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Annual monitoring report on the RTD activities conducted under the EC and Euratom framework programmes

FIFTH FRAMEWORK PROGRAMME

EUR 19.374

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Directorate-General for Research

2000

EUR 19374

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This report is part of the series of the external annual monitoring reports prepared for the EC Framework Programme and the Euratom Framework Programme, and their constituent Specific Programmes.

The Commission has over the years been placing increasing emphasis on the evaluation of Community R&D activities. As part of the process of continuous improvement, a new programme monitoring scheme has been introduced in 1995. The new scheme involves independent external monitoring experts (PART A) and a timely response by the Commission Services to the recommendations produced by the experts (PART B). The new scheme thereby provides the basis of a quick response mechanism to programme developments and should give advice on key issues.

This report is the first covering the Fifth Framework Programme; the report also highlights progress in relation to ongoing activities under the Fourth Framework Programme. The report should help reinforce establishment of best practices and identify the scope for further improvements in programme implementation.

Achilleas Mitsos
Director General
Directorate General Research

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REPORT OF THE 1999 FRAMEWORK PROGRAMME MONITORING PANEL

BY
AN INDEPENDENT PANEL
CHAIRED BY
BRIAN D. EDWARDS

MARCH 2000

THE 1999 FRAMEWORK PROGRAMME MONITORING PANEL

We, the undersigned, are pleased to present our report to the European Commission.

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Chairman of the Panel
Formerly Director Technology
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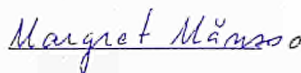
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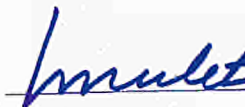
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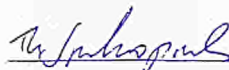
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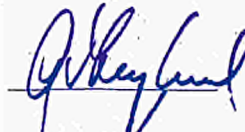
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Mr. H.Tent,
Acting Director General DG Research,
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B-1049 Brussels.

Dear Mr. Tent,
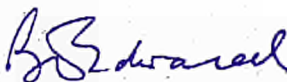
It is my pleasure and privilege to present to you, on behalf of a Panel of independent experts, the attached 1999 External Monitoring Report on the activities of the Framework Programme.

The Panel fully appreciates the unique difficulties which have faced the Commission Services in discharging their brief at a time when the Commission itself has faced a sea-change co-incident with the transition from FP4 to FP5.

The report recommends 3 main challenges for urgent attention. These are related to the administration of project selection and follow up, human resources policy and the need to increase the focus on impact and maximising European Added Value. Additionally, the Panel is concerned that the recommendations of the 1998 Framework Monitoring Panel should remain as high priority for Management attention.

The Panel is anxious that their report should be viewed as constructive and, that through the implementation of their recommendations, the Framework Programmes will flourish.

Yours sincerely,

Brian D.Edwards   Chairman.

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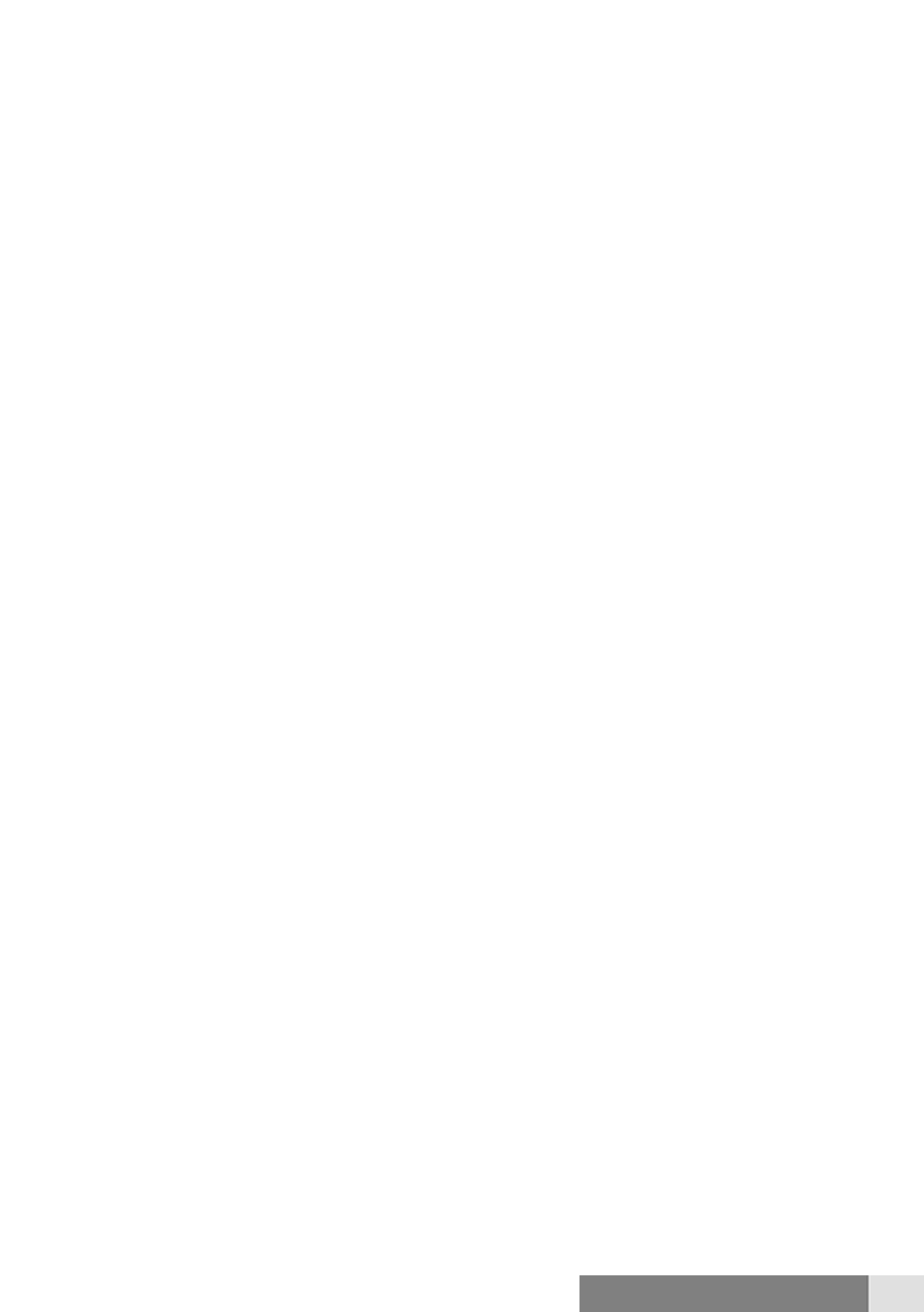
1 EXECUTIVE SUMMARY

This is the 1999 External Monitoring Report on the activities of the European Union's Research and Technological Development Framework Programmes. It covers the ongoing projects and activities still being funded by the Fourth Framework Programme (FP4) as well as the first year of the implementation of the Fifth Framework Programme (FP5). It is required under Article 5.1 of the Decisions setting up the multi-annual European Community and Euratom Framework Programmes.

The 1999 Framework Programme Monitoring Panel must formally congratulate the Fifth Framework Programme's management, scientific officers and support staff on:

- Their management of the transition from FP4 to the very different programme structure, objectives and procedures of FP5.
- The very successful launch of probably the world's largest and most complex research Programme.
- The introduction of many welcome developments and innovations.

All this has taken place against a background of extreme haste and work overloads, mostly due to the significant delays experienced in the European Parliament and Council Decision in launching FP5. There are, of course, major management challenges already facing the FP5:

- **Improving Administration.** There is considerable evidence that the legal procedures imposed override policy objectives.
- **Human Resources Policy.** There is a need for a much more effective human resources development policy within Directorate General RESEARCH.
- **Improving Research Impact:** In addition to high quality research, FP5 must now focus strongly on ensuring the socio-economic impact of its research and take full advantage of the European Added Value.

THE 1999 FRAMEWORK PROGRAMME MONITORING PANEL RECOMMENDS:

1. **The Administration of the "Call for Proposals to Project Contract" Phase should be improved** as follows:

- Simplification (restructuring / changing content) of the information to applicants.
- A review of the Call for Applications process to the Proposal Evaluator's Database in order to facilitate the participation of highly qualified evaluators.
- Clarification to proposers and evaluators of the socio-economic requirements of the Programme and consistent application of the criteria in evaluation, taking account the diverse nature of the different actions.
- The installation of an effective information feedback system to proposers on the proposal evaluation.
- Reassessment of the "legalistic environment" and its impact on strategic and operational objectives.

2. **An effective Human Resources Policy across FP5 should be developed** and linked to a programme improvement / quality improvement system. This requires the commitment and direct involvement of all Directors. It is recommended that a management / human resources consultancy is retained to:

- Develop an outline plan to meet the requirements of staff, management and the Programme's development.
- Support staff and management in the implementation of the plan.

This should take place now rather than await the "Reforming the Commission" consultation process. Directorate AG's intention to develop such activities during 2000 is supported.

A unified management system is required in both the Information Society Technologies Programme and the Energy areas.

3. **The Research and Development Impact Mechanisms of FP5 must be strengthened.** This requires a number of actions:

- Innovation Cells should become the direct responsibility of each operational Programme Director.
- A support structure should be developed for Technological Implementation Plans to include internal training, resources redeployment and, when appropriate, the use of external expertise.
- Coherent and consistent project Monitoring and Impact Tools should be put in place immediately in all Programmes.
- The collection of project impact data should be aligned with the collection of information relating to contracts, monitoring and any needs so as to reduce, to a minimum, demands on project participants, evaluators and Commission Staff.
- Each Programme should have one individual charged with co-ordinating Project Monitoring activities along with liaison to External Programme Monitoring and 5-Year Assessment activities.

4. **Gender Awareness should be strengthened** and appropriate gender-based data collected. Efforts to encourage female evaluators to apply for inclusion in the Proposal Evaluators' Database should continue to be made.

5. **A Public Awareness of Science and Technology** function should be set up under each operational Programme Director and developed into an integrated approach at the FP level. Support should be provided by the Improving Human Research Potential and Socio-Economic Knowledge Programme.

THE 1998 FRAMEWORK PROGRAMME MONITORING PANEL'S RECOMMENDATIONS,
which have shown little progress, are still totally pertinent:

1. **The elaboration of a workable approach to European Added Value** has received little or no attention by Programme Directors. As the raison d'être of the European Union's research activities, each Programme requires a bottom-up, working approach to ensuring that it is maximised.

2. **The FP5 Management Information Systems** are still inadequate. They need to be rationalised and consolidated.

3. **Self-critical, Annual Management Reports** from each Programme are needed. They should include operational management targets, which are, as far as possible, quantified along with indicators on synergy.

4. **The Wider Dissemination of Research Results (FP4 as well as FP5)** to policy makers and a wider public has moved forward with the establishment of a Public Awareness of Science and Technology activity. But this is still not sufficient. Public Awareness activities need to be undertaken by the operational Programmes themselves.

The 1999 Framework Programme Monitoring Panel recommends that a strong and highly visible follow-up system for FPMP recommendations should be instituted at SP and FP level.

The 2000 Framework Programme Monitoring Panel is asked to follow-up the above recommendations.

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Finally, it is recommended that this Framework Programme Monitoring Report, and the Monitoring Reports of the constituent Specific Programmes, form a useful and significant input into the ongoing external Framework Programme 5-Year Assessment exercise.

*

2 INTRODUCTION

The 1999 External Monitoring Report on the activities of the European Union's Research and Technological Development Framework Programme (the FP) covers the ongoing projects and activities still being funded by the Fourth Framework Programme (FP4) as well as the first year of the implementation of the Fifth Framework Programme (FP5), the latter which continues until end-2002.

The current FP5 is a radically different research Programme from any of its predecessors in terms of philosophy, objectives, structure and management approach. It seeks to develop a greater impact for the research through its problem solving orientation Programme. It seeks both the focusing of research through the problem solving orientation and the simplification of research structures through the reduction in the number of Specific Programmes (SPs). Flexibility is also sought through the Key Action / Generic Research / Infrastructural Projects structure of FP5. This flexibility is crucial, since the long approval procedures and five-year term is seen, by some, as a major handicap in researching and exploiting fast changing technologies and in responding to developments in EU legislation. Thus strategically and structurally, FP5 is different from FP4. It focuses on specific socio-economic problems and brings together the research necessary to solve them. In so doing, it also intends to bring research, technology and their application closer together.

