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*****I**

REPORT

on the proposal for a decision of the European Parliament and of the Council concerning the multiannual framework programme 2002-2006 of the European Community for research, technological development and demonstration activities aimed at contributing towards the creation of the European Research Area

(COM(2001) 94 – C5-0087/2001 – 2001/0053(COD))

Part 1: Legislative Proposal - Amendments 1-159

Committee on Industry, External Trade, Research and Energy

Rapporteur: Gérard Caudron

Symbols for procedures

- * Consultation procedure
majority of the votes cast
- **I Cooperation procedure (first reading)
majority of the votes cast
- **II Cooperation procedure (second reading)
majority of the votes cast, to approve the common position
majority of Parliament's component Members, to reject or amend
the common position
- *** Assent procedure
majority of Parliament's component Members except in cases
covered by Articles 105, 107, 161 and 300 of the EC Treaty and
Article 7 of the EU Treaty
- ***I Codecision procedure (first reading)
majority of the votes cast
- ***II Codecision procedure (second reading)
majority of the votes cast, to approve the common position
majority of Parliament's component Members, to reject or amend
the common position
- ***III Codecision procedure (third reading)
majority of the votes cast, to approve the joint text

(The type of procedure depends on the legal basis proposed by the Commission)

Amendments to a legislative text

In amendments by Parliament, amended text is highlighted in ***bold italics***. Highlighting in *normal italics* is an indication for the relevant departments showing parts of the legislative text for which a correction is proposed, to assist preparation of the final text (for instance, obvious errors or omissions in a given language version). These suggested corrections are subject to the agreement of the departments concerned.

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PROCEDURAL PAGE

By letter of 26 February 2001 the Commission submitted to Parliament, pursuant to Article 251(2) and Article 166(1) of the EC Treaty, the proposal for a decision of the European Parliament and of the Council concerning the multiannual framework programme 2002-2006 of the European Community for research, technological development and demonstration activities aimed at contributing towards the creation of the European Research Area (COM(2001) 94 – 2001/0053(COD)).

At the sitting of 12 March 2001 the President of Parliament announced that she had referred this proposal to the Committee on Industry, External Trade, Research and Energy as the committee responsible and the Committee on Budgets and all committees concerned for their opinions (C5-0087/2001).

The Committee on Industry, External Trade, Research and Energy had appointed Gérard Caudron rapporteur at its meeting of 9 January 2001.

It considered the Commission proposal and draft report at its meetings of 26 March, 23 April, 28 May, 26 June, 10 July, 27 August, 2 October, 10 October, 16 October and 22 October 2001.

At the last meeting it adopted the draft legislative resolution by 36 votes to 11, with 2 abstentions.

The following were present for the vote: Carlos Westendorp y Cabeza, chairman; Nuala Ahern, vice-chairman; Gérard Caudron, rapporteur; Gordon J. Adam (for Anders Wijkman), Konstantinos Alyssandrakis, Guido Bodrato, Massimo Carraro, Giles Bryan Chichester, Nicholas Clegg, Harlem Désir, Concepció Ferrer, Francesco Fiori (for Umberto Scapagnini), Colette Flesch, Christos Folias, Glyn Ford, Norbert Glante, Lisbeth Grönfeldt Bergman (for Marjo Matikainen-Kallström), Michel Hansenne, Malcolm Harbour (for Godelieve Quisthoudt-Rowohl), Hans Karlsson, Hans Kronberger (for Daniela Raschhofer, pursuant to Rule 153(2)), Helmut Kuhne (for Elena Valenciano Martínez-Orozco), Bernd Lange (for François Zimeray), Peter Liese (for Dominique Vlasto), Rolf Linkohr, Caroline Lucas, Eryl Margaret McNally, Nelly Maes, Angelika Niebler, Giuseppe Nisticò (for Roger Helmer), Reino Kalervo Paasilinna, Yves Piétrasanta, Elly Plooij-van Gorsel, Samuli Pohjamo (for Willy C.E.H. De Clercq), Bernd Posselt (for Renato Brunetta, pursuant to Rule 153(2)), John Purvis, Bernhard Rapkay (for Mechtild Rothe), Imelda Mary Read, Christian Foldberg Røvsing, Paul Rübig, Ilka Schröder, Konrad K. Schwaiger, Esko Olavi Seppänen, Astrid Thors, Antonios Trakatellis (for Peter Michael Mombaur), W.G. van Velzen, Alejo Vidal-Quadras Roca, Myrsini Zorba and Olga Zrihen Zaari.

The legislative Proposal - Amendments 160-320, the Draft legislative resolution, the Explanatory Statement and the opinions of the Committee on Budgets, the Committee on Citizen's Freedom and Rights, Justice and Home Affairs, the Committee on Employment and Social Affairs, the Committee on the Environment, Public Health and Consumer Policy, the Committee on Agriculture and Rural Development, the Committee on Fisheries, the Committee on Regional Policy, Transport and Tourism, the Committee on Culture, Youth, Education, the Media and Sport, and the Committee on Women's Rights and Equal Opportunities are published separately (part 2, 3 and 4 - A5-0376/2001).

The report was tabled on 26 October 2001.

The deadline for tabling amendments will be indicated in the draft agenda for the relevant part-session.

LEGISLATIVE PROPOSAL

Proposal for a decision of the European Parliament and of the Council concerning the multiannual framework programme 2002-2006 of the European Community for research, technological development and demonstration activities aimed at contributing towards the creation of the European Research Area (COM(2001) 94 – C5-0087/2001 – 2001/0053(COD))

The proposal is amended as follows:

Text proposed by the Commission ¹

Amendments by Parliament

Amendment 1

Title

Proposal for a decision of the European Parliament and of the Council concerning the multiannual framework programme 2002-2006 of the European Community for research, technological development and demonstration activities aimed at contributing towards the creation of the European Research Area

Proposal for a decision of the European Parliament and of the Council concerning the **sixth** multiannual framework programme 2002-2006 of the European Community for research, technological development and demonstration activities aimed at contributing towards the creation of the European Research Area

Justification.

The framework programme now being proposed will be the sixth of its kind. It is therefore logical to call it by that name, which, moreover, will serve to denote the growing fund of knowledge and experience that the Community has been acquiring in the research sphere

Amendment 2

Recital -1 (new)

(-1) Article 2 of the Treaty gives the Community the overall objective of sustainable development.

Justification

The objective of sustainable development needs to be the overarching reference for the research framework programme.

¹ OJ C 180, 26.6.2001, p. 156

Amendment 3
Recital 5

(5) The European Councils in Lisbon in March 2000 and Santa Maria de Feira in June 2000 adopted conclusions aimed at the rapid establishment of a European research and innovation area with a view to job creation and economic growth.

(5) The European Councils in Lisbon in March 2000 and Santa Maria de Feira in June 2000 adopted conclusions aimed at the rapid establishment of a European research and innovation area with a view to job creation and economic growth ***so as to enable the Union, within the next ten years, to become the world's most competitive and dynamic knowledge-based economy.***

Justification

The time-frame laid down by the Lisbon conclusions is a short one. This report should highlight the importance of what is at stake because the ultimate goal to be attained is also the reason why research must now be elevated to the forefront of the key European policy areas.

Amendment 4
Recital 8

(8) It is therefore necessary to adopt a framework programme for the period 2002-2006 capable of exercising a structuring effect on research and technological development in ***Europe*** and making a significant contribution to bringing about the European Research Area.

(8) It is therefore necessary to adopt a framework programme for the period 2002-2006 capable of exercising a structuring effect on research and technological development in ***the European Union and the applicant countries*** and making a significant contribution to bringing about the European Research Area.

Justification

With a view to the next enlargement of the European Union, a uniformly structured European Research Area needs to be created. It is therefore important to refer expressly to the applicant countries in this connection.

Amendment 5
Recital 10a (new)

(10a) Within the framework of security policy, efforts should be made to reduce and possibly eliminate the risks resulting

from weapons of mass destruction stored and awaiting destruction in the former Soviet Union. The Commission is called upon to propose an appropriate initiative to Parliament and the Council;

Justification

This measure contributes towards combating international terrorism, as there is a high risk that such weapons could get into the hands of unscrupulous murderers.

Amendment 6

Recital 11

(11) Research activities carried out within the framework programme *should* respect fundamental ethical principles, notably those which appear in the Charter of Fundamental Rights of the European Union.

(11) Research activities carried out within the framework programme *must* respect fundamental ethical principles, notably those which appear in the Charter of Fundamental Rights of the European Union, *as well as the principles contained in the Protocol on animal welfare agreed at Amsterdam and annexed to the Treaty. No research shall be undertaken into weapons.*

Justification

The Protocol on animal welfare agreed at Amsterdam and annexed to the Treaty places an obligation on the Commission and Council to pay full regard to the welfare of animals when formulating and implementing research policies. It is inappropriate for ethical reasons that the limited funds of the Framework programme should be used for weapons research or for research to bolster the defence capacities of individual Member States. Research activities in general must necessarily be consistent with fundamental ethical principles.

Amendment 7

Recital 11a (new)

(11a) Respect for the individual is a fundamental principle of Western medical ethics, and the right to life of all human beings.

Justification

Self-explanatory.

Amendment 8
Recital 11b (new)

(11b) With a view to the successful creation of the European Research Area, it is necessary to promote full mobility for researchers (at a regional level, between Member States, between sectors, from the public to the private system and vice versa); the European Union undertakes to eliminate the bureaucratic, cultural, economic and legislative constraints still standing in the way of the best use of our human research capital; the European Union also undertakes to prepare all the instruments and incentives needed to bring about (or facilitate) the return of European researchers who have temporarily emigrated outside the European Union.

Justification

For the creation of a European Research Area, economic development, competition and the completion of the single market it is essential for researchers to be able to be mobile; existing obstacles therefore need to be eliminated through coordinated European action.

Amendment 9
Recital 12

(12) Following the Commission Communication "Women and Science" and the Resolutions of the Council and the European Parliament on this theme, an action plan is being implemented in order to reinforce and increase the place and role of women in science and research.

(12) Following the Commission Communication "Women and Science" and the Resolutions of the Council and the European Parliament on this theme, an action plan is being implemented in order to reinforce and increase the place and role of women in science and research ***and further enhanced action is needed.***

Justification

Research shows that the actions to date, although welcome, have been inadequate in improving access to research for women, either as scientists or as users of the research. More work is needed in this area and also in the study of women and science.

Amendment 10
Recital 12a (new)

(12a) The Commission should conduct information events and seminars in order to familiarise researchers from the applicant countries with the instruments, procedures and conditions relating to the 6th multiannual research framework programme;

Justification

The above measures are intended to enable the applicant countries to be integrated successfully and without difficulties into the European Research Area.

Amendment 11
Recital 13

(13) The Commission ***should*** submit regular progress reports on the implementation of the framework programme for 2002-2006 and, in good time and before submitting its proposal for the next framework programme, have an independent assessment carried out of the implementation of the activities undertaken,

(13) The Commission ***must*** submit regular progress reports on the implementation of the 6th framework programme for 2002-2006 and, in good time and before submitting its proposal for the next framework programme, have an independent assessment carried out of the implementation of the activities undertaken; ***the independent assessment should summarise the contribution which the various activities carried out under the framework programme have made to the completion of the Community's tasks as set out in Article 2 of the Treaty.***

Justification

The assessment of the 6th Framework Programme must not be a purely academic exercise. It must draw practical conclusions in the context of the tasks set out in Article 2 of the Treaty. The Commission must submit to Parliament the report on the research results and developments concerned.

Amendment 12
Recital 13a (new)

(13a) Encouragement of basic research is a priority objective of the framework programme.

Justification

The importance of basic research should be clearly spelt out.

Amendment 13
Recital 13b (new)

(13b) The European Parliament shall monitor the implementation of the Sixth Framework Programme and shall communicate its findings to the Council and Commission.

Justification

Although the implementation of the Framework programmes is entirely the role of the Executive (Commission), Parliament has a scrutiny role which must be taken seriously.

