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Committee on Industry, Research and Energy

2011/0402(CNS)

5.7.2012

AMENDMENTS 586 - 753

Draft report
Maria Da Graça Carvalho
(PE489.688v01-00)

on the proposal for a Council decision establishing the Specific Programme
Implementing Horizon 2020 - The Framework Programme for Research and
Innovation (2014 - 2020)

Proposal for a decision
(COM(2011)0811 – C7-0509/2011 – 2011/0402(CNS))

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United in diversity

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Amendment 586
Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision
Annex 1 – section 3 – point 1 – introductory part

Text proposed by the Commission

Amendment

1. Health, **demographic change** and wellbeing

1. Health and wellbeing

Or. en

Amendment 587
Fiona Hall, Kent Johansson

Proposal for a decision
Annex 1 – section 3 – point 1 – paragraph 1

Text proposed by the Commission

Amendment

Effective health promotion, supported by a robust evidence base, prevents disease, improves wellbeing and is cost effective. Health promotion and disease prevention also depend on an understanding of the determinants of health, on effective preventive tools, such as vaccines, on effective health and disease surveillance and preparedness, and on effective screening programmes.

Effective health promotion, supported by a robust evidence base, prevents disease, improves wellbeing, **reduces disability, dependency and social exclusion and** is cost effective. Health promotion and disease prevention also depend on an understanding of the determinants of health, on effective preventive tools, such as vaccines, on effective health and disease surveillance and preparedness, and on effective screening programmes. ***The cultural, social, behavioural and psychological dimensions of health shall also be taken into account. Social sciences and humanities thus have an important role to play in understanding health and wellbeing.***

Or. en

Amendment 588

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 1 – paragraph 1

Text proposed by the Commission

Effective health promotion, supported by a robust evidence base, prevents disease, improves wellbeing and is cost effective. Health promotion and disease prevention also depend on an understanding of the determinants of health, on effective preventive tools, such as vaccines, on effective health and disease surveillance and preparedness, **and** on effective screening programmes.

Amendment

Effective health promotion, supported by a robust evidence base, prevents disease, improves wellbeing and is cost effective. Health promotion and disease prevention also depend on an understanding of the determinants of health, on effective preventive tools, such as **active and healthy lifestyles**, vaccines, on effective health and disease surveillance and preparedness, on effective screening programmes, **and on better and integrated patient-centred health care delivery**.

Or. en

Amendment 589

Salvador Sedó i Alabart, Ramon Tremosa i Balcells

Proposal for a decision

Annex 1 – section 3 – point 1 – paragraph 2

Text proposed by the Commission

Successful efforts to prevent, manage, treat and cure disease, disability and reduced functionality are underpinned by the fundamental understanding of their causes, processes and impacts, as well as factors underlying good health and wellbeing. Effective sharing of data and the linkage of these data with real-world large scale cohort studies is also essential, as is the translation of research findings into the clinic, in particular through the conduct of clinical trials.

Amendment

Successful efforts to prevent, manage, treat and cure disease, disability and reduced functionality are underpinned by the fundamental understanding of their causes, processes and impacts, as well as factors underlying good health and wellbeing. Effective sharing of data and the linkage of these data with real-world large scale cohort studies is also essential, as is the translation of research findings into the clinic, in particular through the conduct of clinical trials. **Transferring research results from the basic research to clinical practice, clinical trials need to establish a**

prior link between the results obtained in the laboratory and the patient through translational research: "from bench to bedside approach".

Or. en

Amendment 590
Norbert Glante

Proposal for a decision
Annex 1 – section 3 – point 1 – paragraph 3

Text proposed by the Commission

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care and the uptake of technological, organisational and social innovations empowering older persons in particular to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

Amendment

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors, ***but also in social innovation research and development***. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care and the uptake of technological, organisational and social innovations empowering older persons in particular to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, ***economic*** and mental well-being. ***Special attention should be devoted to chronic diseases, such as cancer, cardiovascular diseases, rheumatic and musculoskeletal diseases, diabetes and respiratory and mental diseases.***

Or. de

Justification

The emphasis should be placed on diseases that occur with particular frequency and have a particularly significant impact on society as a whole. In many cases, little is known about the causes of these diseases and possible treatments, and there is therefore a particular need for

coordinated European research funding.

Amendment 591

Vladko Todorov Panayotov

Proposal for a decision

Annex 1 – section 3 – point 1 – paragraph 3

Text proposed by the Commission

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care and the uptake of technological, organisational and social innovations empowering older persons in particular to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

Amendment

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care and the uptake of technological, organisational and social innovations empowering older persons in particular to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, *economic*, and mental well-being. ***Special attention should be devoted to chronic diseases, such as cancer, cardiovascular diseases, rheumatic and musculoskeletal diseases, diabetes, respiratory and mental diseases.***

Or. en

Justification

Rheumatic and musculoskeletal diseases (RMDs) are not only a main cause of work loss and early retirement, but also a main cause of disability and reduced mobility, and an enormous burden for families, employers, insurers and the social and health care systems across the EU. They should be included in the list of major chronic diseases, as they are equally or, in some cases, even more important in terms of prevalence or impact on public health systems.

Amendment 592

Jean-Pierre Audy

Proposal for a decision
Annex 1 – section 3 – point 1 – paragraph 3

Text proposed by the Commission

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention **and** treatment provision, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care and the uptake of technological, organisational and social innovations empowering older persons in particular to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

Amendment

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention, treatment provision, **rehabilitation and retraining**, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care and the uptake of technological, organisational and social innovations empowering older persons in particular to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

Or. fr

Amendment 593
Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision
Annex 1 – section 3 – point 1 – paragraph 3

Text proposed by the Commission

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care and the uptake of technological, organisational and social innovations empowering older persons in

Amendment

An increasing disease, **particularly chronic disease**, and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care and the uptake of technological, organisational and social

particular to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

innovations empowering older persons in particular to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

Or. es

Amendment 594
Fiona Hall, Kent Johansson

Proposal for a decision
Annex 1 – section 3 – point 1 – paragraph 3

Text proposed by the Commission

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care and the uptake of technological, organisational and social innovations empowering older persons in particular to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

Amendment

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care and the uptake of technological, organisational and social innovations empowering older persons in particular to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, *economic* and mental well-being. ***Special attention should be devoted to chronic diseases, such as cancer, cardiovascular diseases, rheumatic and musculoskeletal diseases, diabetes, respiratory and mental diseases.***

Or. en

Justification

The Commission text does not mention any specific diseases, which may be preferable to avoid being too prescriptive. If, however, the decision is made to prioritise certain diseases, there is evidence to suggest that rheumatic and musculoskeletal diseases are amongst the

most prevalent, disabling and costly chronic, non-communicable conditions affecting the European population and would therefore deserve to be mentioned.

Amendment 595
Angelika Niebler

Proposal for a decision
Annex 1 – section 3 – point 1 – paragraph 3

Text proposed by the Commission

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care and the uptake of technological, organisational and social innovations empowering older persons in particular to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

Amendment

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care ***also including interventions of complementary and alternative medicine and*** the uptake of technological, organisational and social innovations empowering older persons in particular to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

Or. en

Justification

In order to ensure future funding for research in the field of complementary and alternative medicine, it should explicitly be mentioned in the specific programme.

Amendment 596
Philippe Lamberts
on behalf of the Verts/ALE Group

Proposal for a decision
Annex 1 – section 3 – point 1 – paragraph 3

Text proposed by the Commission

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care and the uptake of technological, organisational and social innovations empowering older persons in particular to remain active and independent. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

Amendment

An increasing disease and disability burden in the context of an aging population places further demands on health and care sectors. If effective health and care is to be maintained for all ages, efforts are required to improve decision making in prevention and treatment provision, to identify and support the dissemination of best practice in the healthcare sector, and to support integrated care and the uptake of technological, organisational and social innovations empowering older persons in particular to remain active and independent ***and respect and facilitate their health care choices***. Doing so will contribute to increasing, and lengthening the duration of their physical, social, and mental well-being.

Or. en

Amendment 597

Zofija Mazej Kukovič, Maria Da Graça Carvalho, Lambert van Nistelrooij, Gabriele Albertini, Seán Kelly, Rolandas Paksas

Proposal for a decision

Annex 1 – section 3 – point 1 – paragraph 4

Text proposed by the Commission

All of these activities will be undertaken in such a way as to provide support throughout the research and innovation cycle, strengthening the competitiveness of the European based industries and development of new market opportunities.

Amendment

All of these activities will be undertaken in such a way as to provide support throughout the research and innovation cycle, strengthening the competitiveness of the European based industries ***and SMEs*** and development of new market opportunities.

Or. sl

Amendment 598
Vicky Ford, Maria Da Graça Carvalho

Proposal for a decision
Annex 1 – section 3 – point 1 – paragraph 4

Text proposed by the Commission

All of these activities will be undertaken in such a way as to provide support throughout the research and innovation cycle, strengthening the competitiveness of the European based industries and development of new market opportunities.

Amendment

All of these activities will be undertaken in such a way as to provide support throughout the research and innovation cycle, ***including support for excellent basic research in health***, strengthening the competitiveness of the European based industries and development of new market opportunities.

Or. en

Amendment 599
Philippe Lamberts
on behalf of the Verts/ALE Group

Proposal for a decision
Annex 1 – section 3 – point 1 – paragraph 4

Text proposed by the Commission

All of these activities will be undertaken in such a way as to provide support throughout the research and innovation cycle, strengthening the competitiveness of the European based industries and development of new market opportunities.

Amendment

All of these activities will be undertaken in such a way as to provide support throughout the research and innovation cycle, strengthening the competitiveness of the European based industries and development of new market opportunities, ***based on an integrated and patient-centred approach***.

Or. en

Amendment 600
Vladko Todorov Panayotov

Proposal for a decision
Annex 1 – section 3 – point 1 – paragraph 4 a (new)

Text proposed by the Commission

Amendment

The cross-cutting objective of the Societal Challenges is to align the Union's research and innovation instruments to the EU 2020 strategy by ensuring smart, inclusive and sustainable growth. Priorities should be set against the background of addressing the most appealing societal challenges and in the most efficient way. Preference should be given to measures which deliver solutions fast and effectively and which are able to convert research into concrete, measurable results.

Or. en

Justification

The EU has top researchers and scientists, but lags behind the USA and some Asian countries in the ability to convert the results of research into concrete products, services and solutions. In times of economic and societal difficulties, when funding for research and innovation at the national level is being severely decreased as a consequence of austerity measures, EU financial support should target applied research and close-to-market solutions.

Amendment 601

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 1 – paragraph 4 a (new)

Text proposed by the Commission

Amendment

The development of research acceleration tools such as 'patent pools' enabling industrial ownership rights to be pooled, thus permitting the right-holders to be properly compensated, with innovation awards as a way of promoting the opening-up of research and acting as a catalyst for the efforts of the public and private sectors.

Amendment 602**Salvador Sedó i Alabart, Ramon Tremosa i Balcells****Proposal for a decision****Annex 1 – section 3 – point 1 – point 1.1 – paragraph 1***Text proposed by the Commission*

A better understanding of the determinants of health is required in order to provide evidence for effective health promotion and disease prevention, and will also allow the development of comprehensive health and wellbeing indicators in the Union. Environmental, behavioural (including life-style), socio-economic and genetic factors, in their broadest senses will be studied. Approaches will include the long term study of cohorts and their linkage with data derived from ‘-omics’ research, and other methods.

Amendment

A better understanding of the determinants of health is required in order to provide evidence for effective health promotion, **wellbeing** and disease prevention, and will also allow the development of comprehensive health and wellbeing indicators in the Union. Environmental, behavioural (including life-style), **biological**, socio-economic and genetic factors, in their broadest senses will be studied. Approaches will include the long term study of cohorts, **biobanks** and their linkage with data derived from ‘-omics’ research, and other methods.

Amendment 603**Teresa Riera Madurell, Dimitrios Droutsas****Proposal for a decision****Annex 1 – section 3 – point 1 – point 1.1 – paragraph 1***Text proposed by the Commission*

A better understanding of the determinants of health is required in order to provide evidence for effective health promotion and disease prevention, and will also allow the development of comprehensive health and wellbeing indicators in the Union. Environmental, behavioural (including life-style), socio-economic and **genetic** factors, in their broadest senses will be studied.

Amendment

A better understanding of the determinants of health is required in order to provide evidence for effective health promotion and disease prevention, and will also allow the development of comprehensive health and wellbeing indicators in the Union. Environmental, **occupational**, behavioural (including life-style), socio-economic (**with special attention to poverty**), **genetic** and

Approaches will include the long term study of cohorts and their linkage with data derived from ‘-omics’ research, and other methods.

pathogen factors, in their broadest senses will be studied. Approaches will include the long term study of cohorts and their linkage with data derived from ‘-omics’ research, and other methods.

Or. en

Amendment 604

Gaston Franco, Françoise Grossetête

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.1 – paragraph 2

Text proposed by the Commission

In particular, a better understanding of the environment as a determinant of health will require integrated molecular biological, epidemiological and toxicological approaches to investigate health-environment relationships, including studies of modes of action of chemicals, combined exposures to pollution and other environmental and climate related stressors, integrated toxicological testing as well as alternatives to animal testing. Innovative approaches to exposure assessment are needed using new-generation biomarkers based on 'omics' and epigenetics, human biomonitoring, personal exposure assessments and modelling to understand combined, cumulative and emerging exposures, integrating socio-economic and behavioural factors. Improved links with environmental data using advanced information systems will be supported.

Amendment

In particular, a better understanding of the environment as a determinant of health will require **human-centred** integrated molecular biological, epidemiological and toxicological approaches to investigate health-environment relationships **and to elucidate the underlying mechanisms of illnesses and human toxicity**, including studies of modes of action of chemicals, combined exposures to pollution and other environmental and climate related stressors, integrated toxicological testing as well as alternatives to animal testing. Innovative approaches to exposure assessment are needed using new-generation **human-centred** biomarkers based on 'omics' and epigenetics, human biomonitoring, personal exposure assessments and modelling to understand combined, cumulative and emerging exposures, integrating socio-economic and behavioural factors. Improved links with environmental data using advanced information systems will be supported.

Or. fr

Justification

Improvements to toxicology tests necessitate human-centred approaches.

Amendment 605

Salvador Sedó i Alabart, Ramon Tremosa i Balcells

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.1 – paragraph 2

Text proposed by the Commission

In particular, a better understanding of the environment as a determinant of health will require integrated molecular biological, epidemiological and toxicological approaches to investigate health-environment relationships, including studies of modes of action of chemicals, combined exposures to pollution and other environmental and climate related stressors, integrated toxicological testing as well as alternatives to animal testing. Innovative approaches to exposure assessment are needed using new-generation biomarkers based on ‘omics’ and epigenetics, human biomonitoring, personal exposure assessments and modelling to understand combined, cumulative and emerging exposures, integrating socio-economic and behavioural factors. Improved links with environmental data using advanced information systems will be supported.

Amendment

In particular, a better understanding of the environment as a determinant of health will require integrated molecular biological, epidemiological and toxicological approaches to investigate health-environment relationships, including studies of modes of action of chemicals, combined exposures to pollution and other environmental and climate related stressors, integrated toxicological testing as well as alternatives to animal testing. Innovative approaches to exposure assessment are needed using new-generation biomarkers based on ‘omics’ and epigenetics, human biomonitoring, personal exposure assessments and modelling to understand combined, cumulative and emerging exposures, integrating socio-economic and behavioural factors ***and design of environments to aid recovery and rehabilitation***. Improved links with environmental data using advanced information systems will be supported.

Or. en

Amendment 606

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.1 – paragraph 2

Text proposed by the Commission

In particular, a better understanding of the environment as a determinant of health will require integrated molecular biological, epidemiological and toxicological approaches to investigate health-environment relationships, including studies of modes of action of chemicals, combined exposures to pollution and other environmental and climate related stressors, integrated toxicological testing as well as alternatives to animal testing. Innovative approaches to exposure assessment are needed using new-generation biomarkers based on ‘omics’ and epigenetics, human biomonitoring, personal exposure assessments and modelling to understand combined, cumulative and emerging exposures, integrating socio-economic and behavioural factors. Improved links with environmental data using advanced information systems will be supported.