The launch of FP5 was followed by major initiatives within the Commission:

- The development of "**Towards a European Research Area**"[1], which points out that FP5 accounts for only 5.4% of the public research effort in the EU. And while useful, "it alone does not enable the achievement of a better organisation of the European research effort… (and that the) fragmentation, isolation and compartmentalisation of national research efforts and systems and the disparity of regulatory and administrative systems only serve to compound the impact of lower global investment in knowledge. Decompartmentalisation and better integration of Europe's scientific and technological area is an indispensable condition for invigorating research in Europe": essentially, more coherence between research at a national and EU level – the development of a European Research Area.
- The White Paper, "**Reforming the Commission: A Consultative Document**"[2], which intends "to make changes which will ensure that efficiency, accountability, transparency, responsibility and service are applied as working conventions" within the Commission and takes particular care in outlining human resources policies.

It is hoped that the present FP5 Monitoring Report contributes to these debates. The issues addressed are very similar.

The 1999 Framework Programme Monitoring Panel (FPMP) was assisted and supported in its work by the DG RESEARCH Evaluation Unit, the SPs Monitoring Panels and Programme Management from across FP5. The Panel wishes to thank all involved for the effective, efficient and timely fashion in which this support was given.

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[1]   "**Towards a European Research Area**", A Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee, and the Committee of the Regions, 18 January 2000.

[2]   "**Reforming the Commission: A Consultative Document**", Communication from Mr. N. Kinnock in agreement with the President and Ms. M. Schreyer, 14 January 2000.

3 ANALYSIS AND FINDINGS

3.1 ACHIEVEMENTS

> The major achievement of 1999 for the Framework Programme (FP) has, of course, been to successfully launch one of the world's largest and most complex research Programmes. The five year, €15 billion budget would place the FP as one of the EU's top 200 companies in terms of turnover.

This has been achieved:

- Across the fifteen EU Member States (along with 15 countries associated to FP5, including 11 Candidate Countries[3]) and using the 11 official languages of the EU.
- Within novel, problem-oriented structures, which are new to project proposers, project evaluators and Programme Management and which incorporate new requirements in the socio-economic relevance of research and coherence with EU policies.
- Within a much shortened timetable due to the major delays in the Parliament and Council Decision launching FP5. Originally scheduled for the first half of 1998, the Decision was finally made on 22 December 1998 for the FP and 25 January 1999 for the individual Specific Programmes (SPs), leaving Programme Management with a substantially curtailed launch year.

A number of important innovations were introduced in the move from FP4 to FP5 including:

- Speeding up of the Call-to-Contract procedures. The time between the closing of Call for Proposals and the opening of contract negotiations has been substantially reduced through the streamlining of the internal consultation process. And this despite concerns over the increasing complexity of rules and procedures.
- A strong move to harmonisation of application and evaluation procedures as well as contracts across the various SPs.
- Greater overall coherence in the activities of FP5 compared with FP4, along with a major effort to create synergy between all FP activities.
- A new management structure was introduced for the Thematic Programmes (co-operating Directors for the same Programme).
- The setting-up of External Advisory Groups (EAGs) for Key Actions.

Finally, this year's External Monitoring has been carried out in parallel with an external 5-Year Assessment, for the FP as well as each SP. The overall effort, one of the most comprehensive programme evaluations carried out anywhere involving some 140 experts working simultaneously in 18 Panels, is a major achievement in itself.

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[3] Candidate Countries associated to FP5: Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia. Other Associated Countries: Norway, Iceland, Liechtenstein and Israel. An association agreement with Switzerland is expected to enter into force in 2000.

3.2   TRENDS

In terms of FP5 research directions, a number of trends are emerging:

- A move to strategic research co-operation. This emphasises European Added Value based on global, commercial, market and socio-economic considerations as well as European Added Value based on the creation of a critical mass of research, the strengthening of cross-border ties and the political cohesion of the EU.
- An increased emphasis on integrated research Programmes (i.e. the problem solving approach) within the overall FP, rather than independent projects. This manifests itself in major efforts to enhance synergy within and between SPs as well as with policy making Directorates General. This offers major challenges in management, co-ordination and complexity. The move to a Key Actions structure may also be seen as laying the groundwork for better coherence and synergy with the national research programmes of Member States.
- There is an increased emphasis on the research results and their valorisation and exploitation. This manifests itself in actions such as the requirement for Technological Implementation Plans (TIPs) and the addition of Innovation Cells to all Thematic Programmes. Also mechanisms to link European financial structures to research outcomes are being increasingly emphasised and supported, as is the general protection and commercialisation of research findings.
- There is a move to fund larger projects reported by many Programmes. While many see this as a corollary of the move to a strategic research orientation, others emphasise the reduced complexity of administration (to the Commission) of such a change and evince concern as to the longer-term implications of such a move. In particular, there is some concern that the move towards larger projects and more integrated projects may tend to make SME participation more difficult.

In administrative terms, the trend to increasing individual staff workloads continues.

3.3   CONCERNS

3.3.1   First Call, Evaluation and Contracting of Projects

The first round of SP activities took place against a background of extreme haste following the much-delayed Council Decision of 25 January 1999 setting up the FP5's individual SPs. Calls for proposals in SPs started as early as 6 March 1999 with a closing date in June 1999. To ensure commitment of 1999 budgets, Programmes then launched a second Call for Proposals within 1999. The workload on Commission officials during mid and late 1999 was simply enormous. It led not only to personal difficulties but also to difficulties in consulting EAGs and in making adjustments to Programmes and procedures between Calls. The haste engendered sidelined much programme planning and development and partly accounts for the lack of attention to FP4 projects.

The FPMP considers the conditions of the launch of FP5 not simply unfair to Commission Staff proposers and evaluators – which they were – but a source of inefficiencies in the wise spending of EU money. The European Parliament and Council should be aware as to how their external actions can affect the efficient administration of EU money managed by the Commission.

Looking sequentially at the activities involved:

- **Dissemination of Initial Information:** Information Package and Web–based information worked well. Simplification of language and contents of the Information Package is still needed. Here, there is a concern that ever-increasing attention to the legal niceties will be counterproductive. The National Contact Points (NCPs) system is now in place but there are problems of consistency, since they are overseen by individual Member States. Proposers should have access to support and guidance of similar quality in drawing up proposals. Training and information provided by the FP and the Member States are helpful but not sufficient in raising all to a similar level of quality.

> **The FPMP recommends that:**
> - THE COMMISSION SHOULD BRING THE DISCREPANCY IN QUALITY OF INFORMATION BEING PROVIDED TO PROPOSERS BY NCPS TO THE ATTENTION OF MEMBER STATES AND MAKE AN APPROPRIATE PROPOSAL FOR ITS SOLUTION.

- **Submission of Proposals** to the SPs was based on an Information Package and an electronic submission package, PROTOOL. The failure of the software to function correctly led to some Programmes not reaching their targets while others declined steeply in electronic submission, some Programmes seeing such submission fall from 80% under FP4 to 10% of proposals under FP5. Despite this, one Director has set a target of 100% electronic submission by the end of FP5. Ideally, all Programme Directors should follow suit.

> **The FPMP recommends that:**
> - ALL PROGRAMME DIRECTORS SHOULD SET A TARGET OF 100% ELECTRONIC PROPOSAL SUBMISSION BY THE END OF FP5.

- **Proposal Evaluation Support Structure:** Given the volume, recurrence and similarity of proposal evaluation procedures, a common evaluation infrastructure was developed including logistical and organisational support from an external service provider, a common database of "willing" (voluntary and eligible) evaluators and common evaluation documentation. Two main difficulties arose:

1. The external service providers failed to provide the quality of service necessary. This was associated with the late signing of contracts and the subsequent haste and was probably a one-off occurrence.

2. There was some concern with the evaluators registering. Potential evaluators had had to complete a time-consuming application form. Four main difficulties arose: (1) many first rank researchers did not apply; this was seen to be associated with the application form; (2) the Staff had considerable difficulty in searching the database for the particular skills required; (3) evaluators in socio-economic areas with expertise in Key Actions did not apply in sufficient numbers; and (4) females made up only 15% of the database.

The open application for inclusion in the database is fully supported by the FPMP – it has brought new blood into the process and will eventually lighten the load on individual Programmes. However, some changes are required.

Proposal Evaluation Procedures: Overall, the FP evaluation system is seen as fair and transparent by Monitoring Panels, administrators and researchers alike. It has been consistently improved over the lifetime of FP4 and now greater consistency across SPs has been developed by the introduction of a common Evaluation Manual and Procedures. As the necessary central core of any research programme, it is a credit to the Framework Programme. The duration taken for the evaluation is also thought to be approaching a minimum, consistent with the required thoroughness. This said, there are a number of issues still to address:

1. The transfer of proposals (those which were submitted initially to an inappropriate area) between Programmes and Key Actions has yet to be fully regularised.
2. Socio-economic relevance and coherence with EU policies as evaluation criteria present difficulties. Both proposers and evaluators are still uncertain of their application and marking. The provision by several policy DGs of guidance documents on EU policy relating to the Life Sciences proved helpful. This should be further improved and extended to other areas and included in the Programme Information Package.
3. In a similar vein, there was concern over the potential for arbitrary decisions associated with socio-economic criteria. The issue of arbitrariness existed not just for individual evaluators but also for whole Programmes where comments ranged from "not as good as we would have liked" to "extremely difficult" to essentially ignoring the requirements. Reinforcing this concern was the potential for socio-economic / policy relevance marking to have an inappropriately strong influence on project selection. If, in the scientific evaluation, many excellent projects obtained very similar high marks, then the subsequent socio-economic evaluation would act as the real discriminant. Of course, this may be what is really intended, but it certainly worries many scientists.
4. An associated concern was that a number of important laboratories had not, as yet, understood the new criteria and problem orientation of FP5 research – although some Monitoring Panels explicitly reported good understanding and adoption. The Guide for Proposers will have to continue to reiterate and make even clearer the new problem oriented approaches.
5. The FPMP expresses concern over the lack of homogeneity of the evaluation procedures within the SPs. In time, better and deeper familiarization with the evaluation criteria will enable the evaluators to achieve a common attitude to marking.
6. There is a continuing wish that evaluations made by experts should be communicated to the applicants so as to assist the preparation of improved proposals in the future. The NCPs might act as a conduit.
7. The FPMP was informed that the Commission was examining the possibility of providing rapid information on the outcome of evaluation of proposals sessions to all proposal co-ordinators, immediately following the end of the evaluation sessions and before any formal decisions are taken to reject proposals or open contract negotiations. The FPMP strongly supports this initiative, and urges that, for the sake of transparency, proposal co-ordinators

should receive both the evaluators' comments and scores at this stage. The FPMP also believes that co-ordinators of proposals rejected for failing eligibility criteria should be informed immediately that this becomes clear. As there is no margin for interpretation in such a decision, the FPMP urges that it be delegated to as low a level as possible within the Commission services, to avoid unnecessary delays.

> **In summary, the FPMP recommends that:**
> - THE TRANSFER OF PROPOSAL BETWEEN PROGRAMMES AND KEY ACTIONS IS REGULARISED.
> - THE EVALUATION CRITERIA OF 1) SOCIO-ECONOMIC RELEVANCE AND 2) COHERENCE WITH EU POLICIES ARE CLARIFIED IN INFORMATION TO PROPOSERS AND EVALUATORS.
> - RAPID INFORMATION ON THE OUTCOME OF EVALUATION OF PROPOSALS SHOULD BE PROVIDED TO ALL PROPOSAL CO-ORDINATORS, IMMEDIATELY FOLLOWING THE END OF THE EVALUATION SESSIONS.

- **Contracts:** An effort has been made to harmonise and increase the transparency of contracts[4]. Contract negotiations were started much more quickly due to the change in "commitology" whereby only the final selection of some projects requires an opinion by the Programme Committee. However, there was concern over the complexity and length of the contract document.

3.3.2 Horizontal and Vertical Synergy

Within FP5, there are a number of levels at which synergy is expected:

- Within the individual Thematic (Vertical) Programmes, between the various Key Actions, Generic Research Activities and Infrastructural Projects.
- Between Vertical Programmes, where there are possibilities of synergy between Programme Activities of one Programme and those of another.
- Between Horizontal and Vertical Programmes.
- Between the FP5 Programmes and the policy DGs of the Commission.