Amendment 14
Recital 13c (new)

(13c) Whereas the multiannual framework programme should be compatible with the current ceiling of heading 3 without restricting other policies.

Justification:

.The amount proposed for the multiannual programme should be compatible with the ceiling under the financial perspective. If, in the course of the adoption of the decision, other amounts were to be proposed by the legislative authority, the budgetary authority would need to be consulted again. In this case, the Committee on Budgets would consider the impact on the ceiling under the current financial perspective. Similarly, if during the multiannual framework programme the evolution of the ceiling of the financial perspective were to change dramatically, the budgetary authority would have to reconsider the financial envelope..

Amendment 15

Recital 13d (new)

(13d) With a view to planning for future framework programmes for research, technological development, and demonstration activities, and for any other policy instrument related to the European Research Area, preparations must begin forthwith to enable measures to be taken to make good the democratic deficit in various sectors of European research policy, and European citizens extensively involved in the discussions and decisions.

Justification

The diverse nature of the stipulations laid down in the different Treaties has led to procedural disparities, adversely affecting parliamentary control over, and hence the involvement of citizens in, various sectors of European research policy. The transition from the sixth to the seventh framework programme will allow sufficient time to remedy this democratic deficit.

Amendment 16
Recital 13e (new)

(13e) When determining the main thematic areas for future framework programmes, in addition to furnishing Parliament with a detailed report on implementation of the previous framework programme, the Commission must first notify Parliament and the Council of the criteria it intends to use to set priorities for the framework programme.

Justification

The European Parliament and the Council should be informed of the results of the previous framework programme and should also be involved in setting the priorities for the framework programme.

Amendment 17
Recital 13f (new)

(13 f) Information and consultation measures must be implemented with a view to ensuring that European Union citizens are increasingly involved in decisions relating to framework programme themes, particularly those concerning the environment, food and research into health and medicines.

Justification

The Union must make citizens more aware of its efforts in framework programme action areas in which the need for regulation is felt to be most urgent, such as the environment, food safety and pharmaceutical research.

Amendment 18
Article 1, paragraph 2

2. The framework programme 2000-2006 shall comprise all Community activities envisaged in Article 164 of the Treaty.

2. The framework document 2000-2006 shall comprise all Community activities envisaged in **Article 163(2) and** Article 164 of the Treaty.

Justification

The Commission proposal makes no reference to a strategy designed to include all bodies with R&D potential that will involve Community investment in all the Member States, including the outermost or less developed regions, an objective which must be met if a European research area is to be created.

Amendment 19
Article 2, paragraph 1 and paragraph 1a (new)

1. The maximum overall amount for Community financial participation in the entire framework programme 2002-2006 shall be EUR 16.270 billion: the proportion assigned to each of the activities is fixed in Annex II.

1. The maximum overall amount for Community financial participation in the entire framework programme 2002-2006 shall be EUR 16.270 billion, **where at least 15% of the budget is assigned to SMEs.** The proportion assigned to each of the activities

is fixed in Annex II.

1a. The SME's must be represented for at least 15% in the integrated research priorities in the 6th Framework Programme.

Justification

Experience with the fifth framework programme has shown how important is participation by SMEs in research efforts. SMEs must, therefore, be able to play a full part in research efforts in all eight areas of the integrated research priorities of the 6th framework programme. A minimum percentage of 15% is necessary.

Amendment 20

Article 2, paragraph 1b (new)

1b. The Commission shall present a programming report on all the activities to be financed under heading 3 each year so as to ensure that the multiannual framework programme is compatible with the ceiling under heading 3 of the financial perspective. This report shall be made available every year by 30 June.

Justification:

The budgetary authority should have a clear idea of the financial impact of the multiannual framework programme on other activities in heading 3. Consequently, the Commission should present a programming report on all activities that are to be financed under heading 3 each year.

Amendment 21

Article 2, paragraph 2a (new)

2a Each specific programme shall have its own budget line under heading 3 of the general budget so as to ensure the follow-up of the financial implementation and guarantee a better flow of information between the Commission and the budgetary authority on the activities financed under the framework programme.

Justification:

The rapporteur considers that the reduction of thematic priorities and their concentration under one heading may cause a risk to the transparency and accountability of these projects.

To ensure the monitoring of these activities, it is necessary to set up a separate budget line for each specific programme.

Amendment 22

Article 3

All the research activities ***carried out*** under the framework programme ***2002-2006*** must be carried out ***in compliance with*** fundamental ethical principles.

1. All research activities conducted under the ***sixth*** framework programme must be carried out ***with due regard for*** fundamental ethical principles, including:

- the principles set out in the Charter of fundamental rights of the EU and the relevant international conventions such as the Declaration of Helsinki adopted in Edinburgh in October 2000, the Council of Europe Convention on Human Rights and Biomedicine signed in Oviedo on 4 April 1997 and the Additional Protocol on the Prohibition of Cloning Human Beings signed in Paris on 12 January 1998, the Universal Declaration on the Human Genome and Human Rights adopted by UNESCO, and the relevant World Health Organisation (WHO) resolutions,

1a. The following fields of research shall not be financed under this framework programme:

- research activity aiming at human cloning for reproductive purposes;

- creation of embryos for research purposes

- research activity intended to modify the genetic heritage of human beings which could make such changes hereditary and is intended for eugenic purposes and not aiming of finding cures or therapy of specific diseases;

1b. Research on the use of human stem cells can be financed depending both on the contents of the scientific proposal and the legal framework of the Member State(s) involved; there is no restriction on financing research using adult stem cells, reprogrammed adult cells and stem cell lines already existing in scientific laboratories. In addition, research on embryo or fetal stem cells deriving from

spontaneous or therapeutic abortion is funded.

1c. Research on 'supernumerary' human embryos (embryos created for the treatment of infertility so as to increase the success rate of IVF but no longer needed for that purpose) can be funded provided that such research is legally permitted in the Member State(s) where it will be conducted under the rules of the competent authority/ies).

1d. Research promoting the understanding of legal, ethical and social implications of the new knowledge in the field of human genetics should also be financed.

Justification

The framework programme now being proposed will be the sixth of its kind. This amendment represents a reasonable balance between the necessary ethical restraints and the urgent need to meet some of mankind's most serious health problems.

Amendment 23

Article 3, paragraph 1e (new)

1e. The multiannual framework programme shall provide financial support to cooperation with Central and Eastern European researchers and supply information to the applicant countries on potential research opportunities.

Justification:

The rapporteur considers that the Commission's proposal should be complemented with a further emphasis on gender equality, food safety, SMEs, cooperation with candidate countries, as well as research on renewable sources of energy and the development of energy efficient technologies.

Amendment 24

Article 3a (new)

The framework programme shall be based on the obligation contained in Article 6 of the Amsterdam Treaty and on the Göteborg

European Council conclusions on sustainability.

Justification

The environmental integration and sustainability principles must be applied in every field.

Amendment 25
Article 4

Progress with implementing the framework programme 2002-2006, and in particular progress towards achieving its objectives and meeting its priorities, shall be presented in detail in the report to be published by the Commission each year pursuant to Article 173 of the Treaty.

Progress with implementing the framework programme 2002-2006, and in particular progress towards achieving its objectives and meeting its priorities, shall be presented in detail in the report to be published by the Commission each year pursuant to Article 173 of the Treaty. ***In addition, the Commission shall lay down performance indicators and qualitative evaluation criteria, monitor achievement of results, and have an evaluation carried out by independent high-level experts of the activities funded by the Community under this programme in the third year (mid-term evaluation). The evaluations shall particularly assess the impact achieved and the efficiency of the use of resources. The evaluations shall also assess whether the activities implemented under this programme are consistent with and complement those measures and actions taken under other related Community programmes. At the latest 40 months after the entry into force of the Decision, the Commission shall submit a mid-term report evaluating the achievement of results to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions. The mid-term evaluation report shall be used as a basis for possible modifications, such as the changing of priorities for the remainder of the programme.***

Justification

Given the enormous speed of scientific developments, there may already be a need after three years to adjust the programme and its priorities to new developments and/or needs.

Paragraph 1 also requires the Commission to lay down beforehand performance as well as qualitative evaluation criteria which are necessary for the selection and the evaluation of the various activities provided for under the programme. A mid-term evaluation is also provided for in the Commission proposal for a decision adopting a programme of Community action in the field of public health (2001-2006) [see COM(2000) 285, Article 11 and Amendment 77 adopted by Parliament at first reading (A5-0104/2001)].

Amendment 26

Article 4, paragraph 1a (new)

1a. IST programmes, citizens and governance in the European knowledge-based society and research infrastructures should be managed by the Directorate-General for Enterprise and the Information Society.

Justification

In order to ensure that the various IST programmes are implemented efficiently, the various IST activities should be integrated under the framework programme.

Amendment 27

Article 4, paragraph 1b (new)

The Commission shall present a report on the financial implementation of the specific programmes every twelve months. In addition, it shall provide prior information to the budgetary authority whenever it intends to depart from the breakdown of expenditure stated in the remarks and annex of the annual budget.

Justification:

To improve the financial monitoring of Community financed research activities, the rapporteur considers that the Commission should inform the budgetary authority on the

implementation of specific programmes on a regular basis and provide prior information whenever it intends to depart from the breakdown of expenditure stated in the general budget.

Amendment 28
Article 4, paragraph 1c (new)

Administrative procedures should be simplified and standardised to enable research applications to all Directorates-General to be dealt with more efficiently with regard to the whole of the sixth framework programme.

Justification

Administrative procedures vary too widely and are often unclear, leading to inefficiency on the part of applicants and the Commission.

Amendment 29
Article 5

Before submitting its proposal for the next framework programme, the Commission shall have an assessment carried out by independent high-level experts of the implementation of Community activities during the five years preceding that assessment. The Commission shall communicate the conclusions thereof, accompanied by its observations to the European Parliament, the Council, the Economic and Social Committee and the Committee of the regions.

Before submitting its proposal for the next framework programme, the Commission shall have an assessment carried out by independent high-level experts of the implementation of Community activities during the five years preceding that assessment. The Commission shall communicate the conclusions thereof, accompanied by its observations to the European Parliament, the Council, the Economic and Social Committee and the Committee of the regions. ***The European Parliament shall monitor the implementation of the Sixth Framework Programme and shall communicate its findings to the Council and Commission.***

Justification

Although the implementation of the Framework programmes is entirely the role of the Executive (Commission), Parliament has a scrutiny role which must be taken seriously.

STRUCTURE OF THE 6TH
FRAMEWORK PROGRAMME

This part of the Framework Programme is structured as follows:

1.1.1 Life sciences for health and safety

*1.1.1a Genomics and biotechnology
for global health and welfare*

1.1.1b The major diseases

1.1.2 Information Society Technologies

*1.1.3 Nanotechnologies and new processes
of production of advanced materials*

1.1.4 Aeronautics and space

*1.1.5 Food quality, safety and health risks
and health improvement*

*1.1.6 Energy, sustainable development,
biodiversity and global change*

1.1.6a Energy

*1.1.6b Sustainable Development and
Global Change*

1.1.6c Transport

*1.1.7 Citizens, democracy, social and
political institutions*

*1.1.8 Anticipating the EU's scientific and
technological needs*

Justification

Self-explanatory.

Amendment 31
Annex I, Introductory part, paragraph 1, indent 1

- strengthening the scientific and technological ***bases of Community industry;***

- strengthening the scientific and technological bases of ***EU Member States at the level of universities, public research centres and industries***

Justification

Self-explanatory.

