



## Foreword

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In July 1996, the European Science Foundation (ESF) published its views on the shape and content of the European Commission's Fifth Framework Programme (FPV). This was intended to provide detailed advice for the formulation of the Programme on which the European Commission and others, including the European Parliament, could draw.

The European Commission published its formal proposal in April 1997 and this is now the subject of discussions throughout Europe, particularly in the Council of Ministers and the European Parliament. ESF has given careful consideration to the European Commission's proposal and has developed views on a number of issues, both general and specific, which we hope will assist in the debate on FPV. It is particularly important that ESF make public these views, already communicated to the European Commission, so that they may be used in the ongoing debate in the Council of Research Ministers, the European Parliament and elsewhere.

I trust that this briefing will serve as further source material and promote discussion.

**Peter Fricker**  
ESF Secretary General

The European Science Foundation acts as a catalyst for the development of science by bringing together leading scientists and funding agencies to debate, plan and implement pan-European initiatives.

### Introduction

In its position paper *Beyond Framework Programme IV* ESF offered an analysis of the issues that its scientific community recommended be addressed in the European Commission's research and development activities beyond the current Fourth Framework Programme (FPV).

Since the publication of the formal Commission proposal (April 1997), ESF has provided some initial general comments and views to the Commission. It has also provided comments to the Office of the Dutch Presidency, at its request, prior to the Council of Research Ministers meeting in May. Subsequently, more detailed comments and draft text have been sent to the Commission, covering Health and Biomedical-related Research, Polar Research and the need for a cultural (Humanities) component to be included in FPV. This briefing adds to and incorporates these earlier contributions into a single condensed document.

In its position paper *Beyond Framework Programme IV*, ESF's main conclusions and recommendations were:

- The programmes of the European Union represent only a part of the total research effort and should therefore concentrate on selected targets leaving complementary tasks to other actors at the national and European levels. While focusing on the scientific themes which are key to the social and economic development needs of Europe beyond the year 2000, they should also establish a careful balance between short, medium and long-term priorities.

- Economic and social success or failure will be determined by whether Europe can achieve a small number of important goals. The convergence of information technology, telecommunications and media communication must be turned to Europe's advantage. Our industries and infrastructure must be firmly established at the forefront of advancing technologies. The remarkable progress in understanding the fundamental mechanisms of life processes must be harnessed to create new industries, and health care systems. We must sustain the availability of raw materials from mineral and biological sources and contain the influence of pollution. Our culture and governance must be improved rather than degraded, if political and economic integration is to be achieved with a cohesive and inclusive society.

- To equip Europe for these challenges, ESF recommended a research agenda constructed around the following focused themes:

**Information and communications technology – the perpetual revolution:**

this theme should focus on more sophisticated techniques for the use of information, and on the societal impacts of digital technologies.

**Industrial technologies for complex systems and products:** this should focus on advanced engineering tasks and on future technologies.

**Molecular mechanisms in life and health:** this should focus on exploiting rather than accumulating genomic information, on structural biology, and on the integration of molecular and cellular biology into higher level systems.

**Sustaining our environment:** this should focus on the sustainable use of resources, environmental management, and on environment and health.

**Change and stability in European society:** this should focus on driving forces of the economy, European

institution building, culture as an integrating force, changing patterns of mobility, transport and communications, and on households and lifestyles.

- The support and development of science for Europe also requires considerable investment in *capacity building*. Here, even more effective pooling of expertise and building on existing strengths throughout Europe is needed. This also means developing training, skills and research facilities at the European level, and building new synergies with close neighbours of the EU to the East and elsewhere.

- The contribution of science to Europe can be further enhanced by improving quality and cost effectiveness, as well as flexibility in *programme management*, and several science management measures to achieve this were proposed, including the need to maximise the contribution of science, decentralisation of programme management; to develop better integration and interfaces between the programmes; and the need to pre-screen outline proposals to improve efficiency.

## General comments on the European Commission's proposal

### Programme structure - focus and flexibility

The ESF broadly welcomes the Commission's proposal and is pleased to see that the document reflects many of the principal issues and proposals contained within the ESF position paper. The new Programme structure, characterised by science themes and their specific Key Actions, is generally acknowledged as an imaginative attempt to provide a more focused and manageable approach.