The approach adopted by the FP5 to respond to these requirements has been to set up a matrix management / collegiate management system. A number of techniques / tools have been developed:

- The activities of the Groups of Directors (GoDs). The meetings of GoDs are the main instruments for the three Horizontal Programmes (IHP, INNO and INCO) to interact with the Vertical Programmes.
- In certain Programmes, meetings of Heads of Units have been developed. Individuals have been appointed to follow up the execution of projects from the horizontal point of view across the range of Vertical Programmes. Working parties have been set up (Observatory for TIP as this group was called in one Programme) to monitor exploitation of results, innovation content, etc, and to carry out the harmonisation of Information Packages with the particular Key Actions. There are now Innovation Cells in each Thematic Programme.

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[4] Five families of contracts have been developed. The five contract types are: 1) Shared Costs; 2) Thematic Network; 3) Concerted Action; 4) Fellowship; and 5) Accompanying Measures. Each contract then has a number of derivatives. All cover the same general issues: administration, liability, termination, IPR, eligible costs, and audit.

- Consultation of EAGs have proved to be useful, particularly those which reflect customer's views or result in increasing awareness of potential investors. However, the EAGs should receive better administrative support.

Reports on the effectiveness of these measures are limited:

- At the Project Level: Under the FP5, clusters can either be proposed: (1) by proposers in their applications; or (2) during project evaluation. The aim is to develop coherence and synergy across the Programme. Thus far, due to the still early development of FP5, no clear picture has yet emerged as to the extent and nature of clustering activities, from the Commission or the Specific Programmes Monitoring Panels' (SPMPs) reports. It is an area with strong potential benefits, but also possible drawbacks. They have to manage larger consortia with attendant management requirements and develop Intellectual Property Right (IPR) agreements across a much larger number of project participants. For the IST Programme, despite commendations of its successful launch, there were recommendations for a unified managerial structure and, particularly, for a programme-wide communications strategy, better to integrate the different cultures of the previous Programmes and, particularly, to improve effectiveness of communications to potential participants. Overall, there will be a need for the direct commitment of the Directors if effective synergy is to be developed across FP5 and with policy DGs.
- At the European Level - Convergence: The introduction of "Key Actions" is one of the innovations of FP5. The European Union expressed its wish to place research at the service of the economic and social objectives of the Union. The concept of Key Action is aimed at supporting the convergence, within a European perspective, of the research policies of Member States. This aim is strongly reiterated within "Towards a European Research Area" where the "fragmentation, isolation and compartmentalisation of national research efforts and systems and the disparity of regulatory and administrative systems" are the focus of a number of proposed curative actions. In the context of the alignment of FP5 and the Communication, it is recommended that the Commission and CREST adopt a more proactive approach.

> **The FPMP recommends that:**
> - A UNIFIED MANAGEMENT STRUCTURE IS DEVELOPED IN THE IST PROGRAMME AND THE ENERGY AREAS.
> - An analysis of what practical actions might be taken by FP5 Programmes in developing explicit co-operation mechanisms with national research programmes.

3.3.3 Improving the Impact of EU Research

The Council Decision expects that the research results of FP5 will have a much greater impact on the social and economic structure of the EU. This section examines four aspects of ensuring this impact is delivered. The setting up of Innovation Cells and Technological Implementation Plans are two newly introduced mechanisms supporting improved research impact. The ability of the Programme Management to monitor projects provides the scaffolding, which will help ensure the delivery of impacts. Finally, the ability of the FP5 to make a much wider European society more aware of science and technology may, in the longer run, provide the largest impact.

The Innovation Cells

The setting up of an "Innovation Cell" within each Thematic Programme is important and welcome within FP5. They are expected to assist each Programme in addressing the different aspects of innovation and technology transfer within their activities. However, these Cells are not formally defined or resourced. They are not administrative units, but rather functions to be developed by each Thematic Programme.

The INNO Programme is expected to ensure synergy between the Cells and to provide advice and access to its own activities and expertise in areas such as venture capital and intellectual property rights (IPR). Under Commission regulations, this support role does not attract staff funding (unlike direct management of research projects) and hence suffers in the priority, which it can be given.

Therefore, Innovation cells are, at the moment, in a structurally weak position. They are simply a function without necessarily having any identifiable resources, while at the same time, the Programme which is expected to develop synergy and provide services for the Cells, not only has no sufficient specified budget, but also has to take staff away from specifically resourced areas to carry out this work.

Thus, there is a need to strengthen the position of the Innovation Cells and increase the priority given to the Innovation Cells by the Thematic Programmes.

> **As a matter of urgency, the FPMP recommends that:**
> - The responsibility for the development of an Innovation Cell be assigned directly to each operational Director within each Thematic Programme. The current practice of assigning the Cells to co-ordination Directors ensures low priority with operational Directors and a low impact on the individual projects under their care.
> - The operational Director should appoint an individual as manager of the Innovation Cell. The Cell should, with support from INNO: (1) develop a strategic 5-year plan and an annual operational plan for the Cell – both to be available to next year's Monitoring Panel; and (2) support each Key Action in developing innovation and technology transfer activities. Each operational Director should make creative use of Accompanying Measures to develop the work of his/her Innovation Cell.
> - Finally, it should be borne in mind that innovation is most often a highly interdisciplinary effort, and as such, the Innovation Cells have an important part to play in spotting areas of potential synergy across the FP5.

Technological Implementation Plans

The Technological Implementation Plan is potentially an important innovation within FP5 - requiring all research projects, during the course of the contract, to draw up a plan for the exploitation of the research undertaken. In principle, they are a major step forward in ensuring the economic valorisation of EU funded research.

The TIP is not seen as a static document but should be developed from the dissemination and valorisation plan submitted with the project proposal and updated over the lifetime of the project. The TIP is a comprehensive document replacing a number of reporting requirements and standard across all FP5 Programmes. The completed TIP should be submitted to the Commission within two months of the end of the project's termination. The Commission then verifies that the TIP complies with the regulations and previous agreed plans.

The development of the TIP is to be overseen by the project's scientific officer, who, currently, has a major workload and little experience (as is the case for many project participants) in the valorisation of research.

> **The FPMP recommends that:**
> - Basic on-line training / support material be developed to support both projects and scientific officers in the development of TIPs and understanding issues such as IPR, licensing, fund raising, company formation, joint ventures, etc.
> - There should be an early and planned recourse to external sources of expertise to assist projects in developing TIP and scientific officers in overseeing their development.
> - A first version of TIP should be available within all projects by the time of their mid-contract review.
> - However, there should be a recognition that, for reasons of confidentiality and commercial exploitation, certain information will not appear in the TIP.

Improved Project Monitoring and Project Impact Analysis

Effective process monitoring and the measuring of the quality of research actions are a prerequisite for the sound management of RTD Programmes. At the level of individual projects, monitoring of their progress over their entire life cycle, including exploitation, will improve their quality and the marketability and usability of results and contribute significantly to research impacts and European Added Value.

The Commission should ensure systematic collection of accurate quantitative and qualitative project data on implementation, participants' achievements, dissemination and use of results. Particular attention should be paid to impact of research as well as successes and failures. A proper evaluation of the FP socio-economic impact necessitates systematic collection of such project data. Harmonisation of project monitoring and evaluation, supported by coherent and consistent monitoring and impact tools, is therefore important.

Recounting of "success stories" by Programmes as an indicator of success is no longer sufficient. Such "stories" themselves must be backed by evidence and external verification and then only be used to complement a more systematic and structured assessment of impact. Overall, there is a need for better gender awareness in the activities of FP5 and the collection of appropriate gender-based data.

This said, the FPMP stresses that the collection of project data must be aligned with contract, monitoring and any other information collection so as to reduce, to a minimum, demands on projects participants and the Commission Staff. A reasonable balance must be struck between what information should be provided externally (contractors) and internally (project officers).

Finally, there is a need to ensure that projects are developing well at all stages of the project's life. Therefore, each project should have, at minimum, a formal comprehensive mid-term evaluation.

> **The FPMP recommends that:**
> - The Commission should ensure systematic collection of accurate quantitative and qualitative project data on implementation, participants' achievements, dissemination and use of results. There should be harmonisation of project monitoring and evaluation tools.
> - "Success stories" as an indicator of success are insufficient. They should only be used to complement a systematic and structured assessment of impact.
> - The collection of project data must be aligned with contract, monitoring and any other information collection.
> - Each project should have, at minimum, a formal comprehensive mid-term evaluation.
> - There is a need for better gender awareness in the activities of FP5 and the collection of appropriate gender-based data.

EU Research and Public Awareness

Last year's Monitoring Panel pointed to the importance of a wide public awareness of scientific and technological developments as crucial to Europe's social and democratic development as well as developing a technologically innovative and entrepreneurial culture. This year's Panel reiterates and fully supports these views.

FP5 contains a SP Activity on "Public Awareness of Science and Technology" within the IHP Programme. Despite a limited budget, it has started to undertake important work through developing: (1) a network of interested institutions in Member States to examine ongoing activities and best practice; (2) a European dimension within Member States' Science Weeks; (3) Round Tables in particular areas; and (4) Web activities and publications.

The budget provided severely limits the direct role of the Public Awareness activity in responding to the major societal challenges being posed – both for FP5 and Europe - in "Towards a European Research Area". It is the FPMP's view that the Public Awareness activity of FP5 should be seen as a responsibility of each SP, if the needs of Europe and European research are to be met.

> **Thus, the FPMP recommends that:**
> - Each operational Programme Director should nominate an individual to be responsible for the Public Awareness of Science and Technology within his/her own area. This person, in conjunction with Key Actions, should develop a strategic 5-year plan and an annual operational plan for the development of the Public Awareness of Science and Technology within their area – both plans to be available to next year's Monitoring Panel. Each operational Director should make creative use of Accompanying Measures to develop the activity.
> - Similarly, at the FP level, an overall strategic 5-year plan and annual operational plan should be developed.
> - The IHP Programme's Public Awareness activity should draw up a brief annual report on "The Public Awareness Activities of the Fifth Framework Programme".
> - Projects under the Social and Economic Research activity might also make a contribution to understanding and developing public perceptions and awareness of S&T. Many of the concerns expressed in "Towards a European Research Area" relate to the broader societal awareness and views of the scientific enterprise. Indeed the communication calls for democratic, public debates on the issues raised in the paper.

Industry, SME Participation and Innovation

FP5 continues the move towards creating more user-friendly structures to encourage SME participation as follows:

- The system of National Contact Points (NCPs) has been established under the auspices of the individual Member States.
- FP5 has established a One-Stop Shop / Single Entry Point for SMEs. This Point provides phone and Web based support to SMEs, as well as tailored documentation.
- The system of Exploratory Awards is continued with funding of up to €22,500 (or 75% of costs) available to explore and prepare a research proposal.
- The QUICKSCAN system continues to provide rapid information to SMEs on patents related to their potential research field. Similarly, CRAFT continues. Some SPs (e.g. Environment) have consciously moved to include service based SMEs.
- The increasing emphasis on the industrial exploitation of research is to be clearly seen in the changes in FP5 IPR support structures: (1) there is increased emphasis on the obligation of contractors / researchers to protect the knowledge generated from EU funding. Costs relating to protection – fees for registration and patent counsel – are now eligible costs up to a limit of €4,000 per patent; (2) access conditions to such knowledge are being better defined within the categories of automatic, privileged and market access. In addition, consortia can set up exclusive license structures within projects, under certain conditions.

This said there are still a number of concerns:

- The requirements, such as selection criteria and contract requirements, which the FP imposed on SMEs, particularly start-up companies, might be so restrictive as to discourage or exclude such companies. There is a general concern that the EC philosophy (rooted outside the FP), that emphasises the absolute legal protection of the Commission rather than any concern for

Programme participants and research outcomes, is becoming counter-productive. There should be positive encouragement to SMEs.

- Greater integration of the financial community into the FP is now a widespread concern. One visionary Director noted that "we have taken the walls down between Programmes – now we need to remove the wall around the FP – we need to bring in people from the outside". Activities such as the Innovation and Technology Equity Capital (I-TEC) should be substantially strengthened.
- There is insufficient encouragement for SME participation in R&D activities as there is no coherent approach by the relevant Commission DGs in supporting the commercial possibilities of FP funded research: a closer co-ordination between funds for R&D Structural, Regional and even Social Funds may help to create an innovation friendly environment.

> **Thus, the FPMP recommends that:**
> - There should be increased encouragement to SME participation.
> - Activities such as the I-TEC should be substantially strengthened and more bridges to the financial community developed.
> - A closer co-ordination between funds for R&D, Structural, Regional and even Social Funds should be explored

3.3.4 The Commission Staff

The FPMP had undertaken a substantial review of FP human resources issues when Commissioner Kinnock's "Reforming the Commission: Consultative Document" was published in January 2000. The Panel agrees with the Document's analysis that, "the systems and procedures of the Institution have become outdated, the burdens of work have been unevenly distributed, responsibility has been fragmented and sometimes obscured… The cumulative results eroded job satisfaction amongst many in the very capable staff and diminished public confidence."