Amendment 32
Annex 1, introductory part, paragraph 1a (new)

Moreover, activities under the framework programme will aim at enhancing and developing further our knowledge and understanding of nature and society

Justification

The basic objectives of research should not be left out of the 6th framework programme

Amendment 33
Annex 1, introductory part, paragraph 4, indent 1

– in a limited number of priority thematic areas ***exclusively*** by means of strongly integrating and powerful instruments: networks of excellence, integrated projects and EU participation in national research programmes implemented jointly pursuant to Article 169 of the Treaty;

– in a limited number of priority thematic areas ***flexibly and methodically*** by means of strongly integrating and powerful instruments: networks of excellence, integrated projects, ***the ‘stairway of excellence’ instrument***, and EU participation in national research programmes implemented jointly pursuant to Article 169 of the Treaty ***and the setting up of joint undertakings pursuant to Article 171 of the Treaty (159). It should be possible to implement the new participation instruments concurrently***

with the participation instruments available under previous framework programmes (partnership projects, concerted actions), with the aim of making the implementation of the framework programme more flexible.

Justification

The sixth framework programme is a key instrument for implementing RTD actions in a wide variety of thematic areas and with the aim of increasing participation by all actors concerned with R&D in the European Union. In this connection, it is important to bear in mind that the instruments traditionally used by the framework programme (RTD, concerted actions,) have proved their value on many occasions. Accordingly, and although new instruments may be introduced, on an experimental basis and subject to assessment, to tackle needs which may not be properly covered at present, the sixth framework programme should maintain and use the current instruments under the fifth programme as a matter of priority.

Amendment 34

Annex 1, introductory part, paragraph 4, indent 3

- in the field of science and technology as a whole in the case of complementary research activities for SMEs.

- in the field of science and technology as a whole, ***in particular*** in the case of complementary research ***and innovation*** activities for SMEs, ***as well as for very small firms (micro-undertakings) and craft firms.***

Justification

New instruments should be promoted gradually during the sixth framework programme. On the one hand, it is necessary to check that new instruments are effective and work properly in order to avoid delays in the programme's administration, and on the other hand those who have not yet reached the required levels of excellence should have instruments available to them which can guide them towards that objective. The participation of very small firms (micro-undertakings) and craft firms must be guaranteed. Besides their considerable overall numbers – more than 92% of firms have less than 10 employees – these firms have a largely unexploited potential for innovation, are involved in research and play a vital role in the application of the results of research. This field should not be limited to SMEs only

Amendment 35

Annex I, introductory part, paragraph 5, indent 1, subindent 3

- - of participation of third country

Does not apply to English version

researchers and organisations in projects and networks in areas of particular interest to those countries.

Justification

[Translator's note: The German amendment seeks to include the feminine as well as the masculine form of the word 'researcher' in order to make the language of the Decision gender-neutral.]

Amendment 36

Annex 1, Chapter 1.1 Priority thematic areas of research, paragraph 1a (new)

The integrated research programme will comprise one comprehensive programme made up of eight distinct subsections. There is one single programme Committee, which meets in different composition corresponding to each of the subsections. Each subsection has its own coordination/management structure as well as its own expert advisory group and budget chapter. The EP will be currently informed about the proceedings of the single programme committee and expert advisory groups and through annual programme implementation reports.

Justification

This clarifies the Commission proposal, with the emphasis on the particular subsections having their own management, coordination structure, advisory committees and budget lines. Taking as the basis one integrated research programme ensures coherence, whilst having clearly distinct sections with their own budget lines ensures the specific nature of each of the sections.

Amendment 37

Annex 1, Chapter 1.1, paragraph 1b (new)

An interdisciplinary and a problem-oriented approach are regarded as

important principles applying to research activities worthy of support.

Justification

Integrating all research activities into a limited number of very specific areas poses the risk that forward-looking, cross-disciplinary research may no longer receive adequate support.

Amendment 38
Annex 1, chapter 1.1, indent 2a (new)

- Emphasis should be placed on the fact that innovation often originates at the interface between different scientific disciplines.

Justification

In future new employment opportunities may arise particularly in the fields of biotechnology and ICT. Research in the areas of human and social sciences continues to be needed in the European Union given its increasing diversity of cultures.

Amendment 39
ANNEX 1, Chapter 1.1.1, Title

Genomics and biotechnology

Life sciences for health and safety

Justification

Self justifying.

Amendment 40
ANNEX 1, Chapter 1.1.1a, sub Title (new)

1.1.1a. Genomics and biotechnology for global health and welfare

Justification

Self justifying.

Amendment 41

ANNEX 1, Chapter 1.1.1a, Objective, paragraph 1 a and b (new)

During the implementation of this programme and in the research activities arising from it, fundamental ethical principles are to be respected, including the following: protection of human dignity, data and privacy, as well as animals and the environment in accordance with Community and international conventions and codes of conduct, e.g. the Helsinki Declaration on the Human Genome and Human Rights adopted by Unesco.

The Union must support stem cell research and projects which respect the guidelines drawn up by the ESF ethical committee. Under those guidelines, cloning experiments for reproductive purposes are prohibited.

Justification

All research on the human genome should respect fundamental ethical principles. Stem cell research is regarded as having great medical potential. Treatments can be made possible, thanks to stem cell research, for degenerative diseases such as diabetes or Parkinson's disease, and it is thought that such new treatments could be accessible in the near future. However, it is important that we make progress at the same time with work on stem cells from embryos, from certain tissues at the birth stage and from adults. Exchange of cell nuclei for the production of stem cells can also have a decisive effect.

Amendment 42

Advances in biotechnological and post-genomic research will entail ethical and social implications. These issues can be resolved only by a joint effort. National solutions are not possible in a Europe of open frontiers.

Justification

Research in the above fields poses numerous ethical and social problems. To enable the European Research Area to come into being they must be dealt with together.

Amendment 43

ANNEX 1, Chapter 1.1.1a), Justification of the effort and European added value, paragraph 1

"Post-genomic" research based on analysis of the human genome and genomes of model (animal, plant and microbial) organisms, will culminate in numerous applications in various sectors, and notably in the development of new diagnostic tools and new treatments capable of helping to combat diseases that are not at present under control, offering major potential markets.

Progress in the field of genomics and biotechnology may yield numerous new applications both in medicine and in the fields of environmental protection and agriculture, as a result of which hitherto unsolved problems can be overcome.

Justification

Genomics and biotechnology should be retained as a priority, but not confined to health. Positive applications exist elsewhere too (see for example the opinion by Mr Sjöstedt on the future of the biotechnology industry). This amendment is intended to make it clear that the possible benefits of genomics and biotechnology are not confined to medicine but also extend to the fields of environmental protection and agriculture. It should also be made clear that the main concern is solutions for problems which people face rather than potential markets.

Amendment 44

ANNEX 1, Section 1, Chapter 1.1.1a), Justification of the effort and European added value, paragraph 1a (new)

Europe also needs to be able to play a leading role in research on these issues, which now arise at world level, as well as a coherent contribution to the international debate on them, based on the most precise and complete knowledge.

Justification

Self-explanatory.

Amendment 45

Annex 1, Chapter 1.1.1a), paragraph 1b (new)

Genomic research coordinated at European level, particularly in the agriculture and agrifoodstuffs sectors, should focus on those areas where it can achieve the greatest impact, should be able to unleash all existing potential in close cooperation with national initiatives, provide as much information as possible for scientists and the general public and should be flexible in duration, but with firm and realistic objectives.

Justification

This is in line with the rapporteur's amendments which extend this thematic area to genomics and biotechnology 'in general' (not just health) and combine the actions proposed by the Commission in areas 1.1.1 and 1.1.5. Accordingly, emphasis should be place at methodological level on seeking greater synergy between actions under the framework programme and national measures, as well as ensuring that results are publicised so as to optimise joint research efforts and provide the necessary information to secure public confidence.

Amendment 46

Annex I, Chapter 1.1.1a), Justification of the effort and added European value, paragraph 3

Europe's spending on research is at present much lower and less coherent. The launching of publicly funded research programmes on **post**-genome research in

Europe's spending on research is at present much lower and less coherent. The launching of publicly funded research programmes on genome research in several

several Member States is a big step in the right direction. All in all, however, the efforts made are inadequate and dispersed.

Member States is a big step in the right direction. All in all, however, the efforts made are inadequate and dispersed.

Justification

A significant amount of genome data (full sequences) is required in order to know the exact number of genes in an organism, which provides the requisite basis for post-genome research.

Amendment 47

ANNEX 1, Chapter 1.1.1a), Justification of the effort and European added value, paragraph 4

European industry ***also*** spends much less on research than US industry does: 70% of genomics companies are located in the United States and a substantial and increasing proportion of European private-sector investment is made in that country.

European industry spends much less on research than US industry does: 70% of genomics companies are located in the United States and a substantial and increasing proportion of European private-sector investment is made in that country.

Justification

Self-explanatory.

Amendment 48

Annex 1, chapter 1.1.1a), Actions envisaged, paragraph 1, indent 1

- Fundamental knowledge and basic tools for functional genomics:

- Fundamental knowledge and basic tools for functional genomics ***from animal, plant model species and human beings***

Justification

-Plant and human genes are similar in structure, but sometimes very different in function. Their evolutionary distance uncovers gene functions and regulatory patterns in plants that are difficult or impossible to access in animals. Valuable, comparative information can thus be obtained on the human genome that can be used to understand major factors affecting

human health. Many genes implicated in human disease conditions have high homology to Arabidopsis genes, a situation similar to the one observed in nematodes and other model organisms, which justifies the study of plants as a model species.

Amendment 49

Annex 1, Chapter 1.1.1a), Actions envisaged, paragraph 1, indent 1, subindent 1

- - gene expression ***and*** proteomics;
- - gene expression, proteomics ***and metabolism***;

Justification

It is important to deal with metabolic flows and not just proteins when analysing the function of genes.

Amendment 50

Annex 1, Chapter 1.1.1a), Actions envisaged, paragraph 1, indent 1, subindent 2a (new)

- ***- research on monogenic and polygenic diseases***

Justification

Self-explanatory.

Amendment 51

Annex 1, Chapter 1.1.1a), Actions envisaged, paragraph 1, indent 1, subindent 2b (new)

- ***- Promotion of cell therapy including therapy with adult staminal cells and adult "reprogrammed" somatic cells.***

Justification

Self-explanatory.

Amendment 52

Annex 1, chapter 1.1.1a), Actions envisaged, paragraph 1, indent 1, sub-indent 3a (new)

- **- plant genomics**

Justification

Plant genomics are of crucial importance to the European Union, together with the systematic identification of genes of industrial interest for ornamental plants, medicinal plants, horticultural plants, woody plants and arable crops. Only by systematically studying plant genomics will it be possible to know and understand biodiversity. It also represents risk-free research that will enable environmental protection technologies to be developed.

Amendment 53

Annex 1, chapter 1.1.1a), Actions envisaged, paragraph 1, indent 1, sub-indent 4a (new)

-- basic biological processes (e.g. programmed cell death, cell cycle, oxidative stress, disease resistance, epigenetics, polyploidy, developmental plasticity)

Justification

Genomics and post-genomics research produces a systematic definition of genes and their functions. Research on universal basic biological processes complements this by defining time, space and circumstances of their interaction and regulation, which is crucial for their function. The refinement of information thus gained through focused studies of selected model species provides an efficient route for the systematic transfer of knowledge to crop plants. This will have a major impact on agricultural & food improvement in the next decade and allow Europe to control the quality, safety and quantity of its own food production.

Amendment 54

ANNEX 1, Chapter 1.1.1a), “Actions envisaged”, paragraph 1, indent 2, subindent 1

technological **platforms** for the development of new diagnostic, prevention and therapeutic tools;

- technological **platform** for the development of new diagnostic, preventive and therapeutic tools **(the priority is preventing and curing diseases. Diagnostic tools will be supported primarily if they are directly**

linked to therapeutic efforts);

Justification

Diagnostic tools should receive support only if they are directly linked to therapeutic efforts. A major investment in research into methods of diagnosis without parallel efforts in the field of therapy would result in the problematic situation that genetic causes of disease could be identified with great precision without it being possible to give the patient any practical assistance. While a precise diagnosis is generally required in order for therapy to be effective, in the case of many genetic disorders a diagnosis alone is of no use to patients. Stem cell therapy is an important new field of medical research. Unlike the specific programme 'Integrating and strengthening the European Research Area', however, this field is not explicitly mentioned in the framework programme. Unlike research on embryonic stem cells, adult stem cell therapy has already reached the stage of affording patients practical benefit and it is supported unreservedly in all Member States.

