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1999 Annual Report on
The Socio-economic Dimension
in the Fifth Framework Programme

**1999 Annual Report on
THE SOCIO-ECONOMIC DIMENSION
IN THE FIFTH FRAMEWORK PROGRAMME**

6/04/2000



**IMPROVING HUMAN RESEARCH POTENTIAL
AND THE SOCIO-ECONOMIC KNOWLEDGE**

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1. INTRODUCTION

In the Decision of the European Parliament and the Council adopting the Fifth Framework Programme of the European Community for research, technological development and demonstration activities (1998-2002), the *Human Potential* programme has been assigned the task to “ensure, through appropriate monitoring and co-ordinating mechanisms, the adequate incorporation of socio-economic considerations into the research activities of the thematic programmes”¹.

In addition, the Council Decision which adopted the specific programme for research, technological development and demonstration on “Improving the human research potential and the socio-economic knowledge base”², stipulates that the *Human Potential* programme will co-ordinate and support relevant activities throughout the framework programme. In relation to socio-economic research, it is stated that “co-ordination will be achieved through participation in the elaboration of the work programmes, support in the creation of appropriate evaluation mechanisms, in particular through the participation of socio-economic scientists, and collection and dissemination of relevant information, in order to ensure that the socio-economic dimension is consistently taken into account in the specific programmes”.

Finally, the Council Decision provides for the creation of a subcommittee of representatives of members states to provide expert advice both on the implementation of socio-economic research in the programme, “as well as to provide an overview of socio-economic research across the whole of the framework programme”³.

This report is a result of this mandate and provides a picture of the socio-economic dimension in the activities of the specific programmes of the Fifth Framework Programme in 1999, first year of implementation.

The Fifth Framework Programme has been designed to respond to the major socio-economic challenges facing the European Union. Breaking away from past tradition, it adopts a problem-oriented approach and is structured along challenges (rather than along disciplines), in the form of key-actions, concentrating the available resources on carefully targeted priorities.

¹ European Parliament and Council Decision 1999/182/EC, OJ L26 of 1.2.1999, p. 27.

² Council Decision 1999/173/EC, OJ L64 of 12.3.1999, p. 105

³ Article 7.5 of Council Decision 1999/173/EC, OJ L64 of 12.3.1999, p. 108

In this context, the socio-economic dimension has acquired a particular importance in both the design and implementation of the technological research activities to be financed under the different specific programmes and key-actions. It constitutes one of the main elements of the new philosophy of the framework programme as Community research is geared mostly towards the needs of society. The monitoring and reporting mechanisms have been established in order to provide an input to the assessment of the success of this first-time endeavour at Community level.

To what extent have the specific programmes tailored their activities to fit this philosophy of socio-economic dimension underlying the FP5? What does the *socio-economic dimension* mean within individual specific programmes? How and to what extent is it reflected in their key-actions and action-lines? Can this be improved and in what way? How is the socio-economic dimension interpreted by the research community and how is it reflected at the level of research proposals? How has this approach favoured interdisciplinary and multidisciplinary proposals? Has socio-economic research been integrated in the conception, design and implementation of research, or does it remain a side activity? How is the evaluation of these more complex proposals organised? These are some of the questions to which this report attempts to provide some first responses.

Defining the *socio-economic dimension* in more concrete terms depends on the specificities of the areas covered by each specific programme and is not an easy exercise. The diversity of the issues involved within each specific programme, the constant evolution of societal needs, and the plethora of approaches to technology within the social sciences, makes the detailed discussion of the socio-economic dimension in the activities of specific programmes look like a moving target. As this report registers, the socio-economic dimension is understood differently both across, as well as within, specific programmes, and there remains a certain degree of ambiguity.

Therefore, it should be underlined that a "standard" definition of the socio-economic dimension that would apply across specific programmes is problematic and rather counter-productive.

In this context, one cannot pretend to have the answers on how to best integrate the socio-economic dimension in the specific programmes. However, there is an intrinsic value in the discussion on the integration of a socio-economic dimension in the specific programmes, as a creative interaction between technological and social scientific expertise can provide useful input to the policy-making process. This

interaction is considered to be a necessary condition for the achievement of the objectives of the Fifth Framework Programme.

The purpose of this first report is not to provide a narrow definition of the "socio-economic dimension". Rather, it is to stimulate the debate and at the same time define a broad way of thinking about the relationship between technology and society that could become a constructive tool or even a constant in the ongoing, dynamic process of the implementation of the Fifth Framework Programme.

This report is not an evaluation of the socio-economic impact - or their potential for - of activities of the Fifth Framework Programme. It is neither an evaluation of the potential of the activities supported to have an impact on Community policies, in particular in the area of social and economic policies. Rather, it is an account of the degree to which a socio-economic dimension, as well as opportunities for socio-economic research are integrated in the various specific programmes.

In this first annual report, a predominantly descriptive approach has been deliberately adopted: the report and its annexes provide a descriptive account of some of the concrete ways in which the specific programmes have integrated the socio-economic dimension in their activity in 1999.

The report has the following parts:

- a summary account of how the socio-economic dimension has been taken into account in the thematic programmes of FP5 in its first year of implementation
- annexes which provide a more detailed discussion of the socio-economic content of each thematic (as well as horizontal) programme of FP5
- a set of general conclusions in relation to the integration of the socio-economic dimension in the specific programmes and their documentation
- a set of general recommendations for the improvement of this integration in the future.

2. THE CONTEXT

Technological change and society shape one another in an intimate symbiotic manner; the technical and the social are bound together in a process of mutual influence. New technologies such as biotechnology, information and communication technologies and genetics drive and are driven by major social changes.

European citizens are increasingly concerned about the socio-economic implications of technological innovation. The implications of technology for employment and social inclusion, for the protection of the environment and natural resources, for energy production, for transport safety, for food safety, for the ageing population, etc., are only few of the areas in which European citizens demand transparency and accountability from their elected representatives.

In this context, making informed decisions for the future of Europe means that one needs to understand the complexity of the relationship between technological innovation, social processes and social needs. Given the diversity and the constant evolution of European societies, this is, in fact, a moving target.

The Fifth EC Framework Programme is dedicated to this end. It is a radical move from research aiming at technological excellence for its own sake towards research aimed at meeting the needs of European citizens. It has been designed to respond to major socio-economic issues facing Europe which include the need for sustainable development and increased competitiveness, the need to fight against inequalities and social exclusion, and the willingness of improving the quality of life of European citizens.

FP5 adopts a problem-oriented approach and is structured along objectives, concentrating the available resources on carefully targeted priorities.

The complexity of the situation demands the successful **integration** of high-quality scientific and technological research with an improved understanding of the social processes taking place in the constantly changing European societies. Perspectives

from the social sciences can enhance our understanding of the complex interaction between social processes and technological change. Interdisciplinary co-operation and multidisciplinary understanding are indispensable for the achievement of the objectives of FP5.

The integration of the socio-economic dimension in the research activity of its specific programmes is a main objective of the FP5.

In the decision for the adoption of FP5, the Commission assigned the *Human Potential* programme the task of developing a suitable co-ordination mechanism for the "...integration of socio-economic and strategic dimension in the research activities of the specific programmes"⁴. This report is a result of this mandate and provides a picture of the situation in 1999.

The report will show that in the first year of FP5, the integration of a socio-economic dimension and of socio-economic research varies considerably in the various parts of FP5, ranging from complete integration to complete separation. Significant differences exist across as well as within individual specific programmes.

The successful integration of the socio-economic dimension and socio-economic research in the various parts of the FP5 is an objective for the middle or even the long term to be reached step-by-step. In this first annual report, we have deliberately adopted an approach that is mainly descriptive. This means that the report and its annexes provide more factual information than critical analysis. It is expected that this balance will be reversed in future annual reports.

⁴ Decision 182/99/EC, OJCE/L26-1/2/99, p. 27.

3. THE THEMATIC PROGRAMMES

The thematic programmes have a great potential to take account of the socio-economic dimension and related questions and to integrate socio-economic research. Both are reflected in their work-programmes.

In a broader sense the socio-economic dimension becomes visible in the innovative approach of the programmes to tackle scientific and technological questions relevant to society by

- looking at strategic problems
- promoting multisectoral research
- promoting multidisciplinary research
- guaranteeing a Europe-wide impact
- involving all stakeholders concerned.

3. 1. THEMATIC PROGRAMME *QUALITY OF LIFE*

The programme is mission-oriented and targeted towards socio-economic and market needs such as

- improving our food
- controlling diseases
- harnessing the power of the biological cell
- the sustainable development of agriculture and fisheries
- and a healthy and independent old age.

With its generic activities the programme aims to build up the knowledge base in identified areas of strategic importance for the future in relation to genomes, the science of the brain, public health, chronic diseases, and socio-economic and ethical issues relating to biosciences.

The key-action "*Food, nutrition and health*" focuses on consumer needs and on the enhancement of competitiveness of the European industry. Socio-economic research is particularly included in sub-item "*Research into the role of food in promoting and sustaining health with respect to diet and nutrition*".

The key-action "*Infectious diseases*" aims at accelerating the progress of research on infectious diseases by targeting obstacles in the research and development process. The following two sub-items are of great relevance to socio-economic research: *Strategies to identify and control infectious diseases : diagnostic tests, risk assessment and transmission*, and "*Aspects of public health and care delivery systems: Organisational and economic aspects of public health and care delivery systems*".

The key-action "*Cell factory*" mentions the socio-economic dimension in its objectives and deliverables. However, no explicit reference to societal needs is made in sub-item "*New innovative health-related processes and products : development of new diagnostics, therapeutic substances and strategies*".

The key-action "*Environment and health*" addresses socio-economic aspects. Research activities will create and exploit research synergies between relevant disciplines in the social, medical, technological, occupational, public health and environmental domains. The sub-item "*Diseases and allergies related to or influenced by the environmental prevention and treatment*" is of special interest in this connection.

The key-action "*Sustainable agriculture, fisheries and forestry, and integrated development of rural areas including mountain areas*" considers socio-economic aspects. The importance of socio-economic research has been underlined in such sub-items as "*Support for common policies; pre-legislative research designed to provide a scientific basis for community legislation*" and "*New tools and models for the integrated and sustainable development of rural and other relevant areas*".

The key-action "*The ageing population and disabilities*" gives particular attention to the socio-economic implications of healthy ageing. Two sub-items are dealing with in-depth socio-economic research issues : "*Demography and epidemiology of ageing*" and "*Health and social care services to older people*".

The activity "*Research and technological development activities of a generic nature*" will bind together, through a synergistic approach, socio-economic research activities of this thematic programme. The activity will also include "*Socio-economic aspects of life sciences and technologies*", which has four objectives :

- to promote the development of appropriate RTD strategies and models for competitiveness, job creation and sustainable development;

- to strengthen the effective linkage between scientific knowledge, technological advances and the development of sound public policies and regulations;
- to improve awareness and understanding among the public of the potential risks and benefits of advances in life sciences and technologies and
- to examine societal expectations and needs of all user communities.

After the experience made with the first call for proposals it can be said that most of the key actions took account of socio-economic aspects in the projects retained for funding.

The aspect of multidisciplinary was more or less taken into account satisfactorily, but this differed between various key actions and the generic activities. There is room for improvement in some areas, although overall scientists seem to have understood the message.

There is a clear effort by the proposers to respond in a meaningful way to the requirements and constraints imposed by the relevance criteria policy relevance of proposals). At this stage however it must be acknowledged that this new approach has not yet been understood by the whole scientific community.

In particular, the following difficulties were noted :

- Since relevance criteria refer to a number of policies, directives, communications and measures, it is impossible to exhaustively list all relevant policy documents
- The socio-economic expertise of proposals is not always made very clear
- Generally, the economic expertise is included in proposals. However, the societal expertise in a broader sense (participation of end users, economic

impact on the society, social or institutional/political impact) is more difficult to explain.

The following have been observed with regard to the evaluation process :

- The number of evaluators with a socio-economic expertise or representing consumers is low
- Certain criteria (employment, environment) appeared inapplicable to evaluators. Also, the evaluators did not feel comfortable in evaluating the socio-economic part of proposals.
- Evaluators seemed to be insufficiently informed about the socio-economic aspects of the evaluation process.

The approach, consisting in evaluating science and management on one side, and relevance criteria, particularly the socio-economic impact, on the other side does not allow for a fully integral grasp of the absolute value of a project (i.e. the intrinsic value is not necessarily the sum of the parts).

3.2. THEMATIC PROGRAMME *COMPETITIVE AND SUSTAINABLE GROWTH*

Its work-programme clearly reflects the willingness to link research, technological development and socio-economic development

The structure of the programme, which is characterised by a systems approach, comprises three elements :

- A set of *four key actions* oriented to solve clearly identified socio-economic problems by developing critical technologies.
- RTD on *generic technologies* helping to develop the scientific and technological base as well as qualified human capital in critical areas, and giving support to innovation across a range of applications :
 - materials and their production and transformation
 - new materials and production technologies in the steel field
 - measurements and testing
- *Support for the more efficient utilisation of existing research infrastructures* to provide an attractive networked environment in selected areas of the fields covered by this programme.

The key-action "*Innovative products, processes and novel forms of organisation of work*" moves towards innovative high performance industrial systems, agile customer-driven networked industrial and related service enterprises. In doing so, it takes account of the specificity of European society and its manufacturing tradition.

The key-action "*Sustainable mobility and intermodality*" is oriented towards the development and future formulation of a common transport policy. Sustainable mobility and intermodality are the paths to address and solve the main problems of the transport system. The socio-economic dimension is incorporated particularly in such sub-items as: quantitative instruments for decision-making, driving forces in

transport, human factors, sustainable mobility policies, safety and environment issues.

The key-action "*Land Transport and Marine Technologies*" aims to support the expected growth in transport demand in a sustainable manner through the development of new technologies. Key issues addressed deal with environmental and safety aspects of innovative technologies. The economic dimension is emphasised through the target of improved system competitiveness in designing and producing future land and marine transport means.

The key-action "*New Perspectives in aeronautics*" takes account of the fact that growth in air traffic is expected to continue during the coming decades with possible important socio-economic implications. It therefore aims to reduce aircraft procurement costs, improve the efficiency and performance of aircraft, reduce impacts related to noise and climate as well as improve passenger environment, and improve the operational capability of the aircraft in the air transport system and of its safety.

Generic activities concentrate on two subjects :

- Materials and steel, and
- Measurement and testing

Activities in this field, above all, contribute to increase the competitiveness of European industry and the health and safety of citizens. However, they have to be considered from a long-term view, and that they will be better answered by means of clustering with the relevant research activities of the Member States and other programmes.

The *Accompanying Measures* of this programme include some activities which are of importance as far as socio-economic aspects are concerned such as

- prospective, impact assessment, or strategic studies addressing scientific, technical, socio-economic, and policy dimensions related to a specific objective or activity (e.g. targeted research action, technology platform) of the programme;
- proposals with a European perspective, relating to broad cross-cutting RTD policy issues related to *industrial competitiveness and sustainable growth* or focusing on important specific socio-economic problems and needs.

Many objectives of the Growth Programme are generally formulated in socio-economic terms, including in some cases quantified targets. For most actions, the work programme objectives are formulated in a way that require and generally lead to proposals with a multidisciplinary approach.

After the experience of the first call for proposals, the following observations can be made :

There are very few socio-economic research proposals or proposals integrating technical and socio-economic research within a single project, except in the areas of the programme, which identify policy or socio-economic research topics such as :

- the key-action “sustainable mobility and inter-modality”
- organisational aspects of production in the key action “innovative products, processes and organisation”
- the accompanying measures.

The main reasons for this were that in many industrial research areas of the programme the integration of technical and non-technical research is not considered necessary by the main research actors and/or scientists from technical and non-technical disciplines, since they are not used to work together within a project; and the lack of awareness within the socio-economic research community.

With regard to the evaluation process, the following can be stated :

- About 50% of the evaluators were selected on the basis of their expertise/experience enabling them to evaluate the socio-economic dimension of the proposals.
- Although the socio-economic aspects of proposals are often intrinsically more difficult to evaluate than the scientific/technical aspects, evaluators were generally satisfied with the briefing they got and felt competent to judge socio-economic aspects.
- Socio-economic experts, who do not have some knowledge of the technical areas of the research proposals, have difficulties in contributing effectively to the evaluation of the socio-economic aspects of a technical research proposal.
- Some evaluators opened a discussion on the meaning of the weighting of relevance criteria as fixed by the Commission.
- The Scientific Officers acting as moderators in the evaluation panels, explained in detail to the experts the socio-economic dimension and context of the programme, they certainly helped in understanding the matter both through briefing the experts and moderating the evaluation panels.

3.3. THEMATIC PROGRAMME *INFORMATION SOCIETY TECHNOLOGIES (IST)*

Information and communications technologies (ICTs) have major social, economic, political and cultural implications. The specific programme *Information Society Technologies (IST)* supports research, development and demonstration on ICT technologies, systems, infrastructures and applications to meet the needs of both private individuals and companies in Europe.

The socio-economic dimension exists by definition in the IST programme; most of its key-actions and action-lines are geared towards the development of technologies, applications and infrastructures which are expected to contribute to the achievement of socio-economic objectives.

The degree of integration of the socio-economic dimension in the various parts of the programme is variable.

The IST programme recognises that the integration of a socio-economic dimension in its research activity can provide conceptual and practical support towards the achievement of its technological priorities and policy objectives.

The programme is structured along four key-actions (KAs) complemented by a number of relevant measures⁵. The four KAs are:

Key-Action 1 (*Systems and Services for the Citizen*) aims to meet the needs and expectations of European citizens (individuals) for high quality, user-friendly and affordable services of general interest. It supports RTD in the fields of health, persons with special needs (including the elderly and disabled), administrations, environment and transport. Its action lines include work on systems and services for improved personal health, telemedicine systems, systems and services to support independent living for persons with special needs, including the disabled and the elderly, etc.

⁵ For a brief description of these parts, see Annex 3, p. 69.

Key-Action 2 (*New systems of work and electronic commerce*) promotes the development of information society technologies and associated policies with a view to enable European workers and enterprises, in particular SMEs, to increase their competitiveness in the global market-place, to improve the quality of working life, through the use of information technologies to provide the flexibility to be free from many existing constraints on both working methods and organisation, including those imposed by distance and time.

Key-Action 3 (*Multimedia content and tools*) – with a goal to bring together Europe's technology developers with content creators to support the cost-effective creation, handling and delivery of attractive personalised and multilingual multimedia content, and for the effective exploitation and management of information. It addresses issues such as interactive electronic publishing, digital heritage and cultural content, education and training, human language technologies and information access, filtering and handling.

Key-Action 4 (*Essential technologies and infrastructures*) focuses on the development of enabling technologies and infrastructures which include mobile and personal communications, microelectronics, technologies and engineering for software, systems and services, simulation and visualisation technologies, novel multisensory interfaces, peripherals, subsystems and microsystems. The aim of KA4 is to promote excellence in the technologies and infrastructures, to accelerate their take-up and broaden their field of application.

Each of the four key-actions is broken down into action-lines, which define more concretely the objectives and priorities of the programme and translate them into research tasks.

The integration of the socio-economic dimension is encouraged in the 1999 work-programme in two ways :

1. through a number of action-lines explicitly geared towards socio-economic problems;

2. through encouragement to proposers to integrate a socio-economic dimension and socio-economic research in their projects.

A number of action-lines address socio-economic research directly. For example, the action-line *New models for providing services to citizens* of KA1, the action-line on *New Perspectives for Work and Business* of KA2, the action-line on *Social and business models for multimedia content* of KA3, and the action-line on *Convergence and integration: scenarios and analysis* of KA4.

The socio-economic content varies across as well as within key-actions. For example, KA1 (*Systems and Services for the Citizen*) focuses on applications targeting specific identified social needs. The aim of KA4 (*Essential technologies and Infrastructures*) is to promote excellence in the technologies and infrastructures, to accelerate their take-up and to broaden their field of application. In this way KA4 also stimulates new demands, drives new markets and also develops generic applications.

Certain action-lines with explicit socio-economic relevance were not open in the first call for proposals⁶. It is expected that the number of proposals addressing socio-economic issues will increase significantly in forthcoming calls when these particular action-lines will be open.

The 1999 IST work-programme reflects the philosophy of socio-economic usefulness which underlies FP5 as a whole. It contains a number of explicit references to socio-economic objectives which are in most cases expressed in general terms.

Both the work-programme and the *Guide for Proposers* explicitly encourage proposers to consider the socio-economic dimension in their proposals.

Multidisciplinary is mentioned as a key-requirement in the IST work-programme 1999. However, the response of the research community was limited in this respect in the first call for proposals; the conventional segregation of the research communities

⁶ For example, action-line 2.1.1 on *New perspectives for work and business* which was open in the second call in October 1999.

and disciplines is still very powerful. Given the novelty of the approach adopted in FP5, the degree to which the research community will respond remains unpredictable. The IST programme managers see this as an objective to be achieved in the medium and long-term. Also, the IST programme managers had considerable difficulties in communicating these ideas to the research community for the first call given the extremely tight timescale for the launching of the programme.

In this first year, the programme deliberately avoided a specific definition of “socio-economically relevant technological research” and was found in a difficult position: the programme tried to achieve a compromise between the need to establish a working definition of the “socio-economic dimension” (and “socio-economic research”) and the danger of becoming prescriptive with the communication of a rigid definition. The programme tried to avoid patronising a certain approach over others. Rather, the programme recognises that there is a whole range of approaches in the social sciences that can enhance our understanding of the interrelationship between technology and society with their concepts and methodological tools.

As a means to facilitate the inclusion of perspectives from the social sciences on ICTs, a new *Cross Programme Action (CPA)* entitled *Socio-economic Analysis for the Information Society* has been added to the IST work-programme for the year 2000.

In the proposals received as a response to the first call, attention paid to socio-economic issues and socio-economic research varied strongly across the various areas of the programme.

Some of the proposals pay only marginal attention to socio-economic issues, this happens mainly in action-lines which prioritise technological development (which are by definition technological in orientation).

Some proposals display a lack of understanding of the social implications of their proposed work as well as a lack of awareness of existing socio-economic research in the area.

All proposals demonstrate an effort to say something about the socio-economic dimension of the proposed project in the relevant section of the application form. However, some proposals convey the impression that proposers tried to find something to write (often couched in terms of the wording of the work-programme itself) rather than understanding the socio-economic issues related to their project. One possible explanation of this phenomenon is that the interpretation of the “socio-economic dimension” was difficult for many proposers. Especially in areas of the programme which prioritise technology development without a necessarily immediate socio-economic applicability, the requirement for statements on the likely socio-economic implications of the proposal seemed to be difficult for proposers.

The socio-economic implications are in some proposals interpreted narrowly in terms of the cost-effectiveness of the technological product aimed at and its viability in the market. Of course in a project geared towards commercial exploitation, this may be a realistic approach (albeit narrow in relation to the goals of the programme) since cost-effectiveness and market viability are signs of competitive solutions coming out of RTD, and users benefit from competition in terms of more choice, lower prices, and new services.

In KA2 (*New methods of work and e-commerce*), 42% of the proposals integrate socio-economic content with technological development research. For example, there are proposals addressing issues like the quality of working life, new service developments, changing labour markets, social partners, regional development, employment creation, and equal opportunities.

In KA1 and KA3 also, there are a number of proposals with socio-economic content. Some proposals in KA1 (*Systems and Services for the Citizen*), for example, include research on user-friendly and cost-effective technological applications in the fields of health, special needs (including ageing and disability), administrations, environment and transport. In KA3 (*Multimedia Content and Tools*), proposals include research on creative multimedia content production, digital preservation of cultural heritage, life-long learning, and attention to language diversity.

The number of evaluators with socio-economic expertise in the evaluation panels has varied considerably from one area to another, depending on the nature of the proposals and the kind of non-technological expertise which was considered necessary.

Almost half of the evaluators had socio-economic expertise relevant to the IST programme. Among these, 106 experts had direct expertise in socio-economic research and sociology and 260 experts had expertise in other relevant fields, such as innovation and entrepreneurship, public health, gender issues, exploitation of research results, learning mechanisms, and European integration.

Many evaluators faced difficulties in assessing the socio-economic dimension of proposals. A reflection of this is that many evaluators have written hardly any comments in the relevant parts of the individual evaluation reports or panel evaluation reports. There is a need for clearer guidance for evaluators in relation to the evaluation of the socio-economic dimension of proposals and the interpretation of the relevant criteria.

Significant differences were noted in how evaluators interpreted the evaluation criteria related to the socio-economic dimension of proposals (innovation, contribution to community social and policy objectives, etc). For evaluators with some background in the social sciences, the interpretation of these criteria seemed to be easier.

“Innovation” was seen mostly in terms of technical innovation (in terms of science and engineering) in the evaluation process. There were exceptions –for example in the area of educational technologies (KA3), where innovation was in many cases interpreted as innovation in pedagogies as well as in technologies.

3.4. THEMATIC PROGRAMME ON *ENERGY, ENVIRONMENT AND SUSTAINABLE DEVELOPMENT*

The socio-economic dimension of the programme has to be seen in close connection with its contributions to solving problems related to questions of climate change and sustainable development such as:

- sustainable management of natural resources (soil, water, coastal zones)
- integrated pollution control and prevention of waste
- reduction in the consumption of non-renewable energy
- improved mobility management (including more efficient and environmentally rational transport modes)
- measures to achieve improvements of environmental quality in urban areas
- improvement of public health and safety.

The programme is sub-divided into two sub-programmes

+ environment and sustainable development

+ energy

which naturally have their own culture and their own perception of socio-economic research and what it should deliver. However, the two sub-programmes are collaborating on crucial socio-economic issues such as climate change.

3.4.1. SUB-PROGRAMME *ENVIRONMENT AND SUSTAINABLE DEVELOPMENT*

References to socio-economic aspects can be found in the work programme for all key actions of the sub-programme :

The key action "water" has integrated socio-economic questions into its priorities and has a separate sub-chapter focusing on specific socio-economic research issues such as pricing policies, the evaluation of relationships between water resources management, policies and institutional arrangements and the understanding of people's perception and expectations in regard to water, both as an environmental source and an economic good.

The key action "global change" clearly supports socio-economic research through activities relative to scenarios and strategies for regarding global issues, in particular climate change (post Kyoto). Moreover, there is a potential for dealing with such questions in such sub-items "Mitigation and adaptation of global change strategies" and "Reconciling the conservation of biodiversity with economic development".