The staff members of Programme Management are dedicated to their work and doing a good job. They are, however, too often overworked and do not have the satisfaction of being fully appreciated for their efforts. The potential for benefits to the Programme from their competence, experience and constructive ideas could be more strongly exploited.

The FPMP sees four closely linked items required to fully develop the Framework Programmes' most valuable resource, namely its people, as shown in the Figure below:

- **The Careers of the individuals within the Commission**. Within any organisation, there is a need to recognise and make provision for people's wish to develop and advance. Transparent career paths linked to open systems for recognising individual effort and achievement and connecting these to human resources development systems is desirable.
- **The Personnel Evaluation System (PES)** – also known as the Notation system. Currently, the system is somewhat isolated from wider considerations. Staff are reviewed by their immediate supervisors on a marking scale (notation) and written comments made on their work. This system needs to be broadened in two respects:
  - The PES needs to be made into a two way process, including feedback and reverse evaluation.

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o   The PES should also form a significant input into the training / development requirements plan for the individual and linked to career development.

- **The Training and Development System.** The in-house Training and Internal Information Unit in DG RESEARCH has had a difficult year given that the launch of FP5 caused an explosion of operational work for all Programme Management. The Unit did, however, manage to run a significant number of training and information sessions to equip people to work with the new FP and its new objectives and systems. This said, the training / development function needs to be broadened in a number of respects:

  o   It needs to be linked to the career development aspirations and to the outcomes of the notation process.
  o   It needs to be linked to and to actively support the strategic development needs of the FP on a continuous basis.
  o   On-the-job coaching needs to be introduced.

  Currently, no annual training plan is available, nor individualised training or development plans. This needs to be rectified and associated planning mechanisms introduced. Also a more formal introductory course needs to be developed, for all levels - independent of their status, for new entrants to DG RESEARCH in order to ease their integration into a complex and multi-cultural environment.

- **A Quality Improvement System.** Along with good general management, much of the motivation comes from the human resources development (careers, personnel evaluation, training and development) system, while a large part of being given the chance to be heard and to be involved in improving things comes from the quality / programme improvement system. There is a need to develop such quality / programme improvement systems across the whole of the FP – systems, which will provide a structure for staff members to be able to contribute to the improvement of the FP. Indeed, for the last five years, the Marie Curie Fellowships have operated a light Total Quality Management system well adapted to research administration and contributing significantly to the efficiency of the Programme Activity.

Towards a Quality and Human Resources Approach

Careers

Quality Improvement System

Personnel Evaluation System (Notation)

Training / Development
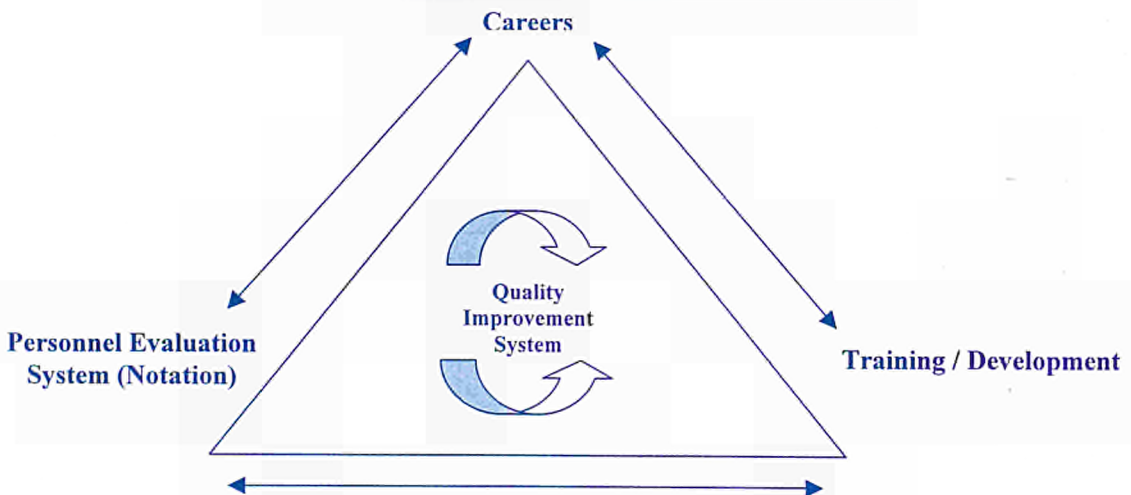
The DG RESEARCH Administrative and Financial Affairs Directorate, which has responsibility for personnel and training, expressly intends to address the issue of: (1) a FP-wide quality / programme improvement system; and (2) a training / human resources development plan during the coming year. The FPMP fully supports these actions and hopes that top management across the FP will actively collaborate. Such important work cannot be achieved without the full commitment of all the Directorate's top management.

> **The FPMP recommends that:**
> - The Administrative and Financial Affairs Directorate implements its plans for: (1) a FP-wide quality / programme improvement system; and (2) a training / development plan during the coming year.
> - A management / human resources consultancy is engaged to:
>   - o develop an outline plan to meet the requirements of staff, management and the Programme's development;
>   - o support staff and management in the implementation of the plan.
> This should take place now rather than await the "Reforming the Commission" consultation process.

3.4   PROGRAMME SUPPORT

3.4.1   Administrative and Financial Matters – Directorate AG

DG RESEARCH Directorate AG, the Administrative and Financial Matters Directorate, provides the operational backbone to the FP5 including personnel, budgetary and financial matters, legal matters, contract management and audit, informatics as well as in-house information, training and equal opportunities.

With the beginning of FP5, the Directorate has provided the central co-ordination to the introduction of a number of administrative reforms including:

- A general effort to ensure common and consistent application of Commission rules and procedures across all FP5 Programmes.
- The establishment of a common administrative proposal evaluation platform as well as the co-ordination of the development of common proposal evaluation guidelines.
- The development of a proposal evaluator database.
- The clarification and harmonisation of contracts.
- A move to strengthen continuous controls on projects.

These have been major tasks and the FPMP wishes to acknowledge Directorate AG for its good work. These tasks have had to be balanced against the availability of management resources and the SP Directors worries' over increasing administrative complexity and complex procedures, which are seen as a major handicap in a fast changing technology.

As noted in the previous Section, the Directorate intends to implement two important measures over the coming year – both extremely important in supporting the philosophy of Commissioner Kinnock's document, **"Reforming the Commission":**

- The development and implementation of a strong and supportive Human Resources Development plan across the FP. This initiative will include career structures, personnel reviews (notation) and training. Closely allied to this: -
- The development and introduction of Quality Improvement Measures across the FP. This initiative will introduce simple and appropriate quality improvement measures, which will seek to capture and valorise the expertise and experience of all employees for the better running of Programmes.

The FPMP recommends that:
- Within this context, Directorate AG makes a major effort to decrease unnecessary administrative burdens on project participants, proposal evaluators and Commission Staff, ensuring that the legal and administrative constraints do not override the policy objectives.

3.4.2   Policy Co-ordination and Strategy – Directorate AP

DG RESEARCH Directorate AP, the Policy Co-ordination and Strategy Directorate, is responsible for the overall development of the policy, structure and substance of the Framework Programme. It co-ordinates the major external consultation process (with Member States and Candidate Countries, Council, European Parliament, Economic and Social Committee, the Committee of the Regions, Researchers, Industrialists, etc.) as well as the internal discussions within the Commission, the Framework Programme and with other policy developing Directorates.

Directorate AP is also responsible for the overall co-ordination and support of the external evaluation (Monitoring and 5-year Assessment) of the Programmes (see Section 3.5 below). Furthermore, it ensures the co-ordination with EU Member States' research policies, with the EUREKA framework and other international research initiatives, and is responsible for the scientific secretariat of COST. In following the links between research and other EU policies, it pays particular attention to State aids for R&D as well as to Regional Policy. The strategic analysis part of the IHP Programme is also under the Directorate's responsibility. Finally, the broader communication function is also in the Directorate.

During the course of 1999, the Directorate played a crucial role in ensuring that policy decisions were correctly implemented throughout the Framework Programme, particularly through the co-ordination of the Programmes' interactions with the advisory and management support mechanisms. This function covered a wide range of matters of importance for Programme implementation, from the functioning of the Programme Committees to the role of EAGs, to the ways to ensure transparency of operations vis-à-vis the European Parliament, the other institutions and the public at large.

The main challenge over the coming year is, following the publication of the Commission's Communication **"Towards a European Research Area"** and the launch of the subsequent debate, to discuss the implications for research policy, at European, national and regional levels. Initial emphasis is on the identification and comparison of the research potential, in areas such as infrastructures and centres of excellence. Following this debate, the implications for the future Sixth Framework Programme will be drawn.

> **The FPMP recommends:**
> - The further development of a strategic management approach within the operational Programmes, which can interface with the Directorate AP and support quicker reaction to policy development. Many SPMP Reports have also pointed to this requirement at a Programme level. Such in-Programme analysis will also be helpful, both in the development and in the early adoption of activities related to the development of the European Research Area.
> - The development by individual Programmes, particularly the IHP Programme, of measures and activities which will contribute to the issue analysis and policy development at a Member State and EU level required in the development of the European Research Area.
> - The Commission and CREST should explore and develop actions which will create a framework for stronger inter-Member State cooperation and concertation at the level of national policies and actions.

3.5 PROGRAMME MONITORING – INTER-SERVICE GROUP ON MONITORING AND EVALUATION

The overall co-ordination of the Annual Monitoring and 5-Year Assessment exercises at the SP and FP level is aided by an Inter-Service Group on Monitoring and Evaluation[5].

The quality of the monitoring process has continued its steady improvement. This year has seen:

- The system of co-ordination meetings between the FPMP and the SPMPs at the launch and conclusion of monitoring, which was introduced last year, supplemented by an exchange of questions, information and draft reports during the monitoring.
- Representatives of SPMPs participated as observers during proposals evaluation sessions.
- For the FPMP, there has been much greater formal interaction and discussions with the Strategy and Administration Directorates of the FP. This has had a major impact on the FPMP's ability to understand the developmental challenges facing FP5.
- The monitoring exercise provided input to the current 5-year assessment[6]: representatives of the FPMP and SPMPs interacted with the respective 5-Year Assessment Panels.
- A greater input of senior Programme Management into the substance and recommendations of this Report through the circulation of drafts for comments.

On the other hand, however, the FPMP is concerned that:

- A systematic follow-up at SP level of the recommendations of the 1998 FPMP was not apparent.

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[5] The Group was established in 1995 in connection with the introduction of the Commission's current enhanced evaluation scheme. All relevant Commission services including DG BUDGET, DG AUDIT and EUROSTAT are represented in the Group, which is supervised by the DG RESEARCH Evaluation Unit.

[6] Article 5.2 of the EC and EURATOM FP5 Decisions stipulates: "Before submitting its proposal for a sixth framework programme, the Commission shall have an external assessment conducted by independent highly qualified experts into the implementation and achievements of Community activities carried out during the five years preceding that assessment......."

- There was a very low level of awareness of these recommendations among most Programme Directors and Senior Programme Management. This was attributed to the low level of direct interaction of FPMP (as opposed to the individual Programme Monitoring Panels) with Programme Management in SPs. Indeed, here, the Monitoring Exercise is still considered as control mechanism rather than a management tool.

> **The FPMP recommends that:**
> - *A strong, highly visible follow-up system for FPMP recommendations should be instituted at both the SP and FP level.*
> - Each Programme should have one individual charged with co-ordinating Project Monitoring activities along with liaison to External Programme Monitoring and 5-Year Assessment activities. This will strengthen the co-ordinating role of the Inter-Service Group on Monitoring and Evaluation.

3.6   IMPLEMENTATION OF LAST YEAR'S RECOMMENDATIONS

3.6.1   Programme Implementation

Last year's FPMP made five basic recommendations, which are outlined below, and their implementation reviewed.

Elaboration of European Added Value

European Added Value is a strong concept but it is weakly defined and poorly applied. **Thus**: An explicit elaboration of perceived European Added Value must be undertaken at individual Programme, Programme Activity and project level and appropriate indicators developed. The concept must become central to the orientation of research direction and selection of projects:

- **Implementation:**   A baseline study has been launched by the DG RESEARCH Evaluation Unit, which will provide a valuable review of approaches to working with concepts of European Added Value. However, it is essential that each individual Programme and Programme Activity develop an explicit, written, operational approach, which will guide project proposers and evaluators within their own specific discipline and EU policy context.

