open to teams outside Europe but normally without Community financial support<sup>4</sup>.

IHP has two different programmes as direct antecedents in FP4: *Training and mobility of researchers (TMR)* and *Targeted socio-economic research (TSER)*. While TSER was introduced in FP4, TMR was itself a continuation of the older Human Capital and Mobility (HCM) Programme of FP3. In fact, the *mobility of researchers* is the only programme whose origins are found specifically in the Union Treaty itself<sup>5</sup>. The overall IHP programme presents a strong continuity with respect to FP4, the main differences applying to *Socio-economic research* and *Support for policies* (actions B and C).

#### **4.3.1 Improving human research potential**

The pattern of evolution of the first three lines of the programme (Action A) from its early version in FP3 is one of *incremental* improvements, adding new elements in response to accrued experience and to recommendations from the Monitoring Panels.

The goal of TMR was to contribute to the development of a European network of researchers in a dual sense: (i) by enlarging the scope of research to give it a European dimension: the so-called European added value; and (ii) by inducing the *Europeanisation* of researchers through personal exchanges and the creation of research opportunities for (mostly) young scientists outside their own countries. This has been accomplished mainly through research training opportunities (*via* fellowships and promoting European research training networks), through the enhancement of accessibility to Europe-wide relevant research infrastructure, and through the exchange of information and knowledge in transnational conferences and seminars.

In addition, TMR was a unique opportunity to promote research initiatives from the *bottom*, i.e., based on the initiative of researchers under the different training schemes. Due to this, TMR was also the only haven for basic research. IHP has maintained these characteristics.

The main novelties in Action A in FP5 include the following:

- Within Marie Curie Fellowships, the creation of 3 new categories of *Host Fellowship* and the extension of the *Experienced Researchers* to mobility between Academia and Industry. The new fellowships are:
  - *Development Host*, a structural cohesion fellowship as recommended in a previous TMR assessment. It is intended for less favoured regions.
  - *Industry Host*, an attempt to make the MCF more attractive for Industry and increase its participation in the programme.
  - *Training Site Host*, defined as *short stay* fellowships. Longer-term post-graduate fellowships are still available within the RTN and MC Fellowship schemes.

---

<sup>3</sup> As of year 2000, there are annual reports giving the overall view of the activity for the whole of the Framework Programme, namely in Fellowships, Infrastructures, Socio-economic dimension and Gender issues.

<sup>4</sup> The horizontal programme *Confirming the International Role of Community research* includes such financial support.

<sup>5</sup> As of 1986, article 130 G (today, article 164).

These imply a qualitative change, introducing a fellowship scheme in industrial and other host research centres, where the centres themselves make the selection of candidates. The total budget has expanded accordingly by almost 50% between FP4 (277 MECU) and FP5 (€410 million), largely due to the three new Host fellowships, which will absorb around 40% of the total budget for fellowships<sup>6</sup>.

- *RTN* does not present significant changes in content or approach. From FP4 onwards more emphasis was placed on basic training (compared to HCM) in order to address training needs. Hence, projects became more expensive. In turn in FP5 there is a higher percentage of funding for appointing young researchers. The budget has increased from 356 MECU in FP4 to €450 million in FP5<sup>7</sup>.
- *Access to research infrastructure* has extended the FP4 concept of *large-scale infrastructure* to include in FP5 “*facilities that provide essential services to the research community*”. In this way, new facilities in scientific disciplines that do not require heavy investment (e.g., Mathematics) or in Humanities are now eligible for support. The budget has risen 53% from 119 MECU in FP4 to €182 million in FP5, the highest increase within IHP.
- *Promoting scientific and technological excellence* receives greater emphasis and visibility<sup>8</sup>. In addition to some new types of conferences and seminars, it includes a totally new activity (*Raising Public Awareness on Science*) and introduces two new *Distinctions* (the Archimedes and Descartes prizes). The budget rises by 25% from 40 MECU to €50 million.

#### **4.3.2 Improving the socio-economic knowledge base**

The TSER programme in FP4 was an independent socio-economic **research** programme (basically the only one). Its creation was one relevant step forward<sup>9</sup>. It was aimed at promoting the development of a European body of research around three Areas (or broad topics) considered to be particularly relevant for the construction of Europe, namely

- (i) Science and Technology Policy formulation;
- (ii) Research on Education and training; and
- (iii) Social integration and social exclusion.

As a successor to TSER, the Key Action is also conceptually independent from Action A: it focuses on research, not on researchers. It is aimed at improving “*our understanding of the structural changes taking place in the European society in order to identify ways of managing change and to involve European citizens more actively in shaping their own futures*”. Budget has increased 47% from 112 MECU to €165 million, the second highest increase and above the average within IHP.

The calls for research proposals involve analysis of the following broad topics:

- (i) Societal trends and structural changes
- (ii) Relationships between technology, employment and society
- (iii) Governance and citizenship: The reappraisal of participation mechanisms
- (iv) New development strategies fostering growth and employment

These topics must not be seen in isolation but as interrelated parts of a coherent and comprehensive framework. This *vision* is coherent with the overall emphasis of the FP5 on its socio-economic impact dimension. The *work programme* further develops the issues into *tasks*.

Hence, even though there is a clear link between TSER and the *Key Action*, two major changes can be also be identified in this transition from FP4 to FP5:

---

<sup>6</sup> Including the Thematic Programmes, the budget for MCF expands from 393 MECUS in FP4 to approximately €600 million in FP5.

<sup>7</sup> Budget distribution between MCF and RTN is only indicative (non binding).

<sup>8</sup> In FP4 it was considered within *Accompanying measures*.

<sup>9</sup> It is worth noting that, contrary to the *European dimension* naturally developed in certain other disciplines (Physics, Chemistry, etc.), applied socio-economic research remains to a large extent divided along national lines and schools of thought.

- There is a greater emphasis on the bottom-up approach<sup>10</sup> and,
- The work programme (research tasks) is more broadly defined (with a greater emphasis on interrelations and comprehensiveness<sup>11</sup>) and redesigned in every new call for proposals after extensive consultation<sup>12</sup> with academics and policy makers to fit what are considered to be the main priorities of the moment (the 1999 call included 12 research *tasks*; the 2000 call, 7).

#### **4.3.3 Support for the development of Scientific and Technology policies**

This action includes two activities: STRATA (*Strategic Analysis of Specific Political Issues*) and the work programme on *Common basis for science, technology and innovation indicators*. They share a budget of €25 million.

STRATA is a new activity and has its roots in the fourth framework programme although there have been considerable changes. In FP4, the *European Technology Assessment Network* (ETAN) was a pilot initiative under Area 1 of the TSER programme. It aimed to provide a link between researchers and policy makers. ETAN stimulated high level debate through convening expert working groups which produced and disseminated synthetic policy reports. It was intended to be a high profile European activity mobilising expertise and thinkers on policy options. STRATA has taken over some of the aims of ETAN in seeking to provide a service to decision makers (not to researchers any more) by promoting dialogue between actors in science and technology policy and by analysing and synthesising information on key issues in S&T policy. It does so through funding networks and accompanying measures in a *bottom-up* approach. A much reduced element of ETAN-like expert groups continues under STRATA.

The activity on *Common basis for science, technology and innovation indicators* differs from the other activities in two respects: (i) the unit responsible for the activity implements its programme, in conjunction with Eurostat, partly through calls for tenders and calls for proposals, and partly through in-house expertise (2) the unit also carries out its own related internal work aimed at developing S&T indicators and producing quantitative analyses for European policy makers<sup>13</sup>.

#### **4.4 METHODOLOGY AND WORK PLAN OF THE PANEL**

The panel is made up of eight independent experts and this report reflects their consensus views on the different issues covered.

Members of the panel have assumed the main responsibility for the assessment of a set of activities of the programme and have prepared *ad hoc* sub-reports that represent with greater detail their personal assessment. The sub-reports have then been the basis for a thorough discussion within the panel. This report represents thus the final consensus assessment of the panel.

In this process the panel members have covered a number of activities, either collectively as a panel or as individuals, namely:

- Study of a wide range of relevant documentation obtained from the Commission.
- In-depth analysis of a sample of 28 TSER final reports
- Discussions with the relevant officials responsible for this action within the Commission.
- Interviews with a number of personalities and current or potential users of the different schemes. Among the former, National Programme Committee members and other high ranking officials involved in national Research Policy design and/or implementation are included.

---

<sup>10</sup> However, once DG Research officials define the work programme, the Key Action becomes as top-down as TSER was. The only possibility for really bottom-up socio-economic research lies within the MCF, RTN and Access activities.

<sup>11</sup> A shift already introduced in the work programme for the third call of proposals of TSER.

<sup>12</sup> The second call has included input from a series of seminars organised by the KA, as well as comments from the EAG and Programme Committee.

<sup>13</sup> There were three calls in 1999 for 25 studies for which 15 contracts were placed, as well as one call for expression of interest. Information on these tenders is not included with the core indicators of the IHP programme.

Even though most interviews have been arranged in the countries of origin of the panel members, two further set of meetings were arranged in Italy and Sweden to take care of the fact that no nationals from those countries were present in the panel. Transcriptions from interviews have been circulated among all panel members.

The panel has held eleven meetings, ten in Brussels and one in Florence. In the first four meetings officials from the Commission made presentations of the different activities under their charge.