The key action "marine ecosystems" clearly supports socio-economic research through activities relative to the "reduction of anthropogenic impact on biodiversity and the sustainable functioning of marine ecosystems", and "Developing safe, economic and sustainable exploitation technologies".

The key action "city of tomorrow and cultural heritage" is aiming at a mix of technological and socio-economic approaches. Some of the research tasks have a large potential for including socio-economic aspects i.e. revitalisation of city centres and neighbourhoods, sustainable transport systems in an urban environment.

In *generic activities* socio-economic research has a chapter of its own.

Accordingly, the first call for proposals asked for socio-economic research in various key-actions such as

- key action "Sustainable management and quality of water" invited proposals for "socio-economic aspects of sustainable use of water" and for "operational management schemes and decision support systems";
- key-action "Global change, climate and biodiversity" invited proposals for "scenarios and strategies for responding to global change issues";
- in key-action "City of tomorrow and cultural heritage" nearly all items of the call relate in some way or the other to the socio-economic dimension.

Proposals have been specifically invited for "improving urban governance and decision-making", "revitalisation of city centres and neighbourhoods", "strategic approaches and methodologies in urban planning towards sustainable urban transport";

- in the part of the call on "RTD activities of a generic nature" there is a specific sub-title on "Socio-economic aspects of environmental change in the perspective of sustainable development" with a special emphasis on the assessment of the environmental implications of socio-economic drivers and tools and methodologies for the socio-economic assessment of policies.

The response to the different key actions and their sub-items and the success rate of proposals was very different. Generally it can be said that the response to work programme items directly asking for socio-economic proposals was rather weak. The key action "City of tomorrow" was an exception. In this domain all proposals selected for funding have a strong socio-economic component, and they also have a good involvement of potential users. In the other key actions some of the sub-items, the response to which has been below average, will be re-opened for the second call of proposals.

However, examples for projects with integrated socio-economic research aspects can be found in all key actions when project lists are carefully screened. They address a broad range of very different socio-economic aspects, such as

- water management
- control strategies for greenhouse gas emissions
- management of hazards and risks.

One reason for the relatively low success rate of proposals with a socio-economic content for the first call of proposals might be the fact that obviously proposers had difficulties to demonstrate the socio-economic relevance of their work in their proposals, and that therefore the evaluators had difficulties to evaluate the relevant section of the proposals. Proposers should therefore in

future be asked to make a distinction between direct impacts, indirect impacts, induced impacts, qualitative and/or measurable impacts. The impacted scale(s): macro, meso or micro should also be precisely described. It is therefore intended to prepare an "information set" to brief evaluators and scientific officers about EU policies, as well as socio-economic aspects, and to provide examples for socio-economic tools.

3.4.2. SUB-PROGRAMME ENERGY

The socio-economic dimension and socio-economic research in the energy sub-programme is mostly directed at evaluating the impact of technologies, policies and market instruments. Activities in this field provide scientific information on the problems and needs of citizens, utilities, industry and public authorities. They are largely based on results achieved within FP4 and concentrate on the following subjects :

- elaboration of models in the field of energy-economy-environment at European and world level
- studies on external costs of energy distribution and consumption (socio-environmental costs)
- studies on the relationship between energy technology research and development, environment and employment
- studies on regulations, costs and barriers.

The key actions refer to such items.

The key action "Cleaner energy systems, including renewable energies" includes two sub-items covering socio-economic aspects :

- Integration of new and renewable energy sources into energy systems, including competitiveness
- Improving the acceptability of renewables.

The key action "Economic and efficient energy" includes clearly an activity about the elaboration of scenarios on supply and demand technologies in economy-energy-environment systems and their interactions, and the analysis of the cost effectiveness (based on total life cycle cost) and efficiency of all energy sources. It takes into consideration three main items : (1) technological change anticipation, (2) prospective and policy impact analysis, and (3) market changes and technology absorption.

The "generic activities" are entirely dedicated to socio-economic aspects of energy within the perspective of sustainable development (the impact on society, the economy and employment). It includes the questions of acceptability and choices, innovation and externalities (socio-environmental costs). It also covers the economy-environment-energy modelling framework and technology implementation potentials.

Accordingly, socio-economic research aspects were covered in the first call for proposals :

- Key-action "Cleaner energy systems, including renewable energies" invited proposals for "improving the acceptability of renewables".
- Key-action "Economic and efficient energy for a competitive Europe" invited proposals for "the elaboration of scenarios on supply and demand technologies" with a special emphasis on technological change anticipation, prospective and policy impact analyses, and market changes and technology absorption.
- The generic activities with their strong socio-economic component have a continuously open call.

Whereas the response to the first call for proposals regarding the sub-items with a socio-economic dimension was good, the success rate was relatively low. This was mainly due to the fact that proposals were badly prepared and lacked a good

explanation of socio-economic issues. The best proposals had a complete and large partnership, including utilities, universities, manufacturers and users; they mostly focussed on the analysis or the assessment of energy and environment policies and/or instruments.

4. GENERAL CONCLUSIONS

Though the thematic programmes are different in structure and approach as well as with regard to their tradition and attitudes of their scientific communities, it can be said that all of them have tried to take account of the socio-economic dimension in their work programmes and include socio-economic research aspects in their calls for proposals.

Results of the first calls for proposals with regard to socio-economic aspects differ from programme to programme as well as from key-action to key-action; however, responses and success rates were lower than expected. When stating this, it has to be borne in mind, however, that these were the first calls based on the new problem-oriented approach of the Framework Programme taking into account societal needs. Neither the scientific community nor the programme managers and scientific officers in the programmes had any experience with this approach before. Therefore it can be expected that the situation will improve with further calls.

Some general conclusions can be drawn that apply to a stronger or lesser degree to all thematic programmes :

- Economic subjects seem to be better covered than subjects relating to social or societal problems.
- Proposers obviously had difficulties to define within their proposals the “socio-economic dimension” or the “policy relevance”. Also, they did not always seem to be aware that these criteria play an important role and are an essential part of the selection criteria. Therefore, in many cases, proposals were badly prepared and thus not retained for funding.
- As a rule, evaluators as well had difficulties to assess the socio-economic dimension of proposals. One reason for this might be the fact that evaluation criteria are uniformly applied to all programmes without taking into account the

different nature of individual projects that are needed to achieve the objectives of different key actions.

- There is a lack of evaluators who are socio-economic experts but – at the same time – have some knowledge of the technical areas of the research proposals they are evaluating and vice versa.
- Whereas the socio-economic dimension has been taken into account and a number of projects in all thematic programmes contain socio-economic research components, there seems to be a lack of projects with a truly integrated approach, combining technical research with socio-economic research based on a joint preparation of the research agenda.

These general conclusions have led to a set of recommendations which have already been discussed with the thematic programmes and – in some cases – have already led to modifications of work-programmes and information packages.

5. RECOMMENDATIONS

- Work-programmes should strongly underline that the socio-economic dimension should be taken into account. It should be made clear that this dimension is not restricted to the sub-items of key actions clearly specifying socio-economic tasks but that the dimension can also be included in technology-oriented proposals.
- All working documents (guide for proposers, guide for evaluators, etc.) should better explain what has to be understood by the integration of socio-economic aspects in the proposals. They should, in particular define with due respect to the programme in question the “socio-economic dimension” and “EU policy”.
- A note should be added to the information package explaining that proposals with a strong multidisciplinary approach would be welcome, and that multidisciplinary in this case does not only mean a mix of technical disciplines but also sociology, economy, law, psychology, public health etc., and that the project should be prepared jointly by researchers from all disciplines involved.
- The Commission should play a more dynamic role to bring together scientists from different disciplines and national decision-makers in order to prepare interdisciplinary research questions and to jointly set a research agenda.
- Generally speaking, scientific officers consider that they have a good understanding of the socio-economic dimension of the work programme. Scientific officers in the programme should be better briefed on the socio-economic aspects to harmonise their approach to these issues and provide them with tools to better assess the socio-economic dimension; internal workshops (with the participation of external experts) to this effect might be useful.
- The socio-economic scientific community has to be informed about the possibilities within the specific programmes of FP5. Information days organised nationally by the contact points might help to achieve this. This could include

meetings organised by the National Contact Points from other thematic programmes.

- In all specific programmes the evaluators had difficulties to judge the relevance criteria. Therefore more evaluators with socio-economic knowledge have to be chosen for the panels. Not only evaluators from the scientific community but also some from potential user groups should be included in the evaluation panels; evaluators should be briefed thoroughly about how to evaluate criteria relating to the socio-economic dimension of proposals.
- Evaluation procedures might be adapted according to the different nature of individual programmes and key actions.
- Gaps related to socio-economic aspects should be identified so that they can be included in future work programmes and calls.
- The following activities could be launched with a view to strengthen the co-operation between researchers from different disciplines :
 - Fostering the exchange of data and information between various projects in key areas of the programme with a socio-economic relevance;
 - Developing further co-operative links and networking actions between projects, in particular with a view to strengthening integrative and interdisciplinary approaches, and promoting new partnerships;
 - Integrating and consolidating research results; developing information systems and information-sharing arrangements;
 - Promoting and improving the packaging and diffusion of research results in a manner responsive to the specific needs of users, such as policy makers, natural resource managers, stakeholders from industry, economy and society. Putting research efforts in a broader, integrated perspective by fostering the exchange of information and linkages between researchers and other players involved in a problem-solving approach.
 - Organising workshops involving researchers from different disciplines with the aim of elaborating joint research agendas.

6. ANNEXES

INTRODUCTION TO THE ANNEXES

Socio-economic aspects within FP5 can be seen at three different levels :

- 1) *The socio-economic impact of the programme* (impact on employment, competitiveness, quality of life, sustainable development etc.). This impact is difficult to evaluate and to measure. Its assessment cannot be done in the beginning of the programme, but needs a longer-term perspective.
- 2) *The socio-economic dimension of the thematic programmes and their key actions* (the contribution which they can make to the overarching aims of FP5 and to EU policies). All thematic and horizontal programmes have defined objectives to this effect within their work programmes, and programme managers estimate that this contribution is very high – either in direct or in indirect terms.
- 3) *Socio-economic research in thematic programmes and their key actions*. This research can take the form of “accompanying projects” under generic activities or in the framework of Accompanying Measures, of projects in specific socio-economic sub-items of key actions, or of multidisciplinary research jointly done by social scientists and natural scientists in an integrated approach.

A word on methodology. This is not a report on the socio-economic impact of the programmes of FP5. It concentrates on levels 2 and 3 described above.

The Annexes have been established in close co-operation with the different programmes on the basis of information either provided in writing or obtained in different meetings and consultations. The following activities have been undertaken, in particular :

- Work programmes have been screened and analysed with regard to their socio-economic references and elements. This led to a comprehensive map indicating where references to socio-economic aspects had been made in the thematic programmes and their key actions. This map was accompanied by a summary of the essential socio-economic aspects presented in the different programmes and key actions. It was published on CORDIS.
- The texts of the calls for proposals and guides for evaluators and proposers have also been analysed with regard to their socio-economic contents. Findings are included in the report.
- Evaluations and their results have been closely followed and analysed. The findings of independent observers – for those thematic programmes where they exist – have been taken into account for the report.
- Throughout the process of drafting the report, close contacts and consultations have been maintained with counterparts in the thematic programmes.

For each of the thematic programmes one key action was chosen jointly with the representatives of the programmes concerned for special screening, and has therefore been given particular attention in the Annexes. These are the following key-actions :

- Quality of life and the management of living resources : The ageing population and disabilities
- Competitive and sustainable growth : Intermodality - Creating a user-friendly information society – New methods of work and electronic commerce
- Energy, environment and sustainable development: City of tomorrow and cultural heritage.

The decision to chose these key actions was – above all – based on the considerations that these key actions

- + are dealing with subjects lending itself to the integration of socio-economic aspects;
- + are of particular interest for decision-makers and the general public.

In drawing up the Annexes an attempt has been made to provide a coherent structure for all Annexes. However, the contents within these structures differ :

- First, there is a difference between the Annexes on the thematic and the horizontal programmes. This first annual report concentrates on the thematic programmes. Therefore they have been analysed more thoroughly than the horizontal programmes, and the report on them is much more comprehensive.

Nuclear energy research is not included in FP5, but in the EURATOM programme; it has been included in this annual report or information purposes only.

- Second, there are differences in the degree of analysis between the different thematic programmes. This is mainly due to the fact that there are different degrees of integration of the socio-economic dimension in the different parts of the FP5, ranging from complete integration to complete separation. The understanding of the relationship between socio-economic and scientific/technological research varies between the different thematic programmes, as well as between different parts of each thematic programme. Also, some thematic programmes have already made a thorough analysis relating to the socio-economic dimension of the programme and some have not. This has been taken into account within the report.

ANNEX 1

QUALITY OF LIFE AND THE MANAGEMENT OF LIVING RESOURCES

1. 1. Introduction to the thematic programme.
1. 2. The work programme and its key actions
- 1.3. Links between research priorities and EU policies
- 1.4. The socio-economic dimension in the 1st call for proposals
- 1.5. The socio-economic dimension in the guide for proposers, including evaluation criteria
- 1.6. Situation after the termination of the 1st call and the evaluation of its proposals
- 1.7. Socio-economic aspects during the evaluation
- 1.8. Conclusions
- 1.9. KEY ACTION 6 : THE AGEING POPULATION AND DISABILITIES**

ANNEX 1. QUALITY OF LIFE AND THE MANAGEMENT OF LIVING RESOURCES

1.1. Introduction to the thematic programme

In view of the complex, multifaceted and multidisciplinary nature of the problems presented in the Key Actions and generic activities of this programme and in view of the rapidity of scientific and technological developments in the life sciences: the primary focus needs to be on limited range of targeted, key problems, each having a number of clear objectives and measurable deliverable.

The programme is built around six specific Key Actions. These are mission oriented and targeted towards more immediate policy objectives of improving the competitiveness of European industry and enhancing the quality of life of the EU citizen. The Key Actions focus on immediate socio-economic and market needs in areas such as improving our food, controlling disease, harnessing the power of the biological cell, the sustainable development of agriculture and fisheries, and a healthy and independent old age. A unique characteristic of key actions is an ability to respond to the common needs of cross-linked Community policy objectives such as those in agriculture and fisheries, industry, environment, and in the field of health.

The capacity of key actions to meet emerging socio-economic challenges must remain in sharp focus as the RTD projects progress. This capacity will depend on the extent to which, from the start of the programme, the synergistic effects of different projects pointing to solutions of these challenges can be recognised and promoted. Therefore, proposals will also be invited from appropriate disciplines in the social sciences to catalyse the links between the Life Sciences and society.

The generic activities on the other hand aim to build up the knowledge base in identified areas of strategic importance for the future in relation to genomes, the science of the brain, public health, chronic diseases, and socio-economic and ethical issues surrounding biosciences.

Supporting these actions and intrinsic to the programme include activities such as infrastructures, dissemination and exploitation of results, and training, with an increased role for the involvement of small and medium enterprises, and the aspect of entrepreneurship.

1.2. The work programme and its key actions

The Quality of Life work-programme is built around six specific key-actions, targeted towards more immediate policy objectives of improving the competitiveness of European industry and enhancing the quality of life of the EU citizen. The key-actions focus on market needs, but at the same time consider the immediate socio-economic needs, in the areas that will be developed by this Programme. Thus in general, the appropriate importance to socio-economic research is given in the objectives of all research activities. The needs of society are taken into consideration and integrated in most of the key actions in a

satisfactory way. Furthermore, the socio-economic dimension is one of the evaluation criteria for the selection of the future research projects.

More specifically :

1.2.1. Key action 1 : *Food, nutrition and health*

This key action is focused on consumer needs and on the enhancement of the competitiveness of the European industry. Although there is no specific reference to socio-economic research, in its own right, an important number of the foreseen activities have a strong socio-economic impact. Socio-economic research is particularly evident under point 1.3 (*Research into the role of food in promoting and sustaining health with respect to diet and nutrition ... particular needs of defined population groups*), although there is no clear mention about the socio-economic relevance of the future research activities .

1.2.2. Key action 2 : *Infectious diseases*

This key action aims at accelerating the progress of research on infectious diseases by targeting obstacles in the research and development process. The socio-economic relevance is mentioned in the objectives of this key action and included partially in the 1999 priorities. In this key action the following two points are of great relevance to socio-economic research and should consider the socio-economic dimension, in an appropriate way: point 2.2 : *Strategies to identify and control infectious diseases : diagnostic tests, risk assessment and transmission* and point 2.3 : *Aspects of public health and care delivery systems: Organisational and economic aspects of public health: organisational and economic aspects of public health and care delivery systems.*

1.2.3. Key action 3 : *The cell factory*

The socio-economic dimension is mentioned in the objectives and deliverables of this key-action in a very clear way and is defined as: the integration of innovative research and technologies with the exploitation of advances made in life sciences and technologies, in the fields of health, environment, food, agriculture, agro-industries and high value-added products, by Community's enterprises and by the public sector. However, there is a relative lack of explicit reference to societal needs in point 3.1: *New innovative health-related processes and products : development of new diagnostics, therapeutic substances and strategies.*

1.2.4. Key action 4 : *Environment and health*

The socio-economic dimension is addressed, and partially integrated, in a satisfactory way in this key action. It is expected that research activities will create and exploit research synergies between relevant disciplines in the social, medical, technological, occupational, public health and environmental domains. Point 4.1 is of a particular interest to socio-economic research (*Diseases and allergies related to or influenced by the environmental*

prevention and treatment) The social factors to be considered, as well as the special needs of high-risk groups will be addressed in the context of these research activities. In contrary, there is no clear reference to socio-economic research in point 4.2 (*Diagnosis, risk assessment and risk management processes to reduce causes and harmful environmental effects*) where the expected socio-economic impact of the research activities, is not negligible.

1.2.5. Key action 5 : Sustainable agriculture, fisheries and forestry, and integrated development of rural areas including mountain areas.

The socio-economic aspects are considered in a very clear and satisfactory way in this key action. Furthermore, the future applicants are very much encouraged to consider, where appropriate and possible, the socio-economic dimension.

More precisely the importance of socio-economic research has been 'underlined' in the following parts : point 5.4 - Support for common policies; pre-legislative research designed to provide a scientific basis for community legislation : Social and economic basis of the CFP⁷ and point 5.5 - New tools and models for the integrated and sustainable development of rural and other relevant areas.

1.2.6. Key action 6 : The ageing population and disabilities

In this key action, the socio-economic challenges of the ageing population are largely considered. More precisely, the 1999 priorities give particular attention to the socio-economic implications of healthy ageing. There are two points that are dealing in depth with socio-economic research issues : point 6.3 - Demography and epidemiology of ageing and in point 6.5 - Health and social care services to older people. However it is noted that the particular needs of the older people as well as the socio-economic impact of the ageing population on the rest of society, should be addressed in a more satisfactory way.

1.2.7. Research and technological development activities of a generic nature.

This action is expected to help bind together, through a synergistic approach, the overall socio-economic research activities of this Programme. More specifically in these activities there will be a specific action on the *Socio-economic aspects of life sciences and technologies*, which has four objectives :

- * to assist the development of appropriate RTD⁸ strategies and models for competitiveness job creation and sustainable development;
- * to strengthen the effective, linkage between scientific knowledge, technological advances and the development of sound public policies and regulations;
- * to improve awareness and understanding among the public of the potential risks and benefits of advances in life sciences and technologies and

⁷ CFP : Common Fisheries Policies

⁸ RTD : Research and Technological Development

- * to examine societal expectations and needs of all user communities.

1.3. Links between research priorities and EU policies

It is stated in the guide for proposers :

"How far can this programme meet citizens expectations will depend on the possibility to maintain, or even multiply the number of interfaces. The whole set-up of the programme is already based on the recognition and upgrading of technology cross-roads. Each key action indeed does already combine biological knowledge and sets of converging technologies. And yet, more such interactions can be anticipated within the programme and across sister programmes, including horizontal activities.

There is a degree of unpredictability in trying to define the extent of possible interfaces. It should be enough to recall the following principles, when reviewing in-coming proposals :

- It is assumed that proposals, drafted as they should in accordance with the RTD priorities enumerated in the previous part of the work-programme, should unambiguously fall under the relevant actions and be co-ordinated, where appropriate, with other projects of the same action.
- In case a proposal is transgressing academic frontiers and includes either remote technology inputs or multiple spin-offs in neighbouring fields, its submission through the "Quality of Life and Management of Living Resources" programme would still be legitimate. It would be sufficient that the core of such proposal be relevant to the RTD priorities seen above.
- As a guideline, a proposal which essentially intends to **develop** a new technology should seek funding from the programme which is the natural host for such technology (e.g. genetics comes under theme 1, computer science under theme 2, instrumentation and process design under theme 3, ecology under theme 4, etc.). Conversely, a proposal which **uses** or **streamlines** a technology developed elsewhere to reinforce performance in research and applications with the quality of life and management of living resources as a **primary objective**, should be addressed to this programme known as theme 1.

The handling of this type of projects would imply that they be examined in the proposal stage simultaneously by the management teams of the two (or more) programmes covering the connected interests, and be further co-ordinated with a wider range of sister projects across the programmes in the implementation phase. Clustering mechanisms could support this process."

1.4. The socio-economic dimension in the 1st call for proposals

Certain key actions or activities are more naturally open to an integration of the socio-economic dimension, such as for example, in "Generic Activities", but also the key action 1 (food safety and nutrition), 4 (health and environment), and 6 (ageing).

However the logic of the 5th PC means that this socio-economic dimension has to be taken into account in a broader way in all programmes and in all key-actions. It is quite obvious that each research area is specific and suits more or less for direct integration of this approach. For example, in the line "Genome" of "Generic Activities", the societal dimension can be heard in various manners. Assuming that it appears essential to take into account the ethical aspects of research proposals, as much the consequences of research on employment and on economic activity is more complex to analyse and remote (long enough period for concrete of the results in penetrating industry). Reflection must remain open on the questions of employment and of training. At least the one concerning the impact of research and, one could think of incorporating into some proposals, when it is suitable, a specific section on jobs to come in the event of a positive marketing of results (number of possible jobs, qualifications, adapted training courses etc).

In addition, generally, taking into consideration economic dimension, in a prospective marketing of results, (for example, industrial implementation) is more easily incorporated, in particular when representatives of the private sector (companies, professional organisations) are a member of the consortia submitting the projects.

1.5. The socio-economic dimension in the guide for proposers, including evaluation criteria

The scope, objectives and thematic content of the different Key Actions (*KA*) are heavily driven by socio-economic considerations, which are related to evolving community policies. For instance *KA5* is fully in line with the Common Agricultural Policy, the Common Fisheries Policy, ongoing community forestry measures, policy on the environment and aspects of consumer safety. In addition many actions lines of the programme are specifically devoted to the socio-economic analysis. Under activities of a generic nature (*GA*) we cover for instance the "*socio-economic aspects of life sciences and technologies*" while under *KA6* it is possible to study "*the demographic and social policy aspects*" as a basis for policy and planning.

It appears that the socio-economic dimension is well described in the workprogramme although some improvements might be needed in particular in respect to evolving Community policies. To this end instead of adding annexes who are often long and cumbersome we will sum up the needs in short paragraphs to be integrated as appropriate in the workprogramme taking advantage of the frequent updating/editing opportunities offered.

1.6. Situation after the termination of the 1st call and the evaluation of its proposals

	KA1	KA2	KA3	KA4	KA5	KA6	GA + Infrastr	TOTAL M€
Received proposals	190	110	399	162	301	222	388	1792
Evaluated propos	176	112	393	159	281	178	394	1693
Worth funded						51		540
Retained proposals	38	36	37	23	67	27	66	295
Total requested	364.9 €	187.9 €	740.6 €	173.1 €	359.6	371.2 €	747.1 €	2944.6
Total allocated	71.8 €	84.79 €	87.72 €.	40.35 €	97.06 €	52.55 €	140.66 €	574.94 €

KA 1 = Food, nutrition, health
 KA 2 = Infectious diseases
 KA 3 = Cell Factory
 KA 4 = Health and environment
 KA 5 = Sustainable agriculture
 KA 6 = Ageing
 GA = Generic Activities
 Infrastr = Research Infrastructures

As outlined in the table almost 1800 proposals have been submitted under the 1st call before the summer break (i.e. the table does not cover proposals submitted by the 15th November deadline). 286 proposals have been initially retained for funding (additional financial resources made recently available because will allow the addition of two dozen proposals).

The pressure on the different KA and GA (and in the different subheadings) does not appear to be proportional to the financial resources available resulting in success rates which vary from 9.2% in KA 3 (Cell factory) to 28% in KA 2 (Infectious diseases). This 3-fold difference has to do with the size of the scientific communities active in the different research areas, their knowledge of and past involvement with previous community R&D programme in Life Sciences (in other words their familiarity with our activities) and how smart the wording of the workprogramme has been to encapsulate the socio-economic drive which ought to legitimate an adequate research focus. But did the applicants perceived this fundamental difference and where they able to adapt to these new needs ?

- **Multidisciplinary (capacity to involve all appropriate partners)**
 Multidisciplinary was more or less satisfactory depending from KA and GA. There is room for improvement in some areas although overall the scientists seem to have understood the message. For instance most of the proposals that have been submitted to KAs 5 and 6 demonstrate an increased effort to address

relevant scientific research issues of important socio-economic implications. This effort is reflected not only on the chosen subject matters but also on the partnerships formed with the aim to meaningfully carry out interdisciplinary RTD efforts. Of course, the above qualities are exemplified and are best visible on the proposals finally selected for funding. In KA 3 the industrial penetration (81%) is the highest and fully satisfactory but the participation of other socio-economic actors (i.e. consumers representatives, financial entrepreneurs, ...) could be improved.

- **Attention to "relevance criteria" and socio-economic dimension.**

There is a clear effort by the proposers to respond meaningfully to the requirements and constraints imposed by the relevance criteria. Overall, proposers are becoming increasingly aware of the importance attributed to the relevance criteria by the Fifth Framework Programme. It is expected that their appreciation will increase in the future, as they become familiar with the philosophy and requirements of the programme. At this stage however it must be acknowledged that this "cultural" shift has not yet been completed by the whole scientific community. In terms of information, considering that relevance criteria refer to a number of policies, directives, communications measures etc. it is impossible to exhaustively list all relevant (and sometimes conflicting) policy documents especially for a key action as diverse in thematic coverage as key action 5. Moreover full attention should be given to the context of growth, competitiveness and citizen's concerns. The "generic" description of relevance criteria is considered sufficient in stimulating the proposers to argue on policy issues by highlighting the relevant aspects.