  A part of the difficulty seen during 1999 proposals and evaluations derives from the lack of an explicit statement as to why particular areas of research are being operated at a European level and what the specific, expected returns of such an approach are to be.

The Exploitation of the Fourth Framework Programme Projects

Given that the majority of FP4 projects would still be operational as FP5 began, the major recommendation of last year's FPMP report centred on their continued care, monitoring and exploitation:

- **Implementation:** The individual Monitoring Reports indicate highly variable approaches and levels of effort in the continued monitoring and exploitation of FP4 projects. The variability of approaches reflects, quite rightly, a continuation of the specific FP4 Programme's old monitoring regime to which the projects are used. However, the different levels of effort, even

if explicable by the major workloads involved in launching FP5, are of more concern. At least one Programme has slipped back to a minimalist position of relying only on written annual reports.

Improving Management Information Systems

The Management Information Systems are still inadequate. They jeopardise good management and make monitoring exercises much less effective. **Thus**: The overall Framework Programme and individual Programmes should identify and commit the resources required for the introduction of one single Management Information System which will support the development of modern management:

- **Implementation:**   This issue continues to be of major concern to the FPMP. It is not at all obvious that there has been any significant progress in the area. Indeed, individual 1999 SPMPs Monitoring Reports point to a continued proliferation of local, non-compatible databases being set up to solve local problems and a general degradation of management effort through the absence of an adequate Management Information System.

Diffusion of Good Management Techniques

The appropriate introduction and exploitation of the innovative research management techniques, which FP4 Programmes have developed, should be widely disseminated and used in FP5. **Thus**: Innovative research management techniques developed under FP4 should be transferred and used in FP5 Programmes. Towards this end, a report should be prepared which draws together and comments on the applicability of these techniques. The work of the Inter-Service Management Groups set up to facilitate the implementation of FP5 should continue:

- **Implementation:** There is much on which to congratulate the FP5 Programme Management in the move from FP4 to FP5 in the area of improved management techniques, particularly, as we have seen, in the moves to harmonise and make more transparent the whole Call for Proposals, evaluation and contract process. There are, of course, changes needed to certain procedures and issues of user friendliness, but praise is due to the Commission and particularly the Inter-Service Management Groups, which developed much of the FP5 planning. However, next year's Monitoring Panel will need to look at the adoption of good management techniques in the areas of project management and monitoring as the first FP5 projects get underway.

Wide Dissemination of Research Results

The full exploitation of the results of FP4 requires a much wider dissemination of results than is traditionally undertaken. Not only scientists and business people need to be informed, so do policy makers and a much wider public. **Thus**: There is a responsibility on Programmes to combat scientific ignorance and promote their objectives and results to policy makers and a wider public. A plan for such non-technical dissemination of its work should be drawn up and implemented through the use of external expertise and state-of-the-art information technology:

- **Implementation**: Little has been done as regards FP4 projects in this area. FP5 contains an SP Activity on "Public Awareness of Science and Technology" and has a Communications Unit within Directorate AP. The current FPMP recommends both the development of a strong, non-technical dissemination plan - involving all SPs - and an appropriate delivery structure.

3.6.2   Programme Monitoring

Last year's FPMP made a number of recommendations, which are outlined below, and their implementation reviewed.

Full Monitoring

The scope of the FP Monitoring Panel should be extended to include the central support services, which plan and underpin the Framework Programme:

- **Implementation:** This has been successfully achieved and has been most useful.

Self-Critical Annual Management Reports

Self-Critical Annual Management Reports are needed. There is a need for the information, which is provided by the SPs to their Monitoring Panels to be rationalised, complemented by analysis of the data and presented in a brief report. The reports should be self-critical and form the basis for the monitoring:

- **Implementation:** This has not been undertaken and little progress can be seen.

Management Targets

Explicit, operational management targets should to be set on an annual basis. The Annual Management Reports should contain analyses of performance against such targets with an indication and explanation of the appropriate core indicators:

- **Implementation:** This has not been undertaken and little progress can be seen.

Synergy and Co-ordination

Strong synergy and co-ordination between Programmes and between Programmes and policy development in the different DGs are required. The Annual Management Reports should provide a clear picture of the extent to which such synergy is achieved:

- **Implementation:** While several mechanisms have been put in place in the context of FP5, a central reporting system is not yet operational.

Rationalising Core Indicators

The core indicators need to be rationalised, slimmed down and better complemented by indicators relevant to each SP. Core indicators should be more limited in number and associated with useful analysis:

- **Implementation:** While rationalised, the pertinence of the information provided to the Panels could still be much improved. There should be a strong focus on a small set of relevant core

indicators that should act as the basis of the self-critical Annual Management Report. The lack of appropriate data relates particularly to the lack of systematic collection of output and impact data on projects.

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4   CONCLUSIONS AND RECOMMENDATIONS

4.1   CONCLUSIONS

The 1999 Framework Programme Monitoring Panel must formally congratulate the Fifth Framework Programme's management, scientific officers and support staff on:

- Their management of the transition from FP4 to the very different Programme structure, objectives and procedures of FP5.
- The very successful launch of probably the world's largest and most complex research Programme.
- The introduction of many welcome developments and innovations: comprehensive information to applicants and a fair and transparent proposal evaluation system which has become standardised across FP5, the Programme-wide use of Technological Implementation Plans, the setting up of Innovation Cells in each Thematic Programme, the installation of a collegiate, matrix management structure which promises much in terms of synergies across the activities of FP5.

All this has taken place against a background of extreme haste and work overloads, mostly due to the significant delays experienced in the European Parliament and Council Decision in launching FP5. All concerned have given sterling service to European research. But a particular word of praise must go to the Inter-Service Management Groups whose forward planning during 1998 helped deliver much of the operational success of the current Programme.

There are, of course, major management challenges already facing the FP5, if it is to develop successfully and deliver the full benefits of its research to the economic and social development of all its stakeholders, viz. governments, institutions, companies and individual citizens.

The main concerns of the FPMP are:

- **Administration of the Launch:** While the launch of the FP5 was an undoubted success, there are still some issues for management in this area: further refining the user-friendliness of the information provided, developing the socio-economic aspects of evaluation, improving the evaluators data-base, and putting an effective information feedback procedure for the proposal evaluation into place. There is considerable evidence that the legal procedures imposed override policy objectives.
- **Human Resources Policy:** There is a need for a more effective and stimulating human resources development policy within DG RESEARCH. Little or no attention is given to developing a systematic linkage between:

  - the personnel evaluation (notation) system,
  - career structures and aspirations, and
  - the individual on- and off-the-job training and development plans. Individual development plans should be established and closely linked to personnel evaluation to overcome what is currently a top-down system. Human resources development should permeate all aspects of the management of the Programme.

- **Improving Research Impact:** In addition to high quality research, FP5 must now focus strongly on ensuring the socio-economic impact of its research and take full advantage of the European Added Value. Various new impact-enhancing instruments have been introduced (Innovation Cells, Technological Implementation Plans, Monitoring and Impact Tools, Public Appreciation Activities, etc). However, the Framework Programme Monitoring Panel is concerned that this shift of focus from an implementation monitoring to impact monitoring is not being adequately addressed by all Specific Programmes.

4.2 RECOMMENDATIONS

The following recommendations were developed and discussed with senior Programme Management. They correspond to the main concerns expressed above.

THE 1999 FRAMEWORK PROGRAMME MONITORING PANEL RECOMMENDS:

1. **The Administration of the "Call for Proposals to Project Contract" Phase should be improved** as follows:
   - Simplification (restructuring / changing content) of the information to applicants.
   - A review of the Call for Applications process to the Proposal Evaluator's Database in order to facilitate the participation of highly qualified evaluators.
   - Clarification to proposers and evaluators of the socio-economic requirements of the Programme and consistent application of the criteria in proposal evaluation, taking account of the diverse nature of the different actions.
   - The installation of an effective information feedback system to proposers on the proposal evaluation.
   - Reassessment of the "legalistic environment" and its impact on strategic and operational objectives.

2. **An effective Human Resources Policy across FP5 should be developed** and linked to a programme improvement / quality improvement system. This requires the commitment and direct involvement of all Directors. It is recommended that a management / human resources consultancy is retained to:

   - Develop an outline plan to meet the requirements of staff, management and the Programme's development.
   - Support staff and management in the implementation of the plan.

   This should take place now rather than await the "Reforming the Commission" consultation process. DG RESEARCH Directorate AG's intention to develop such activities during 2000 is supported.

   A unified management system is required in both the Information Society Technologies Programme and the Energy areas.

3. **The Research and Development Impact Mechanisms of FP5 must be strengthened.** This requires a number of actions:
   - Innovation Cells should become the direct responsibility of each operational Programme Director.
   - A support structure should be developed for Technological Implementation Plans to include internal training, resources redeployment and, when appropriate, the use of external expertise.
   - Coherent and consistent project Monitoring and Impact Tools should be put in place immediately in all Programmes.
   - The collection of project impact data should be aligned with the collection of information relating to contracts, monitoring and any other needs, so as to reduce, to a minimum, demands on project participants, evaluators and Commission Staff.
   - Each Programme should have one individual charged with co-ordinating Project Monitoring activities along with liaison to External Programme Monitoring and 5-Year Assessment activities.

4. **Gender awareness should be strengthened** and appropriate gender-based data collected. Efforts to encourage female evaluators to apply for inclusion in the Proposal Evaluators' Database should continue to be made.

5. **A Public Awareness of Science and Technology** function should be set up under each operational Programme Director and developed into an integrated approach at the FP level. Support should be provided by the Improving Human Research Potential and Socio-Economic Knowledge Programme.

THE 1998 FRAMEWORK PROGRAMME MONITORING PANEL'S RECOMMENDATIONS,
which have shown little progress, are still totally pertinent:

1. **The elaboration of a workable approach to European Added Value** has received little or no attention by Programme Directors. As the raison d'être of EU research activities, each Programme requires a bottom-up, working approach to ensuring that it is maximised.

2. **The FP5 Management Information Systems** are still inadequate. They need to be rationalised and consolidated.

3. **Self-critical, Annual Management Reports** from each Programme are needed. They should include operational management targets, which are, as far as possible, quantified along with indicators on synergy.

4. **The wider dissemination of research results (FP4 as well as FP5)** to policy makers and a wider public has moved forward with the establishment of a Public Awareness of Science and Technology activity. But this is still not sufficient. Public Awareness activities need to be undertaken by the operational Programmes themselves.

Finally, the 1999 Framework Programme Monitoring Panel recommends that a strong and highly visible follow-up system for FPMP recommendations should be instituted at SP and FP level.

The 2000 Framework Programme Monitoring Panel is asked to follow-up the above recommendations.

5 ANNEX

5.1 THE CONTEXT OF EXTERNAL MONITORING REPORT

The 1999 External Monitoring Report on the activities of the Framework Programmes covers the ongoing projects and activities still being funded by FP4 as well as the first year of the FP5. It is required under Article 5.1 of the Council Decisions setting up the EC and the Euratom Framework Programmes:

> "The Commission shall continually and systematically monitor each year, with the help of independent qualified experts, the implementation of the Fifth Framework Programme and its SPs in the light of the criteria set out in Annex I and the scientific ands technological objectives set out in Annex II. It shall assess, in particular, whether the objectives, priorities and financial resources are appropriate to the changing situation. Where appropriate, it shall submit proposals to adapt or supplement the Framework Programme and / or the SPs, taking account of the results of this assessment."

Programme Objectives

The Decision No 182 / 1999 / EC of the European Parliament and of the Council of 22 December 1998 establishing the FP5 directs it "towards strengthening the scientific and technological bases of Community industry and encouraging it to become more competitive at international level… (and) promoting the quality of life of the Community's citizens and to the sustainable development of the Community as a whole, including the ecological aspects. Its implementation is based on the twin aspects of scientific and technological excellence and relevance to the above-mentioned objectives…. the Community shall take action only if and in so far as the objectives cannot be sufficiently achieved by Member States." The Decisions provide common criteria for the selection of objectives, research areas and projects:

- Community Added Value and subsidiarity: (1) establishing critical mass in human and financial terms; (2) contributing significantly to Community policies; (3) addressing Community level development – all subject to subsidiarity.
- Social Objectives: (1) improving the employment situation; (2) promoting the quality of life and health; (3) preserving the environment - all in the context of Community social objectives.
- Economic and S&T Objectives for areas that: (1) are expanding and create good growth prospects; (2) Community businesses can and must become more competitive; (3) offer prospects for significant S&T progress – all contributing to the harmonious and sustainable development of the Community as a whole.