Amendment 55

Annex 1, Chapter 1.1.1a), Actions envisaged, paragraph 1, indent 2, subindent 1a (new)

- ***- support of innovative research on transgenic plants for the production of drugs, hormones and proteins for therapeutic purposes;***

Justification

Self-explanatory.

Amendment 56

Annex 1, Chapter 1.1.1a), Actions envisaged, paragraph 1, indent 2, subindent 2

- support for innovative research in genomics start-up companies.
- support for innovative research in genomics ***and proteomics*** start-up companies.

Justification

Self-explanatory.

Amendment 57

ANNEX 1, Chapter 1.1.1a), "Actions envisaged", paragraph 1, indent 2, subindent 2a (new)

- *the cumulative effects of different authorised biotech and traditional pharmaceuticals which, acting on their own, may present no health risk but which cumulatively may cause undesirable side-effects, allergies and toxicity.*

Justification

Diagnostic tools should receive support only if they are directly linked to therapeutic efforts. A major investment in research into methods of diagnosis without parallel efforts in the field of therapy would result in the problematic situation that genetic causes of disease could be identified with great precision without its being possible to give the patient any practical assistance. While a precise diagnosis is generally required in order for therapy to be effective, in the case of many genetic disorders a diagnosis alone is of no use to patients. Stem cell therapy is an important new field of medical research. Unlike the specific programme 'Integrating and strengthening the European Research Area', however, this field is not explicitly mentioned in the framework programme. Unlike research on embryonic stem cells, adult stem cell therapy has already reached the stage of affording patients practical benefit and it is supported unreservedly in all Member States.

Amendment 58

Annex 1, Chapter 1.1.1a), Actions envisaged, paragraph 1, indent 3, subindent 1

- combating cancer, degenerative diseases of the nervous system, cardiovascular diseases and rare diseases;
- combating cancer, degenerative diseases of the nervous system ***(including Alzheimer's Disease, Parkinson's Disease and experimental treatments now under investigation for new variant Creutzfeldt-Jakob Disease), psychiatric diseases, cardiovascular diseases, metabolism diseases including diabetes*** and rare diseases;

Justification

Self-explanatory. The recent scientific work reported in America on a possible remedy for victims of vCJD represented a key step forward in the treatment of this disease. Work of this nature should therefore be included in the framework programme, as vCJD is now a malady which may be hidden in a number of Member States.

Amendment 59

- - combating resistance to drugs;
- – combating resistance to drugs ***and antibiotics in particular; research in this field must deal with points related to animal feed as well as hygiene habits (or the lack of hygiene), drug prescription practices, and the ways in which medicines are customarily taken;***

Justification

The wording has been changed to reflect the fact that antibiotics are posing the most serious problems where resistance to drugs is concerned.

Amendment 60

Annex 1, Chapter 1.1.1a), Actions envisaged, indent 3, sub indent 3

- - studying human development, the brain and the ageing process;
- - studying human development, the brain and ***diseases relating to*** the ageing process;

Justification

The addition of the words "diseases related to" is made to limit the scope..

Amendment 61

Annex 1, Chapter 1.1.1a), Actions envisaged, paragraph 1, indent 3, subindent 3a (new)

- - ***pharmacogenomics in order to obtain more active drugs without adverse reactions.***

Justification

Self-explanatory.

Amendment 62

Annex 1, paragraph 1.1.1a), Actions envisaged, paragraph 1, indent 3a, (new)

- ***Food: development of healthier and safer methods for manufacturing human and animal food components and products; introduction of methods for assessing the risks of new products as regards public health, including epidemiology related to genetic susceptibilities;***

Justification

This is in line with the rapporteur's amendments which extend this thematic area to genomics and biotechnology 'in general' (not just health) and combine the actions proposed by the Commission in areas 1.1.1 and 1.1.5. On this basis, the main fields of research in the agricultural and food sectors can be defined.

Amendment 63

ANNEX 1, Chapter 1.1.1a), Actions envisaged, paragraph 1, indent 3b (new)

- ***fish breeding: development of new methods and breeds and assessment of risks and dangers;***

Justification

European research must also tackle fish breeding matters.

Amendment 64

Annex 1, Chapter 1.1.1a, Actions envisaged, paragraph 1, indent 3c (new)

Agriculture:

Development of new methods and breeds and plant varieties, study of the genetic maps of plants and animals with a view to exploiting their main assets, in particular resistance to pests and diseases and ability to adapt to soils and adverse climates; development of new products; development of alternative methods for tests on animal species, for example enzyme tests, using micro-organisms or other means; introduction of methods for assessing the risks and dangers of new products as regards environmental impact on public health, including epidemiology related to genetic susceptibilities and more extensive research into genetically modified organisms.

Justification

European research must also tackle agricultural matters. In the development of agriculture the possibility should not be ruled out of developing new plants (including trees) which will for example be more resistant to storms or moisture than existing ones. Climate change is an important challenge. On this basis, the main fields of research in the agricultural and food sectors can be defined.

Amendment 65

ANNEX 1, Chapter 1.1.1a), Actions envisaged, paragraph 1, indent 3d (new)

- ***development of alternative methods to animal tests, for example enzyme tests, using micro-organisms or other means;***

Justification

Parliament has been seeking for years to abolish animal tests in the cosmetics industry. Alternative methods need to be developed to achieve that aim.

Amendment 66
ANNEX 1, Chapter 1.1.1a), Actions envisaged, paragraph 1, indent 3e (new)

- ***small genomes.***

Justification

Information obtained from organisms with a relatively small genome could play an important role in gene structure, function, and sequencing research. The EC has already been involved in such research, more specifically where the plant Arabidopsis thaliana was concerned. Small genomes also include microbial genomes. Europe needs to consolidate its involvement in this research.

Amendment 67
Annex 1, chapter 1.1.1a), Actions envisaged, paragraph 1a (new)

1a. The identification of genes, proteins and of the molecular mechanisms they control should be complemented by an analysis of their spatial and temporal expression through the use of suitable imaging techniques.

Justification

There are many benefits from the use of imaging techniques in particular in the study of neurosciences.

Amendment 68
ANNEX 1, Chapter 1.1.1, sub Title (new)

1.1.1 b. The major diseases

Justification

Self justifying

Amendment 69
Annex 1, Chapter 1.1.1b), Objective, paragraph 1 (new)

Research linked to cancer, cardiovascular diseases, diabetes, degenerative diseases of the nervous system (such as Alzheimer's disease, Parkinson's disease, Creutzfeldt-Jakob disease, and so forth), and rare diseases

Justification

Self-explanatory.

Amendment 70
Annex 1, Chapter 1.1.1b), Objective, paragraph 2

Other objectives are to enable real and consistent progress in medicine and an improvement in the quality of life, both for individuals and civil society in the European Union and applicant countries, more particularly in the fields of public health and citizens, agriculture, and fish breeding.

Justification

With a view to the next enlargement of the European Union, a uniformly structured European Research Area needs to be created. It is therefore important to refer expressly to the applicant countries in connection with each of the priority thematic areas.

Amendment 71
Annex 1, Chapter 1.1.1 b. Objective, paragraph 3 (new)

The accent here must lie on translational research coordinated on European level

Justification

Translational research, which translates laboratory research in order to apply it to patients, remains under-developed. The shorter the chains and the tighter the flow of information, the more opportunities there are for patients to benefit from the achievements of the genome project. If the EU wishes to be effective, translational research can only be undertaken on a large scale. Coordination and cooperation at EU level are therefore needed.

Amendment 72

Annex 1, chapter 1.1.1b), Justification of the effort and European added value, paragraph 1 (new)

Justification of the effort and European added value

European medical research, however, should not focus exclusively on the human genome. 'Non-genomic' research also requires joint efforts first and foremost because research on the human genome will not solve every health problem over the next 20 years. Furthermore, European databases on various diseases could open up prospects for gigantic progress in 'traditional research', since they could be used to document the occurrence and geographical location of cases and prognoses and developments. Databases of this type could likewise document trends as regards disease figures, potential causes of diseases, and factors affording some measure of protection against them.

Justification

There are some radically different and innovatory approaches which are not related to genetic aspects and can clearly not be described as traditional.

In these medical fields, the objective of this priority theme will be to develop improved patient-oriented strategies for the prevention and management of disease and for living and ageing healthily. The research will therefore concentrate on translating the new knowledge being created by genomics and other fields of basic research into applications that improve clinical practice and public health.

*For cancer, the priority theme will sponsor a patient-oriented European Initiative on Cancer Research, containing three interlinked components:
establishing a European Centre for the Exploitation of Research on Cancer, preferably by developing existing structures and networks, with the purpose of developing evidence-based guidelines for good clinical practice and improved public health strategies by accelerating the translation of existing research results into applications;
supporting clinical research, particularly public-interest clinical trials, aimed at validating new and improved interventions;
supporting translational research aimed at pulling basic knowledge through to applications in clinical practice and public health.*

The European Initiative on Cancer Research requires € 400 million in order to have a reasonable visibility and impact in relation to cancer research in Europe as a whole.

Justification

This specifies the contribution that can be made at European level to cancer research. Tens of thousands of people die of cancer every year in the EU. Only if the Union succeeds in conducting more translational research, coordinated at EU level, will it be in a position to compete with the US to keep top researchers in the EU. In addition, this will contribute to the development of medicines in this area in the EU. Improved coordination between the EU and

the Member States will enable the overall budget for cancer research to be used more efficiently and will give a boost to the combating of cancer in the EU.

Amendment 74

Annex 1, chapter 1.1.1b), Justification of the effort and European added value,
paragraph 8 (new)

A European Research Area should also be promoted with regard to cancer research, and therefore the networks dealing with cancer that are already in existence should be supported, particularly those made up of national centres of excellence and expertise in the field of cancer research and treatment, and the criteria for identifying these centres should be clearly defined.

Justification

The exchange of information is essential for cancer treatment. Coordination between centres with expertise in information, screening, training, research, treatment, rehabilitation and the use of research results in clinical practice is vital in order to ensure that treatments are suitable and uniform and that research results are rapidly applied, after the requisite validation procedure, which should place a high priority on the interests of patients.

Amendment 75

Annex 1, Chapter 1.1.1b), Justification of the effort and European added value,
paragraph 9 (new)

Given its nature, research into the field of rare diseases is often considered not economically viable due to the sometimes very limited number of persons in each country affected by specific rare diseases. For this reason, coordination of efforts carried out at national level through the promotion of European cooperation is fundamental

Justification

Research at national level into rare diseases is often scarce and scattered. It is necessary to coordinate efforts and promote cooperation at European level in order to achieve results in this area.

Amendment 76

Annex 1, Chapter 1.1.1b), Justification of the effort and European added value, paragraph 10 (new)

Childhood diseases are a field in which European cooperation is vital for the study of pathogenetic mechanisms underlying pediatric serious diseases as well as identification of new instruments for their prevention and therapy . Serious diseases in children are – fortunately – very rare. Information on the few cases that do exist should be shared to enable effective treatments to be developed.

Justification

Self-explanatory.

Amendment 77

Annex 1, Chapter 1.1.1b), Actions envisaged, paragraph 1, indents 1-6 (new)

Research linked to cancer, cardiovascular diseases, diabetes and diabetes-related diseases, degenerative diseases of the nervous system (including Alzheimer's Disease, Parkinson's Disease and experimental treatments now under investigation for new variant Creutzfeldt-Jakob Disease) , psychiatric diseases, cardiovascular diseases, viral hepatitis C, allergies and metabolism diseases including diabetes and rare diseases
- Transnational research and comparative studies and coordinated development of European databases to

- provide comprehensive pictures of the diseases;*
- *Cooperation with and support for existing networks;*
- *Interdisciplinary networks, to be set up preferably by linking existing networks;*
- *Clinical cancer research;*
- *Exchange of clinical practice*
- *Clinical trials on new drugs.*

Justification

Self-explanatory.