1.7. Socio-economic aspects during the evaluation

Several remarks were made on the quality of the experts' file. The socio-economic competence does not appear always obvious, either as a specific competence or connected with an associated technical competence.

The economic competence (more particularly the one connected with management) is in general taken on board. The societal competence in the broader sense (economic impact on firms, social or institutional/political impact) is more difficult to appreciate and identify in the expert's database currently used.

The following has been observed with regard to the evaluation process:

The number of evaluators representing consumers is low.

The criterion "Community value added" seems rather badly perceived.

Re-examination of all criteria (scientific and socio-economic) seemed necessary, at the time of phase 2, moreover certain criteria (employment maintenance, safeguarding of environment, etc) appeared inapplicable to evaluators.

University and industrial experts expressed different and often complementary impressions regarding quality of proposals (for example, industrialists found the managerial quality of some proposals insufficient).

Clarification of the "innovation" concept is needed.

Lack of experts with a socio-economic competence was stressed.

Appraisers' preliminary information seemed insufficient.

Scientific experts do not feel comfortable in doing the socio-economic part of the evaluation, and the experts do not consider themselves experts in EU policies.

Although clearly supported by all scientific officers who acted as moderators for its practical efficiency, the two-step process still raise concerns at a more conceptual level. The "salami" approach consisting in evaluating science and management on one side and relevance criteria, and in particular the socio-economic impact, on the other side does not allow for a fully integral grasp of the absolute value of a project (i.e. the intrinsic value is not necessarily the sum of the parts). Some argue that bringing over to the 2nd step evaluators (most often only the rapporteur) does not help because for psychological reasons they feel obliged to defend in priority proposals evaluated in their 1st step session.

The relevance criteria were not always fully grasped by the evaluators: in this respect to stimulate further the analysis, in some KA evaluation forms specifically adapted to cover relevant socio-economic issues are presently being worked out. The role and knowledge of the scientific officers acting as moderators in the 2nd step panel is obviously very important. Keeping up with new development both on socio-economic and scientific aspects is necessary for the effective functioning of scientific officers. With regard to science, it is up to his/her personal commitment and to the strength of the specific scientific interests he/she maintains. Concerning socio-economic aspects, which are closely related to policy issues, it is the service's responsibility to ensure a minimum (and sufficient) level of competence on the action's relevant policies. This can be accomplished through workshops and seminars where colleagues from the "policy" DGs will brief and update on issues of common interest. The mini teams set up by the Group of Directors are expected to be instrumental in this respect. At the same time, it is also the responsibility of each scientific officer to be kept informed of all developments in the action line he/she is involved in.

In general the evaluators felt satisfied with the briefing and information they got and felt competent to carry on their duty. It was indeed possible on this occasion to gather a sufficient number of socio-economic experts. However a serious effort should be done to increase the overall number of such experts in the Exsis database. Also panels to be fully equilibrated should include end-users and this was not possible to achieve in all cases. The inclusion of end-users is considered beneficial not only in assessing the socio-economic aspects of proposals but also in assessing whether the proposals' research output and management of financial resources is realistic or not.

Although some argue that the optimal weighting should be 1/3 science, 1/3 management and 1/3 relevance criteria while some suggest a minimal threshold mark for the latter the overall feeling is that the system presently implemented allows for a fair equilibrium between socio-economic and scientific aspects.

While an objective assessment, based on clear-cut criteria, can be achieved in the evaluation of science and management this is impossible for policy issues. Proposals will be subject to the referees' personal appreciation, understanding (even preoccupation,...) of particular policy issues. It is a purely subjective assessment based on personal experiences, background, political ideology etc. Collectively, the consensus score on policy criteria should be regarded as a

yardstick, providing relative policy significance to the proposals but certainly not absolute one. However the final aim of the exercise is to achieve an "*illuminated*" consensus following an all embracing exchange of views and discussion and as a consequence it is very important to achieve an optimally balanced representation of experts covering all relevant facets in stage 2.

1.8. Conclusions

Strengthen the appraisers' briefing on significance of the three relevance criteria in view to better integrate the socio-economic dimension in projects.

Clarify better the significance of the three relevance criteria, by a short complementary note to be included in the evaluation manual.

Clarify better the will to respond "to needs of the European Society" as a priority for research.

Clarify the willing for a better integration of socio-economic dimension and research in the work programmes.

Drafting with the Scientific Officers of a note on integration of socio-economic disciplines in research projects.

Propose a short (1-day) working session with the Scientific Officers on integration of socio-economic dimension in the 5th FP.

A workshop with a small number of experts having taken part in the first evaluation, could be organised on "conditions for inter-disciplinarity in the research activities", particularly those in relation with the QoL programme.

During contract negotiation, the scientific and financial details of a proposal are reviewed in light of the comments made by the evaluators as they appear in the ESR. All suggestions (or sometimes conditions) to improve the socio-economic impact of a project are carefully reviewed and considered both by the services and the proposers. In many instances, scientific officers make suggestions aiming at improving the socio-economic profile of certain proposals.

"In the first phase of the implementation of the *Quality of Life* programme the attention to the socio-economic performance of our activities has been a frontline concern. Overall the programme staff has reacted proactively on this priority while the message has only been partially absorbed by concerned constituencies. In this respect additional efforts are needed. In particular the programme will aim at a higher visibility with socio-economic experts who might be able to contribute directly to financed projects but also at a more strategic level. It should be noted as well that traditionally in Europe established socio-economic research centres have a tendency to concentrate on national issues and seldom have a truly European point of view. With this in mind the programme will attempt in the near future to make a communication effort launching a large debate also with the help of a dedicated web site."

1.9. KEY ACTION 6 : THE AGEING POPULATION AND DISABILITIES

1.9.1. The work programme

(see above)

1.9.2. Links between research priorities and EU policies

(see above)

1.9.3. The socio-economic dimension in the 1st call for proposals

(see above)

1.9.4. The socio-economic dimension in the guide for proposers, including evaluation criteria

(see above)

1.9.5. Situation after the termination of the 1st call and the evaluation of its proposals

Number of proposals received	Number of proposals evaluated	Number of proposals passing evaluation	Number of proposals retained for funding	Total requested budget (M€)	Total available budget (M€)
222	178	51	27 (main list) 7 (reserve list) 3 training fellowships	371.2	38.4

Impact of Main-Listed Proposals

Alzheimer's disease, the leading cause of dementia in older people, and related dementias will be directly addressed in six proposals (2004, 2112, 2178, 2189, 2203, and 2238). Currently there is neither effective therapy nor early diagnosis for Alzheimer's disease. The projects together aim at developing presymptomatic diagnosis, rational and effective prevention, and therapeutic targets and strategies. Several of these projects are expected to produce results that will also be relevant to the early diagnosis, prevention and treatment of other neuro-degenerative diseases, notably Parkinson's disease, and also of certain cerebro-vascular conditions.

Musculo-skeletal disorders are addressed in five proposals. Two (2024, 2108) aim at improved diagnosis, prevention and therapy of osteoporosis. Two others (2072, 2234) aim at treatments, including vaccination, of osteoarthritis. The fifth (2034) will research into the maintenance and regeneration of the ageing muscle. The research in these projects will also have relevance to a wide range of other musculo-skeletal disorders, including rheumatoid arthritis, fibromyalgia and skeletal metastasis.

Cardiovascular diseases are specifically considered in two proposals. One (2111) is an epidemiological study of risk factors for atherosclerotic cardiovascular diseases. The second (2237) looks into the early diagnosis and treatment of hereditary haemochromatosis.

The underlying cellular and molecular mechanisms of ageing are examined in six proposals : oxidative modifications of DNA and DNA repair mechanisms (2002); the ageing of the T-celle immune system (2031); the role of the growth hormone secretagogues in particular on neurodegeneration, glucose tolerance and body composition (2038); animal model studies to identify and characterise genes controlling ageing (2071); the role of proteasome in senescence and apoptosis (2183); and the role of neural cell adhesion molecules on ageing (2187). The socio-economic determinants of healthy ageing will be examined by proposal 2161.

Robot-mediated physiotherapies for neuro and motor rehabilitation will be developed in proposals 2282. The outdoor mobility patterns of older people in urban and non-urban settings will be examined in proposal 2236.

Health and social care provision for older people will be researched in four proposals: improved general practice care for older people through innovative patient involvement instruments (2035); improved hospital admission systems for older people involving multidisciplinary assessment by health workers and social care services (2070); the role of service systems and intergenerational family solidarity in enhancing quality of life of older people and their care givers (2182); and the multidimensional evaluation of potentially modifiable disability risk factors to improve preventive care of older persons.

Reserve-Listed Proposals

A reserve list of 7 proposals, 3 for the first action line on age-related illnesses and health problems and 1 for each of the four remaining action lines, with a combined estimated Community contribution of € 6.7 million, has been drawn up (see Annex 2) in case of failure of negotiations on projects in the main list, withdrawal of projects, savings being made in contract negotiation, or additional budget becoming available. A proposal to be financed, if any, will be chosen from this list in order to ensure that overall budget for the key action remains distributed between the action lines as closely as possible to the formula described earlier.

EXAMPLES

Proposal Title	QLRT 1999-02 161 socio-economic determinants of healthy ageing: from description to explanation
Acronym	SedHA
Abstract	This project aims to describe socio-economic differences in health expectancy among the elderly in 11 European countries, and to contribute to the explanation of these differences. The study will be performed on the basis of survey data on prevalence of disability, diseases and risk factors, mortality data by cause of death, and longitudinal studies of disability and mortality. Life expectancy with and without disability will be calculated, and differences between socio-economic groups will be analysed using decomposition techniques and multistate life tables. The study will lead to a better understanding of how socio-economic factors promote healthy ageing, which is important for the development of policies leading to a compression of morbidity.

Proposal Title	QLRT-1999-02 182 Old age and autonomy: the role of service systems and intergenerational family solidarity
Acronym	Oasis
Abstract	The main objective is to provide a knowledge base of how we may support autonomy in old age to enhance quality of life of elders and their family caregivers. Variations in family solidarity and welfare regimes in interaction as impacting quality of life will be studied, to give recommendations on sustainable service systems for the future. A comparative cross-cultural, cross-generational approach will be used. Cross-sectional (survey) of 3 cohorts (75+, 50-60,20-30) and longitudinal in-depth interviews (a year apart) with 25-40 dyads of "elders at risk" and their caregivers will be performed. Population ageing and changing family norms challenges social integration and policies in Europe. The goal is to learn how family cultures and service systems support autonomy and delay dependency in old age, to promote quality of life and improve the basis for policy and planning.

1.9.6. Socio-economic aspects during the evaluation

The impression of the observer is that the meaning of the key action concept was not fully understood in spite of all the positive efforts made by the Commission staff members. In the introduction of the Work Programme, it is explained that the programme is built around 6 Key Actions. Then it is stated that "The capacity of key actions to meet emerging socio-economic challenges must remain in sharp focus", but this concept was not well grasped. As a result, Stage 2 criteria, the relevance criteria, which were built around evaluating proposals' contribution to these broader areas, were not given appropriate attention or weight. Even though evaluators were explained about the meaning of the key actions vs. generic activities and about the importance of the relevance criteria, — proposals' contribution to such broader areas as quality of life, immediate socio-economic and market needs, and independent

old age, for example, — it became clear during Stage 2 evaluations that this was not fully understood.

Part of the problem seemed to be the **generic nature of the relevance criteria itself**. To maintain uniformity, and to comply with the goals and interests of the European Union, Stage 2 relevance criteria consisted of broad overarching aims. While the aim was a good one and was well appreciated, in reality, the criteria were very difficult to evaluate because they were so generic and because they were not really relevant to the objectives of the Key Action. To give a specific example, block one of the relevance criteria includes “the contribution to the implementation or the evolution of one or more EU policies”, but it was not clear which EU policies (and what they consist of) were of concern. For another example, under 5 "Economic development and S&T prospects", "exploitation potential" was not understood. It was very difficult for evaluators (and for applicants, also) to evaluate these kinds of criteria because they were so vague.

To complicate the Stage 2 evaluation even more, in some panels, the same evaluators for Stage 1 were involved in the Stage 2 evaluation. These experts, usually scientists in the field of focus, were already somewhat biased towards certain proposals by their scientific merit, which made it very difficult for them to objectively evaluate Stage 2 by relevance criteria.

This made the rationale of the stages – to first, accept good quality projects (from a scientific perspective) and then, forget about science and rank the projects accordingly to the "Relevance Criteria", - impossible to put into practice, because "science" out-weighted the relevance criteria, due to the evaluators involved, and then, the relevance criteria were not well understood in the first place.

1.9.7. Conclusions

In general, the quality and relevance of the proposals was high. The problem-solving concept of the key action had clearly been understood by the majority of applicants. However, there are two major issues that need to be examined when revising the QoL work programme : over-subscription and the internal balance of the key action.

(1) **Over-subscription.** The over-subscription rate of 9.3 to 1 is far too high to be in the interest of either the key action or prospective applicants. There are two distinct ways to reduce the over-subscription to more acceptable levels :

- ◆ to narrow still more the focus of the action lines, in particular the first action line concerning age-related diseases and health problems, which accounted for over half the proposals received by value;
- ◆ to restrict some areas of the action to co-ordination projects only (i.e. concerted actions and thematic networks), which could be a more cost-effective means of delivering a high European added-value in fields in which the budget is restricted.

- (2) **Balance of the key action.** The goals of this key action are primarily social. However, an examination of the projects received, as well as those main-listed, show a strong bias away from projects with a direct social content.

These two issues will be discussed first with the key action's *Mini Team*, second with the action's *External Advisory Group (EAG)* and later with the *Programme Committee* with a view to drawing up for the year 2000 a work programme that is more balanced and that avoids an excessive rate of over-subscription.

ANNEX 2

COMPETITIVE AND SUSTAINABLE GROWTH

- 2.1. Introduction to the thematic programme
- 2.2. The work programme and its key actions
- 2.3. Links between research priorities and EU policies
- 2.4. The socio-economic dimension in the work programme of the first periodic call for proposals
- 2.5. The socio-economic dimension in the guide for proposers, including evaluation criteria
- 2.6. Outcome of the first periodic call and the evaluation of proposals
- 2.7. Socio-economic aspects during the evaluation
- 2.8. Conclusions
- 2.9. KEY ACTION 2 : SUSTAINABLE MOBILITY AND INTERMODALITY**

ANNEX 2. COMPETITIVE AND SUSTAINABLE GROWTH

2.1. Introduction to the thematic programme

The Competitive and Sustainable Growth work-programme reflects clearly the willingness to link research, technological development and socio-economic development: "the objective is to produce consumer-friendly products and create new jobs in Europe".

The structure of the programme "competitive and sustainable growth", which is characterised by a systems approach, comprises three elements :

(i) A set of four key actions oriented to solve clearly identified socio-economic problems by developing critical technologies or methodologies and clustering, when appropriate, research and demonstration projects of industrial, basic, policy-driven or applied nature around specific and strategic common challenges:

- **Key Action 1** : innovative products, processes and organisation
- **Key Action 2** : sustainable mobility and intermodality
- **Key Action 3** : land transport and marine technologies
- **Key Action 4** : new perspectives in aeronautics

These actions combine efforts in various research areas (e.g. materials, chemistry, physics, application of information technologies, clean technologies, human factors, socio-economic research, as well as training or accompanying measures) in order to achieve their objectives.

(ii) RTD on generic technologies helping to develop the scientific and technological base as well as qualified human capital in critical areas, and giving support to innovation across a range of applications :

- materials and their production and transformation
- new materials and production technologies in the steel field
- measurements and testing

(iii) Support for the more efficient utilisation of existing research infrastructures to provide an attractive networked environment in selected areas of the fields covered by this programme.

Activities will be integrated and co-ordinated as necessary, within and between the different key and generic actions as well as with other programmes of FP5, with the JRC and with national programmes. This should provide mechanisms by which stakeholders including industry, public authorities and the research community can work jointly in response to common strategic problems.

2.2. The work programme and its key actions

2.2.1. Key action 1 : *Innovative products, processes and organisation*

With respect to social objectives, the goal of KA1 is to move towards innovative high performance industrial systems, agile customer-driven networked industrial and related service enterprises. In order to achieve such goal, it is imperative to develop technological and organisational approaches taking into consideration the specificity of European society and manufacturing tradition and the need for a multi-skilled highly motivated labour force. RTD should enable policy makers to draw conclusions about issues such as future industrial structures or skill needs to develop a coherent and comprehensive industrial policy.

KA1 supports innovative goods and services "meeting the needs of citizen", as well as production methods making it possible "to save resources and being environmentally safe". "These activities should combine, as appropriate, social science and organisational aspects with the classical developments".

The problem-solving approach enhances concentration of a few relevant priorities. Concentration of resources and efforts are achieved through calls for proposals targeted on clearly identified Targeted Research Actions (TRA).

In the planned TRAs for 1999, it was specified that the organisational dimension was one of the basic criteria for selection, and that partnership research between various participants (designers, industrialists, users) was encouraged.

In particular, TRA3, Machinery, production equipment and systems for manufacturing, stresses the need to incorporate into the research parameters the logistical aspects and the management tools, and TRA 4: Towards zero-waste in manufacturing and processing promoting eco-efficient industries proposes new environmentally friendly approaches in terms of development for eco-product and for eco-production as a central objective.

2.2.2. Key action 2 : *Sustainable mobility and intermodality*

This key action is oriented towards the development and future formulation of Common Transport Policy. Sustainable Mobility and Intermodality are the paths to address and solve the main problems of the transport system.

The principal challenge of this action is "to reconcile the increased demand for transport on the one hand and the need to reduce its impact on physical, social and human environment, on the other hand". This is one of the aims of the Common Transport Policy towards which the key action is conceived.

In this respect the three main axes of the key action are :

- Increase the efficiency and quality;
- Increase the safety performances; and
- Increase the sustainability of the transport system.

Mobility of people and goods is becoming more and more the backbone of our socio-economic system, therefore, all the problems tackled by the key action have an enormous socio-economic weight.

Within the 11 research objectives, all incorporate the socio-economic dimension, be it explicitly like in 2.1.1. quantitative instruments for the taking of decision, 2.1.2. driving forces in transport or 2.2.5. human factors, or be it implicitly as in the objectives 2.1.3. sustainable mobility policies, and 2.2.2., 2.2.3., 2.2.4. environment, safety and protection in transport.

2.2.3. Key action 3 : *Land Transport and Marine Technologies*

The key action's overall aim is to support the expected growth in transport demand in a sustainable manner through the development of new technologies. Key issues addressed deal with environmental and safety aspects of innovative technologies. The economic dimension is emphasised through the target of improved system competitiveness in designing and producing future land and marine transport means.

The priorities of the Key action for 1999 were :

- Development of critical technologies for road and rail transport (Objective 3.1), in particular efficient, clean and intelligent road and rail transport vehicle technologies (objective 3.1.1), and human/vehicle interaction (3.1.3);
- Development of critical marine technologies (Objective 3.2), in particular efficient, safe and environmentally friendly ships and vessels (objective 3.2.1), maximising interoperability and vessel performances (objective 3.2.2), and innovative technologies for the monitoring, exploration and sustainable exploitation of the sea (objective 3.2.3).

In addition, the Key Action has identified Technology Platforms (TP) for technology integration and validation. The priorities were for 1999: New land transport vehicle concepts and enhanced systems efficiency (TP1) and Advanced concept for ships and vessels and competitive shipbuilding (TP2).

2.2.4. Key action 4: *New Perspectives in aeronautics*

The remarkable growth in air traffic is expected to continue during the coming decades with possible important socio-economic implications. The overall aim of the key action is reflected in four priorities directed towards (1) the reduction of aircraft procurement costs, (2) the improvement of the efficiency and performance of aircraft, (3) the reduction of impacts related to noise and climate as well as improvement of passenger environment, and (4) the improvement of the operational capability of the aircraft in the air transport system and of its safety. In this context, the economic dimension is emphasised through the target of cost development reductions and the improvement of aircraft efficiency and performance, whereas the social dimension appears through the target of improvement of passenger environment and safety aspects. Finally the ecological dimension is evident

through the objective of reducing air and noise pollution. These aspects are detailed in the various research objectives which are summarised below (a full coverage of all the critical technologies was considered in 1999) :

- Development of critical technologies for reducing aircraft development cost and time to market (Objective 4.1), in particular advanced design systems and tools (objective 4.1.1), manufacturing (objective 4.1.2), and product quality control (objective 4.1.3);
- Development of critical technologies for improving aircraft efficiency (Objective 4.2), in particular aerodynamics (objective 4.2.1), structures and materials applications (objective 4.2.2), propulsion (objective 4.2.3), systems and equipment (objective 4.2.4), and configurational and interdisciplinary aspects (objective 4.2.5);
- Critical technologies for improving environmental friendliness of aircraft (Objective 4.3), in particular, low pollutant emissions (objective 4.3.1), external noise (4.3.2), and cabin environment (objective 4.3.3); and
- Critical technologies for improving operational capability and safety of aircraft (Objective 4.4), in particular air traffic management (ATM) related to air borne systems (objective 4.4.1), operational maintenance (objective 4.4.2), accident prevention (objective 4.4.3), and accident survivability.

Similarly to the Key Action 3, the Key Action has identified Technology Platforms (TP) for technology integration and validation. The priorities for the first call (1999) were: Low-cost, low-weight primary structures (TP1), Efficient and environmentally friendly aero-engine (TP2), Novel rotary-wing aircraft configuration (TP3), and More autonomous aircraft in the future air traffic management system (TP4).

2.2.5. Generic activities :

The nature these activities have to be considered from a long-term view, and that they will be better answered by means of clustering with the relevant research activities of the Member States and other programmes. Priority in 1999 will be given to long term research activities related to other actions of the programme in particular with those identified in the priorities of the key actions. Close attention will have to be paid to co-operation between Member States and third countries.

Materials and Steel: New materials and their technologies for production and transformation are mainly of a medium and long-term nature. One of the key aspects of this generic research is that it is often not related to one specific application but rather to applications for more than one product or sector. RTD objectives relevant to the social goals support advanced material applications needed for improved quality of life, including functional or structural applications, as well as the improvement of safety and reliability. Moreover, RTD objectives encompass material properties and degradation mechanisms with major impact on society: e.g. structural integrity of buildings (e.g. subject to ageing or earthquakes) or efficiency and reliability of vehicles, industrial processes or largely consumed products.

Measurement and the testing : The focus on "methodologies aiming to allow better standardisation and harmonisation of the Community policies" reflects the important socio-economic character of the action, providing the technical base for setting-up regulations and standards, as well as generating initiatives to improve product quality. In particular, the development and validation of measurement and testing methods, as well as the development of certified reference materials, enable the production of reliable and comparable data, which have a direct impact on e.g. safety requirements for products and services. In addition, research in support to Community policies (in particular implementation of directives) has a direct social implication. Furthermore, research on the development of measurements and testing methods needed for detecting and preventing fraud has a direct socio-economic impact in terms of protection of economic interests of enterprises and society and the health and safety of citizens. Finally, the development of generic measurement and testing methods and the establishment of the international traceability of measurements have also evident socio-economic implications.

2.2.6. Accompanying measures

They are defined more explicitly in the guide for proposers and include 5 types of measures covered by the call, of which the most relevant are :

“Measure 1. Studies contributing to the implementation of Key Actions, Generic activities or Support for Research Infrastructures : prospective, impact assessment, or strategic studies addressing scientific, technical, socio-economic, and policy dimensions related to a specific objective or activity (e.g. targeted research action, technology platform) of the programme.

Measure 2. Studies in preparation of future activities : proposals should address, with a European perspective, broad cross-cutting RTD policy issues related to *industrial competitiveness and sustainable growth* or focus on important specific socio-economic problems/needs, emerging technologies, technological systems, industrial sectors, or changing techno-industrial clusters. They should include as appropriate a combination of the following: socio-economic challenges and opportunities, driving forces and directions of change, short/medium/long term goals for technological innovation, technological bottlenecks and research roadmaps, prospective assessment of the impacts of new technologies, comparative assessment of European capabilities, needs and opportunities for European and international RTD co-operation, technical and non-technical barriers to technology deployment, and implications for European RTD and other policies.”

2.3. Links between research priorities and EU policies

When preparing a proposal for submission, the instructions in the Guide for Proposers require explicitly that the proposer present the links between the proposed work and EU policies. In the guide for proposers, it is stated :

"C4. Community Added Value and contribution to EU Policies (about two/three pages)

- Justify why the objectives would be more efficiently addressed at the European level **rather than at national/regional/private** level. Justify the need to create a critical mass in human, technological or financial terms or the need to bring together European-wide expertise and resources.
- Indicate if the proposed activity contributes to the development or implementation of one of more European Union **policies**. Examples of such policies are: employment, environment, transport, health, working conditions, internal market and free circulation of goods, consumer protection, security and justice, energy, regional policies and cohesion.
See also the European Union's web-server on :
http://www.europa.eu.int/comm/dgs_en.htm.
- Indicate if the project is addressing problems connected with European **standardisation and regulation or conformity assessment procedures."**

2.4. The socio-economic dimension in the work programme of the first periodic call for proposals

Many objectives of the Growth Programme are generally formulated in socio-economic terms, including in some cases quantified targets. Policy driven and socio-economic research constitutes a major part of the activities covered by KA2 and are also addressed in KA1 (organisational aspects of production).

For most actions, the work programme objectives (including Targeted Research Actions and Technology Platforms) are formulated in a way that require and generally lead to proposals with a multidisciplinary approach (e.g. consortia covering expertise in different technical fields and involving various stakeholders concerned with environment, testing, product design, marketing, etc.).

In some areas covered by KA1, a significant number of projects were conceived as RTD (technical) projects lacking a properly defined problem-solving multidisciplinary approach and/or clear socio-economic perspectives. Possible reasons are (1) difficulties to constitute multi-disciplinary consortia (e.g. engineers + socio-economic researchers), and (2) difficulties to inform the socio-economic community about the socio-economic objectives of the programme. The focus and formulation of the objectives of KA1 are being improved in the revised work programme for the subsequent calls in order to clarify them and to encourage multidisciplinary projects.

The work programme states that : "Socio-economic research can be funded by both the thematic programmes, as well as by the key-action on "Improving the Socio-economic Knowledge Base" of the horizontal programme "Improving the human research potential and the socio-economic knowledge base". Taking into account the philosophy of the Fifth Framework programme, socio-economic research is present in the thematic programmes as an integral part of the technological research activities. Specific measures will be taken by the horizontal programme to ensure co-ordination of the socio-economic research to be implemented within the current programme. The horizontal programme will draw up an annual report on socio-economic research in the Fifth Framework Programme."