Amendment

In particular, a better understanding of the environment as a determinant of health will require integrated **and human-relevant** molecular biological, epidemiological and toxicological approaches to investigate health-environment relationships, including studies of modes of action of chemicals, combined exposures to pollution and other environmental and climate related stressors, integrated toxicological testing as well as alternatives to animal testing. Innovative approaches to exposure assessment are needed using new-generation **human-relevant** biomarkers based on ‘omics’ and epigenetics, human biomonitoring, personal exposure assessments and modelling to understand combined, cumulative and emerging exposures, integrating socio-economic and behavioural factors. Improved links with environmental data using advanced information systems will be supported.

Or. en

Justification

The aim to perform toxicological testing with the emphasis on replacement alternatives to animal testing requires the application of human-relevant approaches that better predict the human disease and toxicity pathway than animal-based testing.

Amendment 607

Fiona Hall, Kent Johansson

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.1 – paragraph 3

Text proposed by the Commission

In this way, existing and planned policies and programmes can be assessed and policy support provided. Similarly, improved behavioural interventions,

Amendment

In this way, existing and planned policies and programmes can be assessed and policy support provided. Similarly, improved behavioural interventions,

prevention and education programmes can be developed including those pertaining to health literacy in nutrition, vaccination and other primary care interventions.

prevention and education programmes can be developed including those pertaining to health literacy in nutrition, vaccination and other primary care interventions. ***'Health-in-all' approaches (such as those addressing the environment and the work place) can likewise be developed in order to minimise risk factors.***

Or. en

Amendment 608

Peter Liese, Herbert Reul, Markus Pieper, Angelika Niebler, Werner Langen, Christian Ehler, Daniel Caspary, Konrad Szymański, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.2 – paragraph 1

Text proposed by the Commission

The development of screening programmes depends on the identification of early biomarkers of risk and of disease onset, and their deployment depends on the testing and validation of screening methods and programmes. Identifying individuals and populations at high-risk of disease will allow personalised, stratified and collective strategies for efficacious and cost effective disease prevention to be developed.

Amendment

The development of screening programmes depends on the identification of early biomarkers of risk and of disease onset, and their deployment depends on the testing and validation of screening methods and programmes. Identifying individuals and populations at high-risk of disease will allow personalised, stratified and collective strategies for efficacious and cost effective disease prevention to be developed. ***In this connection, priority will be given to screening programmes where prevention or therapy for the patient concerned are available or are likely to be developed.***

Or. de

Amendment 609

Henri Weber

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.3 – paragraph 1

Text proposed by the Commission

Human populations are under threat from new and emerging infections (including those resulting from climate change), from drug resistance to existing pathogens and from other direct and indirect consequences of climate change. Improved methods for surveillance, early warning networks, health service organisation and preparedness campaigns are needed for the modelling of epidemics, for effective pandemic response, for responses to non infectious disease consequences of climate change, as are efforts to maintain and enhance capabilities to combat drug resistant infectious disease.

Amendment

Human populations are under threat from new and emerging infections (including those resulting from climate change), from drug resistance to existing pathogens and from other direct and indirect consequences of climate change. Improved methods for surveillance, early warning networks, health service organisation and preparedness campaigns are needed for the modelling of epidemics, for effective pandemic response, for responses to non infectious disease consequences of climate change, as are efforts to maintain and enhance capabilities to combat drug-resistant infectious disease. ***In order to face up to these global challenges, the EU will, in partnership with the countries concerned, implement measures aimed at achieving concrete results in health policy, improving health care services and supporting their own research capacity.***

Or. fr

Amendment 610

Jean-Pierre Audy, Gaston Franco, Françoise Grossetête, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.3 – paragraph 1

Text proposed by the Commission

Human populations are under threat from new and emerging infections (including those resulting from climate change), from drug resistance to existing pathogens and from other direct and indirect consequences of climate change. Improved methods for surveillance, early warning networks, health service organisation and preparedness campaigns are needed for the modelling of epidemics, for effective pandemic response, for responses to non

Amendment

Human populations are under threat from new and emerging infections (including those resulting from climate change), from drug resistance to existing pathogens and from other direct and indirect consequences of climate change. Improved methods for surveillance, early warning networks, health service organisation and preparedness campaigns are needed for the modelling of epidemics, for effective pandemic response, for responses to non

infectious disease consequences of climate change, as are efforts to maintain and enhance capabilities to combat drug resistant infectious disease.

infectious disease consequences of climate change, as are efforts to maintain and enhance capabilities to combat drug resistant infectious disease. ***In order to face up to these global challenges, the EU will, in partnership with the countries concerned, implement measures aimed at achieving concrete results in health policy, improving health care services and supporting their own research capacity.***

Or. fr

Justification

The challenges identified here are of a global nature. Reference should be made to the EU's general policy on this issue as set out in the Commission Communication of 31 March 2010: 'The EU Role in Global Health' (COM(2010)0128 final) approved by the Council on 10 May 2010.

Amendment 611

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.3 – paragraph 1

Text proposed by the Commission

Human populations are under threat from new and emerging infections (including those resulting from climate change), from drug resistance to existing pathogens and from other direct and indirect consequences of climate change. Improved methods for surveillance, early warning networks, health service organisation and preparedness campaigns are needed for the modelling of epidemics, for effective pandemic response, for responses to non infectious disease consequences of climate change, as are efforts to maintain and enhance capabilities to combat drug resistant infectious disease.

Amendment

Human populations are under threat from new and emerging infections (including those resulting from climate change), from drug resistance to existing pathogens and from other direct and indirect consequences of climate change. Improved methods for surveillance, early warning networks, health service organisation and preparedness campaigns are needed for the modelling of epidemics, for effective pandemic response, for responses to non infectious disease consequences of climate change, as are efforts to maintain and enhance capabilities to combat drug resistant infectious disease. ***In order to face up to these global challenges, the EU will, in partnership with the countries***

concerned, implement measures aimed at achieving concrete results in health policy, improving health care services and supporting their own research capacity.

Or. fr

Justification

The challenges identified here are of a global nature. Reference should be made to the EU's general policy on this issue as set out in the Commission Communication of 31 March 2010: 'The EU Role in Global Health' (COM(2010)0128 final) approved by the Council on 10 May 2010.

Amendment 612

Patrizia Toia

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.3 – paragraph 1

Text proposed by the Commission

Human populations are under threat from new and emerging infections (including those resulting from climate change), from drug resistance to existing pathogens and from other direct and indirect consequences of climate change. **Improved** methods for surveillance, early warning networks, health service organisation and preparedness campaigns are needed for the modelling of epidemics, for effective pandemic response, for responses to non infectious disease consequences of climate change, as are efforts to maintain and enhance capabilities to combat drug resistant infectious disease.

Amendment

Human populations are under threat from new and emerging infections (including those resulting from climate change), from drug resistance to existing pathogens and from other direct and indirect consequences of climate change. **Predictive mathematical theories and improved** methods for surveillance, early warning networks, health service organisation and preparedness campaigns are needed for the modelling of epidemics, for effective pandemic response, for responses to non infectious disease consequences of climate change, as are efforts to maintain and enhance capabilities to combat drug resistant infectious disease.

Or. en

Amendment 613

Vicky Ford, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.4 – paragraph 1

Text proposed by the Commission

There is a need for an improved understanding of health and disease, in people of all ages, so that new and better prevention measures, diagnosis and treatments can be developed.
Interdisciplinary, translational research on the patho-physiology of disease is essential to improve the understanding of all aspects of disease processes, including a re-classification of normal variation and disease based on molecular data, and to validate and use research results in clinical applications.

Amendment

There is a need for an improved understanding of health and disease, in people of all ages, so that new and better prevention measures, diagnosis and treatments can be developed. **Fundamental excellent research and interdisciplinary**, translational research on the patho-physiology of disease is essential to improve the understanding of all aspects of disease processes, including a re-classification of normal variation and disease based on molecular data, and to validate and use research results in clinical applications.

Or. en

Amendment 614

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.5 – introductory part

Text proposed by the Commission

1.5. Developing better preventive vaccines

Amendment

1.5. Developing **new and** better preventive vaccines

Or. en

Amendment 615

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.5 – introductory part

Text proposed by the Commission

1.5. Developing better preventive vaccines

Amendment

1.5. Developing better preventive vaccines

Amendment 616

Gaston Franco, Françoise Grossetête

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.5 – paragraph 1

Text proposed by the Commission

There is a need for more effective preventive vaccines (or alternative preventive interventions) and evidence-based vaccination schemes for an expanded range of diseases. This relies on a better understanding of disease and disease processes and their consequent epidemics, and that clinical trials and associated studies are undertaken.

Amendment

There is a need for more effective preventive vaccines (or alternative preventive interventions) and evidence-based vaccination schemes for an expanded range of diseases. This relies on a better understanding of disease and disease processes and their consequent epidemics, ***more predictive, effective pre-clinical safety assessments (such as coherent approaches combined with other, non-animal or reductive approaches)***, and that clinical trials and associated studies are undertaken.

Or. fr

Justification

Vaccine development is already undergoing a paradigm shift, with the use of more predictive, effective approaches without recourse to animals.

Amendment 617

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.5 – paragraph 1

Text proposed by the Commission

There is a need for more effective preventive vaccines (or alternative preventive interventions) and evidence-

Amendment

There is a need for more effective ***drugs and*** preventive vaccines (or alternative preventive interventions) and evidence-

based vaccination schemes for an expanded range of diseases. This relies on a better understanding of disease and disease processes and their consequent epidemics, and that clinical trials and associated studies are undertaken.

based vaccination schemes for an expanded range of diseases. This relies on a better understanding of disease and disease processes and their consequent epidemics, and that clinical trials and associated studies are undertaken.

Or. en

Amendment 618

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.5 – paragraph 1

Text proposed by the Commission

There is a need for more effective preventive vaccines (or alternative preventive interventions) and evidence-based vaccination schemes for an expanded range of diseases. This relies on a better understanding of disease and disease processes and their consequent epidemics, and that clinical trials and associated studies are undertaken.

Amendment

There is a need for more effective preventive vaccines (or alternative preventive interventions) and evidence-based vaccination schemes for an expanded range of diseases. This relies on a better understanding of disease and disease processes and their consequent epidemics, ***more predictive and efficient pre-clinical safety assessments (e.g. consistency approach together with other non-animal or reduction approaches)*** and that clinical trials and associated studies are undertaken.

Or. en

Justification

In the development of vaccines a paradigm shift is already taking place towards more predictive and efficient non-animal approaches.

Amendment 619

Peter Liese, Markus Pieper, Herbert Reul, Angelika Niebler, Werner Langen, Christian Ehler, Daniel Caspary, Konrad Szymański, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.6 – paragraph 1

Text proposed by the Commission

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective diagnostics. Innovative and existing technologies will be developed with the goal of significantly improving disease outcomes through earlier, more accurate diagnosis and by allowing for more patient-adapted treatment.

Amendment

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective diagnostics. Innovative and existing technologies will be developed with the goal of significantly improving disease outcomes through earlier, more accurate diagnosis and by allowing for more patient-adapted treatment. ***In this connection, priority will be given to diagnostic methods where prevention or therapeutic measures for the patients concerned are available or are likely to be available in the near future.***

Or. de

Amendment 620

Jean-Pierre Audy, Gaston Franco, Françoise Grossetête, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.6 – paragraph 1

Text proposed by the Commission

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective diagnostics. Innovative and existing technologies will be developed with the goal of ***significantly improving disease outcomes through*** earlier, more accurate diagnosis ***and by*** allowing for more patient-adapted treatment.

Amendment

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective diagnostics. Innovative and existing technologies will be developed ***so that they can be adapted to different environmental and socio-economic conditions,*** with the goal of ***ensuring*** earlier, more accurate diagnosis allowing for more patient-adapted treatment.

Or. fr

Justification

Reliable diagnostic tools and affordability are essential for the monitoring and effective

treatment of infectious diseases in developing countries.

Amendment 621

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.6 – paragraph 1

Text proposed by the Commission

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective diagnostics. Innovative and existing technologies will be developed with the goal of significantly improving disease outcomes through earlier, more accurate diagnosis and by allowing for more patient-adapted treatment.

Amendment

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective diagnostics. Innovative and existing technologies will be developed ***so that they can be adapted to different environmental and socio-economic conditions***, with the goal of ***ensuring*** earlier, more accurate diagnosis allowing for more patient-adapted treatment.

Or. fr

Justification

Reliable diagnostic tools and affordability are essential for the monitoring and effective treatment of infectious diseases in developing countries.

Amendment 622

Frédérique Ries, Françoise Grossetête

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.6 – paragraph 1

Text proposed by the Commission

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective diagnostics. Innovative and existing technologies will be developed with the goal of significantly improving disease outcomes through earlier, more accurate diagnosis and by allowing for more

Amendment

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective diagnostics. Innovative and existing technologies will be developed with the goal of significantly improving disease outcomes through earlier, more accurate diagnosis and by allowing for more

patient-adapted treatment.

patient-adapted treatment. ***Mutations causing genetic diseases will be identified and the availability of diagnostic tests will be significantly increased.***

Or. en

Justification

These activities are needed in order to be coherent with and participate to the objectives of the International Rare Diseases Research Consortium (IRDiRC).

Amendment 623

Cristina Gutiérrez-Cortines, Pilar del Castillo Vera, Alejo Vidal-Quadras

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.6 – paragraph 1

Text proposed by the Commission

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective diagnostics. Innovative and existing technologies will be developed with the goal of significantly improving disease outcomes through earlier, more accurate diagnosis and by allowing for more patient-adapted treatment.

Amendment

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective ***in vitro and image*** diagnostics. Innovative and existing technologies will be developed with the goal of significantly improving disease outcomes through earlier, more accurate diagnosis and by allowing for more patient-adapted treatment.

Or. en

Justification

Proven diagnostic tools that are already working and are a strong field of research and that are evolving such as to reduce the time from the appearance of the symptoms to the diagnosis are to be supported under this proposal.

Amendment 624

Henri Weber

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.6 – paragraph 1

Text proposed by the Commission

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective diagnostics. Innovative and existing technologies will be developed with the goal of significantly improving disease outcomes through earlier, more accurate diagnosis and by allowing for more patient-adapted treatment.

Amendment

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective diagnostics. Innovative and existing technologies will be developed ***so that they can be adapted to different environmental and socio-economic conditions***, with the goal of ***ensuring*** earlier, more accurate diagnosis allowing for more patient-adapted treatment.

Or. fr

Amendment 625

Marisa Matias

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.6 – paragraph 1

Text proposed by the Commission

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective diagnostics. Innovative and existing technologies will be developed with the goal of significantly improving disease outcomes through earlier, more accurate diagnosis and by allowing for more ***patient-adapted*** treatment.

Amendment

An improved understanding of health, disease and disease processes at all ages is needed to develop new and more effective diagnostics. Innovative and existing technologies will be developed with the goal of significantly improving disease outcomes through earlier, more accurate diagnosis and by allowing for ***better and more accessible*** treatment.

Or. en

Amendment 626

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.8 – introductory part

Text proposed by the Commission

Amendment

1.8. **Treating** disease

1.8. **Developing adapted treatments and treating** disease

Or. en

Amendment 627

Peter Liese, Herbert Reul, Markus Pieper, Angelika Niebler, Werner Langen, Christian Ehler, Daniel Caspary, Konrad Szymański, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.8 – paragraph 1

Text proposed by the Commission

Amendment

There is a need to support the improvement of cross-cutting support technologies for drugs, vaccines and other therapeutic approaches, including transplantation, gene and cell therapy; to increase success in the drug and vaccine development process (including alternative methods to replace classical safety and effectiveness testing e.g. the development of new methods); to develop regenerative medicine approaches, including approaches based on stem cells; to develop improved medical and assistive devices and systems; to maintain and enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy. These improvements will facilitate the development of new, more efficient, effective and sustainable treatments for disease and for the management of disability.