Amendment 78

Annex 1, Chapter 1.1.1b), Actions envisaged, paragraph 2 (new)

A priority approach will be pursued with regard to combating serious diseases in developing countries such as Aids, malaria and tuberculosis. The European Union will take priority action in this connection, and contribute to coordination at international level. In the case of Aids and tuberculosis, this entails the development of vaccines and medicines appropriate to conditions in third world countries; in the case of malaria, it entails the continuing of research into, and testing of, a malaria vaccine. To that end, a structure will be set up if necessary on the basis of Articles 171 and 181.

Justification

Some five million people die every year of Aids, malaria or tuberculosis. As regards research into malaria, progress achieved to date must not be allowed to be lost. With regard to Aids and malaria, great efforts are needed. International cooperation is essential.

Amendment 79

Annex 1, Chapter 1.1.1b), Actions envisaged, paragraph 3 (new)

***Studying human development, the brain
and diseases relating to the ageing process;***

Justification

The addition of the words "diseases related to" is made to limit the scope..

Amendment 80

Annex 1, Chapter 1.1.1b), Actions envisaged, paragraph 4 (new)

Developing better therapies for children.

Justification

Better therapies for children should become a priority.

Amendment 81

Annex 1, Chapter 1.1.1b), Actions envisaged, paragraph 5, indents 1-4 (new)

***Epidemiology and preventive action on
health techniques:***

- epidemiological data, tools and models for
understanding, analysing and predicting
the influence of environmental and dietetic
factors on various populations and on
health.***
- preventive health policies,***
- preventive action to influence
environmental factors or control
environmental risks,***
- preventive medicine.***

Justification

*It is important to incorporate the concepts of epidemiology and prevention policies into
genomic and biotechnological research.*

Amendment 82
ANNEX 1, Chapter 1.1.1b), Actions envisaged, paragraph 6 (new)

Combating resistance to drugs and antibiotics in particular; research in this field must deal with points related to animal feed as well as hygiene habits (or the lack of hygiene), drug prescription practices, and the ways in which medicines are customarily taken;

Justification

Antibiotics are posing the most serious problems where resistance to drugs is concerned.

Amendment 83
Annex 1, Chapter 1.1.1b), Actions Envisaged, paragraph 7, (new)

Research on alternative or non-conventional medicines.

Studies aimed at: understanding the 'mechanism of action' of non-conventional therapies; evaluating the cost benefit and effectiveness; understanding the effect of non-conventional therapies in farm livestock as regarding on public health and animal welfare

Justification

Significant numbers of European citizens are making frequent use of non-conventional therapies. This makes the development of a research infrastructure which reflects the actual prevalence and relevance of complementary therapies in health essential.

Amendment 84
Annex 1, Chapter 1.1.1b), Actions Envisaged, paragraph 8 (new)

Research on medical use of cannabis.

Justification

There is an emerging interest in the medicinal use of cannabis. Not only in the Netherlands, but also other EU governments are showing interest in the medical use of cannabis. On several occasions the International Narcotics Control Bureau (INCB) called on the associated countries to stimulate clinical trials with cannabis. Although there are indications that cannabis could be useful in certain diseases its therapeutic use is not evidence based. Historically over 40 indications have been reported. The most promising are multiple sclerosis, appetite stimulant in AIDS-wasting syndrome and cancer, nausea and vomiting in cancer chemotherapy, epilepsy, several forms of pain, and glaucoma.

Amendment 85
ANNEX 1, Chapter 1.1.1 a), Actions envisaged, paragraph 9 and 10 (new)

Research into ethically acceptable alternatives to technologies which are controversial within the Community and Member States, e.g. alternatives to experiments on animals and to embryo stem cell research and artificial insemination methods that could prevent the production of supernumerary embryos.

A broad approach will be pursued with regard to combating the three poverty-linked infectious diseases (Aids, malaria and tuberculosis) which have priority in terms of disease control at EU and international level.

Justification

Priority should be assigned to research which could replace applications which are controversial in the Member States and the EU. Examples include finding alternatives to tests on animals and promoting alternatives to the use of stem cells from embryos, i.e. both the use of adult stem cells and other approaches to the treatment of Parkinson's disease, diabetes and the like. Another example is cryopreservation of ova for artificial insemination, which in the

long term could perhaps make it unnecessary to produce so-called superfluous human embryos..

Amendment 86

Annex 1, Chapter 1.1.2, 'Objective', paragraph 1

The activities carried out in this area, pursuant to the conclusions of the Lisbon European Council and the objectives of the e-Europe initiative, are intended to stimulate the development in Europe of technologies and applications at the heart of the creation of the Information Society in order to increase the competitiveness of European industry and allow European citizens in all **EU regions** the possibility of benefiting fully from the development of the knowledge-based society.

The activities carried out in this area, pursuant to the conclusions of the Lisbon European Council and the objectives of the e-Europe initiative, are intended to stimulate the development in Europe of technologies and applications at the heart of the creation of the Information Society in order to increase the competitiveness of European industry and allow European citizens in all **regions of the EU and applicant countries** the possibility of benefiting fully from the development of the knowledge-based society.

Justification

With a view to the next enlargement of the European Union, a uniformly structured European Research Area needs to be created. It is therefore important to refer expressly to the applicant countries in connection with each of the priority thematic areas.

Amendment 87

Annex 1, chapter 1.1.2, objective, paragraph 1a (new)

The research effort in FP6 will concentrate on the future generation of IST that will reinforce the eEurope objectives of bringing IST applications and services to everyone, every home, every school and to all businesses. It will enable the development of the next generation Internet that will be more user-centred. A new generation of IST is emerging that will enable ALL citizens and businesses to benefit from IST services. Involving a radical shift from the current « PC based » systems and from the “keyboard, mouse

and screen”, the aim is to render technology almost invisible and make its use natural and effortless. This requires a massive research effort to embed electronic components and devices in everyday objects and to build networking and computing technologies that have enough bandwidth and performance for interconnecting such components everywhere and at any time. In addition, interfaces are required that use our natural senses (touch, smell, speech and gesture) for easy and effective interaction with knowledge-based applications and services. This approach, which is strongly supported by industry and the research community, represents a clear opportunity for Europe to build on its technological and industrial strengths in areas such as mobile communications, consumer electronics and embedded software. 3G mobile and current wireless systems are a major step towards this next generation as they enable anywhere access to Internet services from a non-PC platform and for the normal “man on the street”. Wearable mobile devices that incorporate interfaces making use of our “natural” senses such as speech are currently under development. They constitute a further step towards this so-called vision of “ambient intelligence” in which the users (people) are at the centre of IST development.

Justification

More concrete examples of what is envisaged.

Amendment 88

Annex 1, chapter 1.1.2, justification of the effort and European added value, paragraph 1a (new)

Europe is well positioned to lead and shape the future development not only of

technologies but also of their impact on our life and work. European industry has to some extent missed the PC era but has secured a lead in other areas, especially the mobile sector, that must be maintained.

Justification

More concrete examples of what is envisaged.

Amendment 89

Annex 1, chapter 1.1.2, justification of the effort and European added value,
paragraph 1b (new)

The future competitiveness of all European industry and the living standards of Europe's citizens depend largely on future efforts in IST research in order to prepare the upcoming generation of products, processes and services. Europe's direct competitors, the USA and Japan, are currently deploying massive effort in this field both at the private and public level. Hence, Europe can not afford to lose the unique opportunities offered by the next generation of IST, either in social or economic terms.

Justification

More concrete examples of what is envisaged.

Amendment 90

Annex 1, Chapter 1.1.2., Justification of the effort and European added value,
paragraph 4

Community actions will concentrate on the technological priorities that will make it

Community actions will concentrate on the technological priorities that will make it

possible to realise this vision. They will aim at mobilising the community of researchers around targeted initiatives, such as the development of the next generations of mobile communication systems, so as to achieve medium and long-term objectives while being able to react to the new needs and demands of markets as well as public policy.

possible to realise this vision. They will aim at mobilising the community of researchers around targeted initiatives, such as the development of the next generations of mobile communication systems, ***operating systems and hardware for the development of computers*** so as to achieve medium and long-term objectives while being able to react to the new needs and demands of markets as well as public ***and social*** policy.

Justification

In the hardware development field Europe lags considerably behind the United States and Japan. Europe's slowness in this key sector of the new economy carries with it significant risks. If Europe intends to leave the field open to its main competitors in the world market in this sector, this could have grave consequences for European technological development and, as a result, employment. European research therefore also needs to focus on hardware development.

Amendment 91

Annex 1, chapter 1.1.2, actions envisaged, action 1a (new)

Building innovative applications and solving complex problems
A strong applied and application-specific research effort is needed to address in an integrated way the socio-economic challenges. Research will aim at:
1. solving "trust and confidence" problems in the areas of security, privacy, property and individual rights and dependability. Improving trust in the knowledge society is a key requirement for its development.
2. addressing the societal challenges such as health, inclusion, transport, environment and cultural heritage as well as business challenges such as support to new value chain management, mobile commerce (allowing for a concrete step forward towards 3G functionality) and e-work tools and processes.
3. developing the tools and applications of knowledge and computing GRIDs for

complex problem solving in science, industry and businesses. These are key elements of the Next Generation Internet and will enable the harnessing of computing and storage resources across Europe and will bring them to the desktop of any researcher, engineer or end user.
4. stimulating further independent research activities on biomedical (in particular non-thermal) effects due to exposure to electromagnetic fields, also in the context of new applications of electromagnetic fields due to emerging technologies. Possible causal relationships between exposure to electromagnetic fields and cancer development and/or neurological disorders and symptoms need to be investigated.

Justification

More concrete examples of what is envisaged.

Amendment 92

ANNEX 1, Chapter 1.1.2, Actions envisaged, action 1, paragraph 1

Completing and building on progress expected in the development of basic technologies, research aimed at finding solutions for major societal and economic challenges and, accordingly, focusing on:

Completing and building on progress expected in the development of basic technologies, research aimed at finding solutions for major societal and economic challenges ***faced by an emerging knowledge-based society*** and, accordingly, focusing on:

Justification

It is important to focus this section of the framework programme on the aim of the European Union as expressed by the Lisbon Summit 'to make Europe the most competitive and dynamic knowledge-based economy in the world' within the next ten years.

Amendment 93

Annex I, Chapter 1.1.2 Actions envisaged, Action 1, paragraph 1, first indent

- **Ambient** intelligence systems offering access to the information society for all, as well as interactive and intelligence systems for health, mobility, security, leisure, preservation of the cultural heritage and environmental monitoring;

- **The development of operating systems and hardware for the production of European computers and ambient** intelligence systems offering access to the information society for all **regardless of age or situation**, as well as interactive and intelligence systems for health **which also allow scientific up-dating for medical qualified people and health operators**, mobility, security, leisure **and tourism, rural development**, preservation of the cultural heritage and environmental monitoring. **Intelligence systems should be particularly aimed at securing access for and participation by socially excluded and disadvantaged groups in society including disabled people; covering both design for all principles and assistive technologies in this field;**

Justification

It is particularly important to make the new information technologies available to disabled people and people with special needs.

Both tourism and rural development have a substantial impact on improving cohesion.

To clarify the meaning of the phrase and highlight the need for the information society to be accessible to disadvantaged groups. Disabled people are particularly concerned with regard to their particular access requirements to the information society and intelligence systems. The Lisbon summit conclusions and the Social Policy Agenda also made particular reference to disability access to Information communication technologies. Therefore, disabled people should be explicitly referred to under this action.

Amendment 94

Annex I, Chapter 1.1.2, "Actions Envisaged, action 1, paragraph 1, indent 2

- electronic and mobile commerce, as well as technologies for secure transactions and infrastructures, new tools and new methods of work, technologies for learning and systems for corporate knowledge

- **technologies for secure communication and storage of information, in particular those easily accessible by individuals and safeguarding their civil liberties**, electronic and mobile commerce, as well as technologies for secure transactions and infrastructures, new tools and new methods

management, for integrated business management and for e-government;

of work, technologies for learning and systems for corporate knowledge management, for integrated business management and for e-government;

Justification

The justification of this thematic area states that it seeks to place "the human being at the centre of the future development of the knowledge-based society", thus research should also aim at protecting civil liberties and not only guaranteeing e-commerce.