2.5. The socio-economic dimension in the guide for proposers, including evaluation criteria

Socio-economic aspects are well defined in the information package (application forms). The instructions give guidance to proposers on how to tackle socio-economic objectives to the evaluators on how to approach the socio-economic criteria.

C5. Contribution to Community Social Objectives (about two/three pages)

Identify the **societal needs**, which the project addresses. Indicate the contribution of the project in meeting these **challenges in clear and quantified terms**, where possible including an economic analysis of the **expected benefits**. Where relevant, refer to the relation with EU policies in these fields. Address the following points:

C5.1 Employment, education, training and working conditions

- Demonstrate how the project will contribute to the creation or preservation of **employment** in Europe. Describe briefly the employment trends in the sectors concerned and the impact that the project is expected to have, directly or indirectly. Consider not only the direct impact of the project but assess the possible shift in type of jobs, taking into account the global and longer term consequences together with the possible consequences of taking no action.
- The impact of the project on the improved use and the development of **skills** including aspects of **education and training**, in particular when job skill requirements will shift, e.g. from lower skill requirements to higher skill requirement.
- Demonstrate the impact of the project on **working conditions** and **safety at work**

C5.2 Environment

- Estimate quantitatively the contribution towards preserving or enhancing the **environment**. Consider the life-cycle impact on the quality of water, air, soil, etc. or the reduction of emissions and noise. Consider also reduction of externalities, i.e. reduction of cost / negative impact on the eco-system and/or society and not imputed in the costs of the product / process / services delivered to the user.
- Preservation of **natural resources and energy**, for instance by applying more efficient processing technologies, reducing materials and energy consumption, recovery and recycling, or using more renewable resources.

C5.3 Quality of life, health and safety of the citizens

- The impact on improving the **quality of life**, (added value of products, processes, services etc. for the citizen including e.g. improved mobility, comfort, etc.)
- the **health** (reduction of dangerous products, devices, etc.)
- **and safety** of European citizens (e.g. reduction of technological risks, safer products, vehicles, etc)

Special mention has to be made with respect to Key Action 2 “Sustainable Mobility and Intermodality” which is directly linked with the Common Transport Policy and therefore managed by DG Transport, underlining the policy-driven character of this key action.

C6. Economic Development and S&T prospects (about three pages)

C6.1 Exploitation and Dissemination of Results, IPR

- Describe the **main project outputs** (the RTD results that are suitable for exploitation) and indicate the **range of applications** as well as the **targeted user groups**, the impact and the time range to exploitation. Present an overview along the lines of the example in Annex 3 Table "Expected Output and Exploitation".
- Describe the **exploitation plans** of the partner organisations including approximate timing to exploitation. Identify the actions planned to lead from the research phase to the industrial/commercial or other exploitation. Include in the management a task to further detail and refine these plans during the course of the project. Describe the role of the **exploitation manager**. The **exploitation plan** presented in the proposal should be further detailed and refined during the course of the project, based on new market research, contacts with users, results from the research work, partner search, etc. If needed, financing should be secured and possibly new partnerships initiated for follow-on research, marketing and production activities, etc. At the mid-term assessment and project end, a

"Technology Implementation Plan" describing these plans will be contractually required.

- Describe the **policy and plans for dissemination of results**, including the main target groups, methods for dissemination or **technology transfer** and the timing. The policy and plans need to be adapted for the type of research and the sectors concerned. For RTD related to standardisation, an early and wide dissemination is probably suitable. If the research relates to the fight against and detection of fraud, a restricted dissemination might be appropriate. Consider in particular also special actions for dissemination or transfer of technology to **SME's** including possible follow-up research to adapt technology to the needs of SME's (e.g. CRAFT, Take-Up measures, etc.).
- Describe the policy for securing **Intellectual Property Rights** and for licensing.

C6.2 Economic growth

- Describe how the RTD contributes to **economic growth and improved competitiveness**. This is preferably done per main exploitable research output. Tabular presentations are preferred.
 - Describe briefly the partners' current market situation and their co-operative and competitive environments.
 - Estimate the increase in turnover and profit or other important **direct economic gains** for the partners if the expected project results are achieved. Consider for example reduced costs for waste disposal, possible economic gains by recovery and recycling of used materials, gains resulting from creation of new markets, increased life-time of products or equipment, or from reduced time-to-market, improvements in productivity, enabling fair international trade, etc.
 - Specify also the wider, **indirect economic impacts** – per main exploitable project research output. Identify sectors that may benefit from the availability of the results of the proposed activity. Define and quantify the impact."

2.6. Outcome of the first periodic call and the evaluation of proposals :

	KA 1	KA 2	KA 3	KA 4	MAT	M&T	TOTAL
<i>Acc. Meas (open)</i>	9	3		6	3	8	29
<i>Acc. Meas (fixed)</i>		41					41
<i>RDT</i>	342	104	155	109	191	86	987
<i>Thematic networks</i>	10	38			6		54
Proposals received	361	186	155	115	200	94	1111
Proposals retained	78 (21.6%)	65 (34.9%)	45 (29%)	50 (43.5%)	63 (31.5%)	33 (35.1%)	334 (30.1%)
Total amount requested (M€)	736.3	375.3	404.1	517.2	374.1	112.6	2519.6
Total amount awarded (M€)	124.3 (16.9%)	124 (33%)	79.7 (19.7%)	252.1 (48.7%)	116.4 (31.1%)	34.7 (40%)	731.4 (29%)

KA 1 = Innovative products, process and organisation

KA 2 = Sustainable mobility and intermodality

KA 3 = Land transport and marine technologies

KA 4 = New perspectives in aeronautics

MAT = Materials

M&T = Measurements and testing

Examples of projects retained :

We present hereinafter the abstracts of five retained proposals, as examples, which obviously include a clear socio-economic dimension :

Proposal	GRD1-1999-10281
Title:	Aircraft Service Logistics
Contract	G4RDCT990098
Acronym	ASL
<p>Existing passenger service systems do not fulfil airline and passenger requirements for 500 + pax size aircraft and long flight duration. The retention of such a system for large capacity aircraft would misuse high value space aboard of the aircraft. The new system will reduce the overall existing system weight and thus the fuel burn, the cabin crew workload, generate extra seats and improve the individual passenger service. The possible overlapping of catering and passenger boarding allows reduction of ground turnaround time and thus improve airport capacity exploitation. The passenger service items will be stored in specially designed containers in the cargo compartment. Each item can be individually handled via a control panel in the cabin. A computer controlled conveyance system will transport the items to the service station on the passenger deck. Storage of waste will be handled in similar process.</p>	

Proposal GRD1-1999-10332
Title: Wake Vortex Characterization and Control
Contract G4RDCT990141
Acronym C-WAKE

The wake Vortex issue has generated widespread interest, not only in the aviation community but also in the general public. The main reason was a growing safety concern over potential hazards created by a "Very Large Transport Aircraft" (VLTA), a novel airplane now on the drawing boards in Europe and the US and likely to enter airline service within the next decade. While the origin of wake turbulence is generally recognised, its physical characteristics in space and time continues to be insufficiently understood. As a result of the insufficient knowledge in wake characterisation, its logical follow-on step is also lacking, that of wake controls. Industry and authorities alike are applying pressure for progressing in this field, the industry to maintain competitiveness and growth, the authorities to assure high standards of safety. This C-Wake project is designed to address, within the 5th Framework Program of EC, one of the most urgent topics in the field of Wake Vortices, that of Wake Vortex Characterisation and Control.

Proposal GRD1-1999-10418
Title Design of advanced production processes for the systematic manufacture of very large monocoque sandwich structures for the transportation sector
Contract
Acronym HYCOPROD

The project covers more than one mode of transport: rail, tram, bus, container, trailer builders and composite manufacturers aim to develop, in common upstream, economically efficient and high quality controlled production processes for the manufacture of very large monocoque hybrid composite sandwich structure. Firstly, the participants will utilise the combined knowledge, expertise and experience to derive technologies for the design tool, manufacture, mould handling and building, quality control and support systems. Secondly, they will focus on demonstrators in all above-mentioned sectors. A critical point to consider is that over 80% of composite manufacturing companies in Europe are SMEs. The creation of lighter weight structures for transport will permit new opportunities for vehicle builders and their suppliers.

Proposal GRD1-1999-10815
Title: Open Systems for Road Information Support
Contract G1RDCT990080
Acronym OSYRIS

European road constructors, owners and maintainers need an efficient system to control the use of resources; up-to-date description of the achieved work; real-time measurements of important pavement parameters and information about as-built for effective maintenance. The objectives of the project are to efficiently fill in the gaps mentioned above with work site IT infrastructure, providing easy-to-use and up-to-date technical information for all users and a line of complementary products, including novel machine sensors for pavement thickness, volume and compaction factor. Application of the system will allow better control of road life cycle, efficient site logistics, better quality for pavement saving the resources, redundant tasks, safer and more comfortable work places. It will create new jobs and profiles on a work-site and open a new market niche for IT.

Proposal GRD1-1999-10968
Title: Competitive Uses of Advanced Manufacturing Technologies for Sustainable Purposes
Contract G1MACT990001
Acronym CUSP

New manufacturing technologies are radically changing the terms of market competition. There is cause for concern that many current practices in the strategic use of these technologies are sustainable because they lead to increase resources consumption in the aggregate by increasing the demand for materials goods.

The proposed research will test the validity of this concern by examining the ways the current generation of production technologies structures the formation and growth of product markets and will design a model that explains the effects of shorter product cycle times and increased product differentiation on consumption patterns. The findings will be used to produce a tool for evaluating the potential of advanced manufacturing technologies to contribute to the dematerialization of the economy. A final outcome will be the ability of manufacturers to link competitive strategies with more sustainable uses of advanced technologies.

There are very few socio-economic research proposals or proposals integrating technical and socio-economic research within a single project, except in the areas of the programme which identify policy or socio-economic research topics (mainly the key action "sustainable mobility and inter-modality", the organisational aspects of production in the key action "innovative products, processes end organisation", and accompanying measures).

Among the main reasons : (1) in many industrial research areas of the programme, the integration of technical and non-technical research is not considered necessary by the main research actors and/or scientists from technical and non-technical disciplines are not used to work together within a project, and (2) the lack of awareness of the socio-economic research community. Actions to improve

awareness of socio-economic researchers about the socio-economic research needs and opportunities across FP5 programmes could be useful.

However, one should not overestimate the need and feasibility of integrating technical and non-technical research. What is generally more important in industrial research is the design of technical research proposals with a problem solving approach, the involvement of users and other stakeholders, the clustering of projects around common objectives, the definition of an optimal exploitation strategy, and the appreciation of the expected socio-economic impacts

2.7. Socio-economic aspects during the evaluation

- 518 evaluators participated in the process, constituting 76 panels. About 50% (80% in one generic action) of evaluators were selected on the basis of their expertise/experience enabling them to evaluate the socio-economic dimension of the proposals. The scientific and socio-economic panels were constituted of experts with complementary expertise and experience to ensure an adequate coverage of the various criteria and dimensions to be evaluated. Of course the professional background of the experts and their combination in panels varied according to the Key/Generic Actions and to the specific objectives of the groups of proposals to be evaluated. Experts from various user and other stakeholder groups were involved. The number of evaluators having a socio-economic degree is not specified.
- Although the socio-economic aspects of proposals are often intrinsically more difficult to evaluate than the scientific/technical aspects, evaluators were generally satisfied with the briefing they got and felt competent to judge socio-economic aspects (based on questionnaires sent to evaluators).
- Note that socio-economic experts, who do not have some knowledge of the technical areas of the research proposals, have difficulties in contributing effectively to the evaluation of the socio-economic aspects of a technical research proposal. Furthermore, experts with appropriate expertise to evaluate the socio-economic aspects of a proposal are not necessarily socio-economic researchers.
- The fact that 3 out of the 5 sets of evaluation criteria deal with socio-economic aspects and that, in the GROWTH programme, the same weight is given to each set of criteria, has generally led proposers to address these aspects in detail.
- The evaluation criteria relating to the implications of the research on employment prospects is difficult to document and evaluate. A discussion on how to better assess this criteria could be useful, and the issue will be discussed with DG-Employment and Directorate F.
- There are differences of opinion on the weighting of criteria. Some believe that the current weight related to socio-economic criteria (60 %) is too high and the scientific and technical-related criteria should be increased, while others are satisfied with the current weighting. It is stressed again that only if the S&T part is sufficiently good can the socio-economic objectives be attained, not the other way round.

- The Scientific Officer acting as moderators in the evaluation panels certainly helped a great deal, in particular for explaining the socio-economic dimension/context of the programme and in particular how to understand and evaluate the European added value. More time for the preparation of the evaluation would also help Commission staff in this respect. Briefings (workshops or guidelines) of scientific officers on socio-economic aspects could be useful if they are simple and concrete and help identify good practice and harmonise their approach to socio-economic aspects.

2.8. Conclusions

- The socio-economic aspects appear explicitly in the formulation of the objectives of most actions of the programme, in the question to be addressed in the proposals and in the evaluation guidelines.
- Based on the experience of the first call, the guides for proposers and the guidelines for evaluators are generally considered sufficiently clear regarding the required description and evaluation of the socio-economic aspects of research proposals.
- The fact that 3 out of the 5 sets of evaluation criteria deal with socio-economic aspects and that, in the GROWTH programme, the same weight is given to each set of criteria, has generally led proposers to address these aspects in detail.
- The evaluation criteria relating to the implications of the research on employment prospects is difficult to document and evaluate. A discussion on how to better assess this criteria could be useful, and the issue will be discussed with DG-Employment and Directorate F.
- The importance of designing research proposals with a multidisciplinary, problem solving approach was already reflected in the documents related to the first call and is further emphasised in the revised work programme and guide for proposers.
- Following discussion with the EAG's and Programme Committee, the current weighting of the criteria is maintained for the next two periodic calls.
- The revised work programme now explicitly encourages the integration of socio-economic research in research proposals.
- Scientific officers generally consider that they have a good understanding of the socio-economic dimension of the work programme (objectives, criteria). However, briefings (workshops or guidelines) of scientific officers on socio-economic aspects could be useful if they are simple and concrete and help identify good practice and harmonize their approach to socio-economic aspects.

2.9. KEY ACTION 2 : SUSTAINABLE MOBILITY AND INTERMODALITY

2.9.1. The work programme and the links between research priorities and EU policies

This key action is largely policy driven. The strong link of this key action with the Common Transport Policy defines the socio-economic objectives: sustainability, efficiency and safety. These objectives combined with the systemic approach leads to the research objectives grouped in three areas, subdivided as follows :

<i>Socio-economic scenarios</i>	<i>Infrastructures and interfaces with transport means</i>	<i>Transport management</i>
.1.1. Quantitative tools for decision-making	.2.1. Infrastructure development & maintenance	.3.1. Traffic management systems
.1.2. Driving forces in transport	.2.2. Environment	.3.2. Transport and mobility services
.1.3. Policies for sustainable mobility	.2.3. Safety	.3.3. Second generation GNSS
	.2.4. Security	
	.2.5. Human factors	

It is obvious that, not only the first column of objectives of the work programme are socio-economic oriented, also the other two columns of objectives have a strong socio-economic component. For example, the second generation GNSS (global navigation satellite system), Galileo, is a key element for the development of the applications and systems that will enable the achievement of sustainable mobility.

This policy-driven approach justifies the need for "Additional Information Document" to the work programme. This "Additional Information Document" besides describing the problem to be solved and orienting the expected results, also gives specific references to the official European policy documents such as :

1. Communication on The Common Transport Policy, Sustainable Mobility : Perspectives for the Future (COM (1998) 716 final)
2. Communication on development of methodologies and criteria for benchmarking in transport
3. The Commission's work programme for 1999, COM (1998) 604 :
 - Trans-European networks and transport policy. DGVII work programme, The Common Transport Policy, COM (1998) 716;
 - Integrated transport systems: Trans-European Transport Networks; Protecting consumers and improving the quality of transport services: Improved quality of local public transport. DGVII Rolling Programme;
 - White Paper on the revision of TEN Guidelines (1999);
 - Communication on interoperability of conventional rail (1999);
 - Communication on the developing of the Citizen's Network;
 - Framework for harmonised technical standards for railways (2000-2004).

Reference is also made to the Kyoto Agreement and Environmental European policy.

This Additional Information Document is structured following the format of the work programme while defining specific research tasks which are normally covered by a single project. For each of the tasks, the above mentioned information is provided.

2.9.2. Management of the key action

As a consequence of the policy driven approach and to ensure the rapid valorisation of the results, the key action is managed by DG-Transport. This Commission service is the main body participating in the definition of the work programme while at the same time being the first direct user of the results emerging from the different projects as they are incorporated in policy and regulatory initiatives.

The key action is closely managed with Member States through an Ad Hoc Working Party set by the programme committee. Similarly to all the other key actions, an External Advisory Group, made of policy makers, transport industry and operators, and users, helps the Commission in the definition of the most adequate research avenues to achieve the defined objectives.

2.9.3. Evaluation criteria and process

The evaluation criteria for this key action are the same as for all FP5 (scientific excellence, quality of the management, economic development, socio-economic and European dimension), but the thresholds of the Socio-Economic and European added value criteria are higher than for the other key actions to ensure the quality of the proposals from these points of view.

It is also relevant to highlight the slightly different evaluation procedure followed by the key action. The evaluators are the same for the evaluation of the five criteria and the same evaluators assess each proposal and participate in the prioritisation of proposals covering a task.

2.9.4. Situation after the termination of the 1st call and the evaluation of its proposals

Proposals received : **181 proposals for 347 M€**

Proposals evaluated (- non eligible) : 12

Proposals accepted (principal list and reserve list) : **65 proposals for 140 M€**

Reading of summaries of evaluation reports seems to indicate a correct understanding of economic aspects, but it seems that social or sociological dimension is sometimes reduced to the general official assessment as "expected positive impact on the quality of life, safety and environment".

The proposals selected are distributed as follows :

Accomp. Measures (open)	1
Accomp. Measures (fixed date)	10
RTD	38
Thematic Networks	16
<u>TOTAL</u>	<u>65</u>

2.9.5. Examples of retained proposals

GEMINUS : *Galileo service definition*

The Galileo service definition (Geminus) is a series of interlinked studies, the aim of which is to define the future Galileo service and also to define the structure of a potential Galileo Service Provision Company. The task begins with an examination of the requirements of the potential users and Service providers. Necessary changes to institutional constraints and laws will be recommended, along with an optimal PPP structure for the Service Provider. Appropriate business structure, income and expenditure flows will be modelled. The results of all the studies will then be made available to potential value-chain service provider so that a number of critical business case studies may be performed.

UNITE : *Unification of accounts and marginal costs for transport efficiency*

Fair and efficient pricing of transport infrastructure use is a fundamental aspect of developing a sustainable transport policy that takes account of the full social costs and benefits of transport. UNITE will supply policy makers with the framework and state-of-the-art cost estimates to progress this policy. UNITE has three core objectives: 1) to develop pilot transport accounts for all modes, EU15 and additional countries; 2) to provide a comprehensive set of marginal cost estimates relevant to transport contexts around Europe; and 3) deliver a framework for integration of accounts and marginal costs, consistent with the overall role of transport taxation in the economy. These objectives will be achieved by a European research team comprising many of the world's leaders in developing and implementing state-of-the-art estimation techniques.

ANNEX 3

INFORMATION SOCIETY TECHNOLOGIES (IST)

- 3.1. Introduction to the thematic programme IST
- 3.2. The work-programme and its key-actions
- 3.3. The socio-economic dimension in the first call for proposals
- 3.4. The socio-economic dimension in the *Guide for Proposers*
- 3.5. Situation after the evaluation of first call proposals
- 3.6. KA 2: New Methods of Work and Electronic Commerce

ANNEX 3. INFORMATION SOCIETY TECHNOLOGIES (IST)

3.1. Introduction to the thematic programme IST

Information and communications technologies (ICTs) have major social, economic, political and cultural implications. The specific programme *Information Society Technologies* (IST) supports research, development and demonstration on ICT technologies, systems, infrastructures and applications to meet the needs of both private individuals and companies in Europe.

The programme follows on from the *ESPRIT*, *ACTS* and *Telematics Applications* programmes, which were carried out within FP4. It is based on a new, more integrated approach that reflects the increasing convergence of the information and communications technologies addressed individually by those earlier programmes in the past.

The socio-economic dimension exists by definition in the IST programme; most of its key-actions and action-lines are geared towards the development of technology applications that are expected to contribute to the achievement of socio-economic objectives.

The degree of integration of the socio-economic dimension in the various parts of the programme is variable. Overall, the programme recognises that the integration of a socio-economic dimension in its research activity can provide conceptual and practical support towards the achievement of its technological priorities and policy objectives.

3.2. The work-programme and its key-actions

The programme is structured along four key-actions:

Key-Action 1 (*Systems and services for the citizen*) aims to meet the needs and expectations of European citizens (individuals) for high quality, user-friendly and affordable services of general interest. It supports RTD in the fields of health, persons with special needs (including the elderly and disabled), administrations, environment and transport. Its action lines include work on systems and services for improved personal health, telemedicine systems, systems and services to support independent living for persons with special needs, including the disabled and the elderly, etc.

Key-Action 2 (*New systems of work and electronic commerce*) promotes the development of information society technologies and associated policies with a view to enable European workers and enterprises, in particular SMEs, to increase their competitiveness in the global market-place, to improve the quality of working life, through the use of information technologies to provide the flexibility to be free from many existing constraints on both working methods and organisation, including those imposed by distance and time.

Key-Action 3 (*Multimedia content and tools*) – with a goal to bring together Europe's technology developers with content creators to support the cost-effective creation, handling and delivery of attractive personalised and multilingual multimedia content, and for the effective exploitation and management of information. It addresses issues such as interactive electronic publishing, digital heritage and cultural content, education and training, human language technologies and information access, filtering and handling.

Key-Action 4 (*Essential technologies and infrastructures*) focuses on the development of enabling technologies and infrastructures including : mobile and personal communications, microelectronics; technologies and engineering for software, systems and services; simulation and visualisation technologies; novel multisensory interfaces; and the development of peripherals, subsystems and microsystems. The objective of KA4 is to drive their development, enhance their applicability and accelerate their take-up in Europe.

Other parts of the Programme. In addition to the four key-actions, *Cross Programme Themes* promote project clustering and exchanges of information on ten topics including Mobile citizens and services, Privacy and personalisation, and Space technologies and applications⁹.

The programme also funds long-term research on *Future and Emerging Technologies* (FET), providing an open door for any new idea likely to have an effect on industry or society. Proactive initiatives cover such areas as quantum computing and communications, personal bio-information systems, and nanotechnology information devices.

The programme supports *Research Networking*, with a view to facilitate and allow the development of trans-European broadband interconnections between national research centres, education and training networks, etc.

Finally, the programme provides for a series of *Support Measures* that include take-up measures, concerted actions and thematic networks, technology projects to stimulate innovation and facilitate SME participation and training fellowships. The programme's *Accompanying Measures* include dissemination, awareness actions and studies. These include studies aiming to provide both technology and market analysis to the research community with a view to matching the research activities with international and socio-economic trends. These studies can be carried out either separately or as investigations under individual key-actions.

3.3. The socio-economic dimension in the first call for proposals

The 1999 IST work-programme reflects the philosophy of socio-economic usefulness underlying FP5 as a whole. The work-programme contains a number of explicit references to socio-economic objectives, which are in most cases expressed in general terms.

⁹ Two types of theme are included in the 1999 workprogramme: "Cross Programme Actions" (CPAs) and "Cross-Programme Clusters".

The integration of the socio-economic dimension is encouraged in the 1999 work-programme in two ways:

1. through a number of action-lines explicitly geared towards socio-economic problems;
2. through encouragement to proposers to integrate a socio-economic dimension and socio-economic research in their projects.

A number of action-lines address socio-economic research directly. For example, the action-line *New models for providing services to citizens* of KA1, the action-line on *New Perspectives for Work and Business* of KA2, the action-line on *Social and business models for multimedia content* of KA3, and the action-line on *Convergence and integration: scenarios and analysis* of KA4.

The socio-economic content varies between as well as within key-actions. Some action-lines have a more direct socio-economic relevance than others (for example, the KA1: *Systems and Services for the Citizen*, which focuses on applications which target specific identified social needs).

Certain action-lines with an explicit socio-economic relevance were not open in the first call for proposals¹⁰. It is expected that the number of proposals with socio-economic content will increase significantly in forthcoming calls where these particular action-lines will be open.

3.4. The socio-economic dimension in the *Guide for Proposers*.

The IST programme encourages the integration of socio-economic research within its technological projects; both the work-programme and the *Guide to Proposers* encourage proposers to consider the socio-economic aspects of their projects. The latter¹¹ explains in detail how the five principal evaluation criteria (which are used across all thematic programmes) are applied to the range of actions open in this first IST call for proposals.

Having a common set of criteria applying across all programmes and action-lines is certainly useful in terms of simplification and "streamlining" of procedures. However, it was felt during the evaluation that this uniformity of evaluation criteria is at times problematic as it allows only limited flexibility for interpretation in the context and specificities of each specific programme and action-line. Part of the difficulties encountered by evaluators during the evaluation (discussed more in the next section) had to do with the need to break down the common evaluation criteria into concrete socio-economic research terms and issues relevant to the IST programme. It may be for that reason that in some areas there was a certain lack of coverage of the socio-economic dimension in the evaluation and that evaluators experienced difficulties in assessing the socio-economic dimension. Consequently

¹⁰ For example, action-line 2.1.1. on *New perspectives for work and business*, which was open in the second call in October 1999. Also, action-lines 1.1.1 (*New models for providing services to citizens*) and 3.1.1. (*Social and business models for multimedia content*) were not open in the first call.

¹¹ IST Guide for Proposers, final edition, 12.03.99

there was little discussion of the socio-economic dimension in the evaluation reports or panel reports.

3.5. Situation after the evaluation of the first call proposals

The first IST call for proposals was launched on 19 March 1999 (OJEC, C 76). A second call for proposals for RTD projects and take-up measures was launched on 1 October 1999¹².

The first call received 2519 proposals, 475 of which were retained for negotiation.