There is a need to support the improvement of cross-cutting support technologies for drugs, vaccines and other therapeutic approaches, including transplantation, gene and cell therapy, ***particularly adult stem cell therapy, umbilical cord blood cell and iPS cell therapies***; to increase success in the drug and vaccine development process (including alternative methods to replace classical safety and effectiveness testing e.g. the development of new methods); to develop regenerative medicine approaches, including approaches based on stem cells; to develop improved medical and assistive devices and systems; to maintain and enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy. These improvements will facilitate the development of new, more efficient, effective and sustainable treatments for disease and for the management of disability. ***There is a need to develop ideas in the field of regenerative medicine,***

*particularly based on adult stem cells,
umbilical cord blood cells and iPS cells.*

Or. de

Amendment 628

Jean-Pierre Audy, Françoise Grossetête

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.8 – paragraph 1

Text proposed by the Commission

There is a need to support the improvement of cross-cutting support technologies for drugs, vaccines and other therapeutic approaches, including transplantation, gene and cell therapy; to increase success in the drug and vaccine development process (including alternative methods to replace classical safety and effectiveness testing e.g. the development of new methods); to develop regenerative medicine approaches, including approaches based on stem cells; to develop improved medical and assistive devices and systems; to maintain and enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy. These improvements will facilitate the development of new, more efficient, effective and sustainable treatments for disease and for the management of disability.

Amendment

There is a need to support the improvement of cross-cutting support technologies for drugs, **biotherapy**, vaccines and other therapeutic approaches, including transplantation, gene and cell therapy, **including inter-disciplinary approaches (e.g. biomathematics, bioinformatics and nuclear medicine)**; to increase success in the drug and vaccine development process (including alternative methods to replace classical safety and effectiveness testing e.g. the development of new methods); to develop regenerative medicine approaches, including approaches based on stem cells; to develop improved medical and assistive devices and systems; to maintain and enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy. These improvements will facilitate the development of new, more efficient, effective and sustainable treatments for disease and for the management of disability.

Or. fr

Justification

Biotherapies encompass technological advances in biomedical research which aim to develop new treatments which differ from traditional treatments. Interdisciplinarity is not sufficiently stressed. However, simultaneous research in disciplines such as mathematics, informatics, ethics and physics is often required in order to respond to joint and complex objectives such as health care.

Amendment 629 **Henri Weber**

Proposal for a decision **Annex 1 – section 3 – point 1 – point 1.8 – paragraph 1**

Text proposed by the Commission

There is a need to support the improvement of cross-cutting support technologies for drugs, vaccines and other therapeutic approaches, including transplantation, gene and cell therapy; to increase success in the drug and vaccine development process (including alternative methods to replace classical safety and effectiveness testing e.g. the development of new methods); to develop regenerative medicine approaches, including approaches based on stem cells; to develop improved medical and assistive devices and systems; to maintain and enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy. These improvements will facilitate the development of new, more efficient, effective and sustainable treatments for disease and for the management of disability.

Amendment

There is a need to support the improvement of cross-cutting support technologies for drugs, ***biotherapy***, vaccines and other therapeutic approaches, including transplantation, gene and cell therapy, ***including inter-disciplinary approaches (e.g. biomathematics, bioinformatics and nuclear medicine)***; to increase success in the drug and vaccine development process (including alternative methods to replace classical safety and effectiveness testing e.g. the development of new methods); to develop regenerative medicine approaches, including approaches based on stem cells; to develop improved medical and assistive devices and systems; to maintain and enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy. These improvements will facilitate the development of new, more efficient, effective and sustainable treatments for disease and for the management of disability.

Amendment 630**Philippe Lamberts**

on behalf of the Verts/ALE Group

Proposal for a decision**Annex 1 – section 3 – point 1 – point 1.8 – paragraph 1***Text proposed by the Commission*

There is a need to support the improvement of cross-cutting support technologies for drugs, vaccines and other therapeutic approaches, including *transplantation*, gene and cell therapy; to increase success in the drug and vaccine development process (including alternative methods to replace classical safety and effectiveness testing e.g. the development of *new* methods); to develop regenerative medicine approaches, including approaches based on stem cells; to develop improved medical and assistive devices and systems; to maintain and enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy. These improvements will facilitate the development of new, more efficient, effective and sustainable treatments for disease and for the management of disability.

Amendment

There is a need to support the improvement of cross-cutting support technologies for drugs, vaccines and other therapeutic approaches, including *allo-transplantation*, gene and cell therapy; to increase success in the drug and vaccine development process (including alternative methods to replace classical *animal-based* safety and effectiveness testing e.g. the development of *more predictive, human relevant* methods); to develop regenerative medicine approaches, including approaches based on stem cells; to develop improved medical and assistive devices and systems; to maintain and enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy. These improvements will facilitate the development of new, more efficient, effective and sustainable treatments for disease and for the management of disability.

Amendment 631**Vicky Ford**

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.8 – paragraph 1

Text proposed by the Commission

There is a need to support the improvement of cross-cutting support technologies for drugs, vaccines and other therapeutic approaches, including transplantation, gene and cell therapy; to increase success in the drug and vaccine development process (including alternative methods to replace classical safety and effectiveness testing e.g. the development of new methods); to develop regenerative medicine approaches, including approaches based on stem cells; to develop improved medical and assistive devices and systems; to maintain and enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy. These improvements will facilitate the development of new, more efficient, effective and sustainable treatments for disease and for the management of disability.

Amendment

There is a need to support the improvement of cross-cutting support technologies for drugs, vaccines and other therapeutic approaches, including transplantation, gene and cell therapy; to increase success in the drug and vaccine development process (including alternative methods to replace classical safety and effectiveness testing e.g. the development of new methods); to develop regenerative medicine approaches, including approaches based on ***all types of*** stem cells; to develop improved medical and assistive devices and systems; to maintain and enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy. These improvements will facilitate the development of new, more efficient, effective and sustainable treatments for disease and for the management of disability.

Or. en

Amendment 632

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.8 – paragraph 1

Text proposed by the Commission

There is a need to support the improvement of cross-cutting support technologies for drugs, vaccines and other therapeutic approaches, including transplantation, gene

Amendment

There is a need to support the improvement of cross-cutting support technologies for drugs, vaccines and other therapeutic approaches, including transplantation, gene

and cell therapy; to increase success in the drug and vaccine development process (including alternative methods to replace classical safety and effectiveness testing e.g. the development of new methods); to develop regenerative medicine approaches, including approaches based on stem cells; to develop improved medical and assistive devices and systems; to maintain and enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy. These improvements will facilitate the development of new, more efficient, effective and sustainable treatments for disease and for the management of disability.

and cell therapy; to increase success in the drug and vaccine development process (including alternative methods to replace classical safety and effectiveness testing e.g. the development of new methods); to develop regenerative medicine approaches, including approaches based on stem cells; to develop improved medical and assistive devices and systems; to maintain and enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy. These improvements will facilitate the development of new, more efficient *and adapted*, effective and sustainable treatments for disease and for the management of disability.

Or. en

Amendment 633
Angelika Niebler

Proposal for a decision
Annex 1 – section 3 – point 1 – point 1.8 – paragraph 1

Text proposed by the Commission

There is a need to support the improvement of cross-cutting support technologies for drugs, vaccines and other therapeutic approaches, including transplantation, gene and cell therapy; to increase success in the drug and vaccine development process (including alternative methods to replace classical safety and effectiveness testing e.g. the development of new methods); to develop regenerative medicine approaches, including approaches based on stem cells; to develop improved medical and assistive devices and systems; to maintain and

Amendment

There is a need to support the improvement of cross-cutting support technologies for drugs, vaccines and other therapeutic approaches, including transplantation, gene and cell therapy; to increase success in the drug and vaccine development process (including alternative methods to replace classical safety and effectiveness testing e.g. the development of new methods); to develop regenerative medicine approaches, including approaches based on stem cells; to develop improved medical and assistive devices and systems; to maintain and

enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy. These improvements will facilitate the development of new, more efficient, effective and sustainable treatments for disease and for the management of disability.

enhance our ability to combat communicable, rare, major and chronic diseases and undertake medical interventions that depend on the availability of effective antimicrobial drugs; and to develop comprehensive approaches to treat co-morbidities at all ages and avoid poly-pharmacy *in due consideration of complementary and alternative medicine*. These improvements will facilitate the development of new, more efficient, effective and sustainable treatments for disease and for the management of disability.

Or. en

Amendment 634

Cristina Gutiérrez-Cortines, Pilar del Castillo Vera, Alejo Vidal-Quadras

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.8 – paragraph 1 a (new)

Text proposed by the Commission

Amendment

Research shall make it possible to improve advanced therapies and cellular therapies. This shall be focused on the treatment of chronic diseases.

Or. en

Amendment 635

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.9 – introductory part

Text proposed by the Commission

Amendment

1.9. Transferring knowledge to clinical practice and scalable innovation actions

1.9. Transferring knowledge to clinical practice and scalable innovation actions *including psychosocial aspects*

Amendment 636
Frédérique Ries, Françoise Grossetête

Proposal for a decision
Annex 1 – section 3 – point 1 – point 1.9 – paragraph 1

Text proposed by the Commission

Clinical trials are the means to transfer biomedical knowledge to application in patients and support for these will be provided, as well as for the improvement of their practice. Examples include the development of better methodologies to allow trials to focus on relevant population groups, including those suffering from other concomitant diseases and/or already undergoing treatment, the determination of comparative effectiveness of interventions and solutions, as well as enhancing the use of databases and electronic health records as data sources for trials and knowledge transfer. Similarly, support for the transfer of other types of interventions such as those related to independent living into real world environments will be provided.

Amendment

Clinical trials are the means to transfer biomedical knowledge to application in patients and support for these will be provided, as well as for the improvement of their practice. Examples include the development of better methodologies to allow trials to focus on relevant population groups, including those suffering from **rare diseases**, other concomitant diseases and/or already undergoing treatment, the determination of comparative effectiveness of interventions and solutions, as well as enhancing the use of databases and electronic health records as data sources for trials and knowledge transfer. ***Specific support should be ensured for the preclinical and/or clinical development of substances with a clear potential to address largely unmet medical needs, such as designated orphan drugs.*** Similarly, support for the transfer of other types of interventions such as those related to independent living into real world environments will be provided.

Or. en

Justification

These activities are needed in order to be coherent with and participate to the objectives of the International Rare Diseases Research Consortium (IRDiRC).

Amendment 637
Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.9 – paragraph 1

Text proposed by the Commission

Clinical trials are the means to transfer biomedical knowledge to application in patients and support for these will be provided, as well as for the improvement of their practice. Examples include the development of better methodologies to allow trials to focus on relevant population groups, including those suffering from other concomitant diseases and/or already undergoing treatment, the determination of comparative effectiveness of interventions and solutions, as well as enhancing the use of databases and electronic health records as data sources for trials and knowledge transfer. Similarly, support for the transfer of other types of interventions such as those related to independent living into real world environments will be provided.

Amendment

Clinical trials are the means to transfer biomedical knowledge to application in patients and support for these will be provided, as well as for the improvement of their practice. Examples include the development of better methodologies to allow trials to focus on relevant population groups, including those suffering from other concomitant diseases and/or already undergoing treatment, the determination of comparative effectiveness of interventions and solutions, as well as enhancing the use of databases and electronic health records as data sources for trials and knowledge transfer. Similarly, support for the transfer of other types of interventions such as those related to independent living into real world environments will be provided.

Ethical principles, and in particular the Helsinki Declaration, require that data from all research activity carried out on humans be made public.

Or. fr

Amendment 638

Marisa Matias

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.9 – paragraph 1

Text proposed by the Commission

Clinical trials are the means to transfer biomedical knowledge to application in patients and support for these will be provided, as well as for the improvement of their practice. Examples include the development of better methodologies to

Amendment

Clinical trials are the means to transfer biomedical knowledge to application in patients and support for these will be provided, as well as for the improvement of their practice. Examples include the development of better methodologies to

allow trials to focus on relevant population groups, including those suffering from other concomitant diseases and/or already undergoing treatment, the determination of comparative effectiveness of interventions and solutions, as well as enhancing the use of databases and electronic health records as data sources for trials and knowledge transfer. Similarly, support for the transfer of other types of interventions such as those related to independent living into real world environments will be provided.

allow trials to focus on relevant population groups, including those suffering from *rare diseases*, other concomitant diseases and/or already undergoing treatment, the determination of comparative effectiveness of interventions and solutions, as well as enhancing the use of databases and electronic health records as data sources for trials and knowledge transfer. Similarly, support for the transfer of other types of interventions such as those related to independent living into real world environments will be provided. *Specific support should be ensured for the preclinical and/or clinical development of substances with a clear potential to address largely unmet medical needs, such as designated orphan drugs.*

Or. en

Amendment 639

Peter Liese, Herbert Reul, Markus Pieper, Angelika Niebler, Werner Langen, Christian Ehler, Daniel Caspary, Konrad Szymański, Lambert van Nistelrooij, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.9 – paragraph 1

Text proposed by the Commission

Clinical trials are the means to transfer biomedical knowledge to application in patients and support for these will be provided, as well as for the improvement of their practice. Examples include the development of better methodologies to allow trials to focus on relevant population groups, including those suffering from other concomitant diseases and/or already undergoing treatment, the determination of comparative effectiveness of interventions and solutions, as well as enhancing the use of databases and electronic health records as data sources for trials and knowledge transfer. Similarly, support for the transfer

Amendment

Clinical trials are the means to transfer biomedical knowledge to application in patients and support for these will be provided, as well as for the improvement of their practice. Examples include the development of better methodologies to allow trials to focus on relevant population groups, including those suffering from other concomitant diseases and/or already undergoing treatment, the determination of comparative effectiveness of interventions and solutions, as well as enhancing the use of databases and electronic health records as data sources for trials and knowledge transfer. Similarly, support for the transfer

of other types of interventions such as those related to independent living into real world environments will be provided.

of other types of interventions such as those related to independent living into real world environments will be provided.

Particular importance will be given to clinical tests in the field of rare diseases and child illnesses including those associated with premature birth.

Or. de

Amendment 640

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.10 – introductory part

Text proposed by the Commission

Amendment

1.10. Better use of health data

1.10. Better ***collection and*** use of health data ***and standardised data analysis techniques***

Or. en

Amendment 641

Marisa Matias

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.10 – paragraph 1

Text proposed by the Commission

Amendment

The integration of infrastructures and information structures and sources (including those derived from cohort studies, protocols, data collections, indicators, etc.) as well as the standardisation, interoperability, storage, sharing of and access to data, will be supported to enable such data to be properly exploited. Attention should be given to data processing, knowledge management, modelling and visualisation.

The integration of infrastructures and information structures and sources (including those derived from cohort studies, protocols, data collections, indicators, etc.) as well as the standardisation, interoperability, storage, sharing of and access to data, will be supported to enable such data to be properly exploited. Attention should be given to data processing, knowledge management, modelling and visualisation, ***as well as to mechanisms ensuring the***

long-term sustainability of such infrastructures in order to make the best use of resources.

Or. en

Amendment 642

Zofija Mazej Kukovič, Lambert van Nistelrooij, Seán Kelly, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.11 – paragraph 1

Text proposed by the Commission

There is a need to support the development of scientific tools, methods and statistics for rapid, accurate and predictive assessment of the safety, efficacy and quality of health technologies including new drugs, biologics, advanced therapies and medical devices. This is particularly relevant for new developments in domains including those concerning vaccines, cell/tissue and gene therapies, organs and transplantation, specialist manufacturing, bio banks, new medical devices, diagnostic/treatment procedures, genetic testing, interoperability and e-health, including privacy aspects. Similarly, support for improved risk assessment methodologies, testing approaches and strategies relating to environment and health are required. There is also a need to support the development of relevant methods for assisting the assessment of ethical aspects of the above domains.

Amendment

There is a need to support the development of scientific tools, methods and statistics for rapid, accurate and predictive assessment of the safety, efficacy and quality of health technologies including new drugs, biologics, advanced therapies and medical devices. This is particularly relevant for new developments in domains including those concerning vaccines, cell/tissue and gene therapies, organs and transplantation, specialist manufacturing, bio banks, new medical devices, diagnostic/treatment procedures, genetic testing, interoperability, *telemedicine* and e-health, including privacy aspects. Similarly, support for improved risk assessment methodologies, testing approaches and strategies relating to environment and health are required. There is also a need to support the development of relevant methods for assisting the assessment of ethical aspects of the above domains.