The Commission's proposal accepts that "the Framework Programme has been transformed over the years into a general framework for a series of

activities ... which are clearly too numerous and dispersed". It must also be acknowledged that while the Framework Programme only accounts for a small fraction of the research carried out in Europe, nevertheless, it represents a considerable proportion of the "manoeuvrable" money available for research support. Taken together, these factors account for both the attractiveness of the Framework Programme to researchers, and the high application rate and consequent low success rate of earlier Programmes. In order to address these factors, focus must be a fundamental requirement for the new Programme.

The ESF suggests that the Commission, as it develops its plans, should **clarify the rationale** it employed in selecting the proposed Key Actions, generic technologies or the specific RTD topics within them. The rationale should be spelled out in terms accessible to the scientific community. It needs, of course, to refer to both RTD needs and opportunities, and to EU policy and Treaty objectives. Importantly, the detailed proposals should be consistent with the principle of subsidiarity, focusing on **RTD that can only (or only effectively) be achieved at the European level**.

Flexibility and focus in FPV could be achieved by an **initial** careful selection of **Key Actions for a first stage of FPV** with a **further selection and update** being made at **the mid-point** of the Programme to reflect changing priorities and evolving research needs. This requires having a portfolio of carefully devised Key Actions from which selections can be made. In the *Scientific issues* section, ESF makes the case for revised Programmes and additions to the Key Action portfolio.

### Adding European value

In ESF's earlier advice to the Commission the importance of **selectivity**, a balanced portfolio that includes **long term fundamental**

**research, capacity building** and effective involvement of **user communities** (researchers, industry and policy-makers) was emphasised. This brings together the essential European elements which promote an added European value within a problem-orientated framework.

### Continuity from FPIV to FPV

It appears that the totality of the proposed new Programmes and their Key Actions amounts to an overall Programme rather similar in content to the Fourth Framework Programme. It is important that, in order to provide new directions and a greater focus in the first stage of FPV, there is selection from the list of the Key Actions and that very well defined objectives are given in the Specific Programmes and in the Work Programme packages.

However, some overlap and continuity is only natural and necessary. Too great a disruption between FPIV and FPV – **inadequately explained** – could introduce its own problems. It might be confusing to the scientific community, and risks losing some of the best practice in research management recently developed at the Commission.

We return to the issue of continuity between FPIV and FPV later in the comments on *Scientific issues*, particularly in relation to marine sciences and technologies, socio-economic research, biomedical research and the environment programme.

ESF believes that it would help the scientific community if Key Actions are clearly described. Such descriptions should include:

- a coherent set of clear **objectives**;
- an indication of the **coverage** in terms of the broad, underpinning platform of applied, generic and basic research and technologies;
- a **rationale** with a strong basis in the Community Treaties, focused on important common problems and

challenges where RTD at a European level provides added value to existing national and European strengths.

There is a further issue of continuity which needs to be addressed and this relates to longer-term projects and their support. The long-term nature of projects in many areas needs to be recognised. For example, there are many funded within the Framework Programme, that may require support longer than either the normal two to three year contracts and may well extend beyond the period of a four-year Framework Programme. Examples are in long-term ecological observation of environmental change and in the establishment, operation and evaluation of clinical trials. These issues need to be taken into account in proposal selection.

#### **Underpinning research and its role in Framework Programmes**

It is important that FPV actions take account of the need, where appropriate, for relevant underpinning research in the proposed Key Actions in order that the work programmes can be soundly based. Declining national budgets in the Member States put even more pressure on basic research and this will have to be considered in the formulation of FPV in that the long-term success of the Framework Programme is dependent on a healthy research base of national programmes. In this connection, Key Actions themselves should be carefully defined to ensure that their objectives can be achieved within Europe's available research capacity. ESF recognises the difficulties which the Commission has in constructing a programme that acknowledges the value of Generic Technologies for Europe without dissipating the focus being sought through tackling specific problems.

We therefore suggest that:

- **Key Actions** should **include** within them the directly relevant **underpinning research** and **Generic Technology**;

- some of the Generic Technologies might benefit from being reformulated as Key Actions;

- there may be a case for an area of Generic Technologies and for some flexibility in the precise objectives to which they are applied. However, if more explicitly developed, the case might be stronger. In particular, it is suggested the case should set out the **added value** of the technologies selected.