<u>OVERVIEW OF SUBMISSION</u>	Submission
KA1 : <i>Systems and Services for the Citizen</i>	582
KA2 : <i>New Methods of Work and Electronic Commerce</i>	504
KA3 : <i>Multimedia Content and Tools</i>	577
KA4 : <i>Essential Technologies and Infrastructures</i>	618
Cross Programme Actions (CPA)	101
Future & Emerging Technologies (FET)	79
Human Potential (inc. MC fellowships)	21
INCO	7
SME Awards	30
Total	2519

Table 1: Number of proposals received per KA (first call).

The response covered all open action-lines and represented a broad interest from all EU states as well as from pre-adhesion states, other associated states, Mediterranean states, from other European states and from other industrial countries.

Participation covered all types of organisations: small and large companies, universities and research centres, as well as public organisations.

The coverage of the work-programme was satisfactory, with the exception of action-line *Persons with special needs, including the disabled and elderly - Systems and services for independent living* (in KA1).

Attention paid to socio-economic issues and socio-economic research in the proposals received varied significantly across the various work-programme areas. In some of the proposals received, only marginal attention has been paid to socio-economic issues. This reflects certainly the endogenous difficulty of bringing the world of engineers and the world of social scientists together in the framework of a research proposal.

¹² This report is based on the results of the first IST call for proposals only. The evaluation of the second call proposals was done in February 2000 and the results have not been available before the finalisation of this report. Due attention to the second IST call results will be given in the Annual Report for 2000.

In KA2 (*New methods of work and electronic commerce*) 42% of the proposals integrate socio-economic content with technological development research. For example, there are proposals addressing issues like the quality of working life and new service developments, changing labour markets, social partners, regional development, employment creation and equal opportunities.

Another positive example which shows the importance that the programme attaches to socio-economic issues comes from the area of *Future and Emerging Technologies* (FET): in the "Universal Information Ecosystems" (UIE) initiative of this domain, the evaluation panel ranked two socio-economically oriented proposals higher than the other technology development proposals¹³. This was an "unusual" result in a sense that more traditional computer science, artificial intelligence, and software engineering was expected to be the focus of UIE.

In KA1 and KA3 also, many proposals were a response to what were perceived, as concrete socio-economic needs. Many of these research consortia involve a combination of public and private users, and providers of ICT and other dedicated technology.

The integration of socio-economic *research* differs between projects and across key-actions. We should not forget that socio-economic research is not *per se* an objective of IST projects. In parts of the programme directed towards core technical advances, the behaviour of 'technical systems' is much more important for projects than socio-economic considerations. In parts of the programme that have direct socio-economic priorities, we find more application-oriented proposals which address socio-economic issues and therefore integrate socio-economic research to the extent to which they consider appropriate.

In some cases, even pure technology development projects consider socio-economic issues like standardisation or constituency and competence building.

Multidisciplinarity is mentioned as a key-requirement in the IST work-programme 1999. However, the response of the research community to this call for interdisciplinary work was limited in the first call for proposals. It seems that the conventional segregation of the research communities and disciplines is still very powerful. We should not underestimate how difficult it is to bring together the world of engineers and the world of social scientists. Also, the IST programme managers had considerable difficulties in communicating the importance it attaches to multidisciplinarity to the research community in time for the first call given the extremely tight timescales for launching the programme.

It seems that at the moment there are a number of obstacles preventing the submission of quality interdisciplinary proposals with a socio-economic content. Given the novelty of the approach adopted in FP5, the degree to which the research community will respond remains unpredictable. There is relatively little experience, let alone a culture, of socio-economically underpinned technology

¹³ One proposal covers the emergence of "ethical" behaviours in a UIE, whereas the second proposal covers the social and economic patterns of aggregation-segregation in UIE.

research in Europe. Questions remain about whether and to what extent the new perspectives contained in the IST programme in relation to this will be picked up by the research community. The IST managers judge that it is not realistic to expect major changes to happen overnight in relation to interdisciplinarity; for them, the integration of the socio-economic dimension is seen as an objective for the medium and long-term.

Given the complexity of the relationship between society and technological change, there is a whole range of scientific disciplines, methodological approaches and conceptual frameworks available. Therefore, it is difficult to draw boundaries around what may be regarded as "socio-economically relevant technological research". In its first year, the IST programme was found in a difficult position: the programme tried to achieve a compromise between the need to establish a working definition of the "socio-economic dimension" (and "socio-economic research") and the danger of becoming prescriptive with the communication of a rigid definition. The programme tried to avoid patronising certain approaches over others. Rather, the programme recognises that there is a whole range of approaches in the social sciences that can enhance our understanding of the interrelationship between technology and society with their concepts and methodological tools.

As a means to include perspectives from the social sciences on ICTs, a new *Cross Programme Action (CPA)* entitled *Socio-economic Analysis for the Information Society* has been added to the IST work-programme for the year 2000.

767 experts were actively involved in the evaluation of the IST first call proposals. 82% of the evaluators were male and 18% were female. 41% of them were from the industry, 23% from research institutions, 28% from universities and 6% from government and non-profit organisations.

48% of the evaluators had some expertise relevant to the socio-economic aspects of the IST Programme¹⁴. Among these, 106 experts had some direct expertise in socio-economic research and sociology, and 260 experts had some expertise in other relevant fields, such as innovation and entrepreneurship, public health, gender issues, exploitation of research results, learning mechanisms, and European integration.

Table 2 below provides a more detailed overview in terms of main subject areas of socio-economic aspects of the IST proposals. These are average figures across the evaluation of proposals in all IST areas. The actual number of evaluators with some socio-economic expertise in the evaluation panels has varied considerably from one area to another, depending on the nature of the proposals concerned and the kind of non-technological expertise which was considered necessary by the programme managers.

¹⁴ The experts and related statistical figures were derived from the official list of experts involved in the evaluation of the first call of the IST Programme, by identifying the keywords and codes of expertise judged relevant to socio-economic aspects of the IST Programme. The resulting 85 codes were then combined into the subject areas in table 2.

Main subject area	Nb of evaluators	% of total nb of evaluators
Health	120	15.65
Environment	119	15.51
Socio-economic aspects, sociology	106	13.82
Education and training	40	5.22
Innovation and entrepreneurship	213	27.77
Economy and market	69	8.99
Technology assessment	85	11.08
Culture	24	3.13

Table 2: Evaluators with expertise in main subject areas of s-e aspects of the IST proposals.

There is little discussion of the socio-economic dimension in individual evaluation reports or panel evaluation reports. Difficulties were experienced by evaluators in assessing the socio-economic dimension. It is not entirely clear from Panel Reports how far evaluators were seeking to interrogate in depth the socio-economic dimension of the proposals they were examining.

Differences were noted in how evaluators interpreted the evaluation criteria related to the socio-economic dimension of IST proposals (especially innovativeness, contribution to community social and policy objectives). It seems that for evaluators with some background in the social sciences the interpretation of these criteria was easier, while for evaluators from science and engineering backgrounds these criteria created confusion.

There is a need for clearer guidance for evaluators in relation to the evaluation of the socio-economic dimension of proposals and in relation to the interpretation of the relevant evaluation criteria. There is a need to clarify the border between which elements are open to "local" interpretation and which are not. Instead of adopting an inflexible approach which restricts "local" interpretation, the Programme could suggest how the guidelines might usefully be interpreted in the different parts of it. Evaluation teams have tended to adopt a more creative approach: evaluators in different areas have been trying to work out how to implement and interpret these common criteria in the context of the challenges of their particular action-lines thus. Some guidance in this respect was published on the web. The experience from the evaluation shows, however, that this guidance should be strengthened and drawn to the attention of potential proposers to convey a clearer message about the kinds of proposals and approaches mostly required.

All proposals demonstrate an effort to say something about the socio-economic dimension of the proposed project in the relevant section of the application form. However, some proposals convey the impression that proposers tried to find something to write (often couched in terms of the wording of the work-programme itself) rather than understanding the socio-economic issues related to their project. This is a reflection of the fact that the interpretation of the "socio-economic dimension" was difficult for many proposers, too. Especially in areas of the programme which prioritise technology development without a necessarily immediate socio-economic applicability (like KA4, for example), the requirement

for statements on the likely socio-economic implications of the proposal seemed to be very difficult for proposers.

The socio-economic dimension is in some proposals interpreted narrowly in terms of the cost-effectiveness of the product and its viability in the market. Of course in a project geared towards commercial exploitation, this may be a realistic approach albeit narrow in relation to the goals of the programme.

“Innovation” was seen mostly in terms of technical innovation (in terms of science and engineering) in the evaluation process. There were exceptions –for example in the area of educational technologies (KA3), where innovation was in many cases interpreted as innovation in pedagogies as well as in technologies.

The following are two examples of proposals with a socio-economic dimension :

Proposal number : IST-1999-20193

Action-line :1.1.2.-3.1.1.

Title :*Technology, Economics and Diversity in the Periphery* (TEDIP)

Abstract¹⁵: *A study across six peripheral European regions that addresses the nature of existing and potential change emanating from the introduction of new information society technologies (IST). The regions have been selected on an experimental basis that allows us to explore the relationship between population size and diversity and trajectories of development associated with IST. Within each region, it considers the nature of these IST-based developments by reference to convergence and digitalisation and their impact upon the reconceptualisation of resources. The impact of these developments on learning, organisational structures, service provision, plans to sustain diversity and potential for expanding the network economy are similarly considered. This allows the study to ascertain the extent to which the different regions are moving towards a coherent process of development. The end product for each region is a business model for future integrated development.*

¹⁵ Taken verbatim from the proposal's evaluation summary report.

Proposal number: IST-1999-11337

Action-line: 1.1.2.-6.2.2.

Title: *Information Cities*

Abstract¹⁶: *The Information Cities project proposes heuristic approaches to the development of behaviours for infohabitants (humans, virtual firms, on-line communities and software agents acting on behalf of them) with the objective to capture aggregate patterns of virtual organisation, emerging from the interaction among large number of infohabitants. We envisage Information Cities as a novel paradigm of organisation over the emerging Information Infrastructure, a virtual place where millions (or billions) of inhabitants meet each other, cooperate and trade : a stable and scalable micro-environment that supports the efficient provision of many e-commerce and personal services, and allows for the continuous creation of new activities and relationships. To investigate conditions of emergence and evolution of Information Cities, we will develop an open multiagent environment, flexible and adaptive to the dynamic nature of the Information Society.*

3.6. KA2: New Methods of Work and Electronic Commerce

3.6.1. The work-programme

The aim of this key-action is to allow European workers and companies, especially SMEs, to increase their competitiveness on the world market by developing relevant information technology, particularly electronic payment techniques, smart cards, mobile systems, business-process modelling software, etc. At the same time, the key-action focuses on technologies that will help improve the quality of the individual's working life, and will provide the flexibility to be free from many existing constraints on both working methods and organisation, including those imposed by distance and time.

Most of the issues that KA2 addresses have socio-economic implications. At present, over 4 million Europeans telework to a greater or lesser extent, a figure which is expected to increase ten-fold by 2007. This development, based on the possibilities offered by information technology and telephony, involves an in-depth reorganisation of social relations and labour legislation, both for business and for individuals. Electronic commerce, too, is creating new possibilities for both consumers and businesses. Nevertheless, these commercial practices raise a number of questions such as intellectual property rights, transaction security, consumer protection, and privacy.

The strong socio-economic relevance of this key-action is manifested in the 1999 work-programme whereby it is stated that:

¹⁶ Taken verbatim from the proposal's evaluation summary report.

Specific attention will be paid to the social implications of new working methods, in particular their impact on equal opportunities and quality of life. It covers both the development and the trading of goods and services, in particular in the electronic marketplace, and takes into account the different requirements and capabilities of the individual worker, consumer and of businesses and organisations, and includes the related training. Considerations of the global context, in particular the rapid evolution of the marketplace, and socio-economic factors will guide the work, and the objective will be to develop and demonstrate world-best work and business practices, exploiting European strengths such as electronic payments, smart cards, mobile systems, software for business process modelling and enterprise management and consumer protection (IST work-programme 1999, p. 16)

3.6.2. The socio-economic dimension in the first call for proposals

KA2 has inherited a significant socio-economic research activity from FP4 on which it is building.

The strategy in the 1999 work-programme was based on mid- to long-term new technology development to empower individuals, as entrepreneurs, workers and consumers, and to stimulate co-operation between SMEs and large enterprises as participants in the global network economy.

The specific objectives were reflected on the ten action-lines which were open for proposals in the first call. A number of proposals with socio-economic content were received as a result of the first call, for projects in areas which include the following:

Changes in employment patterns

- implications for job numbers
- local-regional/sectoral implications as regards for instance the places of work, the ways to perform it and the links with other local/regional organisations

Nature of job/work organisation

- telework development
- changes in shift patterns
- changes in job design

Changes for the citizen

- social inclusion
- implications for equality of opportunities
- access to ICT (especially the Internet)

Human Capital/Resources Development

- changing skills profiles
- opportunities for personal/professional learning and development

Changes in the Economy

- competitiveness

- supply chain integration
- innovation/creation of new products and markets
- exploitation impact on EU/global market

An eleventh action-line (focusing explicitly on socio-economic research on *New perspectives for work and business*) was open only in the second call for proposals (October 1999) and no results of the evaluation of those proposals can be reported at this stage.

3.6.3. Situation after the first call and the evaluation of proposals.

KA2 attracted a larger number of proposals than expected: 472 proposals were received for a requested budget of 892 million euros (116 M€ available for 1999).

At least 42% out of these 472 proposals have some socio-economic content.

Certain action-lines were better covered than others. A strong set of highly-ranked proposals covers knowledge management; teamwork, distributed networked organisations; new market mediation, and enhanced consumer-supplier relationships (for electronic commerce). There is less complete coverage for the three action-lines related to security and confidence-building technologies, and the two action-lines on "Workplace Design" and "Digital Design and Life-Cycle Management of Products and Services".

Analysis done by the IST Programme indicates that 80% of KA2 proposals fall in two broad categories in terms of their content and relevance to socio-economic issues:

The majority (47%) refers to enhancing effectiveness in organisations. Proposals in this area typically relate to the following topics:

- suppliers-customers chain for improving networking services;
- managing, assessing and diffusing knowledge in organisations;
- e-commerce models and mechanisms for virtual organisations and networks of SMEs;
- provision of infrastructures and software tools in the engineering context.

33% of proposals refers to the enabling of cooperation. Proposals in this area typically relate to the following topics :

- infrastructure and tools for networking organisations;
- methodologies for extending organisations across enterprise boundaries.

Most of the proposals in area 1 of the KA (Corporate knowledge management-Dynamic networked organisations) focus on increasing the effectiveness of the enterprise by optimising processes (internal as well as across organisational boundaries) and networking of organisations to allow new ways of collaboration. It is expected that the socio-economic contribution will be mainly to create the methodologies as well as the tools and infrastructure to

achieve higher efficiency and/or networked organisations. This is economically important because only competitive enterprises will survive on the market and ensure employment. New organisational approaches are enabled through networking technology and methodologies which will especially support SMEs to enter new market opportunities.

User requirement analysis, user involvement methods and qualitative data collection methods receive less attention in most proposals.

Frequently in proposals the term "end-user" in fact is used to incorporate user organisations and not to individuals who use or will use personally the ICT product /system being developed.

Almost all proposals included a statement of socio-economic objectives/potential benefits. In general, these tended to interpret "socio-economic" in a particular way and were related to expectations of improved competitiveness resulting from efficiency gains through deployment of ICT and job creation from the creation of new markets. In general, however, the basis for these predictions was not made explicit.

There are few proposals addressing the area of special needs in telework models of working: the provision of telework solutions for persons living in isolated, disadvantaged geographical regions would have important implications for employment and quality of life in Europe, even more so for the socially disadvantaged and physically disabled people in those areas. An effort could be made to attract more proposals in this area.

3.6.4. Socio-economic aspects in the evaluation

174 independent experts were involved in the evaluation of KA2 proposals. 73 % of them were male and 27% female. The majority of the evaluators were from industry (59 %). 14 % were from research institutions, 18 % from universities and 8 % from government and non-profit organisations.

According to the IST programme, the number of evaluators in KA2 who had some socio-economic background was about 35%.

The evaluation resulted in a relatively uneven distribution of ranked proposals across action-lines. This resulted from the use of the same evaluation criteria, with the same thresholds and the same weights for action-lines with widely different emphasis on technology, organisations and social innovation. This common rule of FP5 raises wider issues. The first criterion for scientific/technological quality and innovation, even when interpreted consistently, inevitably affects differently proposals in which social, organisational and business research and innovation is more important than technology development alone. This applies to all action lines.

The most highly-ranked proposals defined clearly the innovation proposed and stated convincingly the potential for an EU wide contribution. Objectives tended to be much clearer where end-users were directly involved. On the

other hand, a number of proposals with a strong technological component were rejected because they failed the socio-economic criteria. This illustrates another risk of imbalances in the evaluation criteria used.

"Innovation" in most cases was interpreted by both proposers and evaluators as technical innovation. In many cases evaluators expressed difficulty in assessing the innovation proposed, both in technology and organisational terms, the policy, social, industrial and market relevance, and the exploitation and dissemination plans. Many proposals failed to make a clear case for the European added value of the proposed work. While in many cases this is due to the fact that European policies and regulation are still under development, proposers should be encouraged to provide a better description of these parts in their proposals in the future.

While some proposals in Area 1 clearly stated the multidisciplinary nature of knowledge management and the strong coherence between technology and social conditions, many others did not. Criterion 1 (Innovation) was often taken to mean innovative ICT technologies. Thus the integration of advanced technologies to address real problems at the application end was not always given sufficient emphasis.

In most action-lines, both proposers and evaluators had difficulty in interpreting criterion 3 (contribution to Community social objectives). An interpretation of this set of criteria was easier for evaluators who had some background in the social sciences. The main difficulty however has been on "how", rather than on "whether" a proposal contributes. Again, this is an endogenous difficulty.

ANNEX 4

ENERGY, ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

4.1. Introduction to the thematic programme

4.2. EU policy initiatives related to research in the fields of energy and environment

A. SUB-PROGRAMME "ENVIRONMENT AND SUSTAINABLE DEVELOPMENT"

A.4.3. The work programme and its key actions

A.4.4. Links between research priorities and EU policies

A.4.5. The socio-economic dimension in the 1st call for proposals

A.4.6. The socio-economic dimension in the guide for proposers, including evaluation criteria

A.4.7. Situation after the termination of the 1st call and the evaluation of its proposals

A.4.8. Socio-economic aspects during the evaluation

A.4.9. KEY ACTION 4 CITY OF TOMORROW AND CULTURAL HERITAGE

B. SUB-PROGRAMME "ENERGY"

B.4.3. The work programme and its key actions

B.4.4. Links between research priorities and EU policies

B.4.5. The socio-economic dimension in the 1st call for proposals

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B.4.7. Situation after the termination of the 1st call and the evaluation of its proposals

B.4.8. Socio-economic aspects during the evaluation

C. CONCLUSIONS REGARDING BOTH SUB-PROGRAMMES

ANNEX 4. ENERGY, ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

4.1. Introduction to the thematic programme

The thematic programme "Energy, environment and sustainable development" has a great potential for integrated socio-economic research. This is – at least to a certain extent – reflected by the work programme. In its introduction it describes an "innovative approach" to tackle science and technology problems relevant to society by

- Looking at strategic problems
- Promoting multisectoral research
- Promoting multidisciplinary research
- Guaranteeing a Europe-wide impact
- Involving all stakeholders concerned.

The programme is sub-divided into the sub-programmes

+ environment and sustainable development and

+ energy

which naturally have their own culture and their own perception of socio-economic research and what it should deliver. However, the two sub-programmes are collaborating on crucial issues such as climate change or the evaluation of external costs, and they have started to use common tools (such as the models developed in the energy programme under FP4).

It can be said that all programme parts contain elements relating to socio-economic aspects, and it is estimated that at least 40 M€ will be devoted to classical socio-economic research in the two sub-programmes such as modelling and scenario building. However, if the broader socio-economic dimension is taken into account, the figures are much higher.

4.2. EU policy initiatives related to research in the fields of energy and environment

The socio-economic dimension of the programmes has to be seen in close connection with their contribution to EU policies. Despite the differences between the sub-programmes "energy" and "environment" there is a common basis as far as policy objectives to which research should contribute are concerned. These objectives are mainly outlined in the EC programme "Towards sustainability" and are above all relating to the questions of climate change and of sustainable development. In detail they can be summarised as follows :

- Sustainable management of natural resources (soil, water, coastal zones)
- Integrated pollution control and prevention of waste
- Reduction in the consumption of non-renewable energy
- Improved mobility management (including more efficient and environmentally-rational transport modes)
- Measures to achieve improvements of environmental quality in urban areas

- Improvement of public health and safety, with a special emphasis on nuclear safety and radiation protection

In addition to this overall framework programme in the field of environment and energy, there are a number of other policy initiatives linked to the research priorities of this specific research programme. Only some of them are mentioned below.

General environmental questions :

- + EC communication "Towards an EU post-Kyoto strategy"
- + EC communication "Preparing for implementation of the Kyoto protocol"

Air :

- + Air quality framework directive (September 1996)
- + Community strategy to combat acidification (1997)

Energy :

- + EC communication "Energy efficiency in the European Community" (1998)
- + EC communication "Energy for the future : renewables – our energy" (1997)

Noise :

- + Future noise policy: European Commission Green paper (1996)

Transport :

- + Directive relating to measures to be taken against air pollution emissions from motor vehicles (1998)
- + Directive relating to the quality of petrol and diesel fuels (1998)
- + Emission limits for heavy duty vehicles (1997)
- + Voluntary agreement between the EC and the European Association of car manufacturers to reduce CO₂ emissions of new vehicles by 25 % in 2008

Waste :

- + Framework Council directive on waste (1991)

Water :

- + Proposal for a water directive (1999)

A. SUB-PROGRAMME "ENVIRONMENT AND SUSTAINABLE DEVELOPMENT"

A.4.3. The work programme and its key actions

A.4.3.1. Key action 1 : *water* has integrated socio-economic questions into its Research and Technological Development priorities and has a separate sub-chapter focusing on specific socio-economic research issues (1.1.2.) such as pricing policies, the evaluation of relationships between water resources management, policies and institutional arrangements and the understanding of people's perception and expectations in regard to water, both as an environmental source and an economic good. If this approach proves successful, it could serve as an example for other key actions.

A.4.3.2. Key action 2 : *global change* clearly supports socio-economic research through activities relative to scenarios and strategies for regarding global issues, in particular climate change (post Kyoto). Moreover, there is a potential for dealing with such questions in those Research and Technological Development priorities dealing with scenarios and in such sub-items as 2.3.1 "Mitigation and adaptation of global change strategies" and 2.3.2 "Reconciling the conservation of biodiversity with economic development".

A.4.3.3. Key action 3 : *marine ecosystems* clearly supports socio-economic research through activities relative to the reduction of anthropogenic impact on biodiversity and the sustainable functioning of marine ecosystems, and "Developing safe, economic and sustainable exploitation technologies".

A.4.3.4. Key action 4 : *city of tomorrow and cultural heritage* is aiming at a mix of technological and socio-economic approaches. Partially this is already reflected in the work programme. Some of the research tasks have a bigger potential for including socio-economic aspects i.e. revitalisation of city centres and neighbourhoods, sustainable transport systems in an urban environment. (This key action is dealt with in greater detail below.)

A.4.3.5. In *generic activities* socio-economic research has a chapter of its own. Co-operation with the horizontal programme should be guaranteed with regard to this chapter.

Socio-economic questions might also be tackled in chapter (ii) with regard to the Research and Technological Development priority "Create favourable conditions to develop the market".

A.4.4. Links between research priorities and EU policies

The underlying environmental policy objectives are outlined under 4.2 above.

A good example of how the programme tries to link policy and research and take account of socio-economic aspects is the field of water quality.

Water policy of the EU concerns the issues :

- quality of drinking water
- water pollution due to agriculture
- waste water from private households and industry
- water quality in lakes and sea
- instruments for more efficient water use and sustainable water management.

The programme deals with these issues in different key actions :

- + The key action on water develops indicators for quality control in management and policy with regard to the quality of drinking water.
- + The key action on water develops tools for best practice and management in agriculture to reduce water pollution by activities in agriculture.
- + The key action on water invites research to assess the socio-economic pressures and barriers which are hampering the sustainable use of water.
- + The key action on water invites research to analyse the economic efficiency and ecological effectiveness of different technological or managerial options for water management, including pricing policy.
- + The key action "City of tomorrow" develops methods to reduce waste and to decontaminate sites, thus dealing with the issue of waste water from households and industry.
- + The key action "marine research" contributes to the implementation of European conventions to reduce pollution in coastal zones, thus improving the quality of lakes and sea.

Another example is the contribution EC funded research can make to the Union's aims of implementing the Kyoto Protocol. Research priorities in the specific programme are geared to meet the following challenges :

- + To obtain knowledge about the atmospheric content of green house gases in order to be able to make predictions about climate changes and variables as well as about ozone depletion.
- + To quantify the carbon and nitrogen cycles of terrestrial and marine ecosystems in order to be able to define options for an increased potential of sinks for carbon and nitrogen.
- + To develop scenarios and strategies for the reduction of green house gas effects and the adaptation to changed climatic conditions.
- + To develop European components of remote sensing systems in order to optimise existing data, to adapt remote sensing systems to existing challenges, and to guarantee long-term monitoring.

A.4.5. The socio-economic dimension in the 1st call for proposals

The call for proposals explicitly mentions socio-economic aspects in various key actions. These aspects are also implicit in some general points of the call.

Examples :

- In key action 1 "Sustainable management and quality of water" proposals have been invited for "socio-economic aspects of sustainable use of water" and for "operational management schemes and decision support systems";
- In key action 2 "Global change, climate and biodiversity" proposals have been invited for "scenarios and strategies for responding to global change issues".
- In key action 4 "City of tomorrow and cultural heritage" nearly all items of the call relate in some way or the other to the socio-economic dimension. Proposals have been specifically invited for "improving urban governance and decision-making", "revitalisation of city centres and neighbourhoods", "strategic approaches and methodologies in urban planning towards sustainable urban transport".
- In the part of the call on "RTD activities of a generic nature" there is a specific sub-title on "Socio-economic aspects of environmental change in the perspective of sustainable development" with a special emphasis on the assessment of the environmental implications of socio-economic drivers and tools and methodologies for the socio-economic assessment of policies. For this part of the call 19 proposals have been received (which is 2 % of all proposals received in the field of environment). However, this is only about half of the numbers, which were expected.