Amendment 95

Annex I, Chapter 1.1.2., Actions envisaged, action 1, paragraph 1, subindent 2a (new)

- technologies and infrastructures to boost European capacity to digitise its data, creations and archives;

Justification

If it is to develop a knowledge-based society and enjoy economic vibrancy, Europe must be capable of building up infrastructures and techniques that can be used to produce digital content and digitise its archives with a view to exploiting their cultural, educational, economic and social potential. Such an aim is a matter of priority for citizens and undertakings alike.

Amendment 96

ANNEX 1, Chapter 1.1.2, Actions envisaged, action 1, paragraph 1, indent 3a (new)

– the consequences of IST for human organisation, job structure, working life and the health and safety of workers.

Justification

This section must specifically recognise and respond to the challenges of a changing work environment and increased mobility, which will affect the way we live in the knowledge-based and IST-dependent society.

Amendment 97

Annex 1, Chapter.1.1.2., Actions Envisaged, Action 1, paragraph 1, indent 3b (new)

The role of consumption and consumer demand in the development of electronic trade, emphasising consumer relevant criteria for e-commerce successes, and integrating new technology into the everyday life of individuals and households.

Justification

In order for e-commerce with consumers to flourish, consumers' interests must be taken into account. Developing the services which the consumers demand is the sustainable model for e-commerce. It is also important to study how new technology can make our lives safer and more secure.

Amendment 98

Annex 1, Chapter 1.1.2, 'Actions envisaged', action 2, paragraph 1, indent 1

- the new generations of wireless and mobile communications systems and networks; satellite communications systems; all-optical technologies; integration and management of communication networks; capacity-enhancing technologies necessary for the development of systems, infrastructures ***and services, in particular for audiovisual applications;***

- the new generations of wireless and mobile communications systems and networks; satellite communications systems; all-optical technologies ***including display systems;*** integration and management of communication networks; capacity-enhancing technologies necessary for the development of systems ***and*** infrastructures, ***including the further rapid development of the next-generation pan-European gigabit research network - GEANT - into a network with a capacity of 100 Gb/s;***

Justification

The increased mobility and coordination of research in Europe envisaged in connection with the ERA will require instantaneous transfer of large amounts of information from one country to another and it is vital that there is an infrastructure in place to support this demand.

Amendment 99

– innovative methods of data storage and recovery.

Justification

In the information society, the amount of data produced that requires storage and retrieval would be unmanageable with today's systems and will require innovative solutions.

Amendment 100

Annex 1, chapter 1.1.2, 'Actions envisaged', action 2, paragraph 1, indent 2b (new)

- research into and development of new technologies for humane mine clearance purposes

Justification

New technologies can contribute to making humane mine clearance efforts safer and cheaper. Experience with current programmes, which are coordinated primarily by the JRC, is encouraging and should be reinforced by new projects.

Amendment 101

Annex 1, Chapter 1.1.2, Actions envisaged, Action 2, paragraph 1, indent 2c (new)

- software technologies supporting the provision of complex services featuring several interacting actors such as operators, service providers, application providers, brokering systems and users.

Justification

Common software architectures and protocols will play a key role in future Information networks. These will provide not only the traditional transfer and communication capabilities, but also easy and efficient high speed access to all multimedia content and innovative value-added services such as transaction management, contract negotiation and connection to information servers. Such software-based integration architecture will become a key factor of the convergence of mobility, internet, telephony and broadcasting.

Amendment 102

Annex 1, Chapter 1.1.2, 'Actions envisaged', action 3, paragraph 1, indent 1

- the design and production of micro- and opto-electronic and photonic components,

- the design and production of micro- and opto-electronic and photonic components, ***including for purposes of storing information,***

Justification

In the information society, huge amounts of data will be handled and processed, requiring new storage systems and devices.

Amendment 103

Annex 1, chapter 1.1.2, actions envisaged, action 3, paragraph 1, indent 1a (new)

- Pushing the limits of miniaturisation and minimising the costs and power consumption of microelectronic and micro-systems components. This also requires the exploration of new materials, such as organic flexible materials for displays and sensors so that they can be placed anywhere, even in the human body, and take any shape.

Justification

More concrete examples of what is envisaged.

Amendment 104

Annex 1, chapter 1.1.2, actions envisaged, action 3, paragraph 1, indent 1b (new)

- Developing mobile, wireless, optical and broadband communication infrastructures and computing technologies that are reliable, pervasive and can be adapted to accommodate new applications and services. They will lead to the next generation Internet and will have to support the exchange of increasingly large amounts of information. Especially the development of Internet Protocol version Six (IPv6) needs further stimulation. In the next ten years, it is expected that the average household will be managing terabytes of photos, music, videos, software and documents.

Justification

More concrete examples of what is envisaged.

Amendment 105

ANNEX 1, Chapter 1.1.2, Actions envisaged, action 3, paragraph 1, indent 2a (new)

– innovations to reduce the environmental impact of ICTs at all stages, manufacturing, use and end of product life.

Justification

It is important to assess the impact of ICTs on sustainable development and to take into consideration the impact on those who use the technologies.

Amendment 106

Annex 1, Chapter 1.1.2., Actions envisaged, Action 4, paragraph 1

Research into information management tools and interfaces, with a view to enabling easier interaction everywhere and at all times with knowledge-based services and applications, addressing:

Research into information management tools, ***training which takes account of human beings' ways of learning and capacity to learn*** and interfaces with a view to enabling easier interaction everywhere and at all times with knowledge-based services and applications, addressing:

Justification

The draft framework programme is very much focussed on technology when one looks at the details. Research which investigates individuals' ways of managing information and their cognitive processes is also important.

Amendment 107

Annex 1, chapter 1.1.2, actions envisaged, action 4, paragraph 1, indent 1

-knowledge representation and management systems based on context and semantics, including cognitive systems, as well as tools for creating, organising, sharing and disseminating digital content;

-knowledge representation and management systems based on context and semantics, including cognitive systems, as well as tools for creating, organising, ***navigating, retrieving***, sharing and disseminating digital content;

Justification

In the Information Society, huge amounts of data will be handled and processed. This will require advanced and innovative navigation and retrieval solutions.

Amendment 108

Annex 1, chapter 1.1.2, actions envisaged, action 4, paragraph 1a (new)

As the EP's report on the Echelon network recently showed, the countries of the Union should develop computer technology (means of transmission, encryption and decryption) independent of the industries of third countries (the USA above all), not only in order to protect European industries, but also and in particular with a view to respect for the privacy of EU citizens.

Justification

In this connection it should be remembered that the report Parliament adopted on the Echelon system calls on the Commission to focus its efforts on the development of a computer technology to ensure the protection of European industries and the privacy of Union citizens.

Amendment 109

ANNEX 1, Chapter 1.1.2, Actions envisaged, action 4a (new)

Future and emerging technologies and the information society

An exploratory activity in future and emergent technologies will support basic research which, in the long run, will bring visionary ideas to the borders of current knowledge. This will be achieved through two activities:

- support for research into open and wide-ranging areas that may result in discoveries that lead to state-of-the-art technologies;***
- funding for projects focused on a small number of highly interdisciplinary objectives such as the interface between organic chemistry and computers;***
- quantum computing;***

Justification

This approach will allow an inclusive and broad funding system to bring the focus of research on to interdisciplinary projects that have been identified as future state-of-the-art technologies. This response is vital in the constantly evolving information society. Quantum computing is a cutting-edge technology and should be covered by a specific research programme, in coordination with the priority concerning nanotechnologies.

Amendment 110
ANNEX 1, Chapter 1.1.3, Title

Nanotechnologies, *intelligent materials, and new production processes*

Nanotechnologies *and new processes of production of advanced materials*

Justification

Self justifying.

Amendment 111
Annex 1, Chapter 1.1.3, Objective, paragraph 1

The activities carried out in this area are intended to help **Europe** achieve a critical mass of capacities needed to develop and exploit, especially for greater eco-efficiency, leading-edge technologies for the knowledge- and intelligence-based products, services and manufacturing processes of the years to come.

The activities carried out in this area are intended to help **the European Union and the applicant countries** achieve a critical mass of capacities needed to develop and exploit, especially for greater eco-efficiency, **and reduction of discharges of hazardous substances to the environment**, leading-edge technologies for the knowledge- and intelligence-based products, services and manufacturing processes of the years to come.

Justification

With a view to the next enlargement of the European Union, a uniformly structured European Research Area needs to be created. It is therefore important to refer expressly to the applicant countries in connection with each of the priority thematic areas.

It is important to include activities that lead to reduction in discharges of hazardous substances to the environment, which is not necessarily achieved by greater eco-efficiency alone.

Amendment 112

Annex I., Chapter 1.1.3. Justification of the effort and European added value, paragraph 4

Where materials are concerned, the aim is to develop intelligent materials which are expected to add considerable value in terms of applications in sectors such as transport, energy and the biomedical sector and for which there is a potential market of several tens of billions of euros.

Where materials are concerned, the aim is to develop intelligent materials which are expected to add considerable value in terms of applications in sectors such as transport, energy, ***electronics*** and the biomedical sector and for which there is a potential market of several tens of billions of euros.

Justification

Intelligent materials will not only have valuable applications in the transport, energy and biomedical sectors, but also in the electronics sector.

Amendment 113

Annex 1, Chapter 1.1.3., Justification of the effort and European added value, paragraph 5a (new)

In order to enhance the impact of such measures through wide dissemination among European businesses, the distinguishing characteristics of small and micro-firms in terms of organisation and management must be taken into account when such measures are finalised.

Justification

Several aspects relating to new production processes directly concern small and particularly very small firms (micro-enterprises). This chapter covers everything relating to the organisation of micro-enterprises' production which seeks to enable them to become effective and environmentally friendly. For small and micro-enterprises, the notion of the life cycle and overall cost is a vital issue for the future.

Amendment 114

Annex 1, Chapter 1.1.3., Justification of the effort and European added value,
paragraph 5b (new)

One of the main objectives in this area must be strengthening the competitiveness of the European bio-basic industry, by developing environmentally efficient technologies for the processing of plant, forestry, animal or waste products for the manufacture of new bio-materials, particularly bio-polymers and bio-fuels, as well as searching for new industrial applications for secondary resources, including recycling of agricultural and forestry waste.

Justification

Developing the European bio-basic industry can help achieve more economically and environmentally sustainable development, encourage more responsible use of resources (water, land, energy, etc.) and provide an outlet for surplus agricultural production. More efficient and cleaner technologies can be used to produce new products with higher added value and low environmental impact for which there is an established demand, while encouraging better use by industry of agricultural and forestry raw materials and waste.

Amendment 115

Annex I, Chapter 1.1.3, actions envisaged, action 1, indent 6

-applications in areas such as health, chemistry, energy, optics and the environment.

-applications in areas such as health, ***including advanced system for storage and management of biological samples (serum, cells, DNA)***, chemistry, energy, ***electronics***, optics and the environment.

Justification

Nanotechnologies will not only have applications in areas such as health, chemistry, energy, optics and the environment, but also in electronics.

Amendment 116

Annex 1, Chapter 1.1.3, Actions envisaged, Action 2, indent 3a (new)

- neuronal networks of artificial intelligence

Justification

Self-explanatory.

Amendment 117

Annex 1, Chapter 1.1.3, Actions envisaged, Action 3, indent -1 (new)

- development of biosensors for diseases diagnostics, food and environment quality and safety;

Justification

Self-explanatory.