#### **Ethics and the public understanding of science**

ESF welcomes the inclusion of ethical aspects of research, especially the requirement to look at bioethical issues in the proposals for the First Activity. More generally, ethics could feature more strongly in other areas including the environmental actions. Public understanding of science, although best tackled at a national level, is a related issue in terms of developing informed debate on research issues within the European Union. There could be scope for a further emphasis on 'public understanding' within the Fourth Activity as a distinct sub-programme. This aspect, however, ought to be included under all the Key Actions as part of the need to promote dissemination and exploitation of results obtained under each part of the Framework Programme.

#### **Research infrastructure - large facilities**

ESF warmly welcomes the current concern about large research facilities as an important European wide issue. While FPV currently discusses access for researchers and infrastructure issues, this needs to be accompanied by related measures to allow specific key large research facilities to seek support to meet the increased demand from researchers across Europe. This has an implication for assessment of the European provision of large facilities across the whole range of research. It is also a concomitant aspect of declining

national research budgets as Europe tries to optimise the impact of limited financial resources through the shared use of facilities.

ESF has long had the issue of large facilities within its mandate and provides a European scientific clearing house for assessing user needs together with current and future supply. The definition of large facilities, used in this context includes both traditional, large centralised facilities and distributed facilities based on European networks of inter-related facilities and databases, e.g. the European Social Survey currently being developed as a blueprint by the ESF Standing Committee for the Social Sciences (SCSS). Another example of this role can be seen in the ESF published study into the scientific prospects for neutron scattering.

## Scientific issues

### Marine sciences

One of the successes of earlier Framework Programmes was the establishment of a coherent marine research programme (MAST) which brought together marine researchers and technologists for their mutual benefit. In addition, MAST created a European 'community' in this important area. Bringing together both Framework activities (MAST) and EUREKA (Euromar) in EC European Marine Science & Technology Conference (previously MAST Days and EUROMAR Market) has served to reinforce this coherence. ESF (through its European Marine and Polar Sciences Board) is pleased to be associated with the third of these conferences to be held in 1998.

ESF considers that there is a strong scientific and policy argument for the continuation of a coherent marine research programme bringing together Key Actions in marine technologies (Theme 2), coastal zone management

(Theme 1) and also aspects of global change research, in which knowledge of the marine environment is critical.

### Socio-economic research

Similarly, the Fourth Framework Programme saw the establishment of the programme on *Targeted Socio-Economic Research* (TSER) as well as the incorporation of a socio-economic component of other programmes. The ESF Standing Committee for the Social Sciences (SCSS) had provided a major input to this development through expert advisory reports which had demonstrated the importance of social science research to European Union policy making. In its contribution to the ESF position paper *Beyond Framework Programme IV*, the SCSS had maintained this impetus in proposing for the Fifth Framework Programme a research theme addressing *Change and stability in European society* and indicating where social science research could be integrated within programmes on information technology, environment, transport and health. In early April 1997, the ESF-SCSS was invited to present these proposals at the Ministerial Conference 'The Social Science Bridge' held under the auspices of the Ministry of Science and Technology, Portugal.

The Commission's subsequent formal proposal for the Fifth Framework Programme has shown an enhanced awareness of the need for European research and development policies that meet citizens' aspirations and needs, but has not translated this need to include a concerted social science research effort that addresses these challenges and analyses appropriate policy options. Following consultation held with the Commission, the ESF-SCSS convened a workshop on 'Social Science Research in the EU Fifth Framework Programme' on 10 October in Stockholm involving Commission officials and prominent European social scientists. The focus of the workshop was three-fold in debating (i) *Improving*

*Human Potential* specific actions on *Harnessing socio-economic research to the needs of society*, (ii) the reinforcement of human research capital in the social sciences via fellowships, networks and research infrastructure facilities, and (iii) social science research input to Key Actions in other parts of FPV. The outcome of the workshop will be an independent ESF report which will be published and submitted to the European Commission and other interested parties.