A.4.6. The socio-economic dimension in the guide for proposers, including evaluation criteria

A.4.6.1. General

The Guide for Proposers of the thematic programme 4 "Energy, environment and sustainable development" has been divided into two parts : the first one is a general guide with overall information and guidelines for the whole programme, and the second part is divided into two sub-parts, one being a specific guide for the environment sub-programme, and the other one being a specific guide for the energy sub-programme.

Part one of the Guide for Proposers mentions the socio-economic dimension by referring to the overall 5th FP stating that "Socio-economic research is present in the thematic programmes as an integral part of the technological research activities". With regard to the specific programme on "Energy, environment and sustainable development" the Guide is referring to the social objectives as well as to targets relating to economic development and growth. It is stated that such objectives can only be met if "in addition to developing technologies, the socio-economic context is appropriately analysed and taken

into account". The Guide also refers to the socio-economic aspects mentioned in the work programmes (see previous chapters of this note).

A.4.6.2. Environment

The specific Guide for Proposers for environment and sustainable development refers to socio-economic aspects as part of a proposal's contribution to meet the economic and social objectives of the Community. This will be taken into account in the evaluation and rating of a proposal. On a scale from 1 to 10 socio-economic or strategic activities will be weighed by the following points :

Key actions - 3.5

Generic activities - 3.0

Research infrastructure - 2.0

A.4.7. Situation after the termination of the 1st call and the evaluation of its proposals

Proposals received	Proposals evaluated	Proposals passing evaluation	Proposals retained for funding	Total requested funding (M€)	Total available budget (M€)
946	911	359	182	2936.3	202

Proposals had been invited for all four key actions (water, global change, climate and biodiversity, marine ecosystems, city of tomorrow) as well as for generic activities and infrastructures.

The response to the different key actions and their sub-items was very different. Generally it can be said that the response to work programme items directly asking for socio-economic proposals were rather weak.

Examples :

Water

- Completely new action lines such as "socio-economic aspects of sustainable use of water" or "operational management schemes and decision support systems" were underrepresented by total number of proposals submitted and also with regard to scientific quality. In the first action line (socio-economic aspects of sustainable use of water) only 7 proposals were received and only 2 got a "go" marking, which represents only 3 % of all "go" markings in the water key action. Out of these two, only one is sufficiently high ranked to be suggested for funding. The other action line (operational management schemes) received 20 proposals, out of which only 6 got a "go" marking; of which again only one proposal got a high enough marking to be suggested for funding. The two action lines will both be re-opened at the next call, hoping that results will be better than.

Global change, climate and biodiversity

- In this key action the response to the socio-economic sub-item "mitigation and adaptation to global change" was regarded as being rather weak. Proposals were in the lowest range of ratings, with only one proposal obtaining high marks (out of 26). Another proposal with a socio-economic research component (Greenhouse Gas Emission Control Strategies) has been put on the shortlist nevertheless due to its relevance for the European Climate policy. Therefore this item will be re-opened in the next call with a special regard to the Kyoto mechanisms (i.e. Emission Trading, Joint Implementation and Clean Development Mechanism).

Generic activities

- In the socio-economic sub-item of "generic activities" 22 proposals were evaluated, but only 10 passed the threshold for funding, and 5 were actually selected for funding. In particular the following areas are not at all or not well covered by the proposals: technological hazards, creating favourable market conditions, determining the critical relationship between socio-economic development and environmental change. The next call will show whether there will be a more favourable response to these issues.

It should also be pointed out that economic modelling and the development of methods and tools of assessments are subject of two proposals which will lead to possible quantitative assumptions for policies and future measures.

However, examples for projects with integrated socio-economic research aspects can be found in all key actions when project lists are carefully screened. Some examples are given below. They address a broad range of very different socio-economic aspects.

Water

The project "*European mountain lake ecosystems: regionalisation, diagnostics and socio-economic evaluation*" (EMERGE) concentrates on the assessment of mountain lake ecosystems, including analyses which ascertain the values that society places on these ecosystems and the cost/benefits inherent in their protection. The specific objectives of the project include the preparation of guidance for decision makers to formulate an appropriate management policy for such ecosystems. Evaluators found the links between technical and socio-economic assessments particularly interesting.

The project "*Floodplain biodiversity and restoration 2: integrated natural science and socio-economic approaches to catchment flow management*" (FLOBAR2) focuses on the enhancement of the ecological quality of riparian ecosystems in Europe through the development of water allocation guidelines. It plans to achieve this by combining expertise in the natural and social sciences to investigate the flow needs of riparian species, floodplain impacts on water levels, and institutional structures for decision making in river basin flow management.

The project "*Freshwater integrated resource management with agents*" (FIRMA) aims at improving water resource planning through the use of multi-agent models that integrate hydrological, social and economic aspects of water resource management. The project will adopt a participatory approach (including customers, suppliers, and government and their interaction at various levels of aggregation) to ensure that its outputs are of value to stakeholders.

Global change, climate and biodiversity

The project "*Greenhouse gas emission control strategies*" (GECS) aims at providing insights for European climate policy, while assessing different greenhouse gas emission reduction strategies for the 2010 and 2030 horizons. The study combines the use and development of a world energy model (POLES, developed in FP4) and of a General Equilibrium Model (GEM-E3), with policy-oriented research on emission targets and flexibility scenarios, in the perspective of sustainable development. The final objective of the study is to develop quantified assessments of different scenarios of emission reduction strategies in order to provide EU negotiators with consistent insights on their costs and advantages.

Marine ecosystems

The project "*Estimation of primary production for fisheries management*" (PROOF) aims to produce estimates of the regional and global marine primary production (PP) based on the available ocean colour and temperature data from earth observation satellites. It will contribute to the proper management of fisheries, implementation of national and EU fisheries policies as well as to defining international quota on fish catch regulations. Project participants intend to develop close relations with fisheries management representatives at EU level in order to assure user guidance and validation.

Generic activities

The project "*Catastrophic avalanches : defense structures and zoning in Europe*" (CADZIE) aims to improve catastrophic snow avalanche zoning by developing new methods in order to be better able to manage the extreme avalanche periods.

A.4.8. Socio-economic aspects during the evaluation

The evaluation was done in two steps. All criteria, including the relevance criteria, were evaluated during the first phase. The second step served to decide on the priority between proposals in the case of equal marks during the first step, and to discuss the establishment of clusters. No percentage is given on the number of evaluators with a socio-economic expertise. However, all key actions claim that panels were made up of a large range of stakeholders, including researchers, representatives from industry and potential users.

Also, scientific officers seem to be well aware of the requirements for multidisciplinary and integrated projects as well as of the socio-economic objectives of the programme and therefore could brief evaluators accordingly.

However, evaluators stated that obviously proposers had difficulties to demonstrate the socio-economic relevance of their work in their proposals, and that therefore the evaluators themselves had difficulties to evaluate the relevant section of the proposals. Proposers should therefore in future be asked to make a distinction between direct impacts, indirect impacts, induced impacts, qualitative and/or measurable impacts. The impacted scale(s): macro, meso or micro should also be precisely described. A set of variables and references to methodologies and/or to studies could also be useful to highlight the socio-economic dimension of technological/scientific proposals.

From the independent observers' report it cannot be seen whether the briefing of evaluators only dealt with the evaluation procedure, markings etc. or whether an intensive briefing was given with regard to the relevance criteria and EU policies. They judged these criteria to be overlapping and "soft" and therefore causing difficulties for the experts. It was suggested to merge overlapping criteria and to introduce a new one called "grade of interdisciplinarity".

A second call for proposals for the sub-programme "Environment and sustainable development" has been published on 18 November 1999 with a deadline of 15 February 2000. The work programme has not changed. However, there is a new version of the Guide for Proposers which better explains the policy initiatives to which the specific programme is linked. For the sub item "Mitigation and adaptation to global change" which was re-opened (see 4.7. above) an additional explanation on the objectives and the links to the Kyoto Protocol challenges was included in the Guide for Proposers. It is also intended to prepare an "information set" to brief evaluators and scientific officers about EU policies, as well as socio-economic aspects, and to provide examples for socio-economic tools.

A.4.9. Key Action 4 : City of Tomorrow and Cultural Heritage

A.4.9.1. The work programme

The key action wants to address the common challenge for cities in Europe such as improve the quality of life in urban communities, and promote sustainable development assessed in economic, architecture, environmental, social and cultural terms. It therefore addresses a mix of socio-economic, environmental and technological approaches, putting emphasis on an increased participation of citizens and other stakeholders in urban decision making. Therefore a large part of the budget earmarked for this key action can be expected to be devoted to socio-economic research activities.

The key actions has four sub-items :

- Sustainable city planning and rational resource management with the RDT priorities improving urban governance and decision making, improving the

quality of urban life, waste reduction and its life cycle management, economic development, competitiveness and employment

- Protection, conservation and enhancement of European cultural heritage with the RDT priorities improved damage assessment on cultural heritage, development of innovative conservation strategies, integration of cultural heritage in the urban setting
- Sustainable built environment with a focus on preservation, recovery, renovation, construction dismantling and demolition, including the revitalisation of city centres and neighbourhoods
- Urban transport concentrating on strategic planning approaches and new transport technologies and their related infrastructure.

Anticipated deliverables such as tools to better predict and prevent environmental damage, best practices for governance and participation of citizens as well as examples for the integration of a whole range of social and economic aspects within the urban context show a strong concern for the socio-economic dimension and therefore open up possibilities for including socio-economic research in the programme.

A.4.9.2. Links between research priorities and EU policies

In addition to the general policy outlines in the environment field mentioned above (A.4.2), the key action has special links to the following policy initiatives of the EU :

- Sustainable urban development in the European Union: a framework for action (all sub-items of the key action)
- Sustainable cities report (sub-item "Integrated approaches aiming at sustainable development of cities and rational management of resources")
- European spatial development perspective (sub-items "Integrated approaches aiming at sustainable development of cities and rational management of resources" and "Urban transport")
- "Acquis communautaire" (urban air, urban water, noise, waste) (all sub-items)
- EC cultural framework programme (sub-item "Protection, conservation and enhancement of European cultural heritage")
- Communication on the competitiveness of the construction industry (sub-item "Sustainable built environment")
- Air quality and climate change policies (all sub-items).

A.4.9.3. The socio-economic dimension in the 1st call for proposals

See 4.5. above.

A.4.9.4. The socio-economic dimension in the guide for proposers, including evaluation criteria

(See 4.6. above.)

A.4.9.5. Situation after the termination of the 1st call and the evaluation of its proposals

In the 1st call only part of the work programme was open for proposals :

- + Improving urban governance and decision making
- + Development of innovative conservation strategies with regard to cultural heritage (networks and concerted actions only)
- + Revitalisation of city centres and neighbourhoods
- + Strategic approaches and methodologies in urban planning towards sustainable urban transport.

Proposals received	Proposals evaluated	Proposals passing evaluation	Proposals retained for funding	Total requested budget (M€)	Total available budget (M€)
137	117	21	16 (main list) 5 (reserve list) ¹⁷	180	17

All sub-themes were covered by the proposals.

In Improved urban governance and decision-making proposals addressed important issues such as data, indicators and models. They did not, however, introduce holistic concepts to improve urban governance. This is not surprising since it is a new FP topic with no national problem-solving analogue programmes. Nevertheless the proposals suggested for funding have a strong socio-economic component.

In Protection, conservation and enhancement of European cultural heritage one concerted action was proposed for funding :

- concerted action on molecular microbiology as an innovative conservation strategy for indoor and outdoor cultural assets.

This proposal provides a valuable contribution to the problem of protection and conservation. However, it does not have a direct socio-economic component.

In Revitalisation of city centres and neighbourhoods focus is on a major project which goes to the heart of the sub-theme and is crucial for laying the foundations for best practice in Europe. Socio-economic aspects are well covered in this project.

In Strategic approaches and methodologies in urban planning towards sustainable urban transport the most important batch of projects deals with the issue of "integrated land use and transport planning". These proposals contribute to the implementation of EU policies on urban environment and transport areas. They include stakeholders from all domains, including socio-economic players.

¹⁷ Only one proposal from the reserve list will be funded.

Examples for projects with a strong socio-economic component :

The project "Sustainable urban tourism: involving local agents and partnerships for new forms of governance" (SUT-GOVERNANCE) presents an effort to work with public-private partnerships and urban governments to develop, validate and deploy a general framework for urban sustainable tourism partnerships that is applicable to a variety of urban municipal and development contexts. IT is the aim of this project to elaborate and promote innovative forms and instruments of local governance to improve urban tourism development involving principles of sustainability and participatory decision-making. This project was given very high marks by the evaluators for the relevance criteria.

The project "Transport planning, land use and sustainability" (TRANSPLUS) will study best practices to manage transport demand through integrated land-use and transport planning – reducing private car use, fostering public and non-motorised transport. It involves a wide range of stakeholders (planning authorities, policy makers, and practitioners). Evaluators judged the project to have a holistic approach covering all phases from an initial planning to final decision-making and dissemination/communication.

A.4.9.6. Socio-economic aspects during the evaluation

47 evaluators from a wide range of stakeholders (city authorities, industry, urban institutes, consultants, international organisations, universities) and disciplines were involved in the evaluation. 62% of them were considered to have the expertise to assess the social and/or economic elements of the proposals. This may be the reason for the fact that in this key action experts did not complain about their "uneasiness" to have to evaluate the relevance criteria and the socio-economic dimension. They obviously attached more importance to these criteria than other evaluation panels, which might be one of the reasons for the rather low success rate in this key action.

The reasons given for failure very often related to the socio-economic dimension of the key action. The following reasons were identified for the low success rate :

- Inappropriate consortia make-up.
- Proposals were inappropriately adapted to the work programme.
- They did not contain an identification of addressed socio-economic problems or challenges.
- They did not contain clearly defined deliverables and dissemination plans.

In future calls proposers should therefore present the objectives and the potential results in the context of the key action's work programme. They should explain why the proposed approach is the best way of meeting the objectives. Claims for socio-economic implications should be justified.

All stakeholders (researchers, end users, public authorities etc.) should be involved in the research.

A.4.9.7. Conclusions

All proposals retained for funding are of a significant socio-economic relevance and most of them have a socio-economic component included. Their potential policy contribution is in the field of industrial competitiveness, environmental, economic and social sustainability, sustainable transport and cultural heritage as well as energy efficiency.

However, the development of a multi- and interdisciplinary research community still needs to be encouraged. This should lead to a more holistic approach.

The mix of evaluators, including all stakeholders, with a strong share of socio-economic expertise, was obviously well adapted to evaluation needs in this sector. The initial briefing of experts included all elements of relevant EU policies where research has a role. Therefore evaluators rigorously applied the policy-oriented criteria, in particular relevance and applicability of research.

However, some questions still have to be asked :

- How can the scientific community be better informed and mobilised ?
- Is there enough research capacity in Europe to follow the issues at stake ? If not how can this capacity be stimulated ?
- Does the work programme have the right focus to attract researchers ?
- Should the perception of research subjects such as "governance", "cultural heritage" be better defined in the work programme ?
- Should the work programme indicate that proposals should extend to a wider notion of protection and conservation, including integrated approaches comprising such questions as human behaviour and attitudes towards cultural heritage, utilisation, management etc ?

B. SUB-PROGRAMME "ENERGY"

B.4.3. The work programme and its key actions

Three "pillars" of the energy socio-economic research giving inputs to the decision-makers allows to evaluate the impact of technologies, policies and market instruments. They provide scientific information on the problems and needs of citizens, utilities, industries and public authorities, and were already integrated parts of energy research in FP4.

- + Elaboration of Energy, Economy, Environment models at the European and World levels and their applications
- * A medium-long term reference projection (2010-2030) of energy demand, investments and CO₂ emissions.
- * Quantification of the impact of significant cost and performance improvements in a variety of energy technologies (nuclear, clean coal, gas generation, fuel cells, renewables) resulting primarily from dedicated enhanced investments in R&D for these technologies.

- * Balance between market competition and environmental demands, energy supply and demand, top-down and bottom-up approaches.
- * Integration and co-ordination among different EU policies (Environment, Energy, Transport, Cohesion).
- * Assessment of the impact of RTD, energy, and environment policies and measures, market instruments and technologies such as the macro-economic consequences (GDP, employment), the marginal cost of emission reduction, the response of producers and consumers, etc.

Example : The POLES model

POLES is a simulation model of the world energy system (30 countries/regions), with endogenous energy demand, supply and prices, up to 2030. It allows to study international energy issues, technology and global environmental strategies. World reference energy projection and macro-economic scenarios are simulated on a yearly, with results by country/region on: prices of oil, gas and coal on international markets, energy demand by sector, fossil fuel supply, new and renewable energy technologies, electricity generation by type of power plant, international trade flows of energy products, regional markets for energy technologies, CO₂ emissions and marginal abatement costs.

+ *External costs(socio-environmental costs)*

"External costs" are the costs imposed on society and the environment that are not accounted for by the producers and consumers of energy, i.e. that are not included in the market (private) price.

Example : The EXTERNE project

- Evaluation of damages to the natural and built environment, such as effects of air pollution on : human health, buildings, crops, forests and global warming.
- Translation of damages (quantification of impacts) in monetary terms for different fuel cycles (fossil, nuclear and renewable), mainly for power generation and transport sectors.
- Contribution to the cost-benefit analysis of environmental policies options (e.g. taxation). Useful for the internalisation of external costs process.

+ Energy RDT, environment and employment

Some models developed in the non-nuclear energy programme have demonstrated that environmental targets or the expansion of the use of renewable energy sources can lead to a *double dividend*. (see HERMES model in which an energy tax is redistributed to alleviate labour costs or the SAFIRE model in which renewable energies are promoted): improving environment (reduced greenhouse gas emissions) and providing positive employment and business spin-offs, at a cost to the public sector that is economically and socially sustainable. More generally, positive effects on employment are expected from CO₂ emission reductions as they are often linked to labour intensive solutions, e.g. imported fuels could be replaced by domestic production. Regarding the RDT impacts, the first simulations of the GEM-E3-Elite model indicate that sectoral and macroeconomic impacts of RTD

policies decisively depend on the pattern of technological externalities, i.e. on RTD intensities of sectors and regions and their ability to capture rent spillovers.

+ Socio-economic research (regulations, costs, barriers)

- The role that renewables can play if tariff reform are implemented.
- The effect of voluntary agreements between public authorities and industry to increase energy efficiency and then, to reduce greenhouse gas emissions.
- The analysis (medium-long term) of energy demand, investments and CO₂ emissions in the context of globalisation, liberalisation, modifications in energy resources, transfer of technologies.
- The development of new tools integrating endogenous growth (RTD expenses), employment and economic, social and environmental welfare.
- The "feasibility" of Climate Change policies and flexible mechanisms (Emission Trading, Joint Implementation and Clean Development Mechanism) and their consequences for the EU as a whole and for Member States separately.

Example : The REALM project (Renewable Electricity in Liberalising Markets)

The various European available regulatory instruments have been divided into seven non-exclusive categories - 'laissez-faire' (or "green consumer behaviour"), 'obligation', 'investment subsidies', 'feed-in tariff', 'bidding system', 'tradables', and 'non-renewables taxation'. The evaluation of these instruments is based on the criteria of 'certainty', 'clarity', 'transparency', 'fairness/equity', 'coherence with liberalisation', 'efficiency' and 'effectiveness'. The analysis suggests which of these instruments are most likely to be consistent with the demands of a liberalised market. The recommendations emerging from the project insist on a new EU framework for renewables support including the concept of tradable obligations as a way of fulfilling good balance of needs among stakeholders, and maintaining coherence with liberalisation principles.

The work programme of FP5 has taken these results into account.

B.4.3.1. Key action 5 : "Cleaner energy systems, including renewable energies" includes two sub-items covering socio-economic aspects :

- Integration of new and renewable energy sources into energy systems, including competitiveness
- Improving the acceptability of renewables.

B.4.3.2. Key action 6 : "Economic and efficient energy" includes clearly an activity about the elaboration of scenarios on supply and demand technologies in an economy-energy-environment (E3) context and the analysis of the cost effectiveness aspect (based on total life cost and concept). This activity will imply the applications of E3 solely with result about the role of technology on issues like employment, sustainable growth, role of externalities in the economy (both at the macro and micro levels, at the EU and world level).

B.4.3.3. The "generic activities" are entirely dedicated to socio-economic aspects and focus on the development of tools (models in particular) to evaluate the socio-economic impact of those technologies relevant for more general issues like "technology assessments" externalities, endogenous growth, E3 impact of

policies (including RTD policies). Existing models developed within the 4th Framework Programme at European and world level would be subject of consolidation and extension. Both micro and macro levels will be considered.

The evaluation procedure described for the sub-programme on energy explicitly says that evaluation panels will be comprised of "technical experts" and "socio-economic experts". This approach might be worth to be followed by other specific programmes as well.

B.4.4. Links between research priorities and EU policies

Research priorities in the sub-programme "energy" are linked to the policy initiatives mentioned under 4.2. above. Policy fields included are energy, environment, transport, but also taxation and employment.

Policy objectives which have been precisely identified and to which energy research has to contribute are the following :

- To reduce by 8 % greenhouse gas emissions (corresponding to around 600 million tons per year CO₂ equivalent) between 2008 and 2012 (compared to 1990 level), known as Kyoto objectives;
- To double the share of renewables in the EU energy balance from 6 % today to 12 % in 2010, following the Council Resolution of May 1998 (White Paper).

In terms of energy research and demonstration this implies to maintain and develop the exploitation capacity of different energy forms with priority to :

- the development of energy technologies capable to contribute to CO₂ reduction
- the integration of the sustainable development dimension in energy-related research activities.

Already in the past socio-economic activities in the non-nuclear energy programme have provided the scientific basis for EU environmental indicators and "green accounting"; In fact, European research has largely improved the knowledge and the methodologies related to the environmental damage assessment and its monetary evaluation especially for the electricity generation and the transport sectors.

B.4.5. The socio-economic dimension in the 1st call for proposals

In the call for proposals for the sub-programme on energy socio-economic aspects are implicit on both key actions.

Examples :

- In key action 5 "Cleaner energy systems, including renewable energies" proposals have been invited for "improving the acceptability of renewables".
- In key action 6 "Economic and efficient energy for a competitive Europe" proposals have been invited for "the elaboration of scenarios on supply and demand technologies" with a special emphasis on technological change

anticipation, prospective and policy impact analyses, and market changes and technology absorption.

- The generic activities with their strong socio-economic component have a continuously open call.

B.4.6. The socio-economic dimension in the guide for proposers, including evaluation criteria

The Guide for Proposers of the thematic programme 4 "Energy, environment and sustainable development" has been divided into two parts : the first one is a general guide with overall information and guidelines for the whole programme, and the second part is divided into two sub-parts, one being a specific guide for the environment sub-programme, and the other one being a specific guide for the energy sub-programme. (Comments on the general part see above.)

The specific Guide for Proposers for energy also refers to the proposals' contribution to meet the social objectives of the Community. In the list of "selection criteria" these are given weighting of 1 (on a scale of 1 to 10).

As to the selection of experts for the evaluation, the energy part clearly separates "technical experts" from "socio-economists". The latter are supposed to have a broad up-to-date knowledge of public or industrial sectors and of the larger economic, social and environment aspects of the proposals, whereas the technical experts should have an up-to-date scientific and technological knowledge concerning the topics of the programme.

B.4.7. Situation after the termination of the 1st call and the evaluation of its proposals

Number of proposals received	Number of proposals evaluated	Number of proposals passing evaluation	Number of proposals retained for funding	Total requested budget (M€)	Total available budget (M€)
802	789	342	181 (main list) 161 (reserve list)	1311	208

Some comments on the areas with a socio-economic dimension :

- In *Integration of new and renewable energy sources into energy systems* there were a number of proposals on socio-economic aspects and acceptability of renewables. However, the quality of proposals was low compared to other sub-items of the programme. Some of the worth funding proposals could be considered for clustering, given the fact that they are in similar areas.
- In *Technologies for the rational and efficient end use of electricity* proposals for the demonstration of energy-efficient technologies in buildings with a strong socio-economic approach have been received. This aspect mainly deals with the potential future competitiveness of the European building industry.

- In *Cost-effective and more efficient exploration and production of hydrocarbons* many proposals were badly prepared and failed because they ignored the socio-economic issues.
- In *Elaboration of scenarios on supply and demand technologies in economy/environment/energy systems* 36 eligible proposals were received, but only 8 were evaluated worth funding. Most of the rejected proposals were not well prepared. The best proposals had a complete and large partnership including utilities, universities, manufacturers and end users. The majority was of a socio-economic nature. They focussed on the analysis or the assessment of energy and environment policies and/or instruments.

Examples for projects with a socio-economic dimension :

The project "*The role of innovation and policy design in energy and environment for a sustainable growth in Europe*" (TCH-GEM-E3) uses the GEM-E3 model to study policy issues in the energy/environment domain, including the role of innovation for sustainable growth in Europe, the phasing out of nuclear energy, trade and environmental effects for the enlargement of the EU, the promotion of renewable energy utilisation and the fine tuning of the Kyoto policies.

The project "*Joint Implementation for international emissions reduction through electricity companies in the EU and the CEECs*" (JOINT) brings together electricity and CHP companies from the EU, Norway and five accession states from Eastern Europe to identify projects, set out the necessary framework for Joint Implementation, undertake baselines, develop feasibility and marketing studies, and develop the financial framework for Joint Implementation. All stakeholders concerned will be involved (governments, NGOs) since Joint Implementation has been defined as one of the major flexible mechanisms to tackle climate change problems in the Kyoto Protocol.

B.4.8. Socio-economic aspects during the evaluation

Each evaluation panel brought together an appropriate balance of technical and socio-economic expertise. In the case of R&D projects each proposal was evaluated by two technical and two socio-economic experts. Accompanying Measures, Thematic Networks and Concerted Actions were evaluated by a panel of three experts, but a combined technical and socio-economic expertise was assured. However, this could not be verified since a list of experts involved was not made available. As in the environment field, all criteria – including the relevance criteria – were evaluated during phase 1. Phase 2 served to verify the balance of recommendations, to assign priorities in case of equal marks, to re-assess proposals in case of lacking consensus, to establish a ranking list and to review proposals for potential clustering.

C. CONCLUSIONS REGARDING BOTH SUB-PROGRAMMES

Obviously programme managers were disappointed about the response to the sub-items dealing with socio-economic research (above all in the environment sub-programme), though projects with a socio-economic dimension can be found in all key actions (see examples above). Many projects with a socio-economic component seem to have been not very well prepared and therefore not retained for funding.