Programme Implementation

During 1999, the first year of the Fifth Framework Programme, the main areas of Programme Management activity have been:

- Transition management from FP4 to FP5.
- Completion of ongoing FP4 activities, in particular, the dissemination and exploitation of the results of FP4. It is only now, as FP4 projects finish, that the full European Added Value of EU funding can be achieved and assessed.
- Launch of FP5, in particular, the information provision, Call for Proposals, and evaluation and contract negotiations for the first tranches of projects as well as the good overall management of the Programme.
- The continuing overall design, development and administrative implementation of FP5, including the initial planning for FP6.

The Monitoring Exercise

The 1999 Report of the FPMP covers the first year of the FP5. Accordingly, this year's Panel has been asked to focus on the following main issues:

- The transition from FP4 to FP5, completion of ongoing FP4 activities and the launch of FP5 activities.
- Major trends and achievements at the level of the FP.
- Overall synergies between individual Programmes at the level of the FP and their contribution to the wider objectives of the EU.
- Overall management and legal environment of FP5.
- The follow up of the 1998 Framework Programme Monitoring Panel recommendations.
- Recommendations on changes that may be needed to the strategy for overall implementation.

5.2   THE SPECIFIC PROGRAMMES

This section provides the Framework Programme Monitoring Panel's views on the individual SPs. Its views are based on interviews with Directors and Programme Management from each of the Programmes, the written reports of the individual Monitoring Panels and interviews and presentations from chairmen and rapporteurs of these Panels, along with supporting documentation.

5.2.1   Thematic Programmes

Quality of Life and Management of Living Resources (QoL) Programme supports research, which aims at providing sustainable development in human health, the quality of the environment and communal life. It contains six multi-disciplinary key-actions (food, nutrition and health; control of infectious diseases; cell factory; environment and health; sustainable agriculture, fisheries and forestry; the ageing population and disabilities) as well as longer-term research in seven generic fields (chronic and degenerative diseases, genomes and related diseases, neuroscience, public health, the disabled, bio-ethics, socio-economic aspects) and biological research infrastructure.

Despite the severe problems caused by the delayed launch of the Programme, the first Call, with two-deadlines for submission of proposals, has been successfully completed, with an evaluation process, which is generally recognised as fair and transparent. The amount of peripheral information to proposers might be reduced with better information on EU policies and socio-economic requirements provided. A better use of electronic submission should also be developed. The new matrix-management structure is showing early signs of its integrative potential, particularly in working with policy DGs. However, the operational Directorates will have to become much more involved in horizontal activities. The clustering of projects, similarly, shows early promise but there is a need to examine the relationship between such clustering, project size, effective management and value of output.

Overall, the pace of work has left little time for consultation with various advisory groups and the Programme Committee. The monitoring and review of FP4 projects have also suffered, with no systematic monitoring in BIOTECH projects and remedial monitoring only in BIOMED but with some stronger efforts in FAIR projects. Standard project monitoring procedures such as the contractual requirement for mid-term project review, which is now a standard feature of all medical and health related projects, will be necessary across the whole of QoL under the FP5. There is a call for the stronger, action specific development of Technological Implementation Plans and the more extensive use of external experts in analysis and dissemination of results, and the better targeting of such activities. Impact analysis should have a much higher profile. Activities to improve the access of QoL projects to the market for private finance and a more general entrepreneurial culture should continue and be further strengthened. In summary, there should be a far greater focus on results – scientific and commercial – and their readiness for exploitation.

The Information Society Technologies (IST) Programme has four objectives: (1) satisfying the needs and expectations of private individuals; (2) helping workers and companies to innovate and improve working conditions and productivity; (3) allowing Europe to express its culture and creativity through multimedia; and (4) developing essential technologies. Associated with the objectives are four Key Actions (systems and services, new methods of work and e-commerce, multimedia content and tools, essential technologies). Ten cross-Programme themes are also being developed in areas such as space technologies, privacy and personalisation, etc. Long-term research is also funded on emerging and future technologies such as quantum computing and nanometer information devices. Finally, research infrastructure aimed at developing trans-European broadband infrastructure is also being developed.

The hard work and commitment of staff during a very difficult and overloaded year is recognised, as is the successful commitment of funding for two Calls. The strategy-defining work of the Expert Advisory Group (ISTAG) and the annual system of developing and updating the Work Programme is commended, as well as an operational roadmap linking 'ISTAG Vision' strategy to Work Programme development. The development of common documentation across FP5 has improved transparency, but is over-elaborate and not sufficiently user-friendly - especially for SMEs, where there is a continuing need to develop more appropriate mechanisms of participation. Greater urgency is needed in correcting the failures of the Programme's support tools in electronic submission and evaluation.

There is a concern, however, about the integration and balance of this large and complex Programme in terms of project size, SME participation and the profile of longer and shorter-term research. The Programme is at an early stage and the IST Monitoring Panel suggests measures and studies relevant to improving integration of the programme. Related to this, there is also a recommendation of enhancing the socio-economic impact of the Programme by further reducing the number of Action lines in future Work Programmes and encouraging systematic participation of SME in each consortium. The critical

mass concept deserves to be better understood for optimising project size, project clustering, etc. Moreover, importance of maintaining high priority on FP4 project monitoring is underlined by the Panel.

Competitive and Sustainable Growth (GROWTH) Programme. The GROWTH Programme's objective is to support research towards the production of clean and intelligent industrial goods and services in pursuit of European competitiveness while working towards safe, economic and environmentally friendly transport and the development of high quality, reliable materials and measurement and testing. There are four Key Actions: (1) innovative products, processes and organisation; (2) sustainable mobility and inter-modality; (3) land transport and marine technologies; and (4) new perspectives on aeronautics. Three generic research fields are also to be funded: (1) new and improved materials and their production and transformation; (2) new and improved materials and production technologies in the steel field; and (3) measurements and testing.

Proficient Programme Management has seen the successful implementation of new research administration structures, development of a new Work Programme and launch of Calls for proposals under extremely difficult and administratively overloaded conditions. The EAG system has worked well but needs further development and, possibly, financial support. Better proposal focusing through pre-screening and a two-stage application has been introduced in parts, but not in the entire Programme. Documentation to proposers was "clear but voluminous" and particularly troublesome to SMEs. The problem-orientation nature of FP5 was welcomed, but the putting into practice of the socio-economic dimension gave problems to both proposers and evaluators. The average project size has grown and there are now, on average, 13 partners per project. There is concern over the effects of such developments, particularly the levels of internal bureaucracy and co-ordination needed.

There is concern that different sections of the Programme still operate with different management procedures, management information systems, project monitoring systems, etc. Appropriate harmonisation across the Programme and greater emphasis on horizontal activities should be a key concern of the Group of Directors. Quantitative annual management targets need to be set and monitored by Directors. FP4 projects continue to be monitored and the continued development of impact analysis strongly supported, but there is already concern over the future dissemination and valorisation of FP5 projects since such activities continue to be effectively excluded from projects, despite the drawing up of Technological Implementation Plans.

Energy, Environment and Sustainable Development Programme tackles European level environmental and energy supply problems.

- **Environment** consists of four Key Actions: (1) sustainability and water quality; (2) global change, climate and bio-diversity; (3) marine eco-systems; and (4) City of Tomorrow along with three generic areas: (i) major natural and technological hazards; (ii) earth observation satellite technology; and (iii) the socio-economic aspects of environmental change. The transition process to FP5 has gone well despite the difficulties generated by the initial political delay in launch and the associated workload on the Commission. The project evaluation process is seen as fair and transparent. There is a suggestion that moderators, those organising and supporting evaluators, might receive training and that Stage II, the socio-economic evaluation be better organised and integrated with the scientific evaluation and much more rapid notification provided to proposers whose projects are not funded. Project follow-up needs immediate strengthening in the areas of Technological Implementation Plans and Management Information Systems if there are not to be

major difficulties in the future. Currently, local, not necessarily compatible, data bases have been developed to solve local needs.

Initial indications are that pre-clustering activities (co-ordination meetings and concerted actions) have been useful. Inter-Programme co-operation has developed with INCO 2. The External Advisory Group system has shown promise, despite some members being concerned at their initial level of impact. The concern is that initial enthusiasm will fade, since there is no financial remuneration to members. Direct reporting and liaison between the EAG and Programme Committee would strengthen the system.

- **Non-Nuclear Energy** consists of two Key Actions: (1) cleaner energy systems; and (2) economic and efficient energy. This move to FP5 placed the FP4 JOULE (research) and THERMIE (demonstration) Programme Activities into a unified, problem-oriented management structure with the expectation of the necessary co-operation between DG RESEARCH and DG ENERGY. However, as its own Monitoring Panel notes, "there is a fundamental incoherence between the external presentation and its internal management", and that "the incompatibility that exists between the structure of the Programme and the management structures in the Commission has very important adverse effects" leading to administration and Programme response difficulties. It is clear that this activity is consciously and explicitly **not** responding to the Council Decision. It is the opinion of the FPMP that the situation is unlikely to change unless radical, external action is taken.

At a more mundane level, there was concern that guidelines to evaluators were not sufficiently explanatory, particularly in interpreting the Work Programme such that evaluators became, to some extent, creators of research policy. The need to incorporate a strong strategic element into the Work Programme, and then provide this to proposers and evaluators, is underlined. Clustering has not as yet occurred. Overall, in the first Call, there is concern at the quality of proposals, and eventual projects, particularly in still being strongly technology-driven rather than problem / market oriented.

Nuclear Energy Programme consists of two further Key Actions: (1) controlled thermo-nuclear fusion; and (2) nuclear fission along with generic research mostly in the area of radiation protection:

- **Fusion** is particular in integrating all European activities in controlled thermonuclear fusion. As a continuation of the former Community Fusion Programme, the Key Action has been successfully launched under FP5. There is concern, however, that the activity has now been split in two with international activities under one Director and S&T work under another Director. A single person with overall responsibility is needed. Three new Candidate Countries have set up Fusion Associations and the new European Fusion Development Agreement has come into force during 1999. As a response to the expected Japanese and Canadian Proposals, the search for an International Thermonuclear Experimental Reactor (ITER) site in Europe continues.

- **Fission** works to improve operational and fuel safety as well as radiation protection. The transition to FP5 has gone well but there is a need for the Commission to be more proactive in seeking proposals in line with Programme objectives. Given a level of research maturity in the field, there is a need to place more emphasis and resources on diffusion of knowledge and developing networks and joint actions between interested parties.

5.2.2   Horizontal Programmes

The International Role of Community Research (INCO) Programme's basic aim is to open up Community research to the world, gaining access to scientific and technological knowledge outside the EU, developing research activities with non-EU countries and preparing the accession of new Member States.

Programme management and planning are solid, though some worry that administrative process dominates content, as has also been observed in other Programmes. Information systems may need some rationalisation. There is some concern that a better geographical balance of evaluators needs to be achieved. Turnover of staff and scientific officers responsible for in the order of 100 projects has made direct monitoring of FP4 projects impossible. Simple reliance on project co-ordinators' reports is not adequate: new mechanisms must be developed and project monitoring must be systematised. However, it is recognised that the diversity and complexity of the Programme do pose problems in assessing achievement and the fulfilment of Programme objectives. European Added Value poses particular issues for this Programme and a more formal, documented approach is required to detail out such added value.

As a horizontal Programme, INCO requires strong interfacing with the main vertical Programmes. This is mostly undertaken through the Group of Directors. Good co-operation with DG DEVELOPMENT is taking place. The Programme Committee (as for all non-nuclear Programmes) consists of two delegates from 15 EU Countries and 15 Associated States; its procedures, interaction with the Commission and its effectiveness need to be reviewed.

COST is functioning well. INCO co-operation 'Work with EUREKA' has been low because of the lack of dedicated funding. INCO-Copernicus continues to develop well. Co-operation with Industrialised Countries needs to be able to demonstrate its value to the policy making and the scientific communities. Continued complementarity between INCO-MED and MEDA-2 needs to be increased. With respect to the implementation of INCO-DEV (Research for Development), over 21% of received proposals related to shared cost actions, concerted actions and thematic networks were maintained for funding (over 38% in the case of accompanying measures).