## **5 ASSESSMENT OF IMPLEMENTATION AND ACHIEVEMENTS**

---

### **5.1 EFFECTIVENESS**

#### **5.1.1 What to assess: Goals, output, impact of the programme.**

Effectiveness has to be measured by comparing stated goals and results (output) of the programme. But the assessment should also look into the consequences of *impact* of the programme. While the direct output is easily measurable (see next section), **impact assessment** is much more complicated. IHP combines actions with very different goals and it is necessary to constantly differentiate between the three:

- ◆ Improving human research potential focuses on researchers (learning, mobilising, etc.).
- ◆ Improving the socio-economic knowledge base focuses on research
- ◆ Support for the development of scientific and technology policies in Europe focuses on linkages between knowledge acquired through research and policy making.

The assessment should ideally look into (i) the impact of the programme on the qualification and career of researchers, (ii) the contribution of their research into the wealth of relevant knowledge and (iii) the effective linkages between that research and policy-making. It turns out that there are very strong information limitations to produce the latter type of assessments.

As a first attempt to overcome these shortcomings, a broad survey<sup>14</sup> has been conducted at the end of 1999 as part of this 5-Year Assessment exercise to gather information on the impact of the programme from the participants' perspective. In what concerns specifically IHP, the survey has covered both co-ordinators and participants of **completed cost-shared projects** under FP3 and FP4, i.e., around 800 RTD projects pertaining to RTN, TSER and Access activities. Throughout this report we will refer to results stemming from around 150 valid answers of this survey.

#### ***Improving human research potential***

Current indicators include mainly *user satisfaction* indicators and results from *mid-term reviews*. But their value as an impact measuring study is rather limited. The conclusions of this type of reports are generally **very positive** with, e.g., the fellows and users expressing high levels of satisfaction.

An ex-post assessment has also been carried out of the final reports submitted by 273 MC fellows whose fellowships were awarded in the period 1987 – 1993. Satisfaction concerning their integration into host country and host institution and the advanced research skills acquired is the common note. Supervisors were also generally very satisfied with the quality of work done during the fellowships. The majority of fellows had a position after the MC fellowship but usually a temporary position.

**The panel recommends that a similar study be urgently carried out on MC fellowships awarded during the period 1994 – 1997.** It should include studies of final reports of MC fellows, career tracking of former MC fellows and collaborative trans-national institutional links developed or strengthened by the MC activity.

---

<sup>14</sup> Questionnaire Survey: *Collecting and analysing quantitative and qualitative data from a selected sample of finished projects under the Third Framework Programme and the Fourth Framework Programme.*

The same considerations apply to RTN. The interviews carried out and the results of the enquiry among the researchers on the occasion of the mid-term review<sup>15</sup> emphasise a great satisfaction with regard to the training received, and the establishing of European contacts and high quality research projects. The **expectations** of young researchers regarding their career prospects following their appointment are ranked as positive (47%) and very rewarding (40%).

The panel considers that what is needed is the monitoring of the impact of the programme on the research career of participants. A number of individual case histories are available (which seem to be mostly positive) but no overall statistical data concerning the period in question. It would be desirable to obtain good quality statistical data on the present career progress of those who were MC Fellows more than 4 years ago. The MC Fellowship Association will be re-designing their database to collect such statistical information in the future.

*The Commission should encourage the MCF Association to make this their highest priority action, which could be done through an Accompanying measure.*

The same recommendation applies to RTN, which should be evaluated along very much the same lines, as there is a basic coincidence in the goals of both schemes. Incidentally, the application of common impact evaluation criteria would shed additional light into the relative merits of both training schemes (i.e., the value of *individual* training schemes versus *network* training schemes).

In addition to this, some other steps have been taken in the context of the MCF activity. After a 12 – 18 months elaboration period by a consultants team a report on a methodology for impact measurement has been made available in January 2000. The panel's view is that the methodology described in this report seems impractical and too complex. The panel is disappointed that quick, simple impact measurement studies of this action have not been carried out long before now, since the programme has now been running in various forms for over 10 years.

Furthermore, the effort should be extended to all activities so that future monitoring and assessment panels are given more relevant impact data to perform their duties.

Similar concerns can be raised with regard to the impact evaluation of the *Access* activity for which user surveys are regularly conducted. The Programme is generally recognised as valuable and has been implemented and managed not just with efficiency but with considerable thoughtfulness about its significance for the scientific community and future development. In the course of interviews some weaknesses were identified, however. These include above all references to continued funding of “clubs “ of users, insufficient attention paid by evaluation panels to the question of geographical and thematic distribution of the infrastructures funded, the necessity of opening access to industry partners and vice-versa. That need is being somewhat corrected by the number of new applications already proposed for funding under the first call of 1999.

The impact of the third line of activities (*conferences*) is again difficult to evaluate, as no impact indicators are available (only output measures and satisfaction indexes). The large series of conferences appears **appropriate**. Direct feedback from the scientific community is positive. However, a particular type of conference highlighting outstanding European achievements is still **missing**. It is also suggested that Euroconferences should establish a more specific **corporate identity**. This would contribute to enhancing the European dimension and visibility of the seven types of conferences included under this activity.

---

<sup>15</sup> Each of the 96 networks funded after the 1<sup>st</sup> call for proposals in 1995 has gone through a process of interviewing. Over a 20 month period (April 1998 to December 1999) more than 800 questionnaires have been processed.

**Key Action: improving the socio-economic knowledge base**

The situation becomes indeed more complex when the issue of assessing the impact of **socio-economic research** is raised since there is no *ad hoc* formal evaluation on the outcome of this research activity beyond the administrative approval of the final reports presented<sup>16</sup>.

The panel has reviewed the final reports available from the 1<sup>st</sup> call of TSER in depth. A first observation concerns the difficulty to advance a judgement on their scientific quality on the basis of the reports themselves, due to the lack of precise information on methodology: In too many cases, the authors are just commenting the main conclusions of their research. This is due to the absence of specific guidelines on the 1<sup>st</sup> call. From later calls, co-ordinators have received more precise instructions as towards presentation and content of their final reports.

Nevertheless, the present format for final reports respond to mainly administrative requirements, e.g., standard formats for easy dissemination; but this preference should not exclude attention to methodological issues (e.g., in annexes). Its absence gives an undesirable appearance of scientific weakness. The crucial information necessary to evaluate the scientific quality of the projects should be part of the final delivery.

Hence the panel **recommends that clear instructions be addressed to the project's co-ordinators concerning the presentation of the methodology section and the overview of the main results in their final reports.**

There is a second, linked issue, the *valorisation* of research results. In the case of socio-economic research - which has no possible commercial application- valorisation comes through **dissemination**, which seems to remain a weak link. The question, however, is **not** to disseminate *more* but to disseminate *better*. And that has to do with the way the **results** are transmitted (i.e., how the message is conveyed). The panel acknowledges the fact that the website has been very well designed and that accessibility of reports is very much enhanced. However, knowledge dissemination requires more than simply access to reports: evaluation of conclusions and *repackaging* of interrelated reports are additional activities that require planning, resources and commitment. TSER has produced some **outstanding examples** in this direction over the past (via the *clustering* of reports, e.g., the Lundval report<sup>17</sup> on *The Globalising learning economy: Implications for innovation policy*). However the panel notes that the launching of FP5 has overshadowed the monitoring and valorisation activities of the many FP4 on-going projects. Since dissemination is a key value in this field, it should become a **major priority again**. In the context, the panel observes that the Programme Management has a full set of instruments (eight lines) that can be used under the second accompanying measure, from the web site to the series of conferences and workshops planned. For the year 2000 eight workshops are already planned and sixteen for 2001 (or early 2002). The first workshops will address the following topics:

- Comparative data on Education-to-work Transitions
- Technology, Economic Integration and social Cohesion
- Regional Dimensions of RTD strategies
- Work and Welfare
- Employment funding

Similar conclusions are applicable to *Support for policies*.

In conclusion, this is a field to which programme management should dedicate more attention. Specific research should be focused at developing operating methodologies to monitor and evaluate the impact of the different activities. This panel recommends that the IHP directorate should give higher priority to retrospective studies of the value and impact of past actions. They should be simple but meaningful.

---

<sup>16</sup> I.e., according to contractual obligations. It is doubtful whether it is sensible (in terms of cost-benefit) to do much more than that. Ideally, the validity and *usefulness* of the research could be measured in terms of the standard bibliometric indicators (e.g., index of international citations) even though this method is more applicable to basic rather than to applied research.

<sup>17</sup> The report is a reflection based on seven other TSER reports.

### **5.1.2 Attainment of goals**

Overall the panel believes that the programme has been **very effective**.

The MCF and RTN schemes have been an extremely effective mechanism for creating a *small* but significant population of mobile, high quality young researchers with trans-national experience and for retaining these researchers within Europe. The descriptive phrase used for this activity is “Training through research”. However the panel believes that it is too narrow a description. The MCF and RTN fellowship schemes of course involve advanced training. But they also include experience broadening, trans-national mobility, knowledge transfers and also bring significant benefits not just to the individual Fellow but to the host institutions and host countries concerned.

*The panel recommends that a broader description be composed which captures these elements, and that it be used in marketing the MCF and RTN schemes – e.g. “Building a new advanced research community for Europe” or some similar descriptive phrase.*

Compared to Europe’s overall needs in an increasingly knowledge-intensive global society, and taking into account the numbers of European researchers who are at the “end of career” or retirement stage, the impact is as yet relatively small. But a significant beginning has been made which the panel hopes will continue to grow.

Some activities, however, have not attained the expected results. It is the case of the MCF “experienced researchers” scheme, which has not attracted a good response (101 fellows in FP4 and 22 in the first call of FP5).