### **The cultural dimension**

Within its position paper, ESF strongly advocated the need to include an element of Humanities research in the Fifth Framework Programme, particularly in relation to understanding cultural diversity within the European Union, an important issue in the further development of the Union. To date, this has been an omission in the Commission's proposal. Both the ESF position paper and the joint EuroHORCs' and ESTA reports on *Strengths, Weaknesses, and Opportunities in European Humanities Research*, makes the case for the inclusion of two main fields of Humanities research within the Fifth Framework Programme. These are:

1. Co-ordination and strengthening of large electronic data banks for the Humanities, including images of artefacts
2. Research on cultural identities and diversity in Europe.

The Commission proposal for research on *Multimedia* is an area where Humanities research could be included and is to be welcomed. ESF considers that support for a Humanities database could fit well in this Key Action, as well as within the proposed Fourth Activity.

In particular ESF proposes:

- **The improvement of the preservation of and access to collections of artefacts, libraries and archives, essential supports of the European cultural heritage.** The

material preservation and the description in electronic data banks should be accompanied by efforts to deepen and widen the knowledge to be made accessible to research and to the broader public.

In terms of more broad-based Humanities research which could underpin EU policy development, either as a Generic Technology, but more preferably as a new Key Action under the Fourth Activity, *Improving Human Potential*, ESF proposes:

- **The comparative study of the effects of the content of schoolbooks on the primary and secondary level in the fostering of cultural identity.**

Courses in history and literature require particular attention. This could lead to the development of alternative approaches, based on new research insights, which could be promoted throughout Europe to redress existing biases of various kinds.

- **The systematic study of the changes in the systems of European values and norms and of the effects of intercultural exchanges in promoting a European identity.**

- **The comparative study of nationalistic movements, their histories, effects and influence on the European identity.**

If the current FPV topic of *Cultural Heritage* is continued, then both it and the issues set out above could form the basis of a coherent Key Action on the Humanities within FPV.

### **Competitiveness and sustainable growth**

The Foundation welcomes the proposed **Key Actions on sustainable mobility and intermodality (concentrating on transport) and on *The City of Tomorrow***. ESF has already established a number of initiatives relevant to these issues including *Tackling Environmental Resource Management (TERM)* and the Network on *European Communications and*

*Transport Activities Research* (NECTAR). Again, the Programme could build on and utilise ESF expertise in the development of these Actions.

ESF is concerned that, in relation to the Second Activity, there is no reference for the need to support nano-technologies in respect of the development of new materials and processes. The progress of European industry in the area of high technology materials will depend on European capabilities for research on the structure of condensed matter and the synthesis of materials at the nanometer or atomic scale, the so-called nano-sciences. This is a serious omission in the FPV proposal.

Along similar lines, ESF has initiated its own programme in the basic sciences of vapour-phase synthesis and processing of nano-particle materials, especially in relation to the generation of single-phase or nano-dispersed structural ceramic materials. COST has sponsored a Nano-sciences *ad hoc* Group with which ESF is liaising. Both initiatives provide the coordination in basic and applied aspects of the subject which can provide a launching pad for an FPV Key Action or Generic Technology to develop Europe's competitive edge in this field.

### Health and biomedical research

The First Activity *Unlocking the Resources of the Living World & Ecosystem* deals with biomedical and health related research, biotechnology and environmental research. It would greatly benefit from a better focus if it were to provide for:

- the **formulation** of a coherent and **clear set of objectives** that integrate user needs with an understanding of scientific opportunity, deliverability and impact;
- a **sound framework** for **delivery** of the Programme, including the technical assessment of scientific and technical quality of individual RTD proposals and the outputs of the Programme as a whole.

In terms of biomedical and health-related research ESF believes that **effective delivery** of **health objectives** requires a structure that concentrates a range of clinical and biomedical expertise, particularly in the assessment of impact on public health, patient care and industrial competitiveness. For this reason, it is suggested for the health-orientated Key Actions to be managed as a **discrete 'health-orientated' thematic programme** separate from 'energy and environment', but co-ordinated with it where appropriate.

The national medical research councils, co-ordinated through the ESF European Medical Research Councils Standing Committee (EMRC) has completed work on the detailed revision of the Key Actions within the proposed new programme on *Health and Biomedical Research* and has proposed a number of amendments to the Commission's proposal.