Or. sl

Amendment 643

Petru Constantin Luhan

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.11 – paragraph 1

Text proposed by the Commission

There is a need to support the development of scientific tools, methods and statistics for rapid, accurate and predictive assessment of the safety, efficacy and quality of health technologies including new drugs, biologics, advanced therapies and medical devices. This is particularly relevant for new developments in domains including those concerning vaccines, cell/tissue and gene therapies, organs and transplantation, specialist manufacturing, bio banks, new medical devices, diagnostic/treatment procedures, genetic testing, interoperability and e-health, including privacy aspects. Similarly, support for improved risk assessment methodologies, testing approaches and strategies relating to environment and health are required. There is also a need to support the development of relevant methods for assisting the assessment of ethical aspects of the above domains.

Amendment

There is a need to support the development of scientific tools, methods and statistics, ***privacy impact assessments*** for rapid, accurate and predictive assessment of the safety, efficacy, ***protection of human rights*** and quality of health technologies including new drugs, biologics, advanced therapies and medical devices. This is particularly relevant for new developments in domains including those concerning vaccines, cell/tissue and gene therapies, organs and transplantation, specialist manufacturing, bio banks, new medical devices, diagnostic/treatment procedures, genetic testing, interoperability and e-health, including privacy aspects. Similarly, support for improved risk assessment methodologies, testing approaches and strategies relating to environment and health are required. There is also a need to support the development of relevant methods for assisting the assessment of ethical aspects of the above domains.

Or. en

Amendment 644

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.11 – paragraph 1

Text proposed by the Commission

There is a need to support the development of scientific tools, methods and statistics for rapid, accurate and predictive assessment of the safety, efficacy and quality of health technologies including

Amendment

There is a need to support the development, ***integration and use of new, more human-relevant*** scientific tools, methods and statistics for rapid, accurate and predictive assessment of the safety,

new drugs, biologics, advanced therapies and medical devices. This is particularly relevant for new developments in domains including those concerning vaccines, cell/tissue and gene therapies, organs and transplantation, specialist manufacturing, bio banks, new medical devices, diagnostic/treatment procedures, genetic testing, interoperability and e-health, including privacy aspects. Similarly, support for **improved** risk assessment methodologies, testing approaches and strategies relating to environment and health are required. There is also a need to support the development of relevant methods for assisting the assessment of ethical aspects of the above domains.

efficacy and quality of health technologies including new drugs, biologics, advanced therapies and medical devices. This is particularly relevant for new developments in domains including those concerning vaccines, cell/tissue and gene therapies, **human** organs and transplantation, specialist manufacturing, bio banks, new medical devices, diagnostic/treatment procedures, genetic testing, interoperability and e-health, including privacy aspects. Similarly, support for **modern hazard and** risk assessment methodologies, testing approaches and strategies relating to environment and health are required. There is also a need to support the development of relevant methods for assisting the assessment of ethical aspects of the above domains.

Or. en

Justification

Health technologies should make use of 21st century advances in human biological sciences and computational modelling to be relevant for human medical and safety needs.

Amendment 645

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.12 – introductory part

Text proposed by the Commission

1.12. **Active** ageing, independent and assisted living

Amendment

1.12. **Healthy and active** ageing, independent and assisted living

Or. en

Amendment 646

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.13 – paragraph 1

Text proposed by the Commission

Empowering individuals to improve and manage their health throughout life will result in cost savings to healthcare systems by enabling the management of chronic disease outside institutions and improve health outcomes. This requires research into behavioural and social models, social attitudes and aspirations in relation to personalised health technologies, mobile and/or portable tools, new diagnostics and personalised services which promote a healthy lifestyle, wellbeing, self-care, improved citizen/healthcare professional interaction, personalised programmes for disease and disability management, as well as support for knowledge infrastructures.

Amendment

Empowering individuals to improve and manage their health throughout life will result in cost savings to healthcare systems by enabling the management of chronic disease outside institutions and improve health outcomes. This requires research into behavioural and social models, social attitudes and aspirations in relation to personalised health technologies, mobile and/or portable tools, new diagnostics and personalised services which promote a healthy lifestyle, wellbeing, self-care, improved citizen/healthcare professional interaction, personalised programmes for disease and disability management ***to enhance patients' personal and social autonomy***, as well as support for knowledge infrastructures.

Or. es

Amendment 647

Henri Weber

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.13 a (new)

Text proposed by the Commission

Amendment

1.13(a) Individual empowerment for self-management of health

People's increasingly sedentary habits and the way lifestyles (at school, at work and in everyday life) are developing call for reflection and specific action concerning the place of physical activity, motor skills and exercise and issues of prevention and the treatment of conditions, whether these are physiological (reduced functional autonomy, obesity, chronic physical

conditions) or psychological (stress, symptoms of depression).

Or. fr

Amendment 648

Marisa Matias, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.14 – paragraph 1

Text proposed by the Commission

Supporting the management of chronic disease outside institutions also depends on improved cooperation between the providers of health and social or informal care. Research and innovative applications will be supported for decision making based on distributed information, and for providing evidence for large scale deployments and market exploitation of novel solutions, including interoperable tele-health and tele-care services. Research and innovation to improve the organisation of long-term care delivery will also be supported.

Amendment

Supporting the management of chronic disease outside institutions also depends on improved cooperation between the providers of health and social or informal care. Research and innovative applications will be supported for decision making based on distributed information, and for providing evidence for large scale deployments and market exploitation of novel solutions, including interoperable tele-health and tele-care services. Research and innovation to improve the organisation of long-term care delivery will also be supported. ***Interdisciplinary research in social sciences is also needed to provide the most suitable solutions for addressing the needs of the patients in their everyday life and to contribute to their empowerment, especially for patients living with chronic conditions, such as rare disease patients.***

Or. en

Amendment 649

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.14 – paragraph 1

Text proposed by the Commission

Supporting the management of chronic disease outside institutions also depends on improved cooperation between the providers of health and social or informal care. Research and innovative applications will be supported for decision making based on distributed information, and for providing evidence for large scale deployments and market exploitation of novel solutions, including interoperable tele-health and tele-care services. Research and innovation to improve the organisation of long-term care delivery will also be supported.

Amendment

Supporting the management of chronic disease outside institutions also depends on improved cooperation between the providers of health and social or informal care. Research and innovative applications will be supported for decision making based on distributed information, and for providing evidence for large scale deployments and market exploitation of novel solutions, including interoperable tele-health and tele-care services. Research and innovation to improve the organisation of **public health systems and** long-term care delivery will also be supported.

Or. es

Amendment 650
Angelika Niebler

Proposal for a decision
Annex 1 – section 3 – point 1 – point 1.14 – paragraph 1

Text proposed by the Commission

Supporting the management of chronic disease outside institutions also depends on improved cooperation between the providers of health and social or informal care. Research and innovative applications will be supported for decision making based on distributed information, and for providing evidence for large scale deployments and market exploitation of novel solutions, including interoperable tele-health and tele-care services. Research and innovation to improve the organisation of long-term care delivery will also be supported.

Amendment

Supporting the management of chronic disease outside institutions also depends on improved cooperation between the providers of health **comprising providers of complementary and alternative medicine and** social or informal care. Research and innovative applications will be supported for decision making based on distributed information, and for providing evidence for large scale deployments and market exploitation of novel solutions, including interoperable tele-health and tele-care services. Research and innovation to improve the organisation of long-term care delivery will also be supported.

Or. en

Amendment 651

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.14 – paragraph 1

Text proposed by the Commission

Supporting the management of chronic disease outside institutions also depends on improved cooperation between the providers of health and social or informal care. Research and innovative applications will be supported for decision making based on distributed information, and for providing evidence for large scale deployments and market exploitation of novel solutions, including interoperable tele-health and tele-care services. Research and innovation to improve the organisation of long-term care delivery will also be supported.

Amendment

Supporting the management of chronic disease outside institutions also depends on improved cooperation between the **patients, the** providers of health and social or informal care. Research and innovative applications will be supported for decision making based on distributed information, and for providing evidence for large scale deployments and market exploitation of novel solutions, including interoperable tele-health and tele-care services. Research and innovation to improve the organisation of long-term care delivery will also be supported.

Or. en

Amendment 652

Niki Tzavela

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.15 – paragraph 1

Text proposed by the Commission

There is a need to support the development of health technology assessment and health economics, as well as the of **gathering** evidence and dissemination of best practice and innovative technologies and approaches in the healthcare sector, including ICT and e-health applications. Comparative analyses of the reform of public health systems in Europe and in third countries and assessments of their

Amendment

There is a need to support the development of health technology assessment and health economics, as well as the **gathering** of evidence and dissemination of best practice and innovative technologies and approaches in the healthcare sector, including ICT and e-health applications. Comparative analyses of the reform of public health systems in Europe and in third countries and assessments of their

mid to long-term economic and social impacts will be supported. Analyses of future health workforce needs both in terms of numbers and required skills in relation to new patterns of care will be supported. Research on the evolution of health inequalities, of their interplay with other economic and social inequalities and on the effectiveness of policies aiming to reduce them in Europe and beyond will be supported. Finally, there is a need to support the assessment of patient safety solutions and quality assurance systems, including the role of patients on safety and quality of care.

mid to long-term economic and social impacts will be supported. Analyses of future health workforce needs both in terms of numbers and required skills in relation to new patterns of care will be supported. Research on the evolution of health inequalities, of their interplay with other economic and social inequalities and on the effectiveness of policies aiming to reduce them in Europe and beyond will be supported. Finally, there is a need to support the assessment of patient safety solutions and quality assurance systems, including the role of patients on safety and quality of care.

Or. en

Justification

Linguistic correction.

Amendment 653

Peter Liese, Angelika Niebler, Christian Ehler, Konrad Szymański, Maria Da Graça Carvalho, Markus Pieper, Werner Langen, Herbert Reul

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.15 a (new)

Text proposed by the Commission

Amendment

1.15a. Life sciences for medicine:

Priority should be given to research efforts which one Member State alone cannot undertake or cannot undertake as efficiently as the Union and which will directly benefit patients in the foreseeable future.

Or. de

Amendment 654

Bernd Lange

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.15 a (new)

Text proposed by the Commission

Amendment

1.15a. Impact of arts education on well-being, health and social behaviour

A major present-day challenge is to instil more enjoyment of life in Union citizens, particularly children, through artistic activities such as music, art, literature, etc., and to enhance their health, well-being and social behaviour.

Or. de

Justification

The positive impact of arts education on well-being, health and social behaviour should not be underestimated. There is strong potential for research in this field, and this potential should be recognised and utilised.

Amendment 655

Adam Gierek

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.16 – paragraph 1

Text proposed by the Commission

Amendment

Support provided will cover the full spectrum of activities from knowledge and technology transfer to large scale demonstration actions, leading to scalable solutions for Europe and beyond.

Support provided will cover the full spectrum of activities from knowledge and technology transfer to large scale demonstration actions, leading to scalable solutions for Europe and beyond. ***In order to overcome the challenges facing the EU's ageing societies, an appropriate, coordinated and strategic analysis of health policy objectives is vital. Such coordination can solve problems caused by the fragmentation and lack of consistency in the policies of Member States and enhance the use of scientific, personal and infrastructural potential throughout the biomedical research community and among those using its end***

products in medical treatments. In order for innovative health research to be successful, it is vital that all medical facilities have a long-term commitment to constantly improving research and the training of creative groups of young scientists through projects under the Marie Curie Actions programme. This development-focused strategy should support research processes leading towards a healthier and more efficient Europe through the involvement of European society in biomedical research and through the new opportunities and challenges that will be offered by the innovative end products of biomedical research. The strategic actions under Horizon 2020 can ensure that specialists have an input in future health policies from their very inception, speed up the introduction of innovations and increase the competitiveness of medical procedures used; they can also support cross-border cooperation between a greater number of scientists and specialists in various areas of medicine with a view to creating real savings for national health systems through scientific advances. Changes to the training of specialist doctors that restrict the monopoly currently held by doctors' professional associations in Member States should be carried out on the basis of a uniform, EU-wide system, and should be implemented in such a way as to ensure that healthcare training and research in Europe are based on the best possible procedures in use in medical research facilities that meet uniform training criteria. A high-level EU advisory board on health should carry out the strategic scientific coordination of healthcare research throughout the Horizon 2020 programme and support horizontal medical research carried out simultaneously in different research centres in the Member States. The aim of such strategic coordination would be to contribute to identifying vital medical

research and bringing future programmes under the umbrella of local Centres of Excellence that are run to the highest standards of excellence, which should ensure that specialists from various fields of medicine have a scientific input into this competitive policy area from its very inception and guarantee the cost-effectiveness of national healthcare systems. Furthermore, the aim of strategic scientific coordination will be to encourage other areas of scientific and technological research to play a role in innovative strategies created by modern biomedical research. By establishing Horizon 2020 internal strategic coordination in the area of health research issues, based upon top-level scientific advice, the EU advisory board will also provide the instruments needed for the intensive promotion of synergies and economies of scale in the area of healthcare. It will aim to achieve voluntary convergence between national healthcare policy funding agencies and the Commission on specific objectives, whenever appropriate, and to achieve strategic partnership at EU level between industry, national agencies and the Commission; furthermore, strategic convergence involving regulatory bodies and national health authorities will be pursued at programme level. The aim of such a systematic approach to research at all levels should be to ensure that specialist medical procedures are more widely available through the development of cheaper methods.

Or. pl

Justification

Positive synergy in the service of health is dependent upon the competent coordination of Member States' policies and upon convergences in the relevant training of specialists in various medical professions and of medical scientists.

Amendment 656

Salvador Sedó i Alabart, Ramon Tremosa i Balcells

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.16 – paragraph 1

Text proposed by the Commission

Support provided will cover the full spectrum of activities from knowledge and technology transfer to large scale demonstration actions, leading to scalable solutions for Europe and beyond.

Amendment

Support provided will cover the full spectrum of activities from knowledge and technology transfer to large scale demonstration actions, leading to scalable solutions for Europe and beyond. ***It should also take into account the important long term benefits of product development for patients in low-income countries, and match its funding accordingly. Product development through innovation can translate into concrete outcomes, with palpable results for society and poverty reduction with more investment in poverty-related and neglected diseases.***

Or. en

Amendment 657

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.16 – paragraph 1

Text proposed by the Commission

Support provided will cover the full spectrum of activities from knowledge and technology transfer ***to*** large scale demonstration actions, leading to scalable solutions for Europe and beyond.

Amendment

Support provided will cover the full spectrum of activities from ***capacity-building***, knowledge and technology transfer ***(including health policy), implementation, monitoring and assessment of*** large-scale demonstration actions, leading to scalable solutions for European and beyond.

Or. fr

Justification

Demonstration actions concerned with health are only possible in a clearly-defined political, regulatory and ethical context which should be in place in Europe and beyond.

Amendment 658

Henri Weber

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.16 – paragraph 1

Text proposed by the Commission

Support provided will cover the full spectrum of activities from knowledge and technology transfer to large scale demonstration actions, leading to scalable solutions for Europe and beyond.

Amendment

Support provided will cover the full spectrum of activities from **capacity-building**, knowledge and technology transfer **(including health policy), implementation, monitoring and assessment of** large-scale demonstration actions, leading to scalable solutions for European and beyond.

Or. fr

Amendment 659

Jean-Pierre Audy, Gaston Franco, Françoise Grossetête, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 1 – point 1.16 – paragraph 1

Text proposed by the Commission

Support provided will cover the full spectrum of activities from knowledge and technology transfer to large scale demonstration actions, leading to scalable solutions for Europe and beyond.

Amendment

Support provided will cover the full spectrum of activities from **capacity-building**, knowledge and technology transfer **(including health policy), implementation, monitoring and assessment of** large-scale demonstration actions, leading to scalable solutions for European and beyond.