A suggestion to improve this would be to re-package this sub-action as an opportunity for a “sabbatical” research period for experienced researchers, and to remove restrictive conditions which may exist. For example short, intermittent visits by an experienced researcher to another institution would be more suited to the busy work schedules of many experienced researchers. This would make it a career enhancing move rather than a career disruptive move. This sub-action should not be allowed to die out. *The panel believes that a real need for this category exists but that the right formula has not yet been found so that it becomes attractive to experienced researchers.* Academic institutions for example should be encouraged to positively discriminate in their promotional practices in favour of researchers who have spent time working in industry or trans-nationally.

Similarly, the results of the *Access to infrastructure* activity are also considered very satisfactory: The interviews and the mid-term reviews emphasise a great satisfaction among the researchers with regard to the training received, and the establishing of European contacts and high quality research projects.

As far as socio-economic research is concerned, results are less clear-cut: the objectives of TSER -and to similar extent, of the Key Action- are very ambitious and spread over a wide number of issues. There are not equivalent indicators (mid-term reviews, etc.) and attainment of goals can only be assessed on the basis of participation and coverage of the work programme. In this sense, goals have been attained. On the other hand, objective indicators of achievement are more difficult to define, as it would involve evaluating the results of research itself.

The same thing can be said with respect to *Support for policy*: Certain ETAN reports (as predecessors to the current STRATA activity) are highly thought of by researchers and policy makers and presentations were successfully made. However, it is very difficult to trace actual policy use, as the effects are likely to be more indirect and require a sustained effort over time (e.g., ETAN reports on Global Climate Change and RTD; report on Women in Science).

The 1999 Survey (*vide supra*) gives, however, a *subjective* answer to the question of achievements of goals. From the perspective of participants RTD projects<sup>18</sup> had mainly (i) *knowledge oriented* and (ii) *network-oriented* goals of a moderately importance (mark 3.5 and 2.8 in a scale from 1 to 5). In the first case, achievements were on average slightly **below** original expectations, while in the second case, achievements

---

<sup>18</sup> RTN, TSER and Access.

**exceeded** them. Other possible goals, namely *exploitation-oriented* and *strategic management* are much less relevant but curiously enough results exceed expectations by far<sup>19</sup>.

### **5.1.3 Trans-national mobilisation and networking**

Numbers are a clear indication of the impressive mobilisation of (financial and human) resources in FP4: 249 RTN (all ongoing in 1999), 3.207 MC fellows (2,240 finalised), 150 infrastructure contracts (40 finalised), 486 contracts covering Euroconferences, Summer Schools and Lab courses, and 250 TSER contracts<sup>20</sup> (147 finalised). Research teams are made up of 5.3 entities on average.

Response to the first calls of FP5 are also relevant<sup>21</sup>: 167 new networks, 413 fellowships, 140 contracts in *Access to infrastructures* and 213 conference and seminars of various kinds: on the other hand, the Key Action is funding 43 projects, STRATA has 6 contracts and the *Common basis* has placed 15 contracts from a total of 25 tender study lots.

The building of co-operative links between different institutions is in itself a major result of the IHP programme. Some may correspond to long-standing co-operation traditions and others are certainly new, but they clearly define a trend: a vast majority of research teams plan (1999 Survey) to begin new collaborative ventures with the same (60%) or with new partners (40%).

The inclusion of teams from associated and accession countries is another significant achievement. However more statistical information of this type needs to be collected to form an overview. From the point of view of "European added value" it is expected that the links formed should act as catalysts for *new* institutional collaborations.

### **5.1.4 Bottom-up approach**

The *bottom-up* nature of the programme under action A is highly appreciated by researchers because it is the only programme where basic research can be accomplished in any discipline. The panel shares this same view: the primary focus of almost 75% of RTD projects is *basic research*, i.e., research that tries to answer serious, fundamental questions. However, the division is not that sharp in the sense that 54% of projects at the same time also have a particular application or use in mind<sup>24</sup>.

HYPERLINKIn this way, IHP plays a complementary role to the more applied, issues-solving approach of the thematic programmes (particularly for the fellowship and access to infrastructures activities which exist in both types of programmes).

On the other hand, the panel has not found any evidence to show that this approach has resulted in the production of new ideas or a more innovative research because the whole issue of **dissemination** of results from research activities under action A is still pending.

In the absence of such evidence, the Panel expresses some concern in the sense that, while the bottom-up character should be preserved, some equilibrating mechanism should also be contemplated, as there are several risks:

- On the one hand, the distribution of funds (e.g., in RTN) reflects demand. Hence distribution reflects the preference of individual participants, who show a relevant bias in favour of Life Sciences (19% of the total) and Physics (25%). This may perhaps have the undesirable effect of penalising good proposals in emerging fields.

---

<sup>19</sup> Question C1 of the Survey

<sup>20</sup> It includes accompanying measures. Projects and networks are 189.

<sup>21</sup> Figures correspond to the Core indicators report and may not refer to funding but to the *recommended for negotiation* stage.

<sup>22</sup> Each of the 96 networks funded after the 1<sup>st</sup> call for proposals in 1995 has gone through a process of interviewing. Over a 20 month period (April 1998 to December 1999) more than 800 questionnaires have been processed.

<sup>23</sup> The report is a reflection based on seven other TSER reports.

<sup>24</sup> The proportions are 46% and 68% for the RTD projects in the whole of the Framework Programme (results from the first 500 questionnaires).

- In fact, a major global transformation is happening in the area of Information and Communication Technologies but is not reflected in the MCF scheme, which remains focused on the traditional sciences, mathematics and the economic and social sciences. Even when fellowships in the thematic Programme *Information Society* is taken into consideration, the distribution of funded proposals by main discipline does not reflect Software/Information Technology research. *The panel believes that a way must be found to make the MC scheme relevant to what is, globally, one of the most important area of S & T research at the present time and for the foreseeable future.*
- Furthermore, only a relatively small amount of the research supported appears to be multi-disciplinary in nature. The panel believes that the overall quality of training provided in this action would be improved if the amount of multi-disciplinary research were higher. In the 1<sup>st</sup> call of FP5 for example about 15% of submitted proposals were deemed to be multi-disciplinary (in the sense of being assessed by more than one evaluation panel<sup>25</sup>). Multi-disciplinarity is, increasingly, a very important factor in advanced research. Greater efforts should be made to ensure that Europe's elite young researchers are equipped to perform optimally in a multi-disciplinary research environment.

*Over the next 3 years the aim should be to double the proportion of multi-disciplinary projects supported by the MC and RTN activities. A similar concern can be expressed concerning the list of infrastructures under the Access activity.*

The approaches of TSER, the Key Action and *Support for policies* are “bottom-up” in a very different way. Socio-economic research is clearly focused on a series of certainly broad topics. TSER included three specific research areas (*vide supra*) and the Key Action is focused on the understanding of the structural changes taking place in the European society. In both cases there is an ample development of a work programme, defining the research tasks of interest for every call. The *bottom-up approach* is therefore restricted to methodology.

STRATA is certainly more *bottom up* than ETAN was. Proposals for thematic networks and accompanying measures are invited in four specific areas: European S&T policies and their systemic context; S&T policies in Europe and how they integrate with other policies; management of change; collaboration. Finally, the activity *Common basis for STI indicators* is specific in that it is mostly developed internally by the staff and in that ample use is made of calls for tenders (a call for proposals is also foreseen in 2000).

### **5.1.5 Links to policy. Problem solving approach. European socio-economic priorities**

FP5 has shifted emphasis onto a “problem solving” approach, specially in the Key actions. IHP is a horizontal programme, but the concern to link research to policy priorities is obvious for shared-cost actions and, most of all, for the Key Action socio-economic research and STRATA, which is a new FP5 activity specifically set up to bridge the gap between research proper and policy applications.

As IHP is set up as a bottom-up research programme, the topics are freely chosen. However, relevance to European policies is kept as one of the items to be considered in the peer evaluation process. Connection to the *policy DGs* is explicit in the formulation of research task programmes and in the priority setting for proposals. Communication with the research community on these grounds is also growing through seminars, work-shops and conferences. However, more should be done to bring policy makers together with researchers from the beginning of RTD projects and thematic networks.

The panel notes a positive evolution in the way the work programme is elaborated and detailed along the three calls for the TSER programme, moving from a rigid description of “research areas” to a more integrated task lists in the third call. Furthermore the Key Action in FP5 is much more adaptable and allows for a greater dialogue between the scientific and policy-makers community every year prior to the elaboration of the work programmes for the calls. However the Panel would like to see this process being defined in a more formalised way.

---

<sup>25</sup> It must be noted that part of the multi-disciplinary proposals are not included in the above-mentioned 15% because they are within one single evaluation panel, for instance Computational Biology and Bio-informatics.

However, relevance should be evaluated not only *ex ante* but also *ex post*: i.e., **results** from research projects should be evaluated to compare what they do deliver with what was *promised* in the proposals. A key difference with many national research policies lies in the fact that European research finances **research** rather than researchers. This makes the task of monitoring and valorisation of on-going research all much more important.

### **5.1.6 Opening to the world.**

The growing internationalisation of the programme is a welcome feature. Not only all specific programmes of FP5 are open to project by project participation by partners from third countries (but without Community funding) but also 15 associated countries have been integrated into FP 5. Some of the activities and schemes have been broadened: e.g., Conferences include a specific scheme that finances the invitation of keynote speakers from third countries.

However, the Panel would like to see more significant steps taken in this direction in order to build a specific European research area and not only a Research area for Europeans.