ESF welcomes the Key Action on *Health and Food*. It is pleased that the proposal, focusing on safety, is not to be driven by a small number of high-profile issues. It has to take a multidisciplinary approach to ensure that the supply chain – food, from its agricultural base to its production in the form of processed food products – is safe and sustains human health. The Key Action should take account of consumer and environmental concerns; would benefit from including work that explores the links between nutrition and health and on the identification of healthy eating patterns; and should also include those aspects of animal health relevant to the overall objective.

The proposed Key Action on *Control of Viral and Other Infectious Diseases* should be reformulated. The strong focus on vaccines and viruses (and HIV/AIDS in particular) seems unbalanced. Disease control at a European level is important and requires an integrated approach, based on a variety of strategies of which vaccination is but

one. The Commission should reformulate the action in terms of infections of increasing importance (e.g. opportunistic infections and zoonoses) and communicable diseases of high morbidity and mortality. ESF suggests explicit mention of collaboration on multi-centre clinical trials on drugs and vaccines and of activities aimed at evaluating health promotion activities.

ESF suggests that a Key Action on *The Ageing Population* is necessary and that, given its importance, it requires this emphasis rather than appear as a Generic Technology. Over the next decades the number and proportion of older people in the European population will rise significantly. By 2030, long term health care could consume 10% of the GNP of the Community. Reducing the need for and costs of long term care presents major challenges for health and social care providers, policy makers and the public and private finance sectors. Research is required to limit the increased need for services, particularly long term care, to reduce consequential costs, and to improve quality of life.

Added value will arise from focusing on a EU wide problem and, in particular, from comparative research (e.g., epidemiology and systematically planned, multicentre, multifactorial clinical trials), building on the cultural and social heterogeneity of Europe, and from integrating novel research approaches and diverse disciplines. In particular, this Key Action should address the impacts of age and disability trends in Europe; the biological psychosocial and social bases of good and ill health and disability in older people; the implications for health and social care delivery of different models of economic and social support for older people; evidence based interventions to promote healthy ageing and independent living (including delaying the onset of disability as prevention, modification of the built environment, and the development of smart medical devices); and effective

and efficient delivery of long term care and respite support.

In *Beyond Framework Programme IV*, ESF suggested that, although there are great research problems and opportunities in the area of **Neurosciences**, the EC should not aim for blanket coverage. As in any other area of EC-supported RTD, EC activity should be selective, fulfilling the criteria of added European value. ESF has experience in this area, through its recently completed *European Neuroscience Programme* and is beginning to explore the need for European co-operation in neuroinformatics.

The expected benefits of a Framework activity focused on the mind-brain challenge are:

- a) new insights and understanding of the mechanisms governing the interrelationship of physical and psychological processes, and between mental and physical health;
- b) in the longer term, a strengthened basis for rational biological and psychological interventions to promote mental health and to treat psychiatric disorders, and underpinning major opportunities for innovation in the healthcare industries;
- c) greater attractiveness for global industry to base neurosciences R&D in Europe.

As in post-genome research, the mind-brain challenge requires selective integration of different approaches at a scale and complexity that is beyond the capacity of a single European nation. Europe has the competitive research strengths on which to build, but greater concentration and co-operation is required if it is to provide a credible counter-weight to, and partner for, the strengths of the United States in this area.

The Foundation is pleased to see the inclusion in the proposal of a Key Action on *Environment and Health*. ESF



has already established a liaison group on this topic, including representatives from the EC and WHO. ESF will continue its activities which will contribute to the identification of research needs to be adopted at the 1999 Ministerial Conference. The Key Action set out by the Commission will need to be flexible in order to include new components which may be adopted at that time. The ongoing ESF activity in this field should constitute a substantial basis for the Key Action as set out by the Commission.

### **Environmental issues, including polar research**

The implication of the creation of a Health and Biomedical-Research Programme is to develop two further discrete programmes. One is on biotechnology, bringing together the set of Key Actions related to this topic. The second is an **environment and energy programme**, concentrating on underpinning the development of environmental policy in relation to global environmental change, its regional impact, biodiversity, and other aspects of environmental policy and management as well as the Key Action on *Advanced Energy Systems* in the Second Activity. It is necessary to define Key Actions in terms of the EU Environmental Action Plans, including the requirements of various environmental Treaties and Conventions to which the Union and its Member states and the European Commission are signatories. With Agenda 2000 in mind, the environmental problems facing Central and Eastern Europe and the former Soviet Union will also need to be taken into account in defining the Key Actions.