Or. fr

Justification

Demonstration actions concerned with health are only possible in a clearly-defined political, regulatory and ethical context which should be in place in Europe and beyond.

Amendment 660

Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 2 – introductory part

Text proposed by the Commission

Amendment

2. **Food** security, sustainable agriculture, marine and maritime research **and the bio-economy**

2. **European bio-economy challenges: food** security **including safety**, sustainable agriculture **and forestry**, marine and maritime research

Or. en

Amendment 661

Amalia Sartori

Proposal for a decision

Annex 1 – section 3 – point 2 – introductory part

Text proposed by the Commission

Amendment

2. **Food** security, sustainable agriculture, marine and maritime research and **the bio-economy**

2. **Bioeconomy: food** security, sustainable agriculture **and forestry**, marine and maritime research and **bio-based industries**

Or. en

Justification

According to the European strategy "Innovation for Sustainable Growth: A Bioeconomy for Europe", the Bioeconomy encompasses the production of renewable biological resources and their conversion into food, feed, bio-based products and bioenergy. The Bioeconomy includes four main sectors that should be supported by the "Bioeconomy" grand challenge: agriculture and forestry; fisheries and aquaculture; bio-based industries and food.

Amendment 662

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – introductory part

Text proposed by the Commission

2. Food security, sustainable agriculture, marine and maritime research and the bio-economy

Amendment

2. Food security, **quality and safety**, sustainable agriculture, marine and maritime research and the bio-economy

Or. en

Amendment 663

Kent Johansson, Fiona Hall

Proposal for a decision

Annex 1 – section 3 – point 2 – introductory part

Text proposed by the Commission

2. **Food** security, sustainable agriculture, marine and maritime research and **the bio-economy**

Amendment

2. **Bioeconomy: food** security, sustainable agriculture **and forestry**, marine and maritime research and **bio-based industries**

(This amendment applies throughout the text. Adopting it will necessitate corresponding changes throughout.)

Or. en

Justification

According to the European strategy “Innovating for Sustainable Growth: A Bioeconomy for Europe”, the Bioeconomy includes four main sectors that should be supported by the “Bioeconomy” grand challenge: agriculture and forestry; fisheries and aquaculture; bio-based industries and food. This title should therefore reflect the definition developed by the European Commission.

Amendment 664

Zofija Mazej Kukovič, Lambert van Nistelrooij, Seán Kelly, Maria Da Graça Carvalho

Proposal for a decision
Annex 1 – section 3 – point 2 – introductory part

Text proposed by the Commission

2. Food security, sustainable agriculture, marine and **maritime** research and the bio-economy

Amendment

2. Food **safety, healthy food and food** security, sustainable agriculture, marine and **mountain** research and the bio-economy

Or. sl

Amendment 665
Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision
Annex 1 – section 3 – point 2 – point 2.1 – introductory part

Text proposed by the Commission

2.1. Sustainable agriculture and forestry

Amendment

2.1. Sustainable agriculture, **including livestock farming** and forestry

Or. en

Amendment 666
Philippe Lamberts
on behalf of the Verts/ALE Group

Proposal for a decision
Annex 1 – section 3 – point 2 – point 2.1 – paragraph 1

Text proposed by the Commission

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time supporting the development of thriving rural livelihoods. Research and innovation will provide options for integrating agronomic

Amendment

Appropriate knowledge, tools, services and innovations are necessary to support more productive **in the long term**, resource-efficient and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver **and maintain** ecosystems services while at the same time supporting the development of thriving rural livelihoods. . **The aim is that of**

and environmental goals into sustainable production, thus: increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments; decreasing dependence from international plant derived protein imports to Europe; increasing the level of biodiversity in primary production systems.

establishing food production systems that, rather than degrading the natural resources they depend upon, strengthen, reinforce and nourish the resource base, which would allow sustainable wealth generation. Research and innovation will provide options for integrating agronomic and environmental goals into sustainable production, thus: increasing ***long-term*** productivity and ***improving*** resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments; decreasing dependence from international plant derived protein imports to Europe; increasing the level of biodiversity in primary production systems ***and reducing the impact of those systems on biodiversity.***

Or. en

Amendment 667

Giles Chichester, Vicky Ford

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – paragraph 1

Text proposed by the Commission

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time supporting the development of thriving rural livelihoods. Research and innovation will provide options for integrating agronomic and environmental goals into sustainable production, ***thus***: increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases

Amendment

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time supporting the development of thriving rural livelihoods. Research and innovation will provide options for integrating agronomic and environmental goals into ***more*** sustainable production, ***such as: enhancing the genetical potential of plants to better adapt to biotic and abiotic***

(GHGs) emissions; **reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments**; decreasing dependence from international plant derived protein imports to Europe; increasing the level of biodiversity in primary production systems.

stresses; increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; **enhancing nutrient and water use efficiency**; decreasing dependence from international plant derived protein imports to Europe; increasing the level of biodiversity in primary production systems.

Or. en

Amendment 668

Salvador Sedó i Alabart, Ramon Tremosa i Balcells

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – paragraph 1

Text proposed by the Commission

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time supporting the development of thriving rural livelihoods. Research and innovation will provide options for integrating agronomic and environmental goals into sustainable production, thus: increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments; decreasing dependence from international plant derived protein imports to Europe; increasing the level of biodiversity in primary production systems.

Amendment

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time supporting the development of thriving rural livelihoods. Research and innovation will provide options for integrating agronomic and environmental goals into sustainable, **affordable and nutritious** production, thus: increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments; decreasing dependence from international plant derived protein imports to Europe; increasing the level of biodiversity in primary production systems, **to better understand and develop responses to the ways we generate, distribute, market, consume and regulate food production.**

Or. en

Amendment 669

Marisa Matias, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – paragraph 1

Text proposed by the Commission

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time **supporting** the **development** of thriving rural livelihoods. Research and innovation will provide options for integrating agronomic and environmental goals into sustainable production, thus: increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments; decreasing dependence from international plant derived protein imports to Europe; increasing **the level of biodiversity in primary production systems**.

Amendment

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient, **resource-protecting** and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time **preserve** the **natural resource base, biodiversity and support** of thriving rural livelihoods. Research and innovation will provide options for integrating agronomic and environmental goals into sustainable production, thus: increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments; decreasing dependence from international plant derived protein imports to Europe; increasing **agricultural systems and landscapes, recycling of nutrients and organic matter and preserving water and soil resources, thereby improving adaptive capacities of farmers with regard to climate change and uncertainties**.

Or. en

Amendment 670

Corinne Lepage

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – paragraph 1

Text proposed by the Commission

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time **supporting** the **development of** thriving rural livelihoods. Research and innovation will provide options for integrating agronomic and environmental goals into sustainable production, thus: increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments; decreasing dependence from international plant derived protein imports to Europe; increasing **the level of** biodiversity in **primary production** systems.

Amendment

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient, **resource-protecting** and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time **preserve the natural resource base and support** thriving rural livelihoods. Research and innovation will provide options for integrating agronomic and environmental goals into sustainable production, **and food systems** thus: increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments; decreasing dependence from international plant derived protein imports **and other materials** to Europe; increasing biodiversity in **agricultural systems and landscapes, recycling of nutrients and organic matter and preserving water and soil resources, thereby improving adaptative capacities of farmers with regard to climate change and uncertainties.**

Or. en

Amendment 671

Cristina Gutiérrez-Cortines, Pilar del Castillo Vera, Alejo Vidal-Quadras

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – paragraph 1

Text proposed by the Commission

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient and resilient

Amendment

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient and resilient

agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time supporting the development of thriving rural livelihoods. Research and innovation will provide options for integrating agronomic and environmental goals into sustainable production, **thus**: increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; **reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments**; decreasing dependence from international plant derived protein imports to Europe; increasing the level of biodiversity in primary production systems.

agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time supporting the development of thriving rural livelihoods. Research and innovation will provide options for integrating agronomic and environmental goals into **more** sustainable production, **such as**: **enhancing the genetical potential of plants to better adapt to biotic and abiotic stresses**; increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; **enhancing nutrient and water use efficiency**; decreasing dependence from international plant derived protein imports to Europe; increasing the level of biodiversity in primary production systems.

Or. en

Justification

“thus” replaced by “such as”, to be less restrictive, more positive and broader.

Amendment 672

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – paragraph 1

Text proposed by the Commission

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time supporting the development of thriving rural livelihoods. Research and innovation will provide options for integrating agronomic and environmental goals into sustainable production, thus: increasing productivity

Amendment

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time supporting the development of thriving rural livelihoods, **safeguarding consumer health and reducing the environmental impact**. Research and innovation will provide options for integrating agronomic

and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments; decreasing dependence from international plant derived protein imports to Europe; increasing the level of biodiversity in primary production systems.

and environmental goals into sustainable production, thus: increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments; decreasing dependence from international plant derived protein imports to Europe; increasing the level of biodiversity in primary production systems.

Or. es

Amendment 673

Kent Johansson, Fiona Hall

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – paragraph 1

Text proposed by the Commission

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time supporting the development of thriving rural livelihoods. Research and innovation will provide options for integrating agronomic and environmental goals into sustainable production, thus: increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments; decreasing dependence from international plant derived protein imports to Europe; increasing **the level of** biodiversity in primary production systems.

Amendment

Appropriate knowledge, tools, services and innovations are necessary to support more productive, resource-efficient, **resource-protecting** and resilient agriculture and forestry systems that supply sufficient food, feed, biomass and other raw-materials and deliver ecosystems services while at the same time **preserve the natural resource base, biodiversity and** supporting the development of thriving rural livelihoods. Research and innovation will provide options for integrating agronomic and environmental goals into sustainable production **and food system**, thus: increasing productivity and resource efficiency of agriculture; reducing agricultural greenhouse gases (GHGs) emissions; reducing leaching of nutrients from cultivated lands into terrestrial and aquatic environments; decreasing dependence from international plant derived protein imports to Europe; increasing biodiversity in primary

production systems.

Or. en

Amendment 674

Giles Chichester, Vicky Ford

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.1 – introductory part

Text proposed by the Commission

Amendment

2.1.1. Increasing production efficiency and *cop***ing with climate change, while ensuring** sustainability and resilience

2.1.1. Increasing production efficiency, **food quality and safety**, sustainability and resilience, **cop**ing with climate change****

Or. en

Amendment 675

Cristina Gutiérrez-Cortines, Lambert van Nistelrooij, Pilar del Castillo Vera, Alejo Vidal-Quadras

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.1 – introductory part

Text proposed by the Commission

Amendment

2.1.1. Increasing production efficiency and coping with climate change, while ensuring sustainability and resilience

2.1.1. Increasing production efficiency, **food quality, safety** and coping with climate change, while ensuring sustainability and resilience

Or. en

Justification

Food quality and safety such as health of plants, sensorial and nutrition characteristics (vitamins, micronutrients).

Amendment 676

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.1 – paragraph 1

Text proposed by the Commission

Activities will enhance productivity as well as the adaptive capacity of plants, animals and production systems to cope with rapidly changing environmental/climatic conditions and increasingly scarce natural resources. The resulting innovations will help to move towards a low energy, low emission and low waste economy, along the entire food and feed supply chain. In addition to contributing to food security, new opportunities will be created for the use of biomass and by-products from agriculture and forestry for a wide range of non-food applications.

Amendment

Activities will enhance productivity as well as the adaptive capacity of plants, animals and production systems to cope with rapidly changing environmental/climatic conditions and increasingly scarce natural resources. The resulting innovations will help to move towards a low energy, low emission and low waste economy, along the entire food and feed supply chain. In addition to contributing to food security **and consumer health**, new opportunities will be created for the use of biomass and by-products from agriculture and forestry for a wide range of non-food applications.

Or. es

Amendment 677

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.1 – paragraph 1

Text proposed by the Commission

Activities will enhance productivity as well as the adaptive capacity of plants, animals and production systems to cope with rapidly changing environmental/climatic conditions and increasingly scarce natural resources. The resulting innovations will help to move towards a low energy, low emission and low waste economy, along the entire food and feed supply chain. In addition to contributing to food security, new opportunities will be created for the use of biomass and by-products from agriculture and forestry for a wide range of non-food applications.

Amendment

Activities will enhance **long-term** productivity as well as the adaptive capacity of plants, animals and production systems to cope with rapidly changing environmental/climatic conditions and increasingly scarce natural resources. The resulting innovations will help to move towards a low energy, low **external input**, **low** emission and low waste economy, along the entire food and feed supply chain. In addition to contributing to food security, new opportunities will be created for the use of biomass and by-products from agriculture and forestry for a wide range of non-food applications.

Amendment 678**Philippe Lamberts**

on behalf of the Verts/ALE Group

Proposal for a decision**Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.1 – paragraph 2***Text proposed by the Commission*

Multi-disciplinary approaches will be sought to improve the performance of plants, animals, micro-organisms, while ensuring efficient resource use (water, nutrients, energy) and the ecological integrity of rural areas. Emphasis will be placed on integrated and diverse production systems and **agronomic practices, including the use of precision technologies and ecological intensification approaches to benefit both conventional and organic agriculture.** Genetic improvement of plants and animals for adaptation and productivity traits will call for **all appropriated** conventional and modern breeding approaches and for a better **use** of genetic resources. Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity. Animal and plant health will be promoted and **integrated disease/pest** control measures will be further developed. Strategies for the eradication of animal diseases including zoonoses will be tackled **along with research on** antimicrobial resistance. Studying the effects of practices on animal welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address relevant biological questions as well as to support the development and implementation of Union policies.

Amendment

Multi- and transdisciplinary approaches **utilizing the expertise and experience of actors along the whole supply chain** will be sought to improve the performance of plants, animals, micro-organisms, while ensuring efficient resource use (water, nutrients, energy) and the ecological integrity **and vitality** of rural areas. Emphasis will be placed on integrated and diverse production systems and **agro-ecological-economic** practices. Genetic improvement of plants and animals for adaptation and productivity traits will call for **sustainable** conventional and modern breeding approaches and for a better **conservation** of genetic resources, **for adaptation to scarce resources, reduced pesticide use and local environmental conditions.** Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity. Animal and plant health will be promoted and **biological** control measures will be further developed. Strategies for the eradication of animal diseases including zoonoses will be tackled, **and an integrated approach to antimicrobial resistance linked high density animal production system.** Studying the effects of practices on animal welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address relevant biological questions as well as to support the development and

implementation of Union policies. ***Any production system that degrades the natural resource base of the system will not be sustainable, nor productive in the long term and therefore not competitive.***

Or. en

Amendment 679
Corinne Lepage

Proposal for a decision
Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.1 – paragraph 2

Text proposed by the Commission

Multi-disciplinary approaches will be sought to improve the performance of plants, animals, micro-organisms, while ensuring efficient resource use (water, nutrients, energy) and the ecological integrity of rural areas. Emphasis will be placed on integrated and diverse production systems and agronomic practices, including the use of precision technologies and ecological intensification approaches to benefit both conventional and organic agriculture. Genetic improvement of plants and animals for adaptation and productivity traits will call for all appropriated conventional and modern breeding approaches and for a better use of genetic resources. Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity. Animal and plant health will be promoted and integrated disease/pest control measures will be further developed. Strategies for the eradication of animal diseases including zoonoses will be tackled along with research on antimicrobial resistance. Studying the effects of practices on animal welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address

Amendment

Multi- and transdisciplinary approaches ***utilizing the expertise and experience of actors along the whole supply chain*** will be sought to improve the performance of plants, animals, micro-organisms, while ensuring efficient resource use (water, nutrients, energy) and the ecological integrity ***and vitality*** of rural areas. Emphasis will be placed on integrated and diverse production systems and agronomic practices, including the use of precision technologies, ***agro-ecological and organic farming methods, and*** ecological intensification approaches to benefit both conventional and organic agriculture. Genetic improvement of plants and animals for adaptation and productivity traits will call for all appropriated conventional and modern breeding approaches and for a better use of genetic resources ***for adaptation to scarce resources, reduced pesticide use and local environmental conditions***. Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity. Animal and plant health will be promoted and integrated disease/pest control measures will be further developed. Strategies for the eradication of animal diseases including zoonoses will be tackled

relevant biological questions as well as to support the development and implementation of Union policies.

along with research on antimicrobial resistance. Studying the effects of practices on animal welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address relevant biological questions as well as to support the development and implementation of Union policies.