Promotion of Innovation and Participation of SMEs (INNO) Programme seeks to support the transformation of research knowledge into wealth and jobs. Its objectives are to ensure the dissemination and exploitation of FP research results and stimulate technology transfer as well as co-ordinate the implementation of specific measures to encourage SME participation. It has three groups of actions: (1) promoting innovation (protection of IPR, new approaches to technology transfer, good innovation practice,..); (2) encouraging SME participation (single entry point, joint support, economic and technological intelligence...); and (3) Joint innovation (European support network, electronic information services, IPR information, access to innovation financing, developing innovative companies, etc.).

The transition to FP5 was very satisfactory and a good management system is in place as is co-ordination and review with other Programmes. Exploratory Awards and co-operative research (CRAFT) projects continue to work well. A Single Entry Point[7] and pre-screening mechanisms[8] have

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[7]   Under FP4 many SME proposals were submitted to the wrong Programme. They are now channelled by the SEP to the correct Programme and Action.

been established to assist SMEs. These and other actions continue to improve SME participation. With new procedures, project co-ordinators are now being informed of success six weeks after submission of proposals. This said, the process is still weighted towards large organisations, and SMEs often have to employ consultants to develop projects. The new FP5 measures for SME activities are only just getting under way.

More generally, there is still a need for much tighter co-ordination between DG RESEARCH and DG ENTERPRISE (which manage the innovation aspects of the SPs). There is a need, in particular, to restructure and assign operational responsibility for the Innovation Units (co-ordinated by the Innovation Programme) within the Specific Programmes. At the European, national and regional level, there is now a plethora of innovation promotion agencies which also require much tighter co-ordination and rationalisation where EU funding is involved. The Innovation Relay Centres have met their targets for 1999.

The CORDIS Internet service has been hugely beneficial to other Specific Programmes as well as to the Innovation Programme. And not just in diffusion of information on FP5 Programmes, but also in terms of developing new approaches to advanced technological brokerage services. The Commission continues to seek improvements in its user friendliness. The Innovation Programme has also undertaken many innovation related studies which require diffusion and associated action, in particular, activities aimed at drawing EU funded projects and studies into closer liaison with the financial community and the European structural funds. The Innovation and Technology Equity Capital (I-TEC) programme launched with the European Investment Bank is showing encouraging progress and its expansion is strongly supported.

Improving Human Research Potential and Socio-Economic Knowledge (IHP) Programme aims to build up Europe's human research resources and develop its socio-economic knowledge base. It consists of one Key Action – improving the socio-economic knowledge base (societal trends, employment, governance, new growth models) and four Programme activities, namely: (1) the training and mobility of researchers; (2) developing access to European large scale facilities and research infrastructure; (3) promoting scientific and technological excellence; and (4) the development of S&T policies in Europe.

Within the context of the delayed Decision on FP5, the Programme launch has been widely praised as efficient and documentation to proposers and evaluators as well designed and informative. However, the *quick-no* procedure for unsuccessful proposals has not worked well. Core indicators need to include information on female proposers. There is concern that valorisation and dissemination of FP4 TSER projects has lost priority.

Marie Curie Fellowships continue to work efficiently. Its 100% immediate monitoring is strongly commended as its plans for longer term monitoring of impact and career development. Industrial Host Fellowships have started well, but there are concerns over the Return and Experienced Researcher Fellowships, which have not been that strongly subscribed. Research Training Networks (RTNs) have launched well with better treatment for inter-disciplinary projects. There are concerns that the bottom-up nature of the fund allocation for disciplines (not for individuals) is fundamentally scientifically conservative and should be altered to favour new, emerging disciplines. A system to monitor the longer-term impact of the RTNs has been recommended by Monitoring Panels for several years. This

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[8] Projects arriving 3 weeks before the submission deadline are screened for eligibility and proposers offered the opportunity to modify the proposal. Only 10% of proposals took advantage of this.

should be put in place before the 2000 Monitoring Panel reports. Research Infrastructures continue to fund a fairly stable set of institutions across Europe. Management of the High Level Scientific Conferences Activities has improved. The Raising Public Awareness of S&T Activity is crucial to the development of FP5. The Key Action on Socio-Economic Research (SER) was well launched but drew far fewer proposals than the equivalent TSER Call. There is concern, however, that this research should be closely tied from project design and launch to those who will actively employ the results of the research.

The Strategic Analysis of Specific Policy Issues (STRATA) activities analyse and synthesise existing research on specific S&T policy issues. They are strongly supported by the FPMP, as a form of activity which should be expanded within the IHP Programme to respond to the needs of other Specific Programmes, Key Actions and wider EU S&T policy needs.

An Action Plan aimed at increasing the participation of women in science within FP5 is implemented by the Women and Science Sector, which is located in the Directorate responsible for the implementation of the IHP Programme.

The integration of Socio-Economic Research activities across Specific Programmes is of major importance to the objectives of FP5.

5.2.3   The Joint Research Centre

The Joint Research Centre is a Directorate-General of the Commission and consists of eight institutes, located in five EU countries. Its mission is to provide scientific and technical support for the conception, implementation and monitoring of EU policies. However, the monitoring of the JRC does not fall within the remit of this Panel but is carried out independently by its own Board of Governors.

The JRC Board of Governors notes the efforts carried out by the JRC management to fulfil its new mission and to adapt the new programme activities according to the needs of its main customers, i.e. the various Commission services. The Board appreciates the initiative of the Director General to carry out a scientific audit to ensure that the JRC scientific resources match the new objectives and expects that necessary measures will be taken to implement its recommendations. The Board further acknowledges the managerial measures put in place over the year to improve the efficiency of the JRC.

The Board acknowledges the JRC's performance in competitive activities and looks forward to continuous updating in this matter. The Board equally notes the efforts to reassure a good collaboration with industry and research organisations leading to the signature of several Memoranda of Understanding. The Board notes the development of the JRC technology transfer initiatives, welcomes the implementation of a training course in entrepreneurship and endorses the plans for an incubator at the JRC's Ispra site and for a technology transfer fund.

In line with its opinion and with the outcome of the Research Council of 2 December 1999, the Board welcomes the initiative taken by the Commission and supports their position that immediate action should be taken on decommissioning of obsolete nuclear installations. In this respect it welcomes the Commission's undertaking to develop a properly funded and structured long-term plan for decommissioning.

Finally, the Board wishes to encourage the inclusion, in further JRC management reports, of how the JRC complies with the Council Resolution on "Women and Science", of 20 May 1999 and with the European Parliament Resolution on the integration of equal opportunities in the Community policies, of 9 March 1999."

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5.3 Budgets for the Fifth RTD Framework Programmes

FP5 – EC Programmes: Maximum Amounts and Breakdown (1998-2002)

INDIRECT ACTIONS	Billion EURO (Current Prices)
First Activity	
Research, technological development and demonstration activities	(*)10,843

Indicative breakdown by theme (Billion Euro):
1. *Quality of life and management of living resources* (2,413)
2. *User-friendly information society* (3,600)
3. *Competitive and sustainable growth* (2,705)
4. *Energy, environment and sustainable development:*
   - *Environment and sustainable development* (1,083)
   - *Energy* (1,042)	

Second Activity	
Confirming the international role of Community research	0,475
Third Activity	
Promotion of innovation and encouragement of SME participation	0,363
Fourth Activity	
Improving human research potential and the socio-economic knowledge base	1,280
DIRECT ACTIONS	
Joint Research Centre (JRC)	0,739
MAXIMUM OVERALL AMOUNT	13,700

(*) of which 10% on average is for SMEs

FP5 – Euratom Programme: Maximum Amounts and Breakdown (1998-2002)

INDIRECT ACTIONS	Billion EURO (Current Prices)
Research and training in the field of Nuclear Energy	0,979
DIRECT ACTIONS	
Joint Research Centre (JRC)	0,281
MAXIMUM OVERALL AMOUNT	1,260

5.4 ABBREVIATIONS

CORDIS	Community Research and Development Information System
CRAFT	Co-operative Research Action for Technology
CREST	Scientific and Technical Research Committee
DG	Directorate General
EAG	External Advisory Group
EC	European Communities
EU	European Union
EUREKA	Co-operation between European firms and research institutes in the field of advanced technologies (1985-....)
FP	Framework Programme
FPMP	Framework Programme Monitoring Panel
GoDs	GROUP OF DIRECTORS
GROWTH	Competitive and Sustainable Growth Programme
IHP	IMPROVING HUMAN RESEARCH POTENTIAL AND SOCIO-ECONOMIC KNOWLEDGE PROGRAMME
INCO	THE INTERNATIONAL ROLE OF COMMUNITY RESEARCH PROGRAMME
INNO	PROMOTION OF INNOVATION AND PARTICIPATION OF SMES PROGRAMME
IPR	Intellectual Property Rights
IST	Information Society Programme
I-TEC	Innovation and Technology Equity Capital
MIS	Management Information Systems
NCP	National Contact Point
PES	Programme Evaluation System
QoL	Quality of Life and Management of Living Resources Programme
RTD	Research, Technology and Development
RTN	Research Training Network
SEP	Single Entry Point
SER	Socio-Economic Research Key Action under IHP
SP	Specific Programme
SME	Small and Medium-sized Enterprises
SPMP	Specific Programme Monitoring Panel
STRATA	Strategic Analysis of Specific Policy Issues under IHP
TIP	Technological Implementation Plan
TSER	The Targeted Socio-Economic Research Programme under FP4
€	EURO

PART B

COMMISSION SERVICES' COMMENTS ON THE 1999 FP MONITORING REPORT

GENERAL CONTEXT

In accordance with the decisions adopting the 5th Framework Programme (FP5)[9], in particular article 5.1, the Commission services have carried out the annual Framework Programme (FP) level monitoring of EU RTD activities assisted by a Panel of nine independent experts, appointed in July 1999. As FP5 consists of 10 Specific Programmes (SPs), the FP monitoring is based on the results of the 1999 SP monitoring conducted by independent external expert panels. The external monitoring ensures an independent *quick feedback* on the state and quality of *programme implementation*. The exercise is not an evaluation/assessment of overall achievement - which is the subject of the five-year assessments - nor an audit; its main purpose is to advise the Commission and help Programme Management to reinforce establishment of best practices and to identify and correct weaknesses in programme implementation.

The present report is the first in a series of annual monitoring reports in FP5, which constitutes an essential part of the overall set of tools for the FP management. The 1999 FP monitoring has provided useful and significant input to the 5-year assessment, the strategic external evaluation exercise foreseen by the FP5 decision (article 5.2) which must be completed prior to the Commission's proposal for the 6th Framework Programme (FP6). The present monitoring report will also constitute an input to the mid-term review introduced by the FP5 legislation (article 6). The 1999 monitoring covers both the launch of the new FP5 and the on-going activities under FP4. In this context, the Panel of experts decided to focus the exercise on the following issues relating to the implementation of the FP:

- The transition from FP4 to FP5, the completion of on-going FP4 activities and the launch of FP5 activities.
- Major trends and achievements at FP level.
- Overall synergies between individual Programmes at FP level and their contribution to the wider objectives of the EU.
- Overall management and legal environment of FP5.
- The follow-up of the 1998 Framework Programme Monitoring Panel's recommendations.
- Recommendations on changes that may be needed for the overall implementation strategy.

While the new policy initiatives were not explicitly part of the Panel's mandate from July 1999, the experts nevertheless considered it useful to formulate their analysis in this evolving context, in particular by taking into account the Communication of the Commission on the "European Research Area" from January 2000[10]. Likewise, the Commission services, in responding to the recommendations, have integrated these recent developments.

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[9] Decision No. 182/1999/EC of the European Parliament and of the Council concerning the Fifth Framework Progrmme of the European Community for research, technological development and demonstration activities (1998 to 2002).
Council Decision of 22 December 1998 concerning the Fifth Framework Programme of the European Atomic Energy Community (Euratom) for research and training activities (1998 to 2002) (1999/64/Euratom).
[10] Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions: "Towards a European Research Area" COM (2000) 6 - 18 January 2000.

RESPONSE TO THE 1999 FP MONITORING PANEL'S RECOMMENDATIONS

The Commission services note with satisfaction the acknowledgement by the Panel that the FP5 was successfully launched overall while introducing a number of useful developments and innovations. The services also share the concerns identified by the Panel which relate to administrative aspects of the launch of FP5, overall human resource policy and improving the impact of FP funded research.

The following responses of the Commission services correspond to the five sections presented in Chapter 4.2 of the experts' report ("Recommendations"). Information on the follow-up of the 1998 Monitoring Panel's recommendations, requested by the 1999 Panel, is presented in an annex. Due to the major importance of efficiency of FP implementation, a special section on this subject has been added.