It seems that a considerable percentage of evaluators had some socio-economic expertise. However, it still seemed difficult for them to evaluate these criteria. They obviously found it hard to define and judge the "socio-economic dimension" or to define and judge "what is EU policy". Better definitions, explanations and information should therefore be conceived for further calls.

It is also possible that evaluators had difficulties to grasp the socio-economic aspects of proposals because the evaluation criteria are applied uniformly to all programmes, without taking into account the different natures of individual projects that are needed to achieve the objectives of the key actions. Therefore evaluation procedures might be adapted accordingly.

For future calls all levels involved (potential proposers, evaluators, users and scientific officers) should be kept aware of the socio-economic objectives of the programme as well as the opportunities offered for multidisciplinary and integrated research without renouncing individual projects of a purely technical nature, provided that these fit into the perspectives of the key actions.

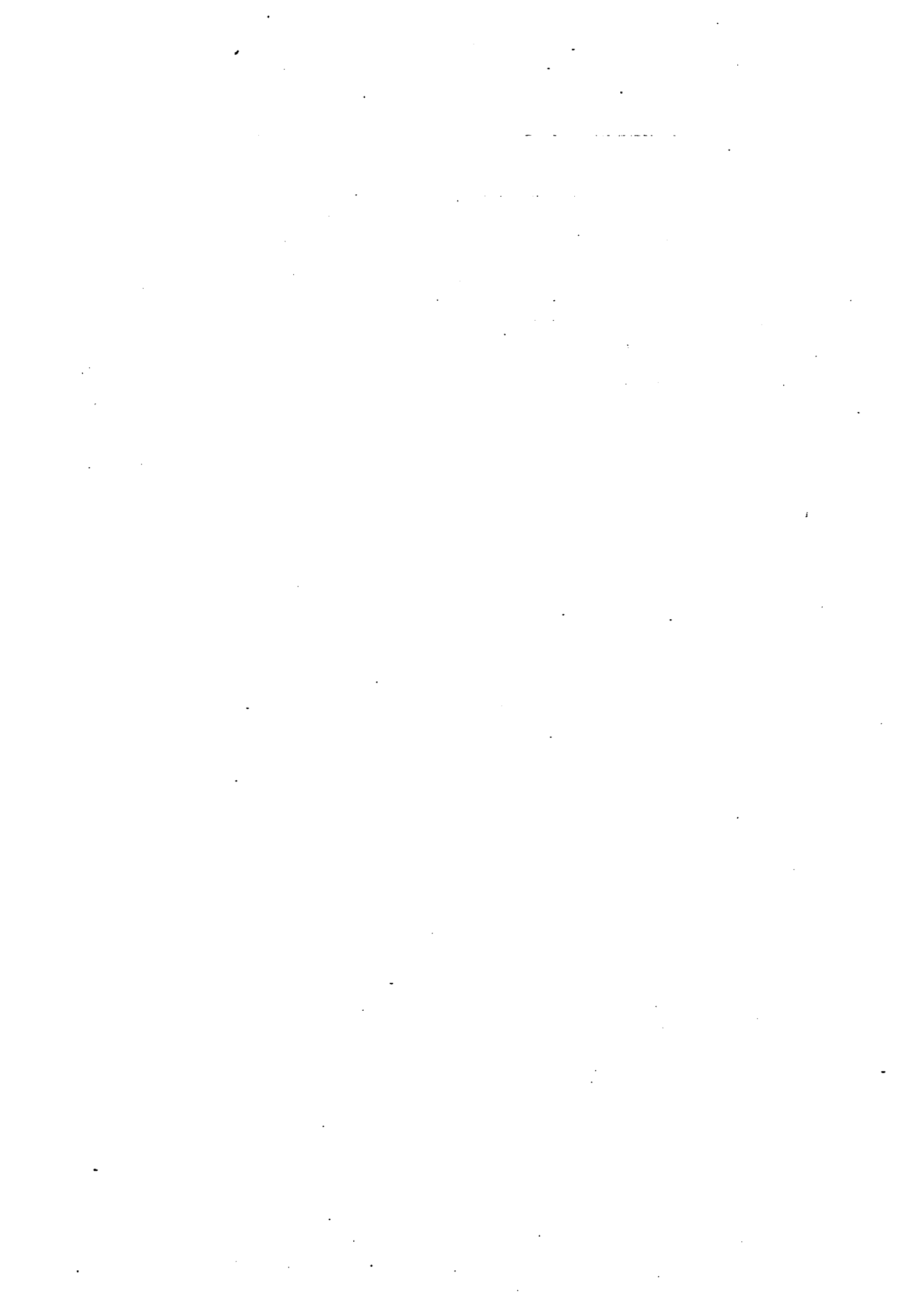
It should be stressed that the development of instruments and criteria for socio-economic impact assessment of research and policies in areas of particular importance for environment and energy is given particular attention.

It should be clearly indicated to proposers and evaluators involved that the relevance criteria play an important role and are an essential part of the selection criteria.

Activities should be launched with a view to the following objectives :

- Making use of the results obtained in FP 3 and 4 with regard to shaping, implementing and monitoring EU policies.
- Fostering the exchange of data and information between various projects in key areas of the programme with a socio-economic relevance (water management, energy production and consumption, global change, urban issues).
- Developing further co-operative links and networking actions between these projects, in particular with a view to strengthening integrative and interdisciplinary approaches, and promoting new partnerships.
- Integrating and consolidating research results; developing information systems and information-sharing arrangements.

- Identifying gaps related to socio-economic aspects.
- Promoting and improving the packaging and diffusion of research results in a manner responsive to the specific needs of users, such as policy makers, natural resource managers, stakeholders from industry, economy and society.
- Putting research efforts in a broader, integrated perspective by fostering the exchange of information and linkages between researchers and other players involved in a problem-solving approach.



ANNEX 5

EURATOM PROGRAMME

KEY ACTION "NUCLEAR FISSION"

- 5.1. Work programme in this key action
- 5.2. Links between research priorities and EU policies
- 5.3. The socio-economic dimension in the 1st call for proposals
- 5.4. The socio-economic dimension in the Guide for Proposers, including evaluation criteria
- 5.5. Situation after the termination of the 1st call and the evaluation of proposals
- 5.6. Socio-economic aspects during the evaluation
- 5.7. Conclusions

ANNEX 5. EURATOM PROGRAMME

KEY ACTION "NUCLEAR FISSION"

5.1. Work programme in this key action

This key action has the following technical objectives :

- Operational systems of existing installations
- Safety of the fuel cycle
- Safety and efficiency of future systems
- Radiation protection and health

Up front in the work programme the following socio-economic objectives are specified :

- Enhance the safety of Europe's nuclear installations
- Improve the competitiveness of Europe's industry
- Protect workers and the public from radiation
- Safely and effectively manage the disposal of radioactive waste
- Maintain a high level of expertise and competence on nuclear technology and safety

These objectives are then taken up in the priorities defined for the 1999 calls for proposals, i.e. in such sub-items as "*organisation and management of safety*", "*public attitudes and involvement*", and "*risk governance*".

5.2. Links between research priorities and EU policies

(will be filled in after having received more information from the programme)

5.3. The socio-economic dimension in the 1st call for proposals

The text of the call does not repeat any of the objectives described in the work programme. For details proposers are referred to FP5 (evaluation and selection criteria), to the work programme or to the Guide for Proposers.

5.4. The socio-economic dimension in the Guide for Proposers, including evaluation criteria

Up front the guide repeats the new approach of FP5 (problem-oriented, contribution to face socio-economic challenges) as well as the three relevance criteria (European added value, social objectives, economic development and scientific and technological prospects). The chapter "programme strategy" explains what these criteria mean for research in the field of nuclear fission.

The Guide for Proposers also includes a box with key recommendations. In this list nothing is said about how to describe the socio-economic dimension of the proposal, whereas a recommendations is given with regard to ethical issues.

As to the evaluation criteria : they are the same as for the non-nuclear energy part of the programme (see above).

5.5. Situation after the termination of the 1st call and the evaluation of proposals

Number of proposals received	Number of proposals evaluated	Number of proposals passing evaluation	Number of proposals retained for funding	Total requested budget (M€)	Total available budget (M€)
76 (+ 3 for training fellowships)	76 (+ 3 for training fellowships)	53 (+ 3 for training fellowships)	30 (main list) 6 (reserve list) 3 training fellowships	78	35

Proposals were received for all programme areas : severe accident management, radiation protection and health support to infrastructures. In the field of "Severe accident management" the aim is to develop a common understanding of severe accident phenomena in order to optimise practical measures for accident management. The chosen proposals represent a balanced mixture of experimental and analytical activities leading to improved methods and measures for such management.

In the field of "Radiation protection and health" the objective is to gain a better understanding of radiation leading to health effects, to develop better tools for the identification of risks, and to improve the quantification of risks from low doses. The proposals comply well with this objective.

5.6. Socio-economic aspects during the evaluation

The proposals were evaluated by 21 experts from industry, non-university research institutes and universities. None of the evaluators had a specific socio-economic expertise. However, the socio-economic merit of the proposals was evaluated according to the evaluation guidelines.

5.7. Conclusions

None of the proposals selected for funding has a clear direct socio-economic dimension, even if the final aim often is to better protect the public or workers in nuclear plants against radiation. (This view is shared by the responsible Commission unit.)

Only one project could be regarded as "socio-economic" in the widest sense : *Development of fundamental data and recommendations for radiological protection*. The proposal has been submitted in the field "support for infrastructures". It aims at advising authorities on how to apply existing recommendations for radiation protection and at defining new recommendations in this field. However, it does not seem that socio-economic disciplines are involved in the research work.

This shows that proposers did not understand the importance of the socio-economic Objectives clearly spelled out in the work programme. Therefore the guide for proposers as well as the next call should more clearly specify what is

expected in this field in order to encourage proposals with a more policy-oriented approach. The responsible programme managers have already reacted to these difficulties. Together with the responsible External Advisory Groups (EAG) they are working at an improvement of the information provided for potential applicants as well as at a better definition of selection criteria.

Obviously the experts – all of them with a clear technology background – did not like the fact that they had to evaluate socio-economic or relevance criteria such as the contribution of the proposals to EU policy etc. They suggested that this evaluation should rather be done by the Commission services. In future there will have to be either a better mix of experts and a better briefing with regard to these criteria, or the evaluation will have to be carried out in two steps (scientific quality first, policy-oriented criteria later) with different experts.

It should also be considered to invite evaluators representing the users, i.e. not only technical representatives from industry but also persons with an experience regarding radiation protection of workers etc.

ANNEX 6

IMPROVING THE SOCIO-ECONOMIC KNOWLEDGE BASE (IHP)

6.1. Introduction to the programme

6.2. Activity : Research Training Networks

6.3. Activity : Marie Curie Fellowships

6.4. Activity : Access to Research Infrastructures

6.5. Activity : High-level conferences

6.6. Activity : Raising Public Awareness

6.7. Key action : Improving the socio-economic knowledge base

6.8. Activity: Strategic analysis of specific political issues (STRATA)

ANNEX 6. IMPROVING THE SOCIO-ECONOMIC KNOWLEDGE BASE (IHP)

6.1. Introduction to the programme

The general objectives of this programme, to be realised in concert with related activities in other programmes of FP5, are centred on two main areas of activity :

- To improve the human research potential
- To strengthen the socio-economic knowledge base.

The programme consists of a number of activities :

- Supporting the training and mobility of researchers through
 - Research Training Networks
 - Marie Curie Fellowships
- Enhancing access to research infrastructures through
 - Transnational Access to Major Research Infrastructures
 - Infrastructure Co-operation Networks
 - Research Infrastructure RTD Projects
- Promoting scientific and technological excellence through
 - High-level Scientific Conferences
 - Distinctions for High-level Research Work
 - Raising Public Awareness
- Key action on “**Improving the socio-economic knowledge base**”
- Support for the development of scientific and technology policies in Europe through
 - The Strategic Analysis of Specific Political Issues.

During the first year of FP5 a number of activities have been started and initiated in the fields described below.

6.2. Activity : Research Training Networks

Objectives

The primary objective of research training networks is to promote training-through-research for young researchers at pre-doctoral and at post-doctoral level within high quality transnational collaborative research projects. The research training networks will further stimulate the co-operation between the participating research teams through networking around a common research project, encourage the mobility and interaction of staff and foster interdisciplinary and the collaboration between academic and industrial research.

Research training networks cover all fields of scientific research that contribute to the Community's objectives in research, technological development and demonstration. In the selection of projects, there will be no pre-established targets in terms of scientific discipline or topic. The common research subject can be

freely chosen by the network and the overriding criteria for the selection will be scientific excellence, the quality of the training programme offered to the young researchers and the organisation and management of the network.

In order to form a research training network, a minimum of 5 independent research institutions from at least 3 different countries (Member States and Associated States) is needed. The maximum contribution of the Community for a network will be 1,5 Mio Euro for a project duration of a maximum of 48 months. The Community funding will normally cover 100% of the additional costs in relation with the network's activities. Eligible costs cover personnel costs for the appointment of young researchers, costs linked to networking (incl. travel and substance for staff members, conference fees, scientific computing, consumables) and a contribution to overheads. At least 60% of the funding for the research training network has to be attributed to the appointment of young researchers.

Young researchers who are to be appointed must not be nationals of the state in which the participating research team appointing them is located and must not have carried out their normal activities in that state for more than 12 of 24 months prior to their appointment. The age limit for young researchers will be 35 years at the date of their appointment; an allowance will be made for compulsory military service or civil service or childcare.

In the frame of the first call for proposals under FP5 a total of 454 eligible proposals was received and 167 projects were retained for funding. 38 proposals were evaluated in the area of the Economic, Social and Human Sciences and 14 projects were selected for funding. The proposals retained cover a wide range of topics from law to social sciences and economics.

The table below summarises the evaluation results :

Economic, Social and Human Sciences (ESH)		Evaluated	Recommended for funding
S-01	Law	4	1
S-02	Political Sciences	5	3
S-03	Sociology	2	
S-04	Psychology	2	1
S-05	Education and Training	1	
S-06	Linguistics	1	
S-07	Media and Mass Communication	1	1
S-09	Other Social and Human Sciences	3	1
S-10	Microeconomics	6	2
S-11	Macroeconomics	3	2
S-12	International Economics	1	1
S-13	Financial Sciences	2	1
S-14	Industrial Economics (incl. Innovation and Technology)	1	
S-15	Public Sector Economics	1	
S-16	Urban and Regional Economics (incl. Transport Economics)		
S-17	Natural Resources and Environmental Economics		
S-19	Labour Economics	2	1
S-20	Social Economics		
S-21	Management	3	
S-22	Quantitative Methods		
S-99	Other Economic Sciences		

Table : Overview on evaluation results for HP research training networks in the Economic, Social and Human Sciences

Examples

Enforcing European Environmental Policy

The network will perform interdisciplinary research on the instruments of environmental policy in the areas of climate protection and air pollution reduction. It will examine the instruments of environmental policy of the Member States of the European Union; in particular, it intends to conduct a comprehensive cost-benefit assessment of the functioning of the various instruments used and formulate recommendations for an appropriate environmental policy mix or alternative instruments of environmental policy.

Complexity in Social Science

The network focuses on the analysis and modelling of complex socio organisational systems in the frame of the so-called "Complexity Paradigm". Its objective is to promote this approach in social sciences and more particularly apply it to complex systems such as Air Traffic Control, Emergency Control Rooms and Information Systems. The network will have an interdisciplinary approach and

bring together researchers from fields such as ethnomethodology, computer science, ergonomics, sociology and economics.

The Analysis of International Capital Markets

The project brings together theoretical and empirical researchers in international finance, taxation and macroeconomics to develop a comprehensive analysis of international capital markets and their impact on the European economy. A rigorous microfunded theoretical framework will be developed to understand and analyse international capital flows and the consequences for tax systems and the potential for policy co-ordination.

6.3. Activity : Marie Curie Fellowships

Objectives

Marie Curie fellowships aim at providing high-level training through research. Fellowships are awarded to the best of Europe's young researchers with the necessary research experience, who wish to receive advanced training through research in a host institution in a country other than their own. The final objective is that these fellows become Europe's leading researchers. Past and present Marie Curie fellows are able to join the Marie Curie Fellowship Association. This organisation, though founded by the European Commission, is run by the fellows. Through a network of groups it seeks to create a clear identity and to foster the multidisciplinary international dimension of the Marie Curie programme.

This already can be regarded as a socio-economic contribution in itself. However as the main Marie Curie Fellowships activity covers all fields of research (a bottom up approach) it also supports a considerable number of proposals in the field of socio-economic research. These proposals are evaluated by a dedicated panel (Economics, Social and Human Sciences panel). Throughout FP5 roughly 60 million Euro will be spent in the field of Economic, Social and Human Sciences.

Evaluation

For the first cut-off date in 1999 117 proposals for individual fellowships were received in this field, 44 of which were retained for funding. This is close to the average success rate for the Marie Curie individual fellowship activity. Also in October 1999, 29 socio-economic Marie Curie Development host and 78 Marie Curie Training site proposals were received. These are currently under evaluation, and are expected to be placed in early 2000.

The Marie Curie Individual Fellowships that were retained for projects which were retained for funding in 1999 show a wide variety of subjects as shown in Table 1.

Table 1: Breakdown by sub-discipline of eligible individual fellowships evaluated in 1999

ECONOMICS, SOCIAL AND HUMAN SCIENCES (ECO)		Evaluated	Recommended
S-01	Law (European or Comparative National)	12	2
S-02	Political Sciences (European or Comparative National)	19	8
S-03	Sociology	8	2
S-04	Psychology (Social, Industrial, Labour, or Education)	3	2
S-05	Education and Training	3	1
S-06	Linguistics (applied to: Education, Industrial Efficiency or Social Cohesion)	5	2
S-07	Media and Mass Communication	2	1
S-08	Philosophy of Science	2	1
S-09	Other Social and Human Sciences	13	4
S-10	Microeconomics	8	5
S-11	Macroeconomics	9	3
S-12	International Economics	2	2
S-13	Financial Sciences	3	1
S-14	Industrial Economics (incl. Technology and Innovation)	6	4
S-15	Public Sector Economics		
S-16	Urban and Regional Economics (incl. Transport Economics)	3	1
S-17	Natural Resources and Environmental Economics		
S-19	Labour Economics		
S-20	Social Economics	1	
S-21	Management of Enterprises (incl. Marketing)	5	2
S-22	Quantitative Methods	1	
S-99	Other Economic Sciences	1	1
Other	Disciplines from other panels	1	1

Examples

A typical success story from a current fellow funded a previous TMR programme is that of an Italian researcher hosted by the University of Warwick. The research into screening and signaling within International debt strategies has enabled participation in conferences within Germany, Spain and the UK. It has also triggered papers accepted for presentation by the European Econometric Society and European Economic Association. One paper titled "IMF screening as a screening device" was awarded the Economic Journals "Austin Robinson" prize for the best paper produced by young economist.

Further examples that illustrate the wide range of socio-economic subjects funded by Marie Curie fellowships are :

- The European Commission in implementation: Facets of institutional discretion
- Multicultural groups: Diversity as a basis for collective action

- European science centers : new strategies for future challenges
- Managing transitional labour markets: Local partnership as key variable
- The Europeanisation of private law
- The differential impact of social policy integration in the European Union: The case of gender equality
- Analyses and comparison of political scandals in Europe, France, Italy and the UK
- Temporary and permanent inequality
- Credit, asymmetric information and relationships between banks and small firms
- GREENET (Green Network) for energy saving design in urban areas

6.4. Activity : Access to Research Infrastructures

Objectives

Within the framework of this activity support is given to facilities and establishments that provide essential services to the research community. The following general objectives have been defined for this support :

- To sponsor new opportunities for transnational access to major research infrastructures of Community-wide interest
- To stimulate infrastructure operators and users to work together in order to make more effective use of research infrastructures and hence to improve the service they provide to the scientific community
- To arrange coordinating, supporting and accompanying actions that ensure consistency with related actions undertaken in other specific programmes.

Evaluation

228 proposals were received and evaluated divided between the three sub-activities: 165 for Transnational Access, 21 for Infrastructure Co-operation Networks, and 42 for RTD Projects. 169 proposals were evaluated to be of high enough quality to be worthy of funding. These proposals were ranked in priority to form a main priority list of 143 proposals (111 for access, 13 for ICN's, and 19 for RTD projects) and a reserve list of 26 proposals.

Examples

Examples of supported Infrastructures which illustrate the diversity of discipline supported by this action are:

The GANIL heavy ion accelerator in France, which as well as providing access to nuclear physicists provides access for atomic and condensed matter physics as well as for radiobiology.

The ISIS neutron source in the UK, which provides access to physicist, chemist and biologist.

The large shaking tables of ISMES in Italy, providing access for civil engineers.

The European Data Laboratory for Comparative Social Research in Germany, providing access for social scientists.

The Brain Research Unit, Low Temperature Laboratory in Finland, providing access for biomedical research.

The CESCA and CEPBA supercomputing centres in Spain, providing access for research in computing science.

6.5. Activity : High-level conferences

Prime research objectives

The High-Level Scientific Conferences activity will contribute to the advancement of science through exchange and to create conditions for experienced researchers, working at the cutting edge of scientific and technological development, to impart their knowledge and experience to the younger generation.

In addition scientific conferences will create the framework for the networking of researchers who are nationals of a Member State or an Associated State in order to build up or preserve their contacts and scientific relations with colleagues in Europe.

This shows that the activity already has a strong inherent socio-economic dimension. However it has also integrated a direct socio-economic component. The following paragraphs are an analysis of the results of the proposal evaluation in the field of economic, social and human sciences (ESH). Only proposals with ESH as lead discipline are included.

Key Data

Call for Proposals IHP-CNF-99-1	16 March 1999	
Deadline for Receipt of Proposals ¹	02 June 1999	
All Proposals/Events Evaluated	245 / 437	
ESH Proposals/Events Evaluated	50 / 95	
ESH Participation Rate	20%	
Successful ² ESH Proposals (All Disc.)	34	(201)
ESH Success Rate (All Disc.)	68%	(82%)

Notes :

- 1) First deadline, three to follow. Next deadline 01 February 2000.
- 2) Contract negotiations on favourably evaluated proposals which achieved an evaluation result of at least 65 points started on 12 August 1999.

The success rate of ESH proposals is below average.

Details

The breakdown of successful ESH proposals by Conference type is: EuroConferences (24), -Summer Schools (4), -LabCourses (1), -Workshops (1), Large Conferences (4), PhD EuroConferences (0) and Eurotron Conferences (0).

Table 1 gives an overview of the scientific fields covered by these events.

Table 1 : Overview of Scientific Fields covered by High-Level Scientific Conferences in the Economic, Social and Human Sciences

Code	Field	Proposals	Events
S-01	Law	2	4
S-02	Political Sciences (European or Comparative National)	4	8
S-03	Sociology	3	4
S-04	Psychology (Social, Industrial, Labour, or Education)	-	-
S-05	Education and Training	2	2
S-06	Linguistics (applied to: Education, Industrial Efficiency or Social Cohesion)	4	8
S-07	Media and Mass Communication	-	-
S-08	Philosophy of Science	-	-
S-09	Other Social and Human Sciences	5	5
Subtotal		20	31
S-10	Microeconomics	1	2
S-11	Macroeconomics	1	1
S-12	International Economics	1	3
S-13	Financial Sciences	-	-
S-14	Industrial Economics (incl. Technology and Innovation)	1	1
S-15	Public Sector Economics	1	3
S-16	Urban and Regional Economics (incl. Transport Economics)	-	-
S-17	Natural Resources and Environmental Economics	1	2
S-19	Labour Economics	2	4
S-20	Social Economics	1	3
S-21	Management of Enterprises (incl. Marketing)	4	15
S-22	Quantitative Methods	1	1
S-99	Other Economic Sciences	-	-
Subtotal		14	35
Total		34	66

Despite the discrepancy in number of successful proposals in the Social and Human Sciences in comparison with those in the Economics Sciences, the number of events is about equal.

It is worth noticing that " Other Social and Human Sciences" has 5 successful proposals whereas " Other Economics Sciences" has none. This could be an indication of an incomplete list of sub-disciplines for the Social and Human Sciences.

Two examples for proposals to be funded :

Environmental law and policy Euroconferences

The proposal includes three Euroconferences focused on the implementation of EU environmental law and policy in Member states and associated states. The overall objective is to disclose possibilities and potential barriers for implementation.

The proposal has a strong training dimension focusing on training through exchange of research experience and through informal discussions. The conferences aim to provide new perspectives for young researchers working with environmental law and policy and to initiate an informal training network, including both young and senior researchers.

Euroconference on innovation, economic growth and European regional cohesion

The conference intends to bring together top young European researchers to discuss recent developments in the theory and practice of economic growth as well as their policy implications, with a special emphasis on their applications to European technological progress, economic growth and regional cohesion.

6.6. Activity : Raising Public Awareness

Objectives

Activities in this field (as in the other subjects of the horizontal programme) cut across the themes of FP5, including social and economic sciences. Specific objectives are

- To bridge the gap between the public and science
- To improve the public's understanding of the beneficial impact of science and technology
- To improve scientists' understanding of the concerns of the public.

The socio-economic importance of this activity is in particular based on its strong societal component: today's modern societies are critically dependent on the application of science (through technology, medicine, communication etc.) and the public needs to be made more aware of this linkage.

Evaluation

(Information on proposals received and retained so far; has to be filled in)

Examples

(has to be filled in)

6.7. Key action : Improving the socio-economic knowledge base

Objectives

The objective of the key action is to improve our understanding of the structural changes taking place in the European society in order to identify ways of managing change and to involve European citizens more actively in shaping their own futures. This will involve the following :

- an analysis of the main trends giving rise to these changes
- an analysis of the relationships between technology, employment and society
- an re-appraisal of participation mechanisms for collective action at all levels of governance
- an elaboration of new development strategies fostering growth, employment and economic and social cohesion.

Evaluation

For the first call 12 research tasks had been defined. Results of the call were different with regard to the individual tasks.

Task 1 "Social and economic challenges of changing family structures" was partly covered. Proposals have been strong on quantitative, economic aspects, less on sociological, "individual" aspects of family.

Task 2 "changes in work and their effects on quality of life" has had a reasonable coverage. Well covered were the subjects work and domestic life, quality of life aspects and identity. Less well covered were the items trend aspects of working life, future perspectives.

Task 3 "Challenges to European welfare systems" was covered with a reasonably wide range of topics, e.g. pensions, health care, social housing.