The Foundation is also concerned at the lack of reference in the proposal to polar (especially Arctic) sciences. This is worrying as the European Union now includes the Arctic region with its especially fragile ecosystem and its vulnerability to global and regional

environmental change. Within the Fourth Framework Programme support has been provided for research addressing an understanding of the Earth's global climate system and the key role played by the Polar regions in 'driving' this system, both now and in the past. In addition, FPV projects have included studies on Arctic stratospheric ozone depletion and the effects on global change on Arctic ecosystems. What is required within FPV is for the explicit reference to the polar regions in relation to the environment and energy programme, recognising also that the Arctic is also an economic reserve for the Union and that the Union also has responsibilities in relation to anthropogenic changes generated there and the effects of these and economic development on both indigenous and immigrant populations.

### **Earth observation**

In the area of Earth-observation technologies, ESF supports the need to co-ordinate activities relating to the application of space technologies (remote sensing) wherever they occur in Programmes and Key Actions. With respect to Earth observation from space and to the generic activities identified in Commission's proposal, the ESF recommends the inclusion in FPV of:

- research programmes to improve the methodology to extract relevant information from satellite data;
- pilot projects to improve the links between research and applications and demonstrate the efficiency of new remote sensing methodologies.

There is also a need for the implementation of a clear interface between and understanding of the roles of the European Commission, ESA, EUMETSAT and national space programmes in order to provide coherence of European space programmes. The ESF European Space Science Committee (ESSC) brings together the European research user community which is able to define user

needs and concerns and can bring these to the attention of these agencies.

In addition, since no major technological development can occur without a strong and continuous effort in fundamental and applied scientific research, the reference to “space technologies” made in Commission’s text should therefore be extended to all space activities and applications.

### Geographical information research

Geographic information research needs to be given a higher profile within the plans for FPV.

- The planned programme on the *Information Society*, focuses almost exclusively on information technology and much less on ‘society’. Recent research findings indicate that technical issues are no longer a major problem. On the contrary, the key barriers to scientific and social development in Europe have to do with political and organisational issues. Resolving these issues requires research on how information resources and technologies can support socio-economic priorities.
- Within the *Information Society* programme the Key Action on *Essential Technologies and Infrastructures* is exclusively focused on the physical aspects of infrastructure such as cabling and switches, but high quality consistent geospatial data across Europe is also an important element of the infrastructure necessary to develop the Information Society and should be included in the text.
- In the current plans, geographic information, which is a key element for the integration of different data sets leading to value added products and analysis, with greater insight, of environmental and social problems, only features under *Electronic Publishing* within the *Multimedia Content* Key Action. Hence, it is only perceived as a product and its strategic value for many other actions in the

Programme and for the European society at large is lost.

Geographic information research has a central part to play in the development of the Information Society, and underpins many other actions throughout the Fifth Framework Programme, such as the integrated development of rural and coastal areas, and the *City of Tomorrow*. ESF recommends:

- moving away from the current emphasis on socio-economic studies into the impact of technology towards promoting research on societal and user needs in relation to new information resources and technologies;
- adding *data resources* as a focal element of the *Essential Technologies and Infrastructures for the Information Society*, with geographic and spatially referenced data as a strategic core subset.

### European research conferences

One particular aspect of the Fourth Activity (*Improving Human Potential*) is European Research Conferences: this is an important initiative originally established by ESF and subsequently incorporated into FPIII (*Human Capital and Mobility*) and FPIV (*Training and Mobility of Researchers*). While it is still included under the proposed Fourth Activity for FPV, it is not as a distinct programme as in the earlier Framework Programmes. ESF would wish to see the Conference programme continue as a distinct element within FPV.

## Management issues

In its position paper, ESF made a number of recommendations concerning the management of a future Framework Programme and welcomes the Commission's proposals to address many of the concerns expressed by the European Science Community.

### Transparency

In particular, ESF is pleased to note the actions already taken by the Commission in several current programmes, in the final Calls for FPIV, to ensure full transparency in its proposal-review process. Publication of selection criteria and adherence to these criteria in the review system have provided the confidence which was needed in the process. This transparent approach to the review process needs to be extended to all programmes and to be kept under review throughout the period of FPV.