Improvement of FP5 management and implementation: simplification/enhancement of procedures and tools

As the monitoring focuses on implementation, it is important to highlight, alongside the more specific responses below, the effort recently undertaken by the Commission services to improve efficiency in implementation. After one year of experience with managing FP5, a series of actions have been undertaken to improve implementation and simplify procedures:

(i) an informal inter-service working group was set up at the initiative of Commissioner P. Busquin and in agreement with Commissioners L. de Palacio, M. Schreyer and E. Liikanen. The aim was to simplify procedures and accelerate decision taking. The inter-service group has identified a number of items for simplification and streamlining which have already been – or are about to be – put into practice. Longer–term measures have been also proposed and these will require an extensive consultation process.

(ii) an exercise of analysis and comparison of research management practices within national and EU programmes has been launched with a view to exchange of good practices and facilitate mutual learning.

(iii) "customer satisfaction workshops" are being organised by some SPs in order to support the ongoing discussions within the Commission services on how the Programme management can be improved (e.g. information to participants, feedback on proposal evaluation results, contract negotiation procedures,…).

1. Improving administration from the Call for proposals to the Project Contract Phase

According to the Panel, *"The administration of the Call for Proposals to Project Contract phase should be improved as follows:*

- *Simplification (restructuring / changing content) of the information to applicants.*
- *A review of the Call for Applications process to the Proposal Evaluator's Database in order to facilitate the participation of highly qualified evaluators.*
- *Clarification to proposers and evaluators of the socio-economic requirements of the Programme and consistent application of the criteria in proposal evaluation, taking account of the diverse nature of the different actions.*
- *The installation of an effective information feedback system to proposers on the proposal evaluation.*
- *Reassessment of the 'legalistic environment' and its impact on strategic and operational objectives."*

The Commission services share this analysis. Indeed, in the context of the general measures described in the previous section, the inter-service group on simplification of procedures, mentioned above, has in particular identified a number of issues for rapid implementation (already in progress), notably:

(i) improvement of the editorial quality of Commission documents and the simplification of proposal and contract preparation forms;

(ii) improved effectiveness of the Proposal Evaluator's Database (application procedures/forms and database management) and;

(iii) faster information to applicants concerning the outcome of the scientific and technical evaluation.

As regards the selection of Proposal Evaluators, the Commission services also consider to introduce measures so as to ensure that the highest qualified experts can be invited.

The proposal evaluation process has been reviewed. It was concluded that the criteria used for evaluating projects were appropriate but that further detailed explanations on socio-economic requirements and the requirements of relevance to EU policies should be provided to proposers. This will be done by improving the guidelines at SP level included in the Guides for Proposers, to be applied in the same way by all evaluators across the different programmes.

Regarding electronic submission, continued improvements will be implemented so that the majority of the FP proposers may use it without making it mandatory.

Concerning the establishment of an effective information feedback system for proposers, it has been decided that all proposers will systematically receive feedback on the outcome of the proposal evaluation. This feedback will be given for information only and will not prejudge the Commission's final decision on any particular proposal. In the same spirit, a new inter-service mechanism has been set-up to accelerate the decision process.

The above efforts undertaken by the Commission services have as an overall objective to reassess what the Panel calls the "legalistic environment" with a view to further reduce the burden on project participants and Commission staff.

2. Human Resources Policy

According to the Panel, *"An effective Human Resources Policy across FP5 should be developed and linked to a programme improvement / quality improvement system. This requires the commitment and direct involvement of all Directors. It is recommended that a management / human resources consultancy is retained to:*

- *Develop an outline plan to meet the requirements of staff, management and the Programme's development.*
- *Support staff and management in the implementation of the plan."*

Within the Commission services, DG RTD is finalising a training plan, in close co-operation with DG Personnel & Administration (DG ADMIN), that fulfils both individual ambitions and the Institution's needs. If need be, in addition to the expertise made available by DG ADMIN, further advice might be sought from specialised external consultants, on issues such as valorisation of research and management of IPRs on RTD projects' results.

As regards the Panel's specific comments about the unified management structure in the Energy area, the Commission services wish to note that in the context of the forthcoming reorganisation of DG RTD, every effort will be made to avoid any potential structural redundancy. As concerns the relation between the competent DGs, and taking into account the close link between the policy and the RTD activities in the field, a clear division of responsibilities has been defined between DG RTD and the newly created DG Transport and Energy (DG TREN) in order to optimise the management of the Programme.

Regarding the IST Programme, its structure is based on the establishment of one Directorate per Key Action and one Directorate for horizontal and co-ordination activities. A need to improve the efficiency of the IST Programme matrix management structure was recognised and, in the autumn of 1999, several co-ordinating structures were progressively put into place. DG Information Society (DG INFSO) will keep the question of management rules and practices under constant review.

3. Strengthening of Impact Mechanisms in FP5

According to the Panel *"The Research and Development Impact Mechanisms of FP5 must be strengthened. This requires a number of actions:*

- *Innovation Cells should become the direct responsibility of each operational Programme Director.*
- *A support structure should be developed for Technological Implementation Plans to include internal training, resources redeployment and, when appropriate, the use of external expertise.*
- *Coherent and consistent project Monitoring and Impact Tools should be put in place immediately in all Programmes.*
- *The collection of project impact data should be aligned with the collection of information relating to contracts, monitoring and any other needs, so as to reduce, to a minimum, demands on project participants, evaluators and Commission Staff.*
- *Each Programme should have one individual charged with co-ordinating Project Monitoring activities along with liaison to External Programme Monitoring and 5-Year Assessment activities."*

The promotion of innovation is a key objective of each thematic Specific Programme and innovation cells were set up in each of them. The liaison of these innovation cells with the services in charge of the key actions will be improved. However, it is not felt necessary to have more than one such structure in each Programme.

Concerning the support to the Technological Implementation Plan (TIP), operational tools already exist and others will be made available to both Commission Services and contractors. The initiatives include:

(i) an "IPR Help Desk" which provides a wide range of information on IPR rules including those useful for efficiently implementing the TIP;

(ii) a "LIFT Help Desk" as a means for assistance in finding Innovation Financing / Risk capital for the commercial exploitation of project results;

(iii) all necessary information concerning TIP and its follow-up, which will also be provided via the "FP5 management web site";

(iv) the encouragement of contractors to prepare TIP at an earlier stage of the project, and to deliver it in electronic format to ensure easy processing;

(v) a review of project management procedures, already in progress, in order to enable scientific officers to dedicate more time to the valorisation of results foreseen in TIP;

(vi) when appropriate, specialised training for the scientific officers will be organised in order to increase the efficiency of TIP follow; and,

(vii) when appropriate, recourse may be made to external expertise for the technological audit foreseen in the contract; in particular, control of the effective implementation of the contractors' intentions as described in the TIP. As regards the latter, confidentiality provisions in FP5 contracts will be respected.

In order to further enhance project monitoring and FP impact assessment and as part of the global review of its workflows, the Commission services have launched different initiatives to develop appropriate tools. One of the underlying principles is that the data collection should be streamlined in order to avoid unnecessary burden both on participants and Commission staff. As compared to FP4 and in line with the criteria used for project selection the Commission services are also making an effort to improve the coherence of project monitoring in the FP5 procedures. A global and coherent set of indicators has been developed enabling the Commission services to assess the quality of projects during their life cycle.

4. Gender Awareness

According to the Panel *"Gender awareness should be strengthened and appropriate gender-based data collected. Efforts to encourage female evaluators to apply for inclusion in the Proposal Evaluators' Database should continue to be made."*

The Commission Services will continue to implement the action plan "Women and Science". This plan foresees continuous collection of data on women's participation in FP5 RTD actions and a target of 40 % women participation in fellowships and evaluation panels.

The participation of women in the evaluation panels will continue to be closely monitored. An internal working group on "women and science" has highlighted progress in this regard: about 10% of proposals' evaluators in FP4 were women as opposed to about 24% in the first call of FP5.

The recommendation to encourage women to apply as evaluators is currently included in the Call for experts. It has been reinforced by the specific request to networks of women scientists to encourage application by their members. However, further efforts are needed and the Commission services will follow up the Panel's recommendation in this respect.

5. Public Appreciation of Science and Technology

According to the Panel " *A Public Awareness of Science and Technology function should be set up under each operational Programme Director and developed into an integrated approach at the FP level. Support should be provided by the Improving Human Research Potential and Socio-Economic Knowledge Programme.* "

The need to address this issue at FP level is recognised. A liaison group of persons from the different Programmes will soon be set up. Its first task will be to assess and report on the current situation. The Improving Human Research Potential and the Socio-Economic Knowledge Base Programme (IHP) will also seek to encourage and support, where possible, activities for raising public awareness of science and technology also launched by other Specific Programmes. As regards the IHP Programme's own activities, a call for proposal on "raising public awareness of science and technology" has been published in 2000. It will lead to the financing of RTD actions (mainly co-operation networks) that should help to bridge the gap between science in its European dimension and the public. This should help European citizens to understand better both the beneficial impact of science and technology on their day-to-day lives as well as limitations and possible implications of research and technological developments. The activity will also aim to increase scientists' awareness of issues and subjects that are of concern to the public.

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The Commission services would like to thank the Chairman, Dr. Brian Edwards, and all the members of the 1999 Framework Programme Monitoring Panel for the considerable effort they have invested in this complex task

$*$

ANNEX

FOLLOW-UP OF THE 1998 FRAMEWORK PROGRAMME MONITORING PANEL'S RECOMMENDATIONS

1. European Added Value

According to the Panel, the elaboration of a workable approach to European Added Value is crucial. *"As the raison d'être of EU research activities, each Programme requires a bottom-up, working approach to ensuring that it is maximised."*

In January 2000, the Commission services launched a study [11] to more accurately define the constituent elements of European Added Value (EAV) for the different FP stakeholders, with a view to developing adequate measurement methodologies and strengthening the basis for programme and policy adaptation. The study attempts to provide a programme-level operational definition of EAV. In FP5, EAV is a key criterion systematically used to select objectives, scientific domains and projects. The improvement of project monitoring, in particular as regards results implementation, will increase the probability that the expected impact, hence the EAV, is achieved.

2. FP5 Management Information Systems

According to the Panel, *"The FP5 Management Information Systems are still inadequate. They need to be rationalised and consolidated."*

In order to further improve the system for collecting information, the Commission services have taken the following initiatives:

(i) an internal audit, launched by DG RTD in close collaboration with the Informatic Services, to establish the state-of-the-art as regards current systems;
(ii) reflections related to the implementation of more user-friendly electronic systems, and;
(iii) the development of a data warehouse allowing a more adequate and easier dissemination of information.

3. Annual Management Reports

According to the Panel, *"Self-critical, Annual Management Reports from each Programme are needed."*

The Broad Guidelines for the 2000 annual monitoring envisage a self assessment management report, to be provided to the relevant Monitoring Panels, which will contain for the year under review a qualitative overview of programme activities, the follow-up of the previous year's monitoring recommendations, and a set of harmonised statistical data on programme implementation.

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[11] "Identifying the constituent elements of the European Added Value (EAV) of the EU RTD programmes: conceptual analysis based on practical experience" (Ref. XII/AP4-1999-2).

4. Public Awareness Activities and Dissemination of Research Results

According to the Panel, *"The wider dissemination of research results (FP4 as well as FP5) to policy makers and a wider public has moved forward with the establishment of a Public Awareness of Science and Technology activity. But this is still not sufficient. Public Awareness activities need to be undertaken by the operational Programmes themselves."*

Raising public awareness on science and technology is one of the main objectives of FP5 and of the IHP Programme in particular (see section 5 in the response to the 1999 recommendations). A clear distinction should be made, however, between disseminating research results (to scientists, industrialists and other professional users) and activities aimed at the general (non-specialised) public.

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For any year, the follow-up of recommendations, formulated by the monitoring panels, is ensured by the relevant Programme management. As this follow-up is a main item in the mandate of the following year's monitoring panel, an overview of the implementation status of the previous year's recommendations is given to the panels at the start of their work. This practice, which will be continued, ensures the implementation of recommendations in a coherent and transparent manner, thereby guaranteeing the credibility of the monitoring process.

As the monitoring and 5-year assessment exercises are, in an integrated manner, both parts of a single coherent evaluation scheme, the monitoring panel reports constitute an input to the 5-year assessment.

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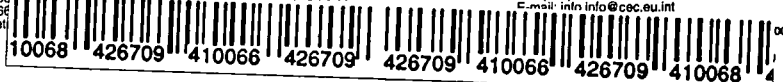E-mail: eucck@eucck.org
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