Amendment 118

ANNEX 1, Chapter 1.1.3, Actions envisaged, action 3, indent 1

– the development of flexible and intelligent manufacturing systems incorporating advances in virtual manufacturing technologies, interactive decision-aid systems ***and*** high-precision engineering;

– the development of flexible and intelligent manufacturing systems incorporating advances in virtual manufacturing technologies, interactive decision-aid systems, high-precision engineering ***and innovative robotics in motor vehicle manufacturing;***

Justification

The motor vehicle industry is the biggest industrial sector in Europe. Development of innovative robotics is crucial for improving its competitiveness in both internal and external markets.

Amendment 119

Annex 1, paragraph 1.1.3, Actions envisaged, action 3, indent 2

- systems research needed for waste management and hazard control

- systems research needed for ***non-polluting*** waste management and hazard control, ***giving priority to activities that minimise the generation of waste in general and hazardous waste in particular by e.g. minimising the use of hazardous substances in production and manufacturing processes;***

Justification

Self-explanatory

Amendment 120

Annex 1, Chapter 1.1.3., 'Actions envisaged', action 3, indent 3a (new)

- Development of new processes and IT tools in the process industry, including simulation, and their exploitation in development work.

Justification

Europe has special skills and strong traditions in the capital-intensive process section. In the branches of this sector, such as the forestry industry, there are major interests in developing new production processes or part-processes, making it possible to achieve a better result both economically and in environmental terms. New production processes in forestry also mean more effective use of raw materials, energy saving and opportunities for the development of new products.

Amendment 121
Annex 1, Chapter 1.1.3., Actions envisaged, Action 3, indent 3b (new)

- Development of environmentally efficient technologies for the extraction or modification of oils, proteins, starch, sugar or fibres from plants, animals or waste for the manufacture of bio-materials, particularly bio-polymers and bio-fuels.

Justification

The aim is to define the main research areas for the development of new production processes for agriculture and forestry.

Amendment 122
Annex 1, Chapter 1.1.3., Actions envisaged, Action 3, indent 3c (new)

- Development of new industrial applications that will increase the added value of agrifoodstuffs and forestry products, encourage the use of secondary resources and reduce agricultural or forestry waste, as well as the consumption of water and energy.

Justification

The aim is to define the main research areas for the development of new production processes for agriculture and forestry.

Amendment 123
ANNEX 1, Chapter 1.1.4, Objective, paragraph 1

The aim of activities carried out in this area is ***two-fold***: to consolidate, ***by integrating its research efforts***, the position of ***the*** European ***aerospace*** industry vis-à-vis increasingly strong world competition; and to help exploit the potential of ***European*** research in this sector with a view to

The aim of activities carried out in this area is ***three-fold***: ***to integrate European aeronautics and the aeronautics industry in a modern, intermodal sustainable transport system*** and to consolidate the position of European industry ***and of European industry in the field of short distance intermodal***

improving safety and environmental protection.

systems and surface transport vis-à-vis increasingly strong world competition, **by combining research efforts**; and to help exploit the potential of research **in the European Union and the applicant countries** in this sector with a view to improving safety and environmental protection.

Justification

The aim is not only to strengthen and develop European industry but above all to integrate it into an intermodal global approach for the future, with due regard for environmental and social conditions. In the field of intermodality, congestion in the air-transport sector (with the effect that that has on safety and the environment) has become a major international problem. The transfer of short- haul domestic flights is one of the options contained in the Common Transport Policy and will depend on the success of air/surface intermodality systems. This will enable Europe to boost its exports of such integrated systems, for which there is increasing international demand. With a view to the next enlargement of the European Union, a uniformly structured European Research Area needs to be created. It is therefore important to refer expressly to the applicant countries in connection with each of the priority thematic areas.

Amendment 124

Annex I, Chapter 1.1.4, Justification of the effort and European added value, paragraph 1

The aerospace industry consists of two technologically and economically separate sectors but they are closely associated on account of their industrial and political implications and the stakeholders involved and they are examples of European economic and commercial success stories. **However, US investment in aerospace is three to six times higher, depending on the sector.**

The aerospace industry consists of two technologically and economically separate sectors but they are closely associated on account of their industrial and political implications and the stakeholders involved and they are examples of European economic and commercial success stories, **rich in tradition and potential. The level of investment in other continents, such as in the USA and Japan, is significant.**

Justification

The difference as regards investment in research exists not only between Europe and the USA but also between Europe and Japan.

Amendment 125

Annex I, Chapter 1.1.4, Actions envisaged, Action 1, paragraph 1, indent 1

- increase the competitiveness of the European industry with regard to commercial aircraft, engines and equipment;

- integrate air transport into a sustainable transport system (including regional and business aeroplanes and helicopters), and strengthen industry in developing appropriate innovative products, including improving engines and equipment and reducing their environmental impact;

Justification

It is not just a question of strengthening and developing the European industry, but also, and primarily, of integrating it into a promising overall intermodal plan, taking into account environmental and social criteria. It is essential to specify that helicopters and regional and business aeroplanes are included under the term 'commercial aircraft' used in the proposal for a decision, so as not to exclude these three areas (in which Europe occupies a predominant place in international competition) from measures seeking to reinforce their competitiveness.

Amendment 126

Annex 1, Chapter 1.1.4 Actions envisaged, Action 1, paragraph 1, indent 2

- reduce environmental nuisances and loads (CO₂ and NO_x emissions, noise);

- research on the environmental and health impacts of aviation, including reduction of CO₂ and NO_x emissions and other chemical pollutants, noise pollution and stacking;

Justification

Self-explanatory.

Amendment 127

Annex 1, Chapter 1.1.4, Actions envisaged, action 1, paragraph 1, indent 2a (new)

- reduce aircraft fuel consumption through greater energy efficiency;

Justification

Self-explanatory

Amendment 128

Annex 1, Chapter 1.1.4., 'Actions envisaged', action 1, paragraph 1, indent 4a (new)

- Air surveillance and its applications; border controls in the context of the Schengen agreements, prevention of pollution (including sea pollution), e.g. by unmanned aircraft.

Justification

Operations in this sector are becoming more and more necessary.

Amendment 129

Annex I, Chapter 1.1.4, Actions envisaged, action 1, paragraph 1, indent 4b (new)

- strengthen innovative, integrated strategies and systems designed to encourage a switch from short-haul flights to trans-European high-speed rail services.

Justification

In the field of intermodality, congestion in the air-transport sector (with the effect that that has on safety and the environment) has become a major international problem. The transfer of short- haul domestic flights is one of the options contained in the Common Transport Policy and will depend on the success of air/surface intermodality systems. This will enable Europe to boost its exports of such integrated systems, for which there is increasing international demand.

Amendment 130

Annex I, Chapter 1.1.4, Actions envisaged, Action 1, paragraph 1, indent 4c (new)

-

- ***integrate aeronautics in a sustainable transport system and strengthen the industry in the development of relevant innovative products, including improvement of engines and equipment and increasing their environmental compatibility;***

Justification

According to Commissioner Busquin, sustainable development is to be one of the hallmarks of the 6th Framework Programme of Research. The constant rise in emissions, especially carbon dioxide, from aviation is a serious problem. Reducing emissions should therefore be the top priority in this field. The aim is not only to strengthen and develop European industry but above all to integrate it into a an intermodal global approach for the future, with due regard for environmental and social conditions.

Amendment 131

Annex 1, Chapter 1.1.4, “Actions envisaged”, Action 1, paragraph 1, indent 4d (new)

- ***integrate social and environmental impacts and take account of prospects for controlling and managing the strong growth in air transport.***

Justification

According to Commissioner Busquin, sustainable development is to be one of the hallmarks of the 6th Framework Programme of Research. The constant rise in emissions, especially carbon dioxide, from aviation is a serious problem. Reducing emissions should therefore be the top priority in this field. The aim is not only to strengthen and develop European industry but above all to integrate it into a an intermodal global approach for the future, with due regard for environmental and social conditions.

Amendment 132

ANNEX 1, Chapter 1.1.4, Actions envisaged, action 2, paragraph 1, indent 3a (new)

- ***space science and study of the solar system, including research on the sun and the climate and geology of the earth.***

Justification

Space science is vital to support other areas of research. For example the sun's magnetic field affects the earth's telecommunication systems and observations made in the atmospheres of other planets aid us in our understanding of our own climate.

Amendment 133 ANNEX 1, Chapter 1.1.5, Title

Food safety and health risks

Food quality, safety and health risks and health improvement

Justification

Self justifying

Amendment 134 Annex 1, Chapter 1.1.5 ,Objective, paragraph 1

The activities carried out in this area are intended to help establish the integrated scientific and technological bases ***needed to develop*** a system of production and distribution of safe ***and*** healthy food ***and*** control food-related risks, relying in particular on ***biotechnology tools, as well as*** health risks associated with environmental changes.

The activities carried out in this area are intended to help establish the integrated scientific and technological ***bases in order to protect human health and working conditions or factors in the work environment and to ensure food and environmental safety in the European Union and the applicant countries by:***

- developing an environmentally friendly*** system of production and distribution of safe, healthy ***and quality*** food ***including sea food in line with consumer requirements, habits and perceptions,***
- control and prevention of*** food-related risks, relying in particular on ***the introduction of HACCP (Hazard Assessment Critical Control Points) throughout the food chain to detect contaminants, toxins and pathogenic micro-organisms in general (including transmissible prions) present in foodstuffs,***

- ***developing food technologies more in keeping with the fundamental role that nutrition, diet and lifestyle play as regards health and disease prevention, while at the same time facilitating consumer choice of products,***
- ***control of*** health risks associated with environmental changes.

Justification

In line with the rapporteur's amendments, this area is now to be called 'Health and safety' and includes only those aspects of food security not related to biotechnologies. Accordingly, emphasis should be placed on the links between agricultural and food-related research and the growing consumer demand for healthy, safe and quality products. With this in view, control and prevention of food-related risks are vital by means of uniform scientific criteria and methods of analysis and detection of contaminants, toxins and pathogenic micro-organisms in general which may be present in food. In particular, it is important to extend the HACCP (Hazard Assessment Critical Control Points) to the whole of the food chain.

Amendment 135

Annex 1, chapter 1.1.5, Justification of the effort and European added value,
paragraph 3a (new)

Given that small and very small enterprises constitute a major part of the food sector, the success of activities undertaken will rely on the adaptation of knowledge and processes to give them a real chance of being exploited by small and very small firms. What is needed is to research and promote the means and methods appropriate to the specific characteristics of these small and very small enterprises.

Justification

All the activities envisaged directly affect small and micro-enterprises in the food sector, of which there are more than a million in Europe manufacturing and selling food products direct to the consumer. Apart from their role in the local distribution of food products and in the development of local networks of food quality and security of supplies, including organic

products, they create many jobs and are an essential aspect of European culture thanks to their maintenance and development of food and culinary traditions. Scientific knowledge can only be made available, and safer production methods and healthier food implemented, using appropriate intermediate methods and means. It is vital to promote the conception and dissemination of such methods for the benefit of small and micro-enterprises.

Amendment 136

Annexe 1, chapter 1.1.5, Justification of the effort and European added value,
paragraph 3b (new)

The healthy crop (factors and processes that affect the chemical composition of the plant, such as altered metabolism, plant-environment interactions and natural variation investigating biological processes and linking to genomics technologies on plants including Arabidopsis and model cereals, legumes and vegetables)

Justification

The current FP6 proposal emphasises food safety and health risks. Its major shortcoming is that it does not emphasise the impact of food quality on the improvement of human health. The aim of this key action is to gain knowledge of biological research that will lead to the improvement of the quality of life through high quality, safe and more nutritious food. Concerted efforts towards understanding the mechanisms of plant growth and development are likely to provide the knowledge base required for improving plants to serve consumer needs while minimising the environmental impact of agriculture. A deeper understanding of biological processes will furthermore strongly increase international competitiveness of European biotechnology, agriculture and food industry

Amendment 137

ANNEX 1, Chapter 1.1.5, Justification of the effort and European added value, paragraph 5

The same remarks apply to the various aspects of the problems associated with the health impact of environmental changes which are a source of growing concern for European citizens, and which often manifest themselves on an international scale. For all these reasons, but also in order to derive the benefit of the combination of the best sources of expertise available in complex areas, the

The same remarks apply to the various aspects of the problems associated with the health impact of environmental changes ***and doping practices*** which are a source of growing concern for European citizens, and which often manifest themselves on an international scale. For all these reasons, but also in order to derive the benefit of the combination of the best sources of expertise available in complex areas, the

research in question should be carried out at European level in such a way as to ensure genuine coordination of national activities.

research in question should be carried out at European level in such a way as to ensure genuine coordination of national activities.