In the case of MC fellowships, the panel believes that there are new issues that the Programme should address. One of them is the attraction to Europe of high quality researchers from the rest of the world – including the USA and Japan. In the same way, the RTN activity should include the possibility of admitting as partners relevant research teams from the rest of the world. Financial provisions should be based on the principle of equilibrium among the participation of the European Union and the other countries.

Another is a wider version of a “return” fellowship, i. e. a fellowship designed to attract top quality researchers who are European nationals back to Europe from the USA.

### **5.1.7 Co-ordination with other activities**

This issue has been examined from four different perspectives: (i) Within IHP activities; (ii) Throughout FP5 activities; (iii) With other European Policies; (iv) In relation to national research policies.

#### **5.1.7.1 Within IHP**

The Panel is satisfied that the degree of co-ordination between similar (MCF and RTN) and complementary (RTN, Access) activities has improved considerably, reaching acceptable levels that improve the efficiency of the programme.

On the other hand, conceptual and operational linkages between the three main actions (A on the one hand, and B and C on the other) are not evident to the panel. The IHP programme does not manage action C, even though it does provide coverage to its budget: STRATA/ETAN is managed by the Policy co-ordination and strategy Directorate, while the indicators team reports directly to the Director General.

#### **5.1.7.2 Throughout FP5.**

IHP is responsible for co-ordination and support to similar activities throughout FP5. This is a clear improvement over FP4, most obvious in the case of MCF. In the past there have been different success rates for fellowships between the thematic programmes and TMR. Improved co-ordination has reduced significantly these differences. Ideally success rates should be roughly equal whether an individual application goes through the thematic programmes or through the horizontal programme. There are good arguments in favour of a single channel of application – i.e. to IHP.

Starting in 1999, annual reports will give overall information for infrastructures, Marie Curie Fellowships, socio-economic research and gender issues and science. The latter two should play a relevant role.

Socio-economic research under the thematic programmes is a welcome new initiative in FP5 and it is coherent with the overall problem-solving approach and the complementary role of *horizontal* research within IHP. Activities in the first year of operation have been limited to an *ex post* tracking mechanism which should give way to a more pro-active and collaborative mechanism in the coming years. However, this

requires considerable methodological development both in terms of the specification of the work programmes, the specification of the evaluation criteria and the setting up of multi-disciplinary evaluation panels. Hence the co-ordination unit in DG Research should be strengthened to accomplish this task and harmonise approaches across thematic programmes.

The Gender issue will be dealt with further below.

### **5.1.7.3 Other European Policies**

#### **A) Regional and national cohesion policy.**

Imbalances in the participation of regions and countries are evident in most activities and will be dealt with further below.

Concerning Cohesion policy (and regional policy structural funds), the evolution of the IHP programme has gone in two opposite directions. Inclusion of a candidate from an Objective 1 region does not bear any effect on the evaluation of the proposal, as was the case at the beginning of FP4. FP5 has introduced in addition one scheme within MCF specifically aimed at these regions: the *Development Host* fellowship scheme.

A more subtle but relevant contribution of the FP to regional cohesion comes through the transfer of knowledge that the mobility actions permit. However since there is no tracking of the subsequent activities of the trainees the Panel cannot ignore that the opposite (a brain drain towards advanced research centres) may also be taking place.

There is no obvious way in which both (regional and research) policies can be made operationally coincident, but they clearly support each other: innovation policy is a key element in many -if not all- of the regional development plans. These pay attention to infrastructure development ("hardware") while the research policy pays attention to training and mobility.

Increased co-ordination between both Directorates-General is strongly recommended. While there is incidental evidence of the information flows linking DG Research and DG Regional Policy, there is no indication that this link has resulted in any specific form of co-operation.

#### **B) Employment and other policies**

The Council Decision approving the IHP Programme links the goal of developing human research potential to the contribution to the "*efforts for creating new jobs*". And out of the four main topics for socio-economic research mentioned in the Council Decision two are directly related to employment issues:

- (i) Relationships between technology, employment and society and
- (ii) New development strategies fostering growth and employment,

a stronger declaration of interest than was evident in FP4.

In the context of training itself, it is *assumed* that participation in the training activities of the programme will result in better employability prospects of the trainees due to value-added of mobility and European relevance. But as already mentioned, actual impact remains to be measured.

On the other hand, the Key Action puts a strong emphasis on (research on) employment issues. Accordingly, four out of twelve *research tasks* in the first call (1999) are linked to employment or work conditions; the second call (2000) reduces the research task to seven and one of them deals directly with the issue of employment and unemployment.

DG Employment has been actively involved in the preparation of the second call for proposals and a number of workshops concerning employment and social affairs, as well as in the monitoring of a number of TSER projects. KA staff participate in a number of DG Employment steering committees dealing with employment, exclusion, racism and equal opportunities, and an informal memorandum of co-operation between DG Research and DG Employment in the field of social exclusion, has been established. Further initiatives along these lines are envisaged.

Finally, the objective of STRATA, as it was the case for ETAN in FP4, is to promote a dialogue between researchers and policy makers on science and technology policy issues of European relevance. ETAN mobilised experts and launched activities on 9 specific topics. The ETAN expert groups produced and published reports, held seminars and conferences with policy makers and made presentations to CREST. Their findings on gender balance<sup>26</sup>, intellectual property rights in the context of technology policy<sup>27</sup> and assessment of European RTD programmes<sup>28</sup> have had direct impact upon the activities of the Commission, to name but three of the groups even if it is very difficult to trace direct impacts on policy.

It is not clear how/whether ETAN/STRATA have been co-ordinated effectively *ex ante* with other Commission activities or to what extent is there some co-ordination with activities at JRC in Seville<sup>29</sup> which shares some of these objectives.

The *indicators* activity is an extremely useful exercise that can contribute to the development of a coherent European research policy. There has been some (rather limited) co-ordination with relevant TSER projects, but links to the relevant statistical agencies (Eurostat, OECD, UNESCO), and to other Commission services (DG Enterprise, DG Economic and Financial Affairs, etc.) have been an important activity, and this co-ordination will increase in the future in the context of the work on benchmarking arising from the Lisbon Summit.

#### **5.1.7.4 Co-ordination with national policies**

There is an absolute lack of information concerning this point as if European and National research policies were largely independent. **The panel feels that there is a clear need to advance in the co-ordination of national and European policies with a clear understanding of their complementarity.**

## **5.2 EFFICIENCY**

### **5.2.1 The management of the programme**

The launching of **FP4** suffered from functional disadjustments in its first call, particularly severe for TSER, which was a new programme. Instability and repeated changes at the head of the management unit certainly did not help. But there has been a clear improvement in the way successive calls have been programmed and executed, and that is reflected in the evolution of the number of proposals and the success rates, as will be shown below.

This improvement has also been clearest in TSER, where improved focus was evident in the second and third calls. The work programme progressively advanced in the direction of higher integration of the different research tasks, thus overcoming the lack of flexibility in budget allocations among the three research areas imposed by the text of the Council Decision. Budget commitments have risen steadily from the beginning to the end of the FP4 showing this greater swing of activity.

**FP5** has been launched with extreme efficiency given the time restrictions. The information packages were extraordinarily well designed and informative for proposers and evaluators alike. Furthermore, all objectives for the last year have been reasonably well covered. However, the time lapse to go through the whole process of evaluation, selection, negotiation and contract signature continues to be extremely long. This is the main criticism, and in spite of an improvement over the past five years,

A first step is to inform candidates of the results of the evaluation, and the issue of contracts. Good progress was made on the first issue for MCF during 1995 – 1997: The average duration to informing candidates was reduced from over 6 months to roughly 4 months. There should be continued pressure to reduce this even

---

<sup>26</sup> *Science policies in the European Union. Promoting excellence through mainstreaming gender equality*, European Communities, 2000, EUR 19319

<sup>27</sup> *Strategic dimensions of Intellectual Property Rights in the context of S&T Policy*, European Communities, 1999, EUR 18914

<sup>28</sup> *Options and Limits for Assessing the Socio-Economic Impact of European RTD Programmes*, European Communities, 1999, EUR 18884

<sup>29</sup> The IPTS in Sevilla is member to the several of the teams with funded proposals under the STRATA activity.

further. In 1999 the so-called *quick no* procedure was approved but failed to be implemented as expected due to legal concerns which are apparently solved for future calls.

In the case of MC Fellows, speed becomes even more critical. Fellows cannot start the project until contracts are issued, hence the signing of contracts is crucial. In FP5 although evaluation panel meetings were completed within 2 months, because of changes in procedures, new software, etc., the Commission decision took up to 6 and 7 months. Although the candidates had been informed after about 2.5 months contracts were not issued until month 7<sup>th</sup>. This is an unacceptable time delay. It is acknowledged that this issue was outside the influence of the staff in the MC unit.

The same thing happens with RTN. The external monitoring report of 1996 pointed out at the extraordinarily long period of time between the closing of the call and contract signature: 35 weeks for the 1<sup>st</sup> call and 32 weeks for the second one. The evaluation procedures in 1997 improved enormously, as they were completed in 22 weeks. The Graz Conference confirms that the Commission has significantly improved the evaluation system for RTN during FP4.

Again, for TSER and the Key Action the amount of time consumed by the process from the moment the call is launched till the signature of the first contracts is a cause of concern. This process has taken up to one year and one does not see improvements resulting from *learning by doing* processes<sup>30</sup>. The contrary seems more certain. The process for STRATA has also been very slow.

The reduction of total time will require a restructuring of the processes followed by and within the Community decision bodies, including a revision of the role played by the Programme Committee.