Or. en

Amendment 680

Giles Chichester, Vicky Ford

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.1 – paragraph 2

Text proposed by the Commission

Multi-disciplinary approaches will be sought to improve the performance of plants, animals, micro-organisms, while ensuring efficient resource use (water, nutrients, energy) and the ecological integrity of rural areas. Emphasis will be placed on integrated and diverse production systems and agronomic practices, including the use of precision technologies and ecological intensification approaches to benefit ***both conventional and organic*** agriculture. Genetic improvement of plants and animals for adaptation and productivity traits will call for all ***appropriated conventional and modern*** breeding ***approaches and*** for a better use of genetic resources. Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity. Animal and plant health will be promoted and integrated disease/pest control measures will be further developed. Strategies for the eradication of animal diseases including zoonoses will be tackled along with research on antimicrobial resistance. Studying the effects of practices on animal

Amendment

Multi-disciplinary approaches will be sought to improve the performance of plants, animals, micro-organisms, while ensuring efficient resource use (water, nutrients, energy) and the ecological integrity of rural areas. Emphasis will be placed on integrated and diverse production systems and agronomic practices, including the use of precision technologies and ecological intensification approaches to benefit ***all types of*** agriculture. Genetic improvement of plants and animals for adaptation and productivity traits will call for all ***available*** breeding ***technologies*** for a better use of genetic resources, ***opening avenues for the production of new and diversified products (food, feed, materials, energy), which meet the increasing demand for low-carbon short-chain delivery systems.*** Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity. Animal and plant health will be promoted and integrated disease/pest control measures will be further developed. Strategies for the eradication of animal diseases including

welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address relevant biological questions *as well as to support the development and implementation of Union policies.*

zoonoses will be tackled along with research on antimicrobial resistance. Studying the effects of practices on animal welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address relevant biological questions *and in addition contributing to Europe's leading role in global initiatives.*

Or. en

Amendment 681

Kent Johansson, Fiona Hall

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.1 – paragraph 2

Text proposed by the Commission

Multi-disciplinary approaches will be sought to improve the performance of plants, animals, micro-organisms, while ensuring efficient resource use (water, nutrients, energy) and the ecological integrity of rural areas. Emphasis will be placed on integrated and diverse production systems and agronomic practices, including the use of precision technologies and ecological intensification approaches to benefit both conventional and organic agriculture. Genetic improvement of plants and animals for adaptation and productivity traits will call for all appropriated conventional and modern breeding approaches and for a better use of genetic resources. Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity. Animal and plant health will be promoted and integrated disease/pest control measures will be further developed. Strategies for the eradication of animal diseases including zoonoses will be tackled along with research on antimicrobial resistance.

Amendment

Multi-disciplinary approaches, *utilizing the expertise and experience of actors along the whole supply chain*, will be sought to improve the performance of plants, animals, micro-organisms, while ensuring efficient resource use (water, nutrients, energy) and the ecological integrity *and vitality* of rural areas. Emphasis will be placed on integrated and diverse production systems and agronomic practices, including the use of precision technologies, *agro-ecological and organic farming methods*, and ecological intensification approaches to benefit both conventional and organic agriculture. Genetic improvement of plants and animals for adaptation and productivity traits will call for all appropriated conventional and modern breeding approaches and for a better use of genetic resources, *for adaptation to scarce resources, reduced pesticide use and local environmental conditions*. Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity. Animal and plant health will

Studying the effects of practices on animal welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address relevant biological questions as well as to support the development and implementation of Union policies.

be promoted and integrated disease/pest control measures will be further developed. Strategies for the eradication of animal diseases including zoonoses will be tackled along with research on antimicrobial resistance. Studying the effects of practices on animal welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address relevant biological questions as well as to support the development and implementation of Union policies.

Or. en

Amendment 682

Lambert van Nistelrooij, Cristina Gutiérrez-Cortines

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.1 – paragraph 2

Text proposed by the Commission

Multi-disciplinary approaches will be sought to improve the performance of plants, animals, micro-organisms, while ensuring efficient resource use (water, nutrients, energy) and the ecological integrity of rural areas. Emphasis will be placed on integrated and diverse production systems and agronomic practices, including the use of precision technologies and ecological intensification approaches to benefit both conventional and organic agriculture. Genetic improvement of plants and animals for adaptation and productivity traits will call for all appropriated conventional and modern breeding approaches and for a better use of genetic resources. Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity. Animal and plant health will be promoted and integrated disease/pest control measures will be further developed. Strategies for the

Amendment

Multi-disciplinary approaches will be sought to improve the performance of plants, animals, micro-organisms, while ensuring efficient resource use (water, nutrients, energy) and the ecological integrity of rural areas. Emphasis will be placed on integrated and diverse production systems and agronomic practices, including the use of precision technologies and ecological intensification approaches to benefit both conventional and organic agriculture. Genetic improvement of plants and animals for adaptation and productivity traits will call for all appropriated conventional and modern breeding approaches and for a better use of genetic resources. Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity **and to minimise losses of ground, surface and underground water resources**. Animal and plant health will be promoted and

eradication of animal diseases including zoonoses will be tackled along with research on antimicrobial resistance. Studying the effects of practices on animal welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address relevant biological questions as well as to support the development and implementation of Union policies.

integrated disease/pest control measures will be further developed. Strategies for the eradication of animal diseases including zoonoses will be tackled along with research on antimicrobial resistance. Studying the effects of practices on animal welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address relevant biological questions as well as to support the development and implementation of Union policies.

Or. en

Amendment 683
Marisa Matias

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.1 – paragraph 2

Text proposed by the Commission

Multi-disciplinary approaches will be sought to improve the performance of plants, animals, micro-organisms, while ensuring efficient resource use (water, nutrients, energy) and the ecological integrity of rural areas. Emphasis will be placed on integrated and diverse production systems and agronomic practices, including the use of precision technologies and ecological intensification approaches to benefit both conventional and organic agriculture. Genetic improvement of plants and animals for adaptation and productivity traits will call for all appropriated conventional and modern breeding approaches and for a better use of genetic resources. Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity. Animal and plant health will be promoted and integrated disease/pest control measures will be further developed. Strategies for the

Amendment

Multi- and transdisciplinary approaches **utilizing the expertise and experience of actors along the whole supply chain** will be sought to improve the performance of plants, animals, micro-organisms, while ensuring efficient resource use (water, nutrients, energy) and the ecological integrity **and vitality** of rural areas. Emphasis will be placed on integrated and diverse production systems and agronomic practices, including the use of precision technologies, **agro-ecological** and **organic farming methods and** ecological intensification approaches to benefit both conventional and organic agriculture. Genetic improvement of plants and animals for adaptation and productivity traits will call for all appropriated conventional and modern breeding approaches and for a better use of genetic resources. Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity. Animal and

eradication of animal diseases including zoonoses will be tackled along with research on antimicrobial resistance. Studying the effects of practices on animal welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address relevant biological questions as well as to support the development and implementation of Union policies.

plant health will be promoted and integrated disease/pest control measures will be further developed. Strategies for the eradication of animal diseases including zoonoses will be tackled along with research on antimicrobial resistance. Studying the effects of practices on animal welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address relevant biological questions as well as to support the development and implementation of Union policies.

Or. en

Amendment 684
Henri Weber

Proposal for a decision
Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.1 – paragraph 2

Text proposed by the Commission

Multi-disciplinary approaches will be sought to improve the performance of plants, animals, micro-organisms, while ensuring efficient resource use (water, nutrients, energy) and the ecological integrity of rural areas. Emphasis will be placed on integrated and diverse production systems and agronomic practices, including the use of precision technologies and ecological intensification approaches to benefit both conventional and organic agriculture. Genetic improvement of plants and animals for adaptation and productivity traits will call for all appropriated conventional and modern breeding approaches and for a better use of genetic resources. Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity. Animal and plant health will be promoted and integrated disease/pest control measures

Amendment

Multi-disciplinary approaches will be sought to improve the performance of plants, animals **and** micro-organisms, while ensuring efficient resource use (water, nutrients, energy), **the quality of production** and the ecological integrity of rural areas. Emphasis will be placed on integrated and diverse production systems and agronomic practices, including the use of precision technologies and ecological intensification approaches to benefit both conventional and organic agriculture. Genetic improvement of plants and animals for adaptation and productivity traits will call for all appropriated conventional and modern breeding approaches and for a better use of genetic resources. Due attention will be given to on-farm soil management for increasing soil fertility as a basis for crop productivity. Animal and plant health will be promoted and integrated disease/pest control measures

will be further developed. Strategies for the eradication of animal diseases including zoonoses will be tackled along with research on antimicrobial resistance. Studying the effects of practices on animal welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address relevant biological questions as well as to support the development and implementation of Union policies.

will be further developed. Strategies for the eradication of animal diseases including zoonoses will be tackled along with research on antimicrobial resistance. Studying the effects of practices on animal welfare will help meet societal concerns. The above listed areas will be underpinned by more fundamental research to address relevant biological questions as well as to support the development and implementation of Union policies.

Or. fr

Amendment 685

Giles Chichester, Vicky Ford

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.2 – introductory part

Text proposed by the Commission

Amendment

2.1.2. **Providing** ecosystem services and public goods

2.1.2. **Strengthening multi-functionality of agriculture, including** ecosystem services and public goods

Or. en

Amendment 686

Cristina Gutiérrez-Cortines, Pilar del Castillo Vera

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.2 – introductory part

Text proposed by the Commission

Amendment

2.1.2. **Providing ecosystem** services and public goods

2.1.2. **Strengthening multi-functionality of agriculture, including** services and public goods

Or. en

Justification

Multi-functionality as a comprehensive approach to combine the use of agriculture and combine it with ecosystems services; to be consistent with CAP policy and research programmes.

Amendment 687

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.2 – paragraph 1

Text proposed by the Commission

Agriculture and forestry are unique systems delivering commercial products but also wider societal public goods (including cultural and recreational value) and **important** ecological services such as functional and in-situ biodiversity, pollination, water regulation, landscape, erosion reduction and carbon sequestration /GHG mitigation. Research activities will support the provisions of these public goods and services, through the delivery of management solutions, decision-support tools and the assessment of their non-market value. Specific issues to be dealt with include the identification of farming/forest systems and landscape patterns likely to achieve these goals. Shifts in **the active** management of agricultural systems - including the use of technologies and change of practices - will increase GHG mitigation and the adaptive capacity of the agriculture sector to the adverse effects of climate change.

Amendment

Agriculture and forestry are unique systems delivering commercial products but also wider societal public goods (including cultural and recreational value) and **essential** ecological services, **not currently rewarded by the market**, such as: functional and in-situ biodiversity, pollination, water **quality availability and** regulation, **agricultural and forested** landscape, **soil functionality**, erosion reduction and carbon sequestration, **climate stability**, GHG mitigation, **air quality, resilience to flooding, drought and fire**. **No systems of generating wealth can be competitive if they degrade their resource bases, hence the need to develop truly sustainable systems of harnessing natural processes**. Research activities will support the provisions of these public goods and services, through the delivery of management solutions, decision-support tools and the assessment of their non-market value. Specific issues to be dealt with include the identification **and development** of **diverse** farming/forest systems and landscape patterns likely to achieve these goals. Shifts in **the active** management of agricultural systems - including the use of technologies and change of practices - will increase GHG mitigation and the adaptive capacity of the

agriculture sector to the adverse effects of climate change.

Or. en

Amendment 688

Vicky Ford, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.2 – paragraph 1

Text proposed by the Commission

Agriculture and forestry are unique systems delivering commercial products but also wider societal public goods (including cultural and recreational value) and important ecological services such as functional and in-situ biodiversity, pollination, water regulation, landscape, erosion reduction and carbon sequestration / GHG mitigation. Research activities will support the provisions of these public goods and services, through the delivery of management solutions, decision-support tools and the assessment of their non-market value. Specific issues to be dealt with include the identification of farming/forest systems and landscape patterns likely to achieve these goals. Shifts in *the active* management of agricultural systems - including the use of technologies and change of practices - will increase GHG mitigation and the adaptive capacity of the agriculture sector to the adverse effects of climate change.

Amendment

Agriculture and forestry are unique systems delivering commercial products but also wider societal public goods (including cultural and recreational value) and important ecological services such as functional and in-situ biodiversity, pollination, water regulation, landscape, erosion reduction and carbon sequestration / GHG mitigation. Research activities will support the provisions of these public goods and services, through the delivery of management solutions, decision-support tools and the assessment of their non-market value. Specific issues to be dealt with include the identification of farming/forest systems and landscape patterns likely to achieve these goals. ***Socio-economic and comparative assessment of farming/forestry systems and their sustainability performance will be addressed.*** Shifts in *the active* management of agricultural systems - including the use of technologies and change of practices - will increase GHG mitigation and the adaptive capacity of the agriculture sector to the adverse effects of climate change.

Or. en

Justification

Socioeconomic research on farming/forestry systems must be an integral part of research into

the multifunctional aspects of agriculture and should be addressed in order to support shifts in the active management of agriculture systems.

Amendment 689

Cristina Gutiérrez-Cortines, Pilar del Castillo Vera

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.2 – paragraph 1

Text proposed by the Commission

Agriculture and forestry are unique systems delivering commercial products but also wider societal public goods (including cultural and recreational value) and important ecological services such as functional and in-situ biodiversity, pollination, water regulation, landscape, erosion reduction and carbon sequestration / GHG mitigation. Research activities will support the provisions of these public goods and services, through the delivery of management solutions, decision-support tools and the assessment of their non-market value. Specific issues to be dealt with include the identification of farming/forest systems and landscape patterns likely to achieve these goals. Shifts in the active management of agricultural systems - including the use of technologies and change of practices - will increase GHG mitigation and the adaptive capacity of the agriculture sector to the adverse effects of climate change.

Amendment

Agriculture and forestry are unique systems delivering commercial products but also wider societal public goods (including cultural and recreational value) and important ecological services such as functional and in-situ biodiversity, pollination, water regulation, landscape, erosion reduction and carbon sequestration / GHG mitigation. Research activities will support the provisions of these public goods and services, through the delivery of management solutions, decision-support tools and the assessment of their non-market value. Specific issues to be dealt with include the identification of farming/forest systems and landscape patterns likely to achieve these goals. ***Socio-economic and comparative assessment of farming/forestry systems and their sustainability performance will be addressed.*** Shifts in the active management of agricultural systems - including the use of technologies and change of practices - will increase GHG mitigation and the adaptive capacity of the agriculture sector to the adverse effects of climate change. ***For instance, biotechnology can improve the efficient use of existing European agricultural and forestry resources by improving the understanding of biological systems and offering a wide range of tools to enhance the sustainability and productivity of agriculture and forestry. It also secures sufficient supply of food and feed, which***

is crucial in light of past and future turbulences on the global markets. The combination of the advantages of the various agricultural technologies should be encouraged to achieve a real benefit for human health and the environment.

Or. en

Amendment 690
Corinne Lepage

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.2 – paragraph 1

Text proposed by the Commission

Agriculture and forestry are unique systems delivering commercial products but also wider societal public goods (including cultural and recreational value) and important ecological services such as functional and in-situ biodiversity, pollination, water regulation, landscape, erosion reduction and carbon sequestration / GHG mitigation. Research activities will support the provisions of these public goods and services, through the delivery of management solutions, decision-support tools and the assessment of their non-market value. Specific issues to be dealt with include the identification of farming/forest systems and landscape patterns likely to achieve these goals. Shifts in the active management of agricultural systems - including the use of technologies and change of practices - will increase GHG mitigation and the adaptive capacity of the agriculture sector to the adverse effects of climate change.