### Criteria for selecting objectives and areas

The overall concept of maintaining and enhancing a genuine "European research area" is in accord with ESF views. The Framework Programme proposal also emphasises the need for "selectivity and concentration on a limited number of areas and objectives". This is to be welcomed. What must be avoided is the problem of spreading resources too thinly to the detriment of the research itself; the detailed breakdown of resources between Actions will be of crucial importance in ensuring that there is not only focus but adequate support for the actions proposed.

### Programme organisation

There is a problem with the Commission's proposed 'matrix' management for the themes and activities. Further clarification of the Commission's intended procedure is needed. The problem which needs to be addressed is to have proper co-ordination between and within the three themes of Activity One and

between this Activity and the Second, Third and Fourth Activities. In addition, the status of Generic Technologies and their relationship with Key Actions requires further clarification. Within and between the proposed Activities measures are needed to provide for coherency between Key Actions and, where necessary, to allow for inter-disciplinary and inter-Key Action activity.

### Pre-screening of applications

In relation to the management of calls and the selection process, the future Framework Programme should reduce the cost of the preparatory proposal process and, particularly, the lengthy preparatory effort required from the scientific community in developing and presenting proposals. By targeting objectives and providing appropriate resources, the first part of the problem may be solved. The second part should be addressed by the introduction of a **pre-screening process** (as advocated in the ESF position paper) with informal pre-screening of preliminary proposals to ensure that they fall within the agreed objectives of Programmes and Key Actions and provide a European added-value. The full scientific evaluation will occur when complete proposals resulting from the pre-screening are received. A more formal approach with a full two-stage approach is desirable. However, this is not possible within the current legal constraints operating on the Commission, and the Foundation considers that the introduction of the above approach will lead to substantial savings both for the Commission and the scientific community.

### Decentralised/devolved management

There are already successful examples within FPIII and FPIV, in particular within the *Biotechnology* Programme. ESF favours a decentralised approach (within the legal constraints applying to the Commission) which should be used more extensively.

## Co-ordination

The need to develop co-operation with other European scientific and technological co-operation frameworks and organisations has been highlighted in the Commission's proposals. Examples quoted include EUREKA, COST, ESA, EMBL and CERN. Given the need to ensure that FPV has firm roots in the basic research capacity of the Union, ESF, as the body which is the association of major funding agencies and institutions in the Member and Associated States, is able to provide high level independent scientific advice. This role should be recognised in FPV in allowing the European scientific community a larger role in the development of FPV.

In relation to COST, we consider that there is scope for a strengthening of links between ESF and COST to our mutual benefit and with a clear definition of roles, both with the Commission and with the Council secretariats. This process has been initiated and will continue. The COST and ESF scientific co-operation frameworks are complementary and often provide the basis for proposals to the Framework Calls.

## Conclusions

The ESF generally welcomes the European Commission's formal proposal for a Fifth Framework Programme and is pleased to see that many of the issues raised in the ESF 1996 position paper *Beyond Framework Programme IV* have been included in the proposal.

However, ESF considers that there is still a need for a greater focus and selectivity in FPV in order to concentrate resources on priority actions. In addition, there is a need to incorporate the relevant underpinning research and Generic Technologies within the appropriate Key Actions.

ESF welcomes the inclusion of ethical issues and the public understanding of science in FPV and also the recognition of the importance of the provision of large facilities and the need to increase access to them as an important issue for the infrastructure of European research.

ESF would wish to see a strengthening and an increased coherence in marine sciences and socio-economic research in FPV and a re-structuring of the First Activity to provide for separate programme on Health and Biomedical-related Research and on Environment, which will also recognise the importance of polar research for the policies of the European Union. ESF is concerned at the continuing omission of reference to cultural (Humanities) research within FPV. It also wishes to see a new emphasis on nano-technologies.

These comments and revisions are proposed with the aim of improving the overall content and management of FPV and ESF hopes that these will be taken into account by the European Commission, the European Parliament and the Council of Research Ministers in the further development of the Programme.

### European Science Policy Briefings

are published by the European Science Foundation (ESF). They address selected science policy issues of key concern to the Foundation's member organisations and the wider scientific community. By drawing on the advice and expertise of the ESF's membership, the briefings aim both to provide information and to promote discussion.

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