Connected with this issue is another cause of concern that affects primarily the monitoring of TSER and Key Action research projects, namely, the rising ratio of projects per scientific officer. This will necessarily reduce the function of scientific officers to mere administrative controllers. Given the duration of the research projects, this ratio has risen on the first year of the Fifth Framework Program, resulting in a loss of attention to valorisation and dissemination activities of these projects. It is worthwhile remembering that projects from the Fourth Framework Programme will continue in operation till at least 2001. Organisational changes in DG Research in 1999 have also resulted in a loss of priority for the monitoring of these ongoing projects.

The right to mobility of scientific officers must not jeopardise the benefits of accumulation of practical knowledge on the running of the programme. Working procedures should assure the preservation of the benefits of the *learning by doing process* by means of technical instruments such as well documented intranets and, most of all, a well defined strategy on personnel policies.

The evaluation of management practices would be easier if **annual management reports** covering goals, instruments, accomplishments, etc., were systematically prepared.

### **5.2.2 Harmonisation and transparency of evaluation procedures**

The **evaluation** procedures have been on the whole just, transparent, unbiased, and conducted according to the rules of the Commission.

**Homogenisation** of procedures has moved forward and some considerable advances are reported in activities that are covered both under the horizontal and the thematic programmes (e.g., MCF schemes). However, there is still room for further harmonisation in these cases: The existence of twin application routes (i.e. via the thematic programmes and via the horizontal programme) is unnecessarily complicated.

In order to simplify the process the panel recommends that *there should be only one channel of application, via IHP, and therefore only one closing date for each call for proposals*. Other procedures – evaluation, contracts, monitoring, etc., can still be done by the thematic programmes. This would be easily applicable to the MCF scheme as well as to the other activities like *Access to infrastructures* and Socio-economic research

---

<sup>30</sup> True, most of the time is consumed by steps beyond the responsibility of officials in DG Research.

A common difficulty has been the inadequacy of the (new) database of **evaluators** to respond to the needs of the evaluation process in the 1999 calls. Partly related to time constraints, problems arise from the fact that:

- Evaluators were selected **before** it was known how many and what type of proposals were to be evaluated. This meant imbalances in the number of evaluators (e.g., for RTN), and a poor adjustment of their qualifications to the specificity of the proposals;
- It is felt that the database does not include the required experts and that the interrogation procedure is not well adjusted to sort out specific experts specially when the skills required do not correspond to specific disciplines. Evaluation of socio-economic components in technical projects in thematic programmes also requires a specific breed of evaluators that presently are hard to find. A further limitation is the low proportion of women evaluators (15%).

***The Commission should promote actively the incorporation of additional evaluators in the areas weakly covered to overcome these inconveniences, establishing a feedback mechanism to detect where the problems are.***

In spite of this overall positive evaluation, some concern has been expressed in connection with specific issues: e.g., about an *absolutist approach* to the ranking of projects on the basis of marks awarded by evaluation panels. This ensures transparency in the application of excellence as the major evaluation criterion. However it produces some serious **imbalances** in participating rates when there is little or no difference in marks between candidates. In the case of fellowships, discrimination on age grounds (which appears to have happened at least once in FP4) should not be acceptable.

To a certain extent, that is what is done for socio-economic research: expert valuation determines the threshold level but actual recommendation for funding results from the interplay of other requirements, such as relevance or priority of the research task (and possible *balance* considerations). However, the transparency of this two-step selection process in the Key Action is also a matter of concern because the second step is taken without the participation of external evaluators.

The infrastructure and working conditions for the evaluators to perform their tasks were deemed as unacceptable by most if not all of the independent observers. These facilities had been outsourced for the first time.

### **5.2.3 Applications and success rates**

Indicators for success are easy to get but their significance is not immediately obvious. The success rate is usually defined as the ratio between the number of contracts placed and the number of proposals. When the success rate is low, its converse is termed *over-subscription* rate, implying that there have been *too many* proposals for the given call. Over the past five years success rates have fluctuated in the different calls depending on the available budget and the *response* of the research community to the calls. A low success rate in one given call has usually resulted in a lower response to the following call.

It turns out that success rates were extremely low for the first call of FP4 (*over subscription*) in some key activities (i.e., MCF, RTN and TSER) but they improved in the following calls. An alternative reading of the same figures is that the first calls resulted in a very large response, quite beyond the available funds and, correspondingly, a poor success rate. Participation fell in the second calls.

This was *probably* the result of two convergent effects: a *learning* process on the side of proposers and more focused information and work programmes for the following calls. The alternative interpretation points out to a *discouragement effect* on unsuccessful candidates. Casual checks and interviews support the validity of the first interpretation. It is also true, though, that the total number of proposals in most activities has gone down. However, the number of *excellent* proposals has gone up, thus confirming the interpretation given. These effects are clearly visible in the first calls of FP5, as the following examples from two of the programme activities show:

- a) Success rate was abnormally low in the first calls for RTN in FP4 (6.7% in 1995, 13.8% in 1996) and that led to dissatisfaction of the scientific community as shown at the Graz Conference. Success rate in the 1<sup>st</sup> call for FP5 (March 1999) has risen to 37%. True, less proposals were received but the number of good proposals had actually increased. An increase in the budget was another factor which contributed to the improvement of the success rate.
- b) In the case of TSER: According to results from evaluations, there has been a progressive increase in their quality in all areas: 22% of proposals were rated A (*excellent*) in the first TSER call; 31% in the first of the Key Action<sup>32</sup>. Improvement was most dramatic in the TSER second call. Better orientation guides and information have surely been conducive to this result, as well as a natural *learning by doing* process and... a sharp decline in total number of proposals.

Other activities have much higher success rates, e.g., *Conferences*. In the first call of FP5 251 proposals were received and 213 projects (85%) retained for funding.

On the contrary, a case where response in absolute terms is poor is the *MC Experienced researcher* scheme. Some of the new activities have also encountered a *very low* response in the first call of FP5 (and correspondingly a high success rate). This is particularly the case for STRATA and *Raising Public Awareness*. In the first case the lack of proposals may be linked to the perception of an imbalance between the effort and bureaucratic requirements of the proposals and the small amount of maximum funding available. Research teams could opt for the relative benefits of cost-shared project funding under TSER, the Key Action and possibly bidding into the vertical programmes of FP5.

In the case of *Raising Public Awareness*, a perceived lack of clearness of the goals of the call and/or the coincidence of a great number of calls with similar deadlines might explain the small number of proposals. Only 12 proposals were received for *Best practice* networks (8 retained for funding) and 16 for the European Science and Technology week (16 proposals of which 7 retained for funding). The threshold levels were intentionally low.

### 5.3 MAJOR ACHIEVEMENTS

Without a well-defined system of impact indicators it is difficult to identify real achievements. Nevertheless the Panel consider that the following can be listed as such:

- The growing **prestige** of the Marie Curie Fellowship activity and the high number of fellows that have been given the opportunity to experience research in another European country.
- The contribution towards building international **institutional links** (RTN, TSER, etc.) or making European national research infrastructures accessible to all European researchers.
- The implementation of co-operation **networks** between infrastructures within a research area, an achievement perhaps best illustrated by the Synchrotron Co-operation Network.
- The 1999 April Conference on TSER, which gathered an audience of over 500 European experts.
- The development of the European community of experts on S&T and innovation policy
- The ETAN working group, report and subsequent conference on Women in Science in April 1998.
- The European reports on S&T indicators (1994 and 1997), and *Key Figures* (1998 and 1999)<sup>33</sup>.

---

<sup>31</sup> All short-listed and reserved listed proposals came from A-marked proposals (excellent). The classification range went from A to D.

<sup>32</sup> The marking system has changed in FP5. Mark A has been assimilated to "excellent".

<sup>33</sup> Even though that activity was not included in FP4.

## **5.4 LESSONS LEARNED**

### **5.4.1 Imbalances**

While IHP is set to "*develop the Community's human research potential, making special efforts to ensure equality of access*", participation results show that numerous imbalances do in fact exist: e.g., in the first call for the new MC *Development Host* scheme, Ireland and Germany account for 64% of the 53 projects recommended for funding. But the share of these two countries among the received proposals was also 64%, thus possibly reflecting a different degree of *information efficiency* in their national organisations (namely, national contact points) *vis-à-vis* the rest of potential candidates. This sends a warning signal specially for accessing countries.

Other imbalances are mentioned elsewhere, e.g., SME involvement *versus* larger enterprises and gender distribution. These divergent results will not depend solely on different information activity. When excellence is used as the major criterion for selection such imbalances are probably inevitable.

*The panel believes that, without sacrificing excellence, other factors can be introduced into the selection process which will reduce imbalances and will produce outcomes more consistent with the Community's ideals of gender equity, balanced regional development and a higher involvement of SME companies.*

### **5.4.2 Contribution to cohesion**

There are (at least) two ways to view the issue of cohesion within the IHP programme: One is to examine the participation of more and less developed regions (countries) and search for imbalances. The other one is to examine whether the benefits of its activities flow *more than* proportionally to less advanced regions.

Participation by countries shows obvious imbalances in numbers and in the *modality* of participation in the different activities. This is most clear in MCF. Geographical distribution of infrastructures funded by the *Access to infrastructures* activity also reflects this imbalance, although the distribution of users (the ultimate beneficiaries), by country of origin, demonstrates a significant "cohesion-friendly" situation. On the other hand, activities based on transnational teams (e.g., RTN, TSER) have certainly permitted a great improvement in terms of the cohesion of researchers and the establishment of a European research area.