Amendment

Agriculture and forestry are unique systems delivering commercial products but also ***forming part of a non-profit-making approach, supplying a wider range of*** societal public goods (including cultural and recreational value) and important ecological services such as functional and in-situ biodiversity, pollination, water regulation, landscape, erosion reduction and carbon sequestration / GHG mitigation. Research activities will support the provisions of these public goods and services, through the delivery of management solutions, decision-support tools and the assessment of their non-market value. Specific issues to be dealt with include the identification of farming/forest systems and landscape patterns likely to achieve these goals. Shifts in the active management of agricultural systems – including the use of technologies and change of practices – will increase GHG mitigation and the adaptive capacity of the agriculture sector to the adverse effects of climate change.
Attention will be paid in particular to local non-commercial food production systems such as urban gardens.

Amendment 691**Maria Da Graça Carvalho****Proposal for a decision****Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.2 – paragraph 1***Text proposed by the Commission*

Agriculture and forestry are unique systems delivering commercial products but also wider societal public goods (including cultural and recreational value) and important ecological services such as functional and in-situ biodiversity, pollination, water regulation, landscape, erosion reduction and carbon sequestration / GHG mitigation. Research activities will support the provisions of these public goods and services, through the delivery of management solutions, decision-support tools and the assessment of their non-market value. Specific issues to be dealt with include the identification of farming/forest systems and landscape patterns likely to achieve these goals. Shifts in the active management of agricultural systems - including the use of technologies and change of practices - will increase GHG mitigation and the adaptive capacity of the agriculture sector to the adverse effects of climate change.

Amendment

Agriculture and forestry are unique systems delivering commercial products but also wider societal public goods (including cultural and recreational value) and important ecological services such as functional and in-situ biodiversity, pollination, water **storage and** regulation, landscape, erosion reduction and carbon sequestration / GHG mitigation. Research activities will support the provisions of these public goods and services, through the delivery of management solutions, decision-support tools and the assessment of their non-market value. Specific issues to be dealt with include the identification of farming/forest systems and landscape patterns likely to achieve these goals. Shifts in the active management of agricultural systems - including the use of technologies and change of practices - will increase GHG mitigation and the adaptive capacity of the agriculture sector to the adverse effects of climate change. ***This also calls for integrated water management and alternative sources (e.g. treated wastewater) for irrigation (agriculture, landscape and forestry), environmental restoration/enhancement, forest-fire fighting, recreational activities and public water supply.***

Amendment 692

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.2 – paragraph 1

Text proposed by the Commission

Agriculture and forestry are unique systems delivering commercial products but also wider societal public goods (including cultural and recreational value) and important ecological services such as functional and in-situ biodiversity, pollination, water regulation, landscape, erosion **reduction** and carbon sequestration / GHG mitigation. Research activities will support the provisions of these public goods and services, through the delivery of management solutions, decision-support tools and the assessment of their non-market value. Specific issues to be dealt with include the identification of farming/forest systems and landscape patterns likely to achieve these goals. Shifts in the active management of agricultural systems - including the use of technologies and change of practices - will increase GHG mitigation and the adaptive capacity of the agriculture sector to the adverse effects of climate change.

Amendment

Agriculture and forestry are unique systems delivering commercial products but also wider societal public goods (including cultural and recreational value) and important ecological services such as functional and in-situ biodiversity, pollination, water regulation **and** landscape, **and in areas relating to** erosion, **drought** and carbon sequestration / GHG mitigation. Research activities will support the provisions of these public goods and services, through the delivery of management solutions, decision-support tools and the assessment of their non-market value. Specific issues to be dealt with include the identification of farming/forest systems and landscape patterns likely to achieve these goals. Shifts in the active management of agricultural systems - including the use of technologies and change of practices - will increase GHG mitigation and the adaptive capacity of the agriculture sector to the adverse effects of climate change.

Or. es

Amendment 693

Giles Chichester, Vicky Ford

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.3 – paragraph 1

Text proposed by the Commission

Development opportunities for rural communities will be mobilised by strengthening their capacity for primary

Amendment

Socio-economic research along with the development of new concepts and institutional innovations is needed to

production and delivery of eco-systems services as well as by opening avenues for the production of new and diversified products (food, feed, materials, energy), which meet the increasing demand for low-carbon short-chain delivery systems.

Socio-economic research along with the development of new concepts and institutional innovations is needed to ensure cohesion of rural areas and prevent economic and social marginalisation, foster diversification of economic activities (including service sector), ensure appropriate relations between rural and urban areas, as well as facilitate knowledge exchange, demonstration, innovation and dissemination and foster participatory resource management. Also, there is a need to look at ways in which public goods in rural areas can be converted into local/regional socio-economic benefits.

Innovation needs defined at regional and local levels will be complemented by cross-sectoral research actions at inter-regional and European levels. By providing the necessary analytical tools, indicators, models and forward looking activities, research projects will support policy makers and other actors in the implementation, monitoring and assessment of relevant strategies, policies and legislation, not only for rural areas but for the whole bio-economy. Tools and data are also required to allow for proper assessment of potential trade-offs between various types of resource use (land, water and other inputs) and bio-economy products. ***Socio-economic and comparative assessment of farming/forestry systems and their sustainability performance will be addressed.***

ensure cohesion of rural areas and prevent economic and social marginalisation, foster diversification of economic activities (including service sector), ensure appropriate relations between rural and urban areas, as well as facilitate knowledge exchange, demonstration, innovation and dissemination and foster participatory resource management. Also, there is a need to look at ways in which public goods in rural areas can be converted into local/regional ***as well as European*** socio-economic benefits. ***For instance by complementing local activities*** by cross-sectoral research actions at inter-regional and European levels. By providing the necessary analytical tools, indicators, models and forward looking activities, research projects will support policy makers and other actors in the implementation, monitoring and assessment of relevant strategies, policies and legislation, not only for rural areas but for the whole bio-economy. ***It will be essential that 'fit for purpose' and effective regulations are in place, and to improve the assessment of the effects of regulation and costs of compliance in the agri-industry and the farming community.*** Tools and data are also required to allow for proper assessment of potential trade-offs between various types of resource use (land, water and other inputs) and bio-economy products.

Or. en

Amendment 694
Marisa Matias

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.1 – point 2.1.3 – paragraph 1

Text proposed by the Commission

Development opportunities for rural communities will be mobilised by strengthening their capacity for primary production and delivery of eco-systems services as well as by opening avenues for the production of new and diversified products (food, feed, materials, energy), which meet the increasing demand for low-carbon short-chain delivery systems. Socio-economic research along with the development of new concepts and institutional innovations is needed to ensure cohesion of rural areas and prevent economic and social marginalisation, foster diversification of economic activities (including service sector), ensure appropriate relations between rural and urban areas, as well as facilitate knowledge exchange, demonstration, innovation and dissemination and foster participatory resource management. Also, there is a need to look at ways in which public goods in rural areas can be converted into local/regional socio-economic benefits. Innovation needs defined at regional and local levels will be complemented by cross-sectoral research actions at inter-regional and European levels. By providing the necessary analytical tools, indicators, models and forward looking activities, research projects will support policy makers and other actors in the implementation, monitoring and assessment of relevant strategies, policies and legislation, not only for rural areas but for the whole bio-economy. Tools and data are also required to allow for proper assessment of potential trade-offs between various types of resource use (land, water and other inputs) and bio-economy

Amendment

Development opportunities for rural communities will be mobilised by strengthening their capacity for primary production and delivery of eco-systems services as well as by opening avenues for the production of new and diversified products (food, feed, materials, energy), which meet the increasing demand for low-carbon short-chain delivery systems. Socio-economic research along with the development of new concepts and institutional innovations is needed to ensure cohesion of rural areas and prevent economic and social marginalisation, foster diversification of economic activities (including service sector), ensure appropriate relations between rural and urban areas, as well as facilitate knowledge exchange, demonstration, innovation and dissemination and foster participatory resource management. Also, there is a need to look at ways in which public goods in rural areas can be converted into local/regional socio-economic benefits. Innovation needs defined at regional and local levels will be complemented by cross-sectoral research actions at inter-regional and European levels. By providing the necessary analytical tools, indicators, models and forward looking activities, research projects will support policy makers and other actors in the implementation, monitoring and assessment of relevant strategies, policies and legislation, not only for rural areas but for the whole bio-economy. Tools and data are also required to allow for proper assessment of potential trade-offs between various types of resource use (land, water and other inputs) and bio-economy

products. Socio-economic and comparative assessment of farming/forestry systems and their sustainability performance will be addressed.

products. Socio-economic and comparative assessment of farming/forestry systems and their sustainability performance will be addressed. ***Criteria for transparent procedures for assessment of the desirability and acceptability of new technologies will be taken into account as well as concerns of civil society.***

Or. en

Amendment 695

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – paragraph 1

Text proposed by the Commission

Consumer needs for safe, healthy and affordable food have to be addressed, while considering the impacts of food consumption behaviour and food and feed production on human health and the total ecosystem. Food and feed security and safety, the competitiveness of the European agri-food industry and the sustainability of food production and supply will be addressed, covering the whole food chain and related services, whether conventional or organic, from primary production to consumption. This approach will contribute to (a) achieving food safety and security for all Europeans and eradication of hunger in the world (b) decreasing the burden of food- and diet-related diseases by promoting the shift towards healthy and sustainable diets, via consumer education and innovations in the food industry (c) reducing water and energy consumption in food processing, transport and distribution **and** (d) reducing food waste by 50 % by 2030.

Amendment

Consumer needs for safe, healthy and affordable food have to be addressed, while considering the impacts of food consumption behaviour and food and feed production on human health and the total ecosystem. Food and feed security and safety, the competitiveness of the European agri-food industry and the sustainability of food production and supply will be addressed, covering the whole food chain and related services, whether conventional or organic, from primary production to consumption. ***Competitiveness can be defined on various levels, and the aim is to achieve systems which also enable farmers to be competitive on a local and regional level. There should be coherence in the Union's approach so that striving for competitiveness on a global market should not run contrary to Union efforts and funding to create vibrant local economies and short food production and supply chains. Negative externalities of input intensive production systems, previously considered as "competitive" and "productive", should be widely***

considered and any notion of "affordable" food should also consider the costs to the taxpayers and public purse of environmental and public health impacts. This approach will contribute to (a) achieving food safety and security for all Europeans and eradication of hunger in the world (b) decreasing the burden of food- and diet-related diseases by promoting the shift towards healthy and sustainable diets, via consumer education and innovations in the food industry (c) reducing water and energy consumption in food processing, transport and distribution (d) reducing food waste by 50 % by 2030 ***and (e) providing a broad diversity of healthy, authentic, high quality and safe foods for all. Furthermore, they should concentrate on consumer wishes and competitive food processing methods that use less resources and additives and produce fewer by-products and greenhouse gases.***

Or. en

Amendment 696

Marisa Matias, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – paragraph 1

Text proposed by the Commission

Consumer needs for safe, healthy and affordable food have to be addressed, while considering the impacts of food consumption behaviour and food and feed production on human health and the total ecosystem. Food and feed security and safety, the competitiveness of the European agri-food industry and the sustainability of food production and supply will be addressed, covering the whole food chain and related services, whether conventional or organic, from primary production to

Amendment

Consumer needs for safe, healthy and affordable food have to be addressed, while considering the impacts of food consumption behaviour and food and feed production on human health and the total ecosystem. Food and feed security and safety, the competitiveness of the European agri-food industry and the sustainability of food production and supply will be addressed, covering the whole food chain and related services, whether conventional or organic, from primary production to

consumption. This approach will contribute to (a) achieving food safety and security for all Europeans and eradication of hunger in the world (b) decreasing the burden of food- and diet-related diseases by promoting the shift towards healthy and sustainable diets, via consumer education and innovations in the food industry (c) reducing water and energy consumption in food processing, transport and distribution **and** (d) reducing food waste by 50 % by 2030.

consumption. This approach will contribute to (a) achieving food safety and security for all Europeans and eradication of hunger in the world (b) decreasing the burden of food- and diet-related diseases by promoting the shift towards healthy and sustainable diets, via consumer education and innovations in the food industry (c) reducing water and energy consumption in food processing, transport and distribution (d) reducing food waste by 50 % by 2030 **and (e) the research activities shall also focus on a broad diversity of healthy, authentic, high quality and safe food for all.**

Or. en

Amendment 697

Pilar del Castillo Vera, Alejo Vidal-Quadras

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – paragraph 1

Text proposed by the Commission

Consumer needs for safe, healthy and affordable food have to be addressed, while considering the impacts of food consumption behaviour and food and feed production on human health and the total ecosystem. Food and feed security and safety, the competitiveness of the European agri-food industry and the sustainability of food production and supply will be addressed, covering the whole food chain and related services, whether conventional or organic, from primary production to consumption. This approach will contribute to (a) achieving food safety and security for all Europeans and eradication of hunger in the world (b) decreasing the burden of food- and diet-related diseases by promoting the shift towards healthy and sustainable diets, via consumer education and innovations in the food industry (c)

Amendment

Consumer needs for safe, healthy and affordable food have to be addressed, while considering the impacts of food consumption behaviour and food and feed production on human health and the total ecosystem. Food and feed security and safety, the competitiveness of the European agri-food industry and the sustainability of food production and supply will be addressed, covering the whole food chain and related services, whether conventional or organic, **for all types of farming and products**, from primary production to consumption. This approach will contribute to (a) achieving food safety and security for all Europeans and eradication of hunger in the world (b) decreasing the burden of food- and diet-related diseases by promoting the shift towards healthy and sustainable diets, via consumer education

reducing water and energy consumption in food processing, transport and distribution and (d) reducing food waste by 50 % by 2030.

and innovations in the **agricultural and** food industry (c) reducing water and energy consumption in food processing, transport and distribution and (d) reducing food waste by 50 % by 2030.

Or. en

Amendment 698

Cristina Gutiérrez-Cortines, Pilar del Castillo Vera

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – paragraph 1

Text proposed by the Commission

Consumer needs for safe, healthy and affordable food have to be addressed, while considering the impacts of food consumption behaviour and food and feed production on human health and the total ecosystem. Food and feed security and safety, the competitiveness of the European agri-food industry and the sustainability of food production and supply will be addressed, covering the whole food chain and related services, whether conventional or organic, from primary production to consumption. This approach will contribute to (a) achieving food safety and security for all Europeans and eradication of hunger in the world (b) decreasing the burden of food- and diet-related diseases by promoting the shift towards healthy and sustainable diets, via consumer education and innovations in the food industry (c) reducing water and energy consumption in food processing, transport and distribution and (d) reducing food waste by 50 % by 2030.

Amendment

Consumer needs for safe, healthy and affordable food have to be addressed, while considering the impacts of food consumption behaviour and food and feed production on human health and the total ecosystem. Food and feed security and safety, the competitiveness of the European agri-food industry and the sustainability of food production and supply will be addressed, covering the whole food chain and related services, whether conventional **sustainably intensive** or organic, from primary production to consumption. This approach will contribute to (a) achieving food safety and security for all Europeans and eradication of hunger in the world (b) decreasing the burden of food- and diet-related diseases by promoting the shift towards healthy and sustainable diets, via consumer education and innovations in the **agriculture** food industry (c) reducing water and energy consumption in food processing, transport and distribution and (d) reducing food waste by 50 % by 2030.

Or. en

Amendment 699

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – paragraph 1

Text proposed by the Commission

Consumer needs for safe, healthy and affordable food have to be addressed, while considering the impacts of food consumption behaviour and food and feed production on human health and the total ecosystem. Food and feed security and safety, the competitiveness of the European agri-food industry and the sustainability of food production and supply will be addressed, covering the whole food chain and related services, whether conventional or organic, from primary production to consumption. This approach will contribute to (a) achieving food safety and security for all Europeans and eradication of hunger in the world (b) decreasing the burden of food- **and** diet-related diseases by promoting the shift towards healthy and sustainable diets, via consumer education and innovations in the food industry (c) reducing water and energy consumption in food processing, transport and distribution and (d) reducing food waste by 50 % by 2030.