Health and safety are important not only where food is concerned, but also as regards work. Safe production processes and working conditions to protect health are subjects that could be dealt with in a joint approach.

Justification

The changes to the first paragraph are of a technical nature. The final paragraph raises the matter of safety at work.

Amendment 138

Annex 1, chapter 1.1.5, Justification of the effort and European added value, paragraph 5a (new)

Evidence is starting to build up of the significant risks to human health posed by chemical molecules in our environment with carcinogenic effects or effects on the hormonal system. These molecules are present in small concentrations in the air and the water and thus enter the food chain.

Justification

Food safety cannot be separated from the dissemination of certain chemicals in the environment, particularly those which are potentially carcinogenic or which imitate hormones, all the more so since food and water are the main route by which these products enter our bodies. Any chemical present in the environment will end up in our food (as has been shown in the case of dioxins, etc.). In addition, chemicals in the environment may reinforce the effects of chemicals in food. The investigation of chemicals in the environment should therefore be dealt with together with the investigation of food safety.

Amendment 139

Annex 1, chapter 1.1.5, Justification of the effort and European added value,

paragraph 5b (new)

The impact of work on the health and safety of workers is an important issue for a great deal of EU citizens. Over 5,000 workers are killed and over 4.5 million accidents occur every year as a result of workplace accidents in the EU. Equally, 77% of consumers interviewed in a recent European survey believe that protecting the health and safety of workers is an important area to which companies should contribute or support (health and safety coming above human rights and the environment). Through targeted and coordinated research across Europe, into safety management, safe working conditions and practices, work equipment and products, many accidents and illnesses could be avoided. Research will be one of the priority themes in the EU's new European Safety and Health Strategy 2002.

Justification

The new European Strategy on Safety and Health at Work will be adopted in early 2002. Research will be one of the key areas for attention in the Strategy. Unless a safety and health element is included at this stage in the EU Research programme, the first 3 years of the EU safety and health strategy will lack one of the key tools necessary in order to carry out the EU safety and health strategy.

Amendment 140

ANNEX 1, Chapter 1.1.5, Actions envisaged, paragraph -1 (new)

Research into the ethical and social consequences of progress in the field of health and biotechnology;

Justification

The ethical and social aspects have to be addressed.

Amendment 141
ANNEX 1, Chapter 1.1.5, Actions envisaged, paragraph 1

Community activities will cover research relating to various aspects of the control of health risks and links between health and food:

Food: Community activities will cover research relating to various aspects of the control of health risks and links between health and food:

Justification

Some of the actions provided for in section 1.1.5 are covered by the new section 1.1.1, whereas other actions in section 1.1.1 of the Commission proposal are now listed in section 1.1.5. The additions are explained in the justifications for the previous amendments.

Amendment 142
Annex 1, chapter 1.1.5., Actions envisaged, paragraph 1, indent -1 (new)

- all aspects of food safety in all links in the food chain, from primary production to processing;

Justification

The Commission proposal does not mention the 'from farm to table' approach.

Amendment 143
Annexe I, Chapter 1.1.5, Actions envisaged, paragraph 1, indent 1

- methods of analysis and detection of chemical contaminants and pathogenic micro-organisms (viruses, bacteria, parasites, and new agents of the prion type);

- methods of analysis and detection of chemical contaminants and ***sequencing of*** pathogenic ***and non-pathogenic*** micro-organisms (viruses, bacteria, ***yeasts, fungi***, parasites, and new agents of the prion type), ***which will make it possible to develop tools to predict the emergence of the pathogenicity of micro-organisms;***

placing special emphasis on the introduction of HACCP (Hazard Assessment Critical Control Points) throughout the food chain, and in this regard, particularly the urgent need for the development and evaluation of reliable and more refined scientific methods and increased research into ante-mortem diagnostic tests for BSE and scrapie.

Justification

Genome sequences are a very reliable, rapid and inexpensive way of identifying parasites and pathogens, but also of understanding genomic modifications at the origin of an emergent pathogen. In line with the rapporteur's amendments, this area is to be called 'Health and safety' and includes only those aspects of food safety not related to biotechnologies. The aim is to develop these aspects in the specific section on 'Food'.

Amendment 144

Annex 1, chapter 1.1.5., Actions envisaged, paragraph 1, indent 1a (new)

– development of methods and products which cause very little or no damage to the environment, to combat natural agricultural crop diseases and pests;

Justification

Despite efforts to render farming sustainable, experience shows that too little funding is available from industry for developing environmentally sound plant protection products. In view of the importance of change in agriculture, government has a very important role to play here, which justifies financing research.

Amendment 145

Annex 1, chapter 1.1.5 Actions envisaged, paragraph 1, indent 1b (new)

- characterisation of molecular mechanisms underlying pathologies induced by chemical contaminants, including prions, viruses, bacteria, protozoa and parasites and development of new instruments for prevention and therapy;

Justification

Self-explanatory.

Amendment 146

Annex 1, chapter 1.1.5., Actions envisaged, paragraph 1, indent 2a (new)

- technologies to promote organic farming and stockbreeding with all necessary guarantees, and to develop new products which meet consumer requirements and provide them with adequate information on intrinsic safety, duration, recyclability, ingredients, qualitative and nutritional properties, allergy risks and production methods used;

Justification

In line with the rapporteur's amendments, this area is to be called 'health and safety' and includes only those aspects of food safety not related to biotechnologies. With the same end in view, the aim is to develop the content of the actions envisaged under the new section on 'Food'.

Amendment 147

Annex 1, chapter 1.1.5., Actions envisaged, paragraph 1, indent 2b (new)

– development of functional foodstuffs and food technologies in order to take more appropriate account of the fundamental importance of food, dietetics and life-style to health and prevention of diseases, at the same time helping consumers to choose products;

Justification

According to the draftsman's amendments, this section is to be called 'health and safety', and

it is only to contain aspects of food safety which are not linked to biotechnology. The new subheading 'food' is similarly supplemented.

Amendment 148

Annex 1, chapter 1.1.5 Actions envisaged, paragraph 1, indent 3

- “traceability” processes, in particular relating to genetically modified organisms, including those based on recent biotechnology developments;

- “traceability” processes, in particular relating to genetically modified organisms, including those based on recent biotechnology developments ***and evaluation of possible pathogenetic effects of GMO in man and animals;***

Justification

Self-explanatory.

Amendment 149

Annex 1, Chapter 1.1.5, Actions envisaged, paragraph 1, indent 4

— safer production methods and healthier foodstuffs, including those based on biotechnologies and on organic farming processes;

— safer ***and environmentally friendly*** production methods and healthier foodstuffs, including those based on biotechnologies and on organic farming processes;

Justification

The agriculture of the 3rd millennium must address as a matter of urgency issues relating to the safety and health quality of food (as the BSE crisis, inter alia, has shown), but it must also address issues relating to respect for the environment. The problems of water contamination by nitrates and pesticides are of topical relevance. Citizens expect tomorrow's agriculture to protect the environment, the countryside and nature. This aspect is, however, missing from the proposed text.

Amendment 150
Annexe 1, 1.1.5, Actions envisaged, indent 4a (new)

- application of biotechnology to the development of crop and animal breeding to benefit global health and environmental welfare;

Justification

There must be European research in animal and plant biotechnology which must benefit not just Europe but also developing countries.

Amendment 151
ANNEX 1, Chapter 1.1.5, Actions envisaged, paragraph 1, indent 5

– epidemiology of food-related diseases
and genetic susceptibilities;

– epidemiology of food-related diseases;

Justification

The point in question is covered by section 1.1.1. See Amendment 31.

Amendment 152
ANNEX 1, Chapter 1.1.5, Actions envisaged, paragraph 1, indent 5a (new)

- the impact of diet on the health of children;

Justification

Because their constitution and metabolism differ from those of adults, children require an appropriate diet. Health risks associated with diet may have a particular impact on children because they are growing fast and because they consume more per kilo of body weight

Amendment 153

ANNEX 1, Chapter 1.1.5, Actions envisaged, paragraph 1, indent 6

- impact of food, and in particular products containing genetically modified organisms, on health;

- impact of food, and in particular products containing genetically modified organisms, on health, ***and methods for the analysis of causes of food-related allergies;***

Justification

As a growing number of patients, in particular, children suffer from food allergies, research into the causes of these allergies should be supported.

Amendment 154

ANNEX 1, Chapter 1.1.5, Actions envisaged, paragraph 1, indent 7

- environmental health risks, with emphasis being placed on cumulative risks, transmission routes to human beings, long term effects and exposure to small doses, as well as the impact on particularly sensitive groups, and especially children.

- environmental health risks, with emphasis being placed on cumulative risks, ***the cumulative effects of different authorised substances which, acting on their own, may present no health risk but which cumulatively may cause undesirable side-effects, allergies and toxicity;*** transmission routes to human beings, long term effects and exposure to small doses, as well as the impact on particularly sensitive groups, and especially children.

Justification

Because their constitution and metabolism differ from those of adults, children require an appropriate diet. Health risks associated with diet may have a particular impact on children because they are growing fast and because they consume more per kilo of body weight

As a growing number of patients, in particular, children suffer from food allergies, research into the causes of these allergies should be supported.

Amendment 155

Annex 1, chapter 1.1.5 Actions envisaged, paragraph 1, indent 7a (new)

- research in environmental safety particularly in the health impact of environmental pollutants of biological, chemical, physical (e.g. radiations,

electromagnetic fields) nature and identification of new instruments for prevention and therapy of pollutant induced disease.

Justification

Self-explanatory.

Amendment 156

Annex I, chapter 1.1.5 Actions envisaged, paragraph 1, indent 7b (new)

- the healthy crop (factors and processes that affect the chemical composition of the plant, such as altered metabolism, plant-environment interactions and natural variation using genomics technologies on plants including Arabidopsis and model cereals, legumes and vegetables

Justification

The aim of this key action is to gain knowledge of biological research that will lead to the improvement of the quality of life through high-quality, safe and more nutritious food:

- Concerted efforts to examine the mechanisms of plant growth and development will create the basis for improving plants to serve consumer needs while minimising the environmental impact of agriculture. A deeper understanding of biological processes will also enhance the international competitiveness of European biotechnology, agriculture and the food industry.

Amendment 157

ANNEX 1, Chapter 1.1.5, Actions envisaged, paragraph 1, indent 7c (new)'

- effects of GMOs fed to animals in animal feedstuffs on the end product destined for human consumption

Justification

The aim of this key action "healthy crop" is to gain knowledge of biological research that will lead to the improvement of the quality of life through high-quality, safe and more nutritious food:

1. Genomics and post-genomics research produces a systematic definition of genes and their

functions. The refinement of information thus gained through focused studies of selected model species provides an efficient route for the systematic transfer of knowledge to crop plants. This will have a major impact on agricultural and food improvement in the next decade and allow Europe to control the quality, safety and quantity of its own food production..

Amendment 158

ANNEX 1, Chapter 1.1.5, Actions envisaged, paragraph 1a (new)

***Safety at work and new technologies:
Development of European ‘safe handling’
standards and safe waste management in
biotechnology laboratories and other
institutes working with biological
material, GMOs, etc.***

Justification

Safety at work is completely omitted from the Commission proposal. Especially where new technologies are concerned, the point has to be added.

Amendment 159

ANNEX 1, Chapter 1.1.5, Actions envisaged, paragraph 1b, indent 1 (new)

– control of health risks at work.

Justification

European research must also tackle safety at work, which has not been included in the Commission proposal.