#### ***The experience from Marie Curie Fellowships***

In MCF there is an "import surplus" of MC Fellows into the UK (particularly), France, Netherlands, and Belgium, and an "export surplus" of Fellows from Italy, Spain, Greece, Germany. Indeed over 50% of all fellows went to the UK and France as host countries. The United Kingdom received 1,059 fellows in 1995-1999 but only 224 fellows from UK went to other countries. Participation has been higher than proportional in Spain, Greece, Ireland and Italy. Still, the number of fellows in other countries is proportionally too low (e.g., Portugal and Austria).

Differences among the number of fellows from a given country and the number of fellows received in it reflect the prestige of the respective research centres on the one hand, but also of differences in language command. As there is a significant element of knowledge transfer, this activity is largely contributing to cohesion policy of the Community (assuming most researchers return to their home countries).

But there are also negative side effects to this. Host institutions also benefit from MC Fellowships - financially and in manpower terms - and such large trans-national imbalances are not desirable in the long term in the context of creating a balanced European Research Culture. Differences in fiscal and legal treatment of research and researchers, as well as different operating conditions across member countries may be influencing this outcome. Participation of the new accessing countries remains a cause of concern for the panel and more pro-active policies should be considered, given their backgrounds.

*The Commission should examine the structural and cultural factors that inhibit the inflow of MC fellows to certain countries with advanced research facilities and devise methods to encourage such countries to minimise obstacles to the mobility of researchers in Europe.*

### **The experience of TSER and the Key Action**

TSER shows interesting results:

- In the first call there was not a single research team co-ordinator belonging to Austria, Greece, Finland, Portugal and Spain.
- In the second call 11% of projects were co-ordinated by team leaders from three of these countries.
- In the third call 26% of all projects<sup>34</sup> were co-ordinated by research leaders from these five countries.

These data give indication of the growing level of participation and research responsibility of newer and less favoured members of the European community.

### **5.4.3 Participation of industry and of SMEs**

The activities of IHP (being mainly composed of fellowships, access to infrastructures, socio-economic research, etc.) do not lend themselves to an easy direct involvement of industry. In fact, RTN together with MCF (which had 10% of proposals with industrial involvement) were the only activities in FP4 where this involvement could take place.

Figures show a relevant participation: in 30% of the 405 networks there are or have been one or more industrial partners. The evolution is irregular: 18 % in the 1<sup>st</sup> call of FP4; 44 % in the 2<sup>nd</sup> call of FP4; and 23% in the 1<sup>st</sup> call of FP5. However, direct implication of an industry as a contractual partner in a network is not necessarily the best indicator of the extent to which that industry may benefit from the network activities. The 1999 Survey shows that end users<sup>35</sup> of RTD projects only include industry in around 22% of the cases, according to participants<sup>35</sup>.

FP5 has introduced new activities of direct relevance to industry, namely the *Industry Host* Fellowships scheme (153 fellowships in this first call) and the industry component of the *Experienced Researchers* Scheme. The panel welcomes this shift. Obviously it is too early to produce a judgement on results. However, the **dominance of large multi-national companies** as industrial hosts in the first FP5 call is evident, with a low percentage of SME companies submitted and selected (13%). Since industry hosts receive significant benefits under this scheme (as well as the young researchers themselves) it is not consistent with the European Union's commitment to equity that individual large companies should receive many MC fellows under this scheme while SMEs do not succeed in getting fellows. A possible remedy to that situation should be either to have more flexible criteria (for SMEs the number of scientific publications is clearly not relevant) and/or to help SMEs to construct their proposals by suggesting that a public laboratory should be associated to them.

### **5.4.4 Transition from fellowships to a career in research**

The panel has noted that obstacles and rigidities exist which can make it difficult for EU funded research fellows to successfully make the transition to a career in research.

The existing *Return fellowship* scheme, which applies only to fellows from less favoured regions partially addresses this issue in a way which is consistent with European Union Regional policy. The panel believes that this *Return fellowship* should be retained.

In addition, however, the panel **recommends** two further changes:

---

<sup>34</sup> We have used available data from only 36 projects.

<sup>35</sup> But the sample includes TSER projects, which are less likely to be of direct use of any industry.

- (i) The financial value of existing fellowships (both MCF and RTN) should be increased by a small amount to permit fellows for a short time at the end of their fellowship to make relevant visits, give seminars, etc.
- (ii) A special fund should be created to allow a small number of the very best research fellows to create new research groups located within the European research community. The funds would be open to global competition with normal evaluation and selection criteria. The size of the fund would be such as to select around 10% of the numbers of post-docs selected under the existing MCF and RTN schemes.

This scheme would be implemented in co-ordination with existing national science policies in Europe.

#### **5.4.5 Other obstacles in the way of researchers**

Issues of personal taxation and social insurance contributions have been mentioned as problem issues by a number of MC and RTN fellows interviewed. The panel believes that a “European statute for researchers”, if implemented could provide the context for a satisfactory resolution of this issue.

#### **5.4.6 The experience from ETAN**

ETAN has shown that its mode of convening experts to enter dialogues with policy makers is effective and efficient.

#### **5.4.7 European Databases**

The indicators activity shows that it is possible to mobilise data from national and international sources and to create new datasets about Europe. It has required in-house expertise and working with external experts, but it has achieved a rich source of quantitative and qualitative data and analysis. These lessons could be transferred to the creation of European datasets about other socio-economic areas.

### **5.5 RELEVANCE**

The more general aspects of the IHP/TSER Program were incorporated in the fabric of the whole report and can be seen through the careful reading of the previous Sections. In this Section, only the most significant points are highlighted:

IHP/TSER jointly have contributed greatly to and to a large extent exceeded the goals set in FP5.

TSER helped to reinforce the importance not just of individual socio-economic research projects but of an atmosphere where respect and consideration of the socio-economic component in all aspects of R&D prevail.

Subprograms concerned with Science Policy service to Policy makers and users (STRATA/ETAN) and with the Public Awareness of Science represent an inestimable asset at a time of growing concern for social issues related to the application of scientific knowledge.

Similarly the subprogram on S&T indicators will increase in relevance proportionally to the need to have a portrait of scientific productivity in different countries and continents. Such quantitative portraits although not excluding the need for qualitative assessment by experts, provide additional valuable tools for Science policy makers in the EC and in national R&D bodies.

Improving the Human Potential through Training and Mobility of young researchers proved to be of the greatest relevance to identify scientific quality in Europe both at the individual level (through the Marie Curie Fellowship Program) and at the team level (through the Research Training Networks). The two Fellowship modalities have complementary relevance.

The identification of Infrastructures that can provide use of equipment by multiple users from countries different from the one where the infrastructure is located proved of the highest relevance: a) to the creation

of a lively and exciting research atmosphere in Europe, and b) as the seed for transnational single topic and multidisciplinary collaborations.

One of the most relevant contributions of the program has been perhaps the maintenance of a space for non-oriented basic research in Europe. The latter aspect of the Program, a bottom-up approach, has been felt of particular relevance because largely missing in thematic oriented Programs.

The Program has now reached a point where its budget has to be increased in order to fund more excellent proposals and excellent Fellows. The need to expand with the creation of measures that will secure return of European scientists from the US to Europe, that will secure an augmentation of the number of young researchers proportional to the foreseeable needs imposed by an ageing University and Research population in some European countries and the need to implement measures with the flexibility imperative to rapidly changing fields, ie information technologies, nanotechnologies, biology, environment, etc., more than justify a significant increase in the budget. At least, taking into account the unique relevance of some aspects of the Program, the budget should double.

Available data suggests that researchers currently account for 0.5% of the total labour force in Europe i.e. about 800,000 active researchers. Assuming an approximately even distribution of researchers over the age spectrum of 25 – 60 years, we can deduce that at least 25,000 researchers are naturally exiting the workforce each year. At present scale of operation the MC fellowship scheme (together with related Network Training and *Access to Infrastructures*) is helping to diffuse between 2,000 and 3,000 new, mostly young, elite researchers into the European workforce each year. At most therefore IHP generally is providing about 10% of the minimum replacement needs and the MC scheme about 5% of these needs. The size of the minimum population of researchers will of course increase dramatically with the expansion of the EU in the next 5 years. In the context of the decisions taken by the EU Council of Ministers at the recent Lisbon summit to move radically by 2002 to create a European Research Community capable of attracting and retaining high quality research talent in Europe, *there is a genuine requirement to radically expand this scheme.*

## **5.6 GENDER ISSUES**

The “Women and Science” activity broadly aims to promote women in research in order to enrich research in Europe. The activity itself is not formally part of the IHP programme. However, it is included within its mandate (see Council Decision) and is managed by the same Directorate of DG Research as the programme. It is part of an action plan drawn up by the Commission and backed by the European Parliament to reduce the gender imbalances in European research, which are particularly severe in senior scientific positions.

Some data:

- The 1999 Survey shows that the ratio of men to women in RTD projects is 3 to 1 for research and technical staff. The ratio among personnel specifically recruited for the project rises to 2 to 1.
- The proportion of female coordinators in TSER projects decreased from the first call (28%) to the others (22% - 21%). This proportion was clearly lower in area I (only 10%) while 28% of the projects are conducted by women in the areas II & III. These proportions are below the relative weight of female participation in the teams. Women are significantly underrepresented as co-ordinators.
- The overall participation of women in the MC scheme is in the range 35% - 40%. Although success rates vary a lot from subject area to subject area, the overall weighted success rates in TMR are reported as 22.9% for males and 20.9% for females. Based on results for 1999 this trend appears to be continuing in FP5.