Amendment

Consumer needs for safe, healthy and affordable food have to be addressed, while considering the impacts of food consumption behaviour and food and feed production on human health and the total ecosystem. Food and feed security and safety, the competitiveness of the European agri-food industry and the sustainability of food production and supply will be addressed, covering the whole food chain and related services, whether conventional or organic, from primary production to consumption. This approach will contribute to (a) achieving food safety and security for all Europeans and eradication of hunger in the world (b) decreasing the burden of food-, diet- **and (child and adult) obesity-** related diseases by promoting the shift towards healthy and sustainable diets, via consumer education and innovations in the food industry (c) reducing water and energy consumption in food processing, transport and distribution and (d) reducing food waste by 50 % by 2030.

Or. es

Amendment 700

Giles Chichester, Vicky Ford

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – paragraph 1

Text proposed by the Commission

Consumer needs for safe, healthy and affordable food have to be addressed, while considering the impacts of food

Amendment

Consumer needs for safe, healthy and affordable food have to be addressed, while considering the impacts of food

consumption behaviour and food and feed production on human health and the total ecosystem. Food and feed security and safety, the competitiveness of the European agri-food industry and the sustainability of food production and supply will be addressed, covering the whole food chain and related services, ***whether conventional or organic***, from primary production to consumption. This approach will contribute to (a) achieving food safety and security for all Europeans and eradication of hunger in the world (b) decreasing the burden of food- and diet-related diseases by promoting the shift towards healthy and sustainable diets, via consumer education and innovations in the food industry (c) reducing water and energy consumption in food processing, transport and distribution and (d) reducing food ***waste*** by 50 % by 2030.

consumption behaviour and food and feed production on human health and the total ecosystem. Food and feed security and safety, the competitiveness of the European agri-food industry and the sustainability of food production and supply will be addressed, covering the whole food chain and related services, ***for all types of farming and products***, from primary production to consumption. This approach will contribute to (a) achieving food safety and security for all Europeans and eradication of hunger in the world (b) decreasing the burden of food- and diet-related diseases by promoting the shift towards healthy and sustainable diets, via consumer education and innovations in the ***agricultural and*** food industry (c) reducing water and energy consumption in food processing, transport and distribution and (d) reducing food ***wastage*** by 50 % by 2030.

Or. en

Amendment 701
Kent Johansson, Fiona Hall

Proposal for a decision
Annex 1 – section 3 – point 2 – point 2.2 – paragraph 1 a (new)

Text proposed by the Commission

Amendment

The research activities should also focus on a broad diversity of healthy, authentic, high quality and safe foods for all. Furthermore, they should concentrate on consumer wishes and competitive food processing methods that use less resources and additives and produce fewer by-products and less greenhouse gases.

Or. en

Justification

There is a need to recognize food production as one of the important determinants of health.

Amendment 702

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – point 2.2.1 – paragraph 1

Text proposed by the Commission

Consumer preferences, attitudes, needs, behaviour, lifestyle and education will be addressed, and communication between consumers and the food chain research community and its operators will be enhanced in order to improve informed choice, sustainable consumption and their impacts on production, inclusive growth and quality of life, especially of vulnerable groups. Social innovation will respond to societal challenges, and innovative models and methodologies in consumer science will deliver comparable data and lay the ground for responses to Union policy needs.

Amendment

Consumer preferences, attitudes, needs, behaviour, lifestyle and education will be addressed, and communication between consumers and the food chain research community and its operators will be enhanced in order to improve informed ***and reflective*** choice, sustainable consumption and their impacts on production, inclusive growth and quality of life, especially of vulnerable groups. Social innovation will respond to societal challenges, and innovative models and methodologies in consumer science will deliver comparable data and lay the ground for responses to Union policy needs.

Or. en

Amendment 703

Giles Chichester, Vicky Ford

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – point 2.2.2 – paragraph 1

Text proposed by the Commission

Nutritional needs and the impact of food on physiological functions, physical and mental performance will be addressed as well as the links between diet, ageing, chronic diseases and disorders and dietary

Amendment

Nutritional needs and the impact of food on physiological functions, physical and mental performance will be addressed as well as the links between diet, ageing, chronic diseases and disorders and dietary

patterns. Dietary solutions and innovations leading to improvements in health and well-being will be identified. Chemical and microbial food and feed contamination, risks and exposures will be assessed, monitored, controlled and traced throughout the food and drinking water supply chains from production and storage to processing, packaging, distribution, catering, and preparation at home. Food safety innovations, improved risk communication tools and improved food safety standards will lead to enhanced consumer trust and protection in Europe. Globally improved food safety standards will also help to strengthen the competitiveness of the European food industry.

patterns. ***Quality and healthy nutrition shall be increased by investigating and improving healthy compounds in plants (e.g. secondary metabolites) and the health status of cultivated plants.*** Dietary solutions and innovations leading to improvements in health and well-being will be identified. Chemical and microbial food and feed contamination, risks and exposures will be assessed, monitored, controlled and traced throughout the food and drinking water supply chains from production and storage to processing, packaging, distribution, catering, and preparation at home. Food safety innovations, improved risk communication tools and improved food safety standards will lead to enhanced consumer trust and protection in Europe. Globally improved food safety standards will also help to strengthen the competitiveness of the European food industry.

Or. en

Amendment 704

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – point 2.2.3 – paragraph 1

Text proposed by the Commission

The needs for the food and feed industry to cope with social, environmental, climate and economic change from local to global will be addressed at all stages of the food and feed production chain, including food design, processing, packaging, process control, waste reduction, by-product valorisation and the safe use or disposal of animal by-products. Innovative and sustainable resource-efficient processes and diversified, safe, affordable and high quality products will be generated. This

Amendment

Only a sustainable production system can be competitive in the long term. The needs for the food and feed industry to cope with social, environmental, climate and economic change from local to global will be addressed at all stages of the food and feed production chain, including food design, processing, packaging, process control, waste reduction, by-product valorisation and the safe use or disposal of animal by-products. Innovative and sustainable resource-efficient processes

will strengthen the innovation potential of the European food supply chain, enhance its competitiveness, create economic growth and **employment** and allow the European food industry to adapt to changes. Other aspects to address are **traceability**, logistics and services, socio-economic factors, the resilience of the food chain against **environmental** and climate risks, and the **limitation** of negative impacts of food chain activities and of changing diets and production systems on the environment.

and diversified, safe, **healthy**, affordable and high quality products will be generated, **bearing in mind that the concept of affordability should cover the externalities of the system, including cost to taxpayers through cost of public health and environmental impacts**. This will strengthen the innovation potential of the European food supply chain, enhance its competitiveness, create economic growth and **employment** and allow the European food industry to adapt to changes. Other aspects to address are **traceability**, logistics and services, socio-economic factors, the resilience of the food chain against **environmental** and climate risks, and the **elimination** of negative impacts of food chain activities and of changing diets and production systems on the environment.

Or. en

Amendment 705

Cristina Gutiérrez-Cortines, Pilar del Castillo Vera

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – point 2.2.2 – paragraph 1

Text proposed by the Commission

Nutritional needs and the impact of food on physiological functions, physical and mental performance will be addressed as well as the links between diet, ageing, chronic diseases and disorders and dietary patterns. Dietary solutions and innovations leading to improvements in health and well-being will be identified. Chemical and microbial food and feed contamination, risks and exposures will be assessed, monitored, controlled and traced throughout the food and drinking water supply chains from production and storage to processing, packaging, distribution, catering, and preparation at home. Food safety innovations, improved risk

Amendment

Nutritional needs and the impact of food on physiological functions, physical and mental performance will be addressed as well as the links between diet, ageing, chronic diseases and disorders and dietary patterns. **Quality and healthy nutrition shall be increased by investigating and improving healthy compounds in plants (e.g. secondary metabolites) and the health status of cultivated plants.** Dietary solutions and innovations leading to improvements in health and well-being will be identified. Chemical and microbial food and feed contamination, risks and exposures will be assessed, monitored, controlled and traced throughout the food

communication tools and improved food safety standards will lead to enhanced consumer trust and protection in Europe. Globally improved food safety standards will also help to strengthen the competitiveness of the European food industry.

and drinking water supply chains from production and storage to processing, packaging, distribution, catering, and preparation at home. Food safety innovations, improved risk communication tools and improved food safety standards will lead to enhanced consumer trust and protection in Europe. Globally improved food safety standards will also help to strengthen the competitiveness of the European food industry.

Or. en

Amendment 706

Salvador Sedó i Alabart, Ramon Tremosa i Balcells

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – point 2.2.3 – introductory part

Text proposed by the Commission

Amendment

2.2.3. A sustainable and competitive agri-food industry

2.2.3. A sustainable, **affordable** and competitive agri-food industry

Or. en

Amendment 707

Giles Chichester, Vicky Ford

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – point 2.2.3 – paragraph 1

Text proposed by the Commission

Amendment

The needs for the food and feed industry to cope with social, environmental, climate and economic change from local to global will be addressed at all stages of the food and feed production chain, including food design, processing, packaging, process control, waste reduction, by-product valorisation and the safe use or disposal of animal by-products. Innovative and

The needs for the food and feed industry to cope with social, environmental, climate and economic change from local to global will be addressed at all stages of the food and feed production chain, including **agricultural production**, food design, processing, packaging, process control, waste reduction, by-product valorisation and the safe use or disposal of animal by-

sustainable resource-efficient processes and diversified, safe, affordable and high quality products will be generated. This will strengthen the innovation potential of the European food supply chain, enhance its competitiveness, create economic growth and employment and allow the European food industry to adapt to changes. Other aspects to address are traceability, logistics and services, socio-economic factors, the resilience of the food chain against environmental and climate risks, and the limitation of negative impacts of food chain activities and of changing diets and production systems on the environment.

products. Innovative and sustainable resource-efficient processes and diversified, safe, affordable and high quality products will be generated. This will strengthen the innovation potential of the European food supply chain, enhance its competitiveness, create economic growth and employment and allow the European food industry to adapt to changes. Other aspects to address are traceability, logistics and services, socio-economic factors, the resilience of the food chain against environmental and climate risks, and the limitation of negative impacts of food chain activities and of changing diets and production systems on the environment.

Or. en

Amendment 708

Pilar del Castillo Vera, Alejo Vidal-Quadras

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – point 2.2.3 – paragraph 1

Text proposed by the Commission

The needs for the food and feed industry to cope with social, environmental, climate and economic change from local to global will be addressed at all stages of the food and feed production chain, including food design, processing, packaging, process control, waste reduction, by-product valorisation and the safe use or disposal of animal by-products. Innovative and sustainable resource-efficient processes and diversified, safe, affordable and high quality products will be generated. This will strengthen the innovation potential of the European food supply chain, enhance its competitiveness, create economic growth and employment and allow the European food industry to adapt to changes. Other aspects to address are

Amendment

The needs for the food and feed industry to cope with social, environmental, climate and economic change from local to global will be addressed at all stages of the food and feed production chain, including **agricultural production**, food design, processing, packaging, process control, waste reduction, by-product valorisation and the safe use or disposal of animal by-products. Innovative and sustainable resource-efficient processes and diversified, safe, affordable and high quality products will be generated. This will strengthen the innovation potential of the European food supply chain, enhance its competitiveness, create economic growth and employment and allow the European food industry to adapt to

traceability, logistics and services, socio-economic factors, the resilience of the food chain against environmental and climate risks, and the limitation of negative impacts of food chain activities and of changing diets and production systems on the environment.

changes. Other aspects to address are traceability, logistics and services, socio-economic factors, the resilience of the food chain against environmental and climate risks, and the limitation of negative impacts of food chain activities and of changing diets and production systems on the environment.

Or. en

Amendment 709

Cristina Gutiérrez-Cortines, Lambert van Nistelrooij, Pilar del Castillo Vera

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.2 – point 2.2.3 – paragraph 1

Text proposed by the Commission

The needs for the food and feed industry to cope with social, environmental, climate and economic change from local to global will be addressed at all stages of the food and feed production chain, including food design, processing, packaging, process control, waste reduction, by-product valorisation and the safe use or disposal of animal by-products. Innovative and sustainable resource-efficient processes and diversified, safe, affordable and high quality products will be generated. This will strengthen the innovation potential of the European food supply chain, enhance its competitiveness, create economic growth and employment and allow the European food industry to adapt to changes. Other aspects to address are traceability, logistics and services, socio-economic factors, the resilience of the food chain against environmental and climate risks, and the limitation of negative impacts of food chain activities and of changing diets and production systems on the environment.

Amendment

The needs for the food and feed industry to cope with social, environmental, climate and economic change from local to global will be addressed at all stages of the food and feed production chain, including **agricultural production**, food design, processing, packaging, process control, waste reduction, by-product valorisation and the safe use or disposal of animal by-products. Innovative and sustainable resource-efficient processes and diversified, safe, affordable and high quality products will be generated. This will strengthen the innovation potential of the European food supply chain, enhance its competitiveness, create economic growth and employment and allow the European food industry to adapt to changes. Other aspects to address are traceability, logistics and services, socio-economic factors, the resilience of the food chain against environmental and climate risks, and the limitation of negative impacts of food chain activities and of changing diets and production systems on the environment.

Amendment 710
Salvador Sedó i Alabart, Ramon Tremosa i Balcells

Proposal for a decision
Annex 1 – section 3 – point 2 – point 2.2 – point 2.2.3 a (new)

Text proposed by the Commission

Amendment

2.2.3a. Biotechnology applied to agriculture

Obtaining food products with high added value using classical and emerging biotechnological tools (functional foods, more efficient crops) and the development of alternative technologies to GMOs. Biotechnology applied to food and agriculture ("green") also has an essential role as an engine to drive a very important sector in the Union. Plant biotechnology is used to improve crop yields, make them resistant to biotic and abiotic stress, improve the organoleptic characteristics of food and develop healthier foods, among other applications.

Or. en

Amendment 711
Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision
Annex 1 – section 3 – point 2 – point 2.3 – introductory part

Text proposed by the Commission

Amendment

2.3. Unlocking the potential of ***aquatic living resources***

2.3. Unlocking the potential of ***fisheries, aquaculture and marine biotechnologies***

Or. en

Amendment 712

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.3 – paragraph 1

Text proposed by the Commission

One of the main features of living aquatic resources is that they are renewable and their sustainable exploitation relies on in depth understanding and a high degree of quality and productivity of the aquatic ecosystems. The overall objective is to sustainably exploit aquatic living resources to **maximise** social **and** economic benefits/returns from Europe's oceans and seas. This includes the need to optimise the sustainable contribution of fisheries and aquaculture to food security in the context of the global economy and reduce the heavy Union's dependence on seafood imports (approximately 60 % of total European sea food consumption depends on import and the Union is the world's largest importer of fisheries products), **and to boost marine biotechnologies to fuel 'blue' growth**. In line with current policy frameworks, research activities will underpin the ecosystem approach to the management and exploitation of natural resources, and the 'greening' of the sectors involved.

Amendment

One of the main features of living aquatic resources is that they are renewable and their sustainable exploitation relies on in depth understanding and a high degree of quality and **long-term** productivity of the aquatic ecosystems. The overall objective is to sustainably exploit aquatic living resources to **fulfil** social **needs, deliver** economic benefits/returns from Europe's oceans and seas, **while protecting biodiversity, ecosystem services and preserving the resource base**. This includes the need to optimise the sustainable contribution of fisheries and aquaculture to food security in the context of the global economy and reduce the heavy Union's dependence on seafood imports (approximately 60 % of total European sea food consumption depends on import and the Union is the world's largest importer of fisheries products). **It also means ending overfishing in order to rebuild fish stocks by keeping them above the levels which can produce the maximum sustainable yield**. In line with current policy frameworks, research activities will underpin the ecosystem approach to the management and exploitation of natural resources, and the 'greening' of the sectors involved, **through active involvement of fishermen, scientists, civil society and other stakeholders**.

Or. en

Amendment 713

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.3 – point 2.3.1 – paragraph 1

Text proposed by the Commission

The new Common Fisheries Policy, the Marine Strategy Framework Directive and the Union's Biodiversity Strategy call for European fisheries to be more sustainable, competitive, and environmentally-friendly. The move towards an ecosystem approach to fisheries management will require an in depth understanding of marine ecosystems. New insights, tools and models will be developed to improve understanding of what makes marine ecosystems healthy and productive and to assess, evaluate and mitigate the impact of fisheries on marine ecosystems (including deep sea). New harvest strategies