Task 4 "Emerging concepts of work" received only few proposals, and only one was retained for funding. This project concerns mutuality and trust in the social economy and contribution to local economic development.

Task 5 "The implications of societal change for education and training" had a partial coverage. In particular, the theme of social exclusion and educational aspects is less well covered.

Task 6 "The relationship of the financial sector to the rest of the economy and society" was partially covered. There were good proposals for the themes of financial regulation, effects of competitiveness, macro developments in relation to EMU; but the themes of behaviour of the financial sector (pensions, assurance) and effects on welfare and inequality received fewer high quality proposals.

Task 7 "The dynamics of knowledge in the economy" retained proposals addressing the role of economically useful knowledge in economic development, and economics of knowledge transmission and accumulation.

Task 8 "Internationalisation, technology and employment in different geographical environments" was well covered by retained proposals. Issues address are: effects of globalisation and new technology on rural peripheral areas, impact of foreign direct investment on employment according to geographical distribution, effects of globalisation and knowledge economy on SME's restructuring behaviour, impact of regional strategies on technological change and employment.

Task 9 "The relationship between employment and growth" was widely covered. Retained proposals refer mainly to links between employment and growth in Europe and on effects of macro-economic change on technological change.

Task 10 "European integration and European identity", task 11 "European construction and multi-level governance", and task 12 "Governance and media" were new EU RTD areas. With this in mind, the coverage has been good. For tasks

10 and 11 a relatively high number of proposals indicate interest and adequate research supply. Retained projects provide a good start. However, a relatively high percentage of proposals did not pass the threshold, and evaluators were sometimes disappointed with the scientific quality of some proposals in relation to methodology and the relative lack of truly comparative research. Task 12 was only marginally addressed by proposals.

Examples

The project "Growth and European labour markets" aims to analyse the relationship between growth and employment. The employment intensity of growth will be measured and compared within the EU and with other industrial countries. The influence of labour supply changes will be studied. A theoretical and empirical analysis of the main determinants of labour demand will be established, like, for example, labour productivity increases. An "equilibrium" rate of unemployment will be estimated for the EU-countries. This concept will be utilised to discuss policy measures to reduce unemployment as outlined in the EU-white-book on employment, competitiveness and growth or the more recent employment guidelines of the European Commission. The study will, in particular, focus on the institutional arrangements on the labour market and its relationship to both the employment intensity of growth and the "equilibrium" rate of unemployment. The conclusion will end up with recommendations for an updating of the strategy to reduce unemployment outlined in the EU-white-book on employment, growth and competitiveness.

The project "Democratic participation and political communication in systems of multi-level governance"

Electoral abstention is a major challenge to the legitimacy of contemporary multi-level governance. The overall objectives of the project are to analyse the nature and sources of electoral participation and abstention in systems of multi-level governance and to make policy recommendations designed to deal with the factors identified as sources of abstention. The specific scientific objectives are to identify the relative influence on voter turnout of the following four factors :

- Political institutions and political structure.
- Social exclusion.
- Political mobilisation (political campaigning and media communication).
- Voter facilitation.

The policy objectives underlying the project are to produce a set of concrete recommendations addressing the increasingly apparent problems of electoral participation in advanced industrial societies. These recommendations will deal with the process of electoral participation at all levels of governance from the supranational through the national to the sub-national and, in particular, will address the challenge of fostering meaningful citizen participation and enhanced system legitimacy at all levels of Europe's complex system of multi-level governance.

The project "Improving Policy Responses and Outcomes to Socio-Economic Challenges: changing family structures, policy and practice"

The overall aim of the research is to develop a better understanding of the factors contributing to socio-demographic change, the challenges it poses for policy makers, the policy solutions adopted and their impact for family formation, gender and intergenerational relations. Important objectives are to identify the factors motivating policy formation, and to determine how policy influences the decisions taken by individuals in different family situations and at different life stages. The research seeks to investigate these factors by conducting new empirical work in selected EU member states (France, Germany, Greece, Ireland, Italy, Spain, Sweden, United Kingdom) and applicant countries (Estonia, Hungary Poland, Malta), representing different socio-economic and political environments. It assesses the extent to which policy solutions to the challenges presented by socio-demographic change are transferable across countries and the potential for EU policy learning and development.

6.8. Activity: Strategic analysis of specific political issues (STRATA)

Objectives

Activities in the STRATA action line should provide a flexible service for decision makers on the development of STI policies in Europe. They will

- contribute to an open dialogue between the various actors with a stake in STI policy
- promote continual mutual learning amongst decision makers and researchers on STI policy developments
- collate, analyse and synthesise policy relevant data and information.

Proposals were asked for in the following areas :

- European STI policies and national and global systems
- Articulation between RTD and other policies within the European institutional environment
- Management of change in STI policy
- Collaboration in science, technology and innovation : changing needs and opportunities for policy.

Evaluation

Following the first call, 12 proposals for Thematic Networks and 4 for Accompanying Measures have been received. Of these, 5 Thematic Networks and 3 Accompanying Measures were selected for finance. The projects are planned to start on 1 February 2000, with 88 organisations from 21 countries bringing together participants from industry, academia, administration and the general public (about half of them from the government sphere). They will address issues varying from

- aspects of input, evolution, public access, and evaluation of European STI policies, to
- strategies of different actors in national systems of innovation, and to

- the aligning of STI policies with other policy actions – specifically regional development activities.

Examples

Scenarios for the evolution of the **European STI Policy (EUROPOLIST)** : this project intends to conceive and discuss institutional scenarios for a further evolution of Europe's STI policy, and with respect to its content major new orientations and initiatives for its evolution. It focuses on three objectives: - Assessing the evolution (1999-2010) of the political, socio-economic context of the European STI policy and its potential impact; -Assessing transformations of the science and technology institutions; -Building policy institutional scenarios for the future of the European STI policy (new mechanisms, new tools, new kinds of institutions, etc).

The **FOREN (Foresight for Regional development Network)** aims at promoting effective integration of Foresight processes into regional development policy and strategy planning. Its 15 members come from 8 EU Member States and 1 Candidate Country. By considering and exploring the peculiarities of the different regions and Member States the project will establish different fora and communication channels for a structured mutual learning process between two heretofore relatively independent constituencies - i.e. those of Technology Foresight / Assessment and Regional Development Policy. Final deliverable is a consolidated directory of generic and specific policy initiatives for subsequent use by policy planners.

ANNEX 7

CONFIRMING THE INTERNATIONAL ROLE OF COMMUNITY RESEARCH (INCO)

- 7.1. Introduction to the horizontal programme
- 7.2. EU policy initiatives related to this horizontal programme
- 7.3. The work programme and its activities
- 7.4. The socio-economic dimension in the 1999 calls for proposals
- 7.5. The socio-economic dimension in the guide for proposers, including evaluation criteria
- 7.6. Situation after the termination of the 1999 calls and the evaluation of proposals
- 7.7. Socio-economic aspects during the evaluations
- 7.8. Conclusions

ANNEX 7. CONFIRMING THE INTERNATIONAL ROLE OF COMMUNITY RESEARCH (INCO)

7.1. Introduction to the horizontal programme

International research and technology development co-operation under FP5 is pursued through two complementary routes :

- An integral dimension of international co-operation in the specific programmes and their key actions; and
- A dedicated horizontal “international co-operation programme” which is described in this chapter.

The latter focuses on specific RTD activities, which are relevant to certain third countries or regions. The underlying objective is the enhancement of these countries and regions by scientific co-operation, training of researchers and co-ordination of research activities. The programme also aims at establishing legal frameworks with third countries and to disseminate information about participation opportunities. It therefore has a strong inherent socio-economic dimension.

7.2. EU policy initiatives related to this horizontal programme

The programme contributes to a range of EU policy initiatives, in particular to external relations, including enlargement and development, and to regional policies. The interconnection between research and EU policy is mentioned throughout the work programme, and the INCO home page on CORDIS contains a paragraph explaining the relationship.

7.3. The work programme and its activities

For the *candidate countries* FP5 corresponds to the period in which they will prepare their full integration into the European science and technology community. These countries are now all associated to FP5, and can fully participate in its programmes. The co-operation activities are directed towards helping these countries in achieving this objective, and are therefore limited to certain types of accompanying measures such as supporting centres of excellence, conference support, and awareness and training.

For the *Central and Eastern European countries which are not candidates for accession and for the NIS* co-operation is directed towards specific problems in their regions such as environment and health, transition and socio-economic development, sustainable use of natural resources.

For the *Mediterranean partner countries* activities concentrate on such subjects as socio-economic modernisation, managing scarce regional water resources, preserving and using cultural heritage and promoting healthy societies.

For the activity *Research for development* it was decided to concentrate on two urgent problems: health improvement with respects to major health problems and technologies for sustainable plant and animal production. In these areas policy

research related to questions of fulfilling basic needs is supported, but on the other hand the development of tools and instruments for better management in this area is supported as well.

Two schemes for *training of researchers* have been opened: bursaries for young researchers from developing countries and fellowships to Japan for researchers from the EU.

7.4. The socio-economic dimension in the 1999 calls for proposals

In 1999 nine different calls were published in this horizontal programme. The calls relating to "accompanying measures" for other programmes of FP5, have a strong inherent socio-economic dimension. Some of the calls mention these aspects explicitly:

Emerging economy and industrialised countries (Accompanying measures) was directed towards proposals for studies and analyses of the evolution of S&T capacities in areas of particular interest to the Community, in particular those covered by FP5.

Copernicus 2 is directed towards CEECs to help these countries' efforts to develop an S&T system, which can contribute to solving major economic and societal problems. The call text specifically mentioned that socio-economic research aspects should be integrated whenever possible and appropriate.

Support for centres of excellence is directed towards accession countries. Support for these centres is meant as a contribution to restructuring the science and technology sector of the countries concerned and to better put their capabilities at the service of the economic and social needs of their region. This call has a truly socio-economic approach since it asks for proposals bringing together theoretical and applied research in the natural, social and economic sciences, using a multidisciplinary approach whenever possible.

Awareness and training is directed towards CEECs and will support activities directly related to preparing project proposals under FP5.

Conference participation support is directed to accession countries and CEECs and covers all domains of FP5.

INCO MED is directed towards Mediterranean partner countries and aims at long-range sustainable development in the context of transboundary economic, environmental and socio-political problems. With its focus on socio-economic modernisation, management of water resources, preservation and utilisation of cultural heritage and promotion of healthy societies it has a very strong socio-economic component.

INCO DEV is directed at developing countries. It concentrates on policy research for sustainable development with the aim to identify socio-economic conditions that favour progress in this area.

INCO MED and INCO DEV (Accompanying Measures) is directed towards Mediterranean partner countries and developing countries and covers activities related to the specific programmes of FP5 such as workshops, seminars, studies and networking.

Fellowship to Japan for Community researchers aims at enabling young researchers from the Community and associated countries to participate in high-level industrial research in Japan.

7.5. The socio-economic dimension in the guide for proposers, including evaluation criteria

In the guide for proposers socio-economic aspects are only mentioned in the overall connection with regard to their inclusion in FP5 as such. No specific mention is being made with regard to the INCO programme.

The relevance criteria are mentioned, and have been explained, if applicable.

As far as evaluation criteria are concerned, in some cases thresholds have been defined for the relevance criteria, and the criteria have been given a weighting marks.

7.6. Situation after the termination of the 1999 calls and the evaluation of proposals

The calls dealing with RTD projects have included socio-economic components. By its nature the programme includes socio-economic aspects in those calls relating to training, awareness and dissemination activities, and conferences since these activities are strongly geared to support the development of S&T capacities in the countries concerned which is a socio-economic objective in itself.

Copernicus 2

Though this call attracted mainly technically oriented project proposals, examples for socio-economic components could be found, i.e.

The project "*Sustainable development of the Pechora region in a changing environment and society*" (SPICE) assesses alternative scenarios for the sustainable development of the Pechora region (Northeast European Russia) which ensure the economic and social well-being of its population and protect the unique natural environment, its high biodiversity. The project will evaluate the present-day state of formal and informal economic sectors, population and employment, public opinion, and the environment in relation to anthropogenic impacts. The project aims at presenting strategies for sustainable development in consultation with all stakeholders concerned.

Centres of excellence

185 proposals had been received for the call. 37 of them have been suggested for funding. Proposals with clearly socio-economic subjects have been rather weak. Only two of the 32 proposals received in this area have been selected for funding: "A bridge for scholarship between East and West (local talent, regional tradition,

European quality, global connection)" proposed by the Collegium Budapest - Institute for Advanced Studies, and

"A Centre of Excellence on computational finance and economics" proposed by the University of Cyprus - Centre for Banking and Financial Research.

However, proposals selected for funding in other areas also have a socio-economic dimension included. Examples are :

"Neuroscience serving regional integration, higher education and welfare of society" proposed by the Hungarian Academy of Sciences,

"Reduction of negative impact of environmental factors on Human health" proposed by the Slovak Academy of Sciences, or

"Advanced research centre for cultural heritage interdisciplinarity projects" proposed by the Czech Academy of Sciences."

Research for development

Projects in this area have an inherent socio-economic component since they support the development of S&T capacities in these countries. Following are some examples with more direct socio-economic dimension:

Monitoring shifts in health sector policies in South Asia

The broad objective of this project is to develop a network of South Asian and European scholars that would take up issue of common interest for exploration, analysis and exchange of ideas with the purpose of intervening in policy debates and generating public awareness regarding health sector reforms.

Governance of fish-for-food: North and South in concert

This thematic network aims to produce a new approach to the governance of the natural and human resource systems in the field of fisheries and food security, based upon interactions between different scientific disciplines and between scholars and practitioners.

7.7. Socio-economic aspects during the evaluations

No complete information does exist in this horizontal programme on the involvement of socio-economic experts in the evaluation or on the taking into account of socio-economic aspects when selecting the projects. However, the policy panel of INCO DEV (Research for development) reports that 10 out of 40 evaluators had a socio-economic expertise.

7.8. Conclusions

Whereas the work programme makes specific references to the problem-oriented approach of FP5 and the socio-economic aspects which should be integrated in the programme, this is not much taken up in the calls (with the exception of the centres of excellence and socio-economic modernisation in the Mediterranean) or in other documents of the information package.

For future calls proposers as well as evaluators should be better and more precisely informed on the socio-economic component.

ANNEX 8

PROMOTION OF INNOVATION AND ENCOURAGEMENT OF SME PARTICIPATION (SME's)

- 8.1. Introduction to the horizontal programme
- 8.2. EU policy initiatives related to this horizontal programme
- 8.3. The work programme and its activities
- 8.4. The socio-economic dimension in the 1999 calls for proposals
- 8.5. The socio-economic dimension in the guide for proposers including evaluation criteria
- 8.6. Situation after the termination of the 1999 calls and the evaluation of proposals
- 8.7. Socio-economic aspects during the evaluations
- 8.8. Conclusions

ANNEX 8. PROMOTION OF INNOVATION AND ENCOURAGEMENT OF SME PARTICIPATION (SME's)

General objective of the programme

To improve the economic and social impact of research activities by ensuring the better dissemination of results, by encouraging the participation of SMEs, and by encouraging the transfer and dissemination of technologies from various sources, taking into account the needs of customers and users.

8.1. Introduction to the horizontal programme

In the context of the general objectives of the fifth framework programme, the aim of this programme is to promote innovative activities contributing towards the implementation of the first action plan for innovation, and to promote a more active role for, and facilitate and encourage participation of SMEs in the fifth framework programme.

The “Innovation and SME Programme”, within the context of FP5, at Community level in coordination with enterprise policy pursues the following missions :

- * Developing the innovative capacities of “traditional” SMEs and creating new “hi-tech” companies drive the diffusion of new technologies and the emergence of new economic activities.
- * Promoting innovation and encouraging SME participation, although not synonymous, are closely linked and call both for appropriate stimulation and policy measures.

It stands at the cross-roads of the Community’s policies on Research, Innovation and SMEs and serves three main functions:

As a “service provider”, the programme offers information services and assistance to innovative SMEs, other firms and relevant players. It supports the Specific Programmes in their approach to Innovation and SMEs.

As a “clearing house”, the programme collects innovation data and analyses trends, initiatives and policies at Community and Member States level. It offers platforms for trans-national experience exchange and contributes to Community policy initiatives.

As a “test bed”, the programme launches pilot actions in the areas of Innovation and SME participation and aims at the continuous improvement of Community instruments.

SPECIFICITY OF THE PROGRAMME

The new approach of FP5 has given rise to a new role of the Innovation and SME Programme and led to a significant evolution of its structure.

Co-ordination and support activities covering both dimensions of "Innovation" and "SMEs" will become increasingly important. New interfaces are to be built with the Thematic Programmes and with their "Innovation Units", in particular. The emergence of an innovation oriented management culture shared by all Community RTD programmes is the ultimate aim of these efforts.

In parallel, the programme will carry out specific activities under the following three strands:

- * **The strand "encouraging SME participation"** is completely new. It encompasses setting up a "single complementary entry point" and introducing common management tools. A new action line on "technological and economic intelligence" will be developed to guide the choices and orientation of SMEs. In particular those SMEs with limited or no research capability of their own will be able to benefit from this.
- * **The strand "promotion of innovation"** contributes directly to the implementation of the European Action Plan for Innovation and future Innovation policy initiatives. It includes a new generation of pilot and demonstration projects experimenting with new approaches in the priority domains of innovation and technology transfer.
- * **The strand of "joint actions"** includes in particular new Help Desks in two areas of the programme. one to provide information and support services in matters of intellectual and industrial property rights (IPR) and the other to help in matters of innovation financing and, in particular, in the creation of innovative enterprises. There are also actions to extend and improve CORDIS as the "multi-service" platform of the entire Framework Programme and to strengthen the Innovation Relay Centre (IRC) network to further stimulate the adoption and transfer of technologies at regional and local levels.

The "joint actions" will also include pilot actions in relationship with key domains of the European Action Plan for Innovation such as IPR, Innovation financing and the creation and development of innovative enterprises.

8.2. EU policy initiatives related to this horizontal programme

The activities carried out in this programme must not duplicate activities undertaken within Member States. They will support, supplement and co-ordinate activities carried out under other specific programmes or, where appropriate, in the context of other Community activities. The other programmes will contribute actively to the attainment of the strategic objectives. In particular, this programme will promote and co-ordinate activities carried out in relation to innovation and SMEs, notably in coherence with the SME policy.

In 1999, the SME and Innovation Unit of DG RTD has strongly interacted with DG Enterprise for the formulation of the EU SME policy. In particular, it has provided input and examples for the following papers or initiatives :

- Follow-up of the Action Plan for Craft and small enterprises (Published in April '98)
- Follow-up of the Recommendations of the BEST Taskforce on administrative simplification (Published in September '98)
- Drafting of a Recommendation on SME participation to national & EC programmes (not finalised yet)
- Drafting of the research part of the 5th report on Activities in favour of SMEs and Craft (not finalised yet)

On the basis of the measures, instruments and expertise developed in the context of its specific activities, it will in particular focus on the design of mechanisms to facilitate the exploitation and transfer of results, the participation of SMEs, the evaluation of results, and the post-auditing of their exploitation in order to evaluate **their economic and social impact**. Action in the context of this programme will be based in particular on the activities carried out by the "innovation units", located within the thematic programmes, which it will co-ordinate in order to integrate the innovation dimension in the implementation of the programmes.

The Commission will endeavour to ensure complementarity between the indirect RTD actions under the programme, in particular by grouping them around a common objective, and to avoid duplication, while respecting the legitimate interests of proposers of indirect RTD actions.

As far as possible, coordination will also be ensured between actions under the specific programme and those carried out in :

- * other specific programmes implementing the fifth framework programme,
- * the research and training programmes implementing Council Decision 1999/64/Euratom of 22 December 1998 concerning the fifth framework programme of the European Atomic Energy Community (Euratom) for research and training activities (1998 to 2002) (1),
- * other European research frameworks including Eureka and COST,
- * other Community research-related instruments.

It will comprise :

- (i) the identification of common themes or priorities, resulting in particular in :
- * the exchange of information,
 - * the carrying out of work decided on jointly, entailing in particular the joint initiation of one of the procedures referred to in Article 9 of the rules for participation and dissemination,
 - * the examination of the lessons learned from carrying out this work and the evaluation of their economic and social impact;

- (ii) the reassignment of proposals for indirect RTD actions between specific programmes or between a specific programme and a research and training programme.

8.3. The workprogramme and its activities

The specific programme will be implemented through indirect RTD actions and pilot activities.

8.4. The socio-economic dimension in the 1999 calls for proposals

The programme will apply the general FP 5 criteria with particular emphasis on Community added value and economic development. Depending on the nature of the activities, additional criteria specific to "innovation" will be utilised. The impact of the programme will be elucidated by periodic appraisals against specific performance indicators. The performances of the support infrastructure and services provided by the programme will be assessed through user surveys and, where appropriate, apply quantitative targets. Monitoring and evaluation procedures will be established for each pilot and experimental activity.

8.5. The socio-economic dimension in the guide for proposers including evaluation criteria

The guidelines for evaluating proposals under the SME Specific Measures specify that for the four thematic programmes, the common set of five main common evaluation criteria used for the 5th Framework Programme will be used. Contribution to Community Social Objectives, addressing likely socio-economic impacts, is one of these 5 main set of criteria. Each of the 5 main criteria will be marked from 0 (not addressing the point) to 5 (Excellent). They will all have the same weight.

Proposals for which :

- each of the main criteria reaches an average of 3 or higher,
AND
- the total of all criteria reaches an average of 3 or higher for all experts (i.e. 21 points for Exploratory Awards and 15 points for Cooperative Research – CRAFT projects)

→ may be retained for funding

Proposals for which :

- at least 2 main criteria fail to reach an average of 3
OR
- the total of all criteria does not reach an average of 3 or higher for at least 2 experts

→ will be rejected

Proposals for which :

- only 1 of the main criteria does not pass the threshold
AND/OR
- the total of all criteria does not reach an average of 3 for one given expert only

→ **a meeting will be organised for experts to discuss their comments and reach a consensus on retention or rejection. If no consensus is reached, additional experts will be asked to evaluate and discuss the proposal until a consensus is reached.**

It is also possible for the moderator to organise a consensus meeting to discuss any proposal for which he/she feels that there is the need to do so.

8.6. Situation after the termination of the 1999 calls and the evaluation of proposals

- In 1999, 838 Exploratory Awards (EA) and 148 CRAFT projects were submitted, involving 2500 SMEs and requesting a total of 92 Million euro. **This is 20% more than in the first year of FP4, but over a period of only 6 months (April to October 1999) witnessing a big interest from SMEs in these measures.**
- **Ineligibility rates are lower than for FP4 : 10% for EA and 14% for CRAFT projects.**
- **Most of the EA aim at preparing a CRAFT project, but 25% of proposals envisage preparing Collaborative Research, Demonstration or Combined projects.**
- **Proposals are more spread across programmes than in FP4, with 40% of EA proposals for "Growth" and 30% for "Quality of Life". CRAFT projects still aim mainly to the "Growth" programme but less than in the past (65% of proposals in FP5 vs. 75% in FP4).**
- **Proposals are also well spread across all key actions, with all of them having at least an Exploratory Award and only 4 having received no CRAFT proposal.**
- **The spread of SME proposers across Member States is also greater than in FP4, thanks again to the effort of all SME National Contact Points. SMEs from Cohesion countries represent 22% of proposers and seem to find here measures adapted to their needs. 5% of SMEs are from states Associated to FP5, witnessing their increasing interest in EU RTD programmes.**
- **Small and very small companies are participating : 80% of all SME proposers have less than 50 employees, and 40% even less than 10.**
- **54% of SME proposers come from the manufacturing sector, 12% from business activities, the rest being spread across other economic activities. 45%**

of selected proposers are in low technology sectors according to the latest OECD classification.

- **Female entrepreneurs represent 5% of proposers.** Although this figure is low, it is in line with the percentage of European women owning technology oriented business.

Economic and Technological Intelligence Actions

11 of the 23 proposals submitted by the first cut-off deadline (July 1999) have been retained and negotiations have started to support actions in fields such as Leather, Biomass, Electronic Commerce, Aerospace and Nanotechnologies. Other actions specifically aim at stimulating the participation of SMEs from less developed European regions or training and accrediting members of support networks in Associated States.

8.7. Socio-economic aspects during the evaluations

According to the guidelines, socio-economic aspects were considered at the same level of other evaluation criteria and no particular remark was made by the evaluation panels or the independent observers invited to participate in the evaluation exercise.

Reports made by particular programmes or key-actions, should be incorporated in the thematic programmes parts.

8.8. Conclusions

The SME Specific Measures aim at fostering the participation of SMEs in the 5th Framework Programme. The more SMEs are present in research projects, the higher the socio-economic impact is likely to be, as previous impact studies show that project impact/benefits tend to be higher for SMEs than for any other category of participants.

For example, a series of studies by the programme on Industrial Technologies¹⁸ reviewed the expected economic and social impact of finished projects one year after termination and the effective impact on the first projects five year after their termination :

- **SMEs are the category who has more frequent benefits** : five year after a project was completed 43% of participating SMEs had increased their turnover, 53% had accessed new markets and 42% and created new jobs. While SMEs represented 33% of the sample evaluated, they accounted for 47% of those with increased turnover, 66% of those who accessed new markets and 76% of those who created new jobs.
- **Total (direct and indirect) economic impact is smaller for SMEs** : while, on average, the average economic impact 5 year after completion is of 12 euro per

¹⁸ *Industrial technologies : impact predicted, impact delivered*, European Commission, 1998 (WWW ***)

euro invested in a project, the impact is of 9 euro per euro invested by an SME. This is mainly due to the fact that SMEs have less resources to invest in exploitation after the research is completed.

- **A similar trend emerges for CRAFT projects** : the expected impact a year after termination is more frequent than for the average project with 82% of projects anticipating the commercialisation of a new product (average is 64%) and 73% an internal usage for boosting competitiveness (average is 59%). However, while on average a project anticipated yielding 10 euro per euro invested by a partner in the project, the anticipated economic return is of 6.5 euro for CRAFT projects.
- **Other impacts on SMEs** : the report also mentions other, less measurable, benefits for SMEs :
 - in all CRAFT projects and in 65% of collaborative projects, SMEs played a major role
 - 60% of SME partners mentioned other benefits such as new commercial links, improved know-how, increased reputation or better internal organisation.
 - Non-partner SMEs also benefited of technology transfers from 30% of finished projects

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