The European Commission organised a “Women and Science” conference in 1998, which endorsed the view that “mainstreaming” approach should be taken up in research, and in January 1999 established a small dedicated sector within DG Research, part of the Unit for the Key Action on socio-economic research. A

---

<sup>36</sup> We have used available data from only 36 projects.

Commission communication<sup>37</sup> entitled “*Women and science – mobilising women to enrich European research*” was the subject of a favourable resolution of the Council and a plan of action that accompanied it is now being put into effect. Member States were invited to contribute to the building up of indicators and pursue equal opportunities policies in national research. The Commission was asked to develop indicators of participation of women scientists in scientific research in general and to increase the participation of women in FP5. The Commission was also asked to propose new measures and report in the summer of 2001 on progress and the way forward. It can be seen from the above account that the activity is relatively recent.

The sector within DG Research has started to co-ordinate the existing European networks of women scientists (“networking the networks”), which is open for proposals under “accompanying measures”. It convenes the “Helsinki Group” of national policy makers to co-ordinate the policies of member states. It co-ordinated a working group of experts under the auspices of the ETAN activity, which has resulted in a report<sup>38</sup> (delivered in November 1999), conferences and dissemination to policy makers. The Commission’s working group *Women and Science* is run by the sector (linking to programme managers across FP5) covering horizontal and strategic aspects.<sup>39</sup> Gender impact studies are beginning at the time of writing, as are the development of S&T indicators with a gender dimension.

In initiating activities and dialogue on gender issues in European research, the activity has begun well. Data are emerging which give a basis for action and for comparison across Member States, and it is clear that some Member States at least are keen to achieve better standards of gender equality. The linking of policy makers via the Helsinki group has been effective in achieving a greater European awareness of gender issues in research. At the time of writing, the sector is exploring links with industry, so that the activity will not be limited to women in public sector research. Gender impact studies and some work related to gender and indicators of science, technology and innovation are only just beginning.

The activity has been delivered by a small sector staffed by four (recently increased to five) professional persons. This has certainly been efficient in terms of what has been delivered, but may be difficult to sustain. The activity requires much dialogue, awareness raising and co-ordination with policy makers and scientists themselves in Europe, as well as working within the Commission and with the newly started studies.

The relevance of the activity has become if anything greater than before, because quantitative and qualitative evidence is needed to help form gender policies at a broad and institutional level.

## **6 CONCLUSIONS**

---

### **6.1 CONCLUSIONS FROM THE ASSESSMENT**

#### **6.1.1 Main result: European mobilisation and networking**

Overall the panel believes that the programme has been a very effective mechanism for (i) creating a *small* but significant population of mobile, high quality young and experienced researchers with trans-national experience and for retaining these researchers within Europe; (ii) building inter-institutional links and (iii) stimulating net-working and creating meeting points for European researchers (research networks, European infrastructures).

---

<sup>37</sup> COM(99)76

<sup>38</sup> *Science Policies in the European Union: Promoting excellence through mainstreaming gender equality*, EC, 2000

<sup>39</sup> DG Research has new practices of recording the incidences of women in projects, and a policy of having a more balanced representation of women on its various advisory committees, and review and evaluation panels. Here, the approach is to think about research “by, for and about” women.

<sup>40</sup> Mainstreaming Communication, CEC 1996

<sup>41</sup> COM(99)76

<sup>42</sup> DG Research has new practices of recording the incidences of women in projects, and a policy of having a more balanced representation of women on its various advisory committees, and review and evaluation panels. Here, the approach is to think about research “by, for and about” women.

Results are less clear-cut for socio-economic research. On the basis of participation and coverage of the work programme, goals have also been attained. But the evaluation of the specific research output remains to be done.

### **6.1.2 Other strengths**

- IHP is the only haven for non-oriented, basic research within FP4 and FP5, to a large extent guaranteed by its bottom up approach.
- The Marie Curie Fellowship has reached a prestige status
- The training activities generate a pool of well-trained young researchers which contributes to the replacement of the retiring generations in the European research community and Universities.
- The *Access to infrastructures* activity shows how national infrastructures can become open and integrated into European research sites. The panel welcomes the extension of this activity to cover small, relevant infrastructures, and centres of competence that provide essential services.
- The management of the programme shows some outstanding examples of *good practices* in confronting the issues with the research community, e.g., systematic mid-term reviews, conferences (Graz , etc.).
- The socio-economic dimension has been formally integrated into the thematic programmes in FP5.
- There are good practices of valorisation of socio-economic research through the clustering of projects and dissemination of results, i.e., via conference and seminars and a well designed website.
- ETAN has shown that its mode of convening experts to enter dialogues with policy makers is effective and efficient.
- The activity on women and sciences has begun well.

### **6.1.3 Some criticisms**

- The selection of project evaluators by means of the *ad-hoc* data-base has not worked satisfactorily. It is felt that the database does not include the required experts and/or that the interrogation procedure is not well adjusted to sort out specific experts especially when the skills required do not correspond to specific disciplines. The low proportion of women evaluators (15%) is a notorious weakness. Furthermore, evaluators were selected **before** it was known how many and what type of proposals were to be evaluated. This meant imbalances in the number of evaluators, and a poor adjustment of their qualifications to the specificity of the proposals.
- There is a serious lack of final evaluation and impact studies in each activity.
- The bottom-up nature of the programme generates an imbalance which becomes evident in the breakdown of participants by country/region of origin, by discipline, involvement of private enterprises and gender. Some mechanism should be set up in order to correct this imbalance.
- Activities in action A include too many schemes that make the programme too complex.
- The length of time to complete the administrative process from planning to action is too long.
- The concept of *Euroconference*, as a label, is not consolidated.
- The new *Prizes* introduced in FP5 are not sufficiently well defined.
- The objectives of TSER -and of the Key Action- have been rather ambitious and spread over a wide number of issues. Although the process of consultation is good, there have been changes in the work programme which are confusing for the research community and may lead to a dilution of the impacts of the research.
- In the first calls of TSER insufficient attention was paid to methodology and the development of common databases. However, the panel welcomes the fact that the second call of the Key Action makes explicit reference to the comparative methodological approaches and the third call will contain social science infrastructures including the development of common databases and methodological research.

## 7 RECOMMENDATIONS FOR THE FUTURE

---

### 7.1 RECOMMENDATIONS ON SOCIO-ECONOMIC RESEARCH

1. The panel recommends that socio-economic research (SER) becomes (again) a separate **thematic programme** in the future framework programme, as it has (intrinsically) very little in common **with the training and mobility of researchers programme**. It should be a thematic, horizontal programme made up of two main lines of research:
  - A central topic or closely related set of topics focusing on key European problems with an agenda for the whole length of the FP period. One element of this line of action would be the development of common set of socio-economic indicators (e.g., in the line of the Science, Technology and Innovation indicators).
  - A set of research tasks dealing with socio-economic implications of S&T research activities included in the remaining thematic programmes.
2. The budget allocated to the specific socio-economic research field should be increased in such a way that no *excellent* proposals are left without funding (28% of proposals above *excellent* mark have been left without funding). Alternatively, the number of research topics in the future calls should be reduced.
3. The work programme should include the development of the kind of statistical data needed to conduct research projects of high quality in the topics of interest. The activity *common base for indicators* shows one possible way of advancing in this area.
4. Methodological analysis must receive more emphasis in proposals and in final reports. The required attention must be given to the development of **quantitative** analysis wherever relevant. Clear instructions should be addressed to the project's co-ordinators concerning the presentation of the methodology section and the overview of the main results in their final reports.
5. The proper implementation of co-ordination of socio-economic analysis across the Framework Programme requires more human resources and, more than that, the development of appropriate tools. The scientific officers and the evaluators should receive a specific training.
6. The present workload of the scientific officers risks limiting their capacity to mere administrative duties. The panel believes that the staff must be involved in the scientific follow-up of the projects, the analysis of results and in the dissemination activities. Furthermore, a complete assessment of the final reports should be prepared at the end of each project (preferably with the help of external evaluators) with the objective of assessing the contribution of the project to the objectives of the programme and to the knowledge base. Unless this manpower situation is solved, the Commission will miss the chance of a much-needed learning process about the output of this activity and progress of the future research programme will be at stake.

### 7.2 RECOMMENDATIONS ON IMPROVING HUMAN RESEARCH POTENTIAL

7. The panel supports a **stronger** training and mobility of researchers programme that stresses the values of scientific excellence, multidisciplinary, cultural diversity, co-operation and administrative flexibility. The enlargement of the Community accentuates this need. Its share in the future Framework Programme budget should at least **double** the present level.

With the purpose of having more precise information on the needs of the scientific human resources in Europe it is recommended that a prospective, quantitative study on the needs of scientific employment for the next ten years (universities, public labs and institutions, industries, etc., is conducted in every member country.

8. The **bottom-up** approach is a characteristic of the programme that the Panel values and wholeheartedly recommends retaining as a means to strengthening the basic research capabilities in Europe.

9. The panel also recommends that at the same time some attention be given to strategic considerations in order to **correct the observed imbalance**. A possible way could be to introduce a two-step selection procedure, involving scientific evaluators at each stage. The first step of the selection would be the same as it is now, the panel of evaluators ranking the proposals along criteria of scientific excellence only. In the second step, for which a dedicated percentage of the budget would be devoted by the Director of the programme, proposals with rank in quality above a definite threshold AND coming from less represented countries, disciplines, enterprise size ranges and gender would be selected. Such a procedure would be in contradiction neither with the bottom-up philosophy –which determines the first step- nor with the necessity of transparency.
10. Extend the **mobility** concept (by relaxing age-limits, encouraging the participation of women, experienced researchers, new countries, and developing return grants from outside Europe) and increase the flexibility of the grants, in an attempt to consolidate an increasingly **open**, global research area in Europe. In particular, there is a need to review the relative importance granted to pre-doctorate researchers in relation to post-doctorate researchers and open the possibility to older researchers, particularly female, who might have had academic responsibilities and who wish for a scientific updating. This would also facilitate dealing with the *gender issue*.
11. The panel believes that Europe should be an attractive, competitive, open research area. Mobility and training programmes must become attractive for researchers from any country and include co-operation with research teams in any country. Relations with other developed countries should be inspired by the principle of balanced financial co-operation; with developing countries, by the principles of co-operation for development (avoiding brain drain).
12. A more ambitious approach to European research infrastructures is needed, including financing for upgrading and **new** national and European research centres. The panel endorses a vision of European research **networks** linking relevant infrastructures and centres of excellence in a structured, coherent way. New rules for financial support, **continuous evaluation** of the centres and accession rules for users will be required. New European centres should adhere strictly to relevance criteria. In addition to scientific excellence for *the immediate future*, these components of relevance should include: **multidisciplinarity**, **contribution to public awareness of Science**, have a multipurpose philosophy, i.e., **combine basic and applied approaches to existing problems or innovative questions**, and guaranteeing **European Added Value**. This can clearly be seen already at work in infrastructures such as CERN and in other European Laboratories and scientific areas that are at present already of acknowledged world excellence.
13. The panel favours an increased emphasis in **multidisciplinarity** in training and research. Over the next 3 years the aim should be to double the proportion of multi-disciplinary projects supported by the MC and RTN activities to 30% of the total. It is suggested that in the forthcoming Conference on Infrastructures, the active participation of people from different research areas should be encouraged. For example, Neurobiology, Mathematics and Physics; Genetics, Physics, Engineering, Mathematics and the Human Sciences; Mathematics, Physics and Socio-economics, History, Psychology and Political Science. The development of multidisciplinary co-operation networks should be a priority in the new European research space.
14. The panel strongly recommends activities addressed to increase public awareness on the relevance of Science for the competitive development of Europe. With this end in mind activities on conferences and prizes should be used to project relevant European contributions to Science. Dissemination of the scientific results of the programme (and all other programmes too) should be one key element of this activity. It is also worth noting that dissemination of results, e.g., of RTN, is an issue that has not received an adequate answer.

### **7.3 RECOMMENDATIONS COMMON TO ALL ACTIVITIES UNDER IHP**

15. There is a clear need to incorporate **impact indicators** (in addition to output indicators) to strengthen future monitoring and assessment exercises and have objective measures of quality. For this purpose 1%

of the budget of every activity might be used, as a minimum, to finance required methodological research and evaluation exercises.

16. There is also a need to **simplify a) the components of the Programme and b) the administrative procedures**. Even though there has been a clear improvement in information dissemination and documentation, there are still ample possibilities to make the activities more attractive through simplification and flexibility. When long term activities are contemplated, there should be more flexibility to adapt the content of the original work programme. As time management is clearly the weakest point in procedures, the panel recommends a revision in depth of the role and procedures of executive and advisory committees taking part in the process. This revision should aim to achieve a substantial reduction in the time delay between an application's submission and contract signing. It might also include a study of the outsourcing of certain aspects of the programme management. However, the panel is not convinced that such outsourcing would be a better option. Moreover the panel strongly recommends that any outsourcing should **only** be transferred to European bodies and **not** to national institutions.
17. DG Research should place a strong priority in the management of its human resources, in order to guarantee the long term development of its activity. The stability of the staff and the **accumulation of organisational knowledge (memory)** is a crucial point. The employees' turnover remains an element to be controlled: in some units, none of the members involved at the start of the programme is currently working on it. In addition, there is a need for a clear functional organigramme and for an annual management report to give a view of objectives and accomplishments in each of the relevant activities.
18. In view of the different level of participation by countries, the Commission should encourage National Governments to provide their **national contact points** with guidelines for their activity. An appropriate training of the national contact point people should allow a greater equality between the member-states concerning the necessary support to the proposers. This is a special concern for new accession countries.
19. Last but not least, some recommendations for the evaluation process itself: Better working conditions are necessary for the evaluators, as well as for the monitoring and assessment panels (computers, rooms with windows, etc.). The introduction to the assessment process was confusing due to the plethora of documents, many poorly presented, to the point that it was difficult to know which documents were important and which were not. In addition there was no clear organigramme, indicating who within the CEC was responsible for what. The result was lost time, inefficiency and avoidable difficulties for the panel members. For the future this panel recommends that much more time and thought should be devoted to the initiation of a new assessment panel. Finally, the coincidence of the Monitoring and the 5-Year Assessment processes should be avoided, since tasks overlap and the workload of DG officials duplicates.

#### **7.4 RECOMMENDATIONS ON THE NEXT FRAMEWORK PROGRAMME**

20. The goal of increasing the participation of **women in science** and its associated decision-making should be **explicit** in European research policy, and specifically for the next Framework programme. The approach of "mainstreaming" should continue. The activity should be **strengthened** to allow continued and enhanced dialogue and co-ordination with member states and European women researchers, particularly for the accession countries. A strengthened activity will warrant its own Unit. It would be most appropriate for the Unit to report directly to the Director General or the Deputy DG. This would assure its ability to act horizontally. A strengthened activity should undertake more **policy studies** to build quantitative **indicators** to allow **monitoring of progress** towards the goal of increasing participation and qualitative findings to provide experiences and practical resources to help research organisations in Europe take forward equality goals.
21. In the coming stage of European research policy, a reinforcement of explicit co-operation and complementarity between European, National and Regional research policies (included funding) is strongly recommended. Increased co-ordination between Directorates within the EC, and between the EC and other European Science Bodies is also needed.

22. The role of the **Programme Committee** should be thoroughly revised. The PC as it stands now (it is not operational to work with 2 or 3 representatives of 30 States) is inefficient and introduces unnecessary delays in the decision process. In order to play a relevant role as a co-ordination tool between national and community research policies a significant reduction would be necessary in the number of members (less than 20 members). Furthermore, it should not have any active *ex ante* role in the process of approval of the projects to be funded.
23. The development of a European patent system and a common European statute for researchers is greatly felt, specially, in the context of IHP. The activities of the research networks, for example, imply gathering of common research results and consequently raise the issue of their property rights. On the other hand the equality of treatment of the fellows in the different European countries would be greatly improved by the establishment of a European statute for researchers.

**List of acronyms:**

CREST, Scientific and Technical Research Committee (*Comité de la recherche scientifique et technique*).

EAG, External Advisory Group

ETAN, European Technology Assessment Network

EU, European Union

FP3, 3<sup>rd</sup> Framework Programme

FP4, 4<sup>th</sup> Framework Programme 1994-1998

FP5, 5<sup>th</sup> Framework Programme 1998-2002

HCM, Human Capital and Mobility (programme of FP3).

IHP, Improving the Human Research Potential and the Socio-Economic Knowledge Base

IPTS, Institute for Prospective Technological Studies. Belongs to the JRC.

JRC, Joint Research Centre

MC, Marie Curie

MCF, Marie Curie fellowships

MECU, million ECU.

MRI, Major Research Infrastructures

RTD, Research and Technological Development (projects of)

RTN, Research Training Networks

SER, Socio-economic research

SME, Small and medium-sized enterprises

STI, Science, Technology and Innovation

STRATA, Strategic Analysis of Specific Political Issues

TMR, *Training and mobility of researchers* (programme of FP4)

TSER, *Targeted socio-economic research* (programme of FP4)

**ANNEX I**

**Table 1. Budget for IHP activities under FP4 and FP5.**

<b>FP5 DENOMINATION</b>	<b>FP5</b>	<b>%</b>	<b>FP4</b>	<b>%</b>	<b>FP4 DENOMINATION</b>
<b>Training and Mobility</b>	<b>858</b>	<b>67%</b>	<b>634</b>	<b>70%</b>	
Marie Curie Fellowships	410		277		Fellowships
Research Training Networks	448		356		Networks
<b>Enhancing Access</b>	<b>182</b>	<b>14%</b>	<b>119</b>	<b>13%</b>	<b>Large Scale Facilities</b>
<b>Promoting Excellence</b>	<b>50</b>	<b>4%</b>	<b>40</b>	<b>4%</b>	<b>Accompanying measures</b>
<i>Subtotal Improving Human Research Potential</i>	1,090	85%	792	88%	<i>Subtotal TMR</i>
<b>Key Action</b>	<b>165</b>	<b>13%</b>	<b>112</b>	<b>12%</b>	<b>Subtotal TSER</b>
<b>Support for S&amp;T Policy</b>	<b>25</b>	<b>2%</b>			
<b>TOTAL IHP</b>	<b>1,280</b>	<b>100%</b>	<b>904</b>	<b>100%</b>	<b>TOTAL TMR+TSER</b>
<i>Share in total FP</i>	<b>9%</b>		<b>7%</b>		
<b>TOTAL FP</b>	<b>13,940</b>		<b>12,121</b>		
<b>TOTAL FP (Index )</b>	<b>14,960 (100)</b>		<b>13,215 (100)</b>		<b>TOTAL FP (Index )</b>

Figures for FP5 in million euros and for FP4 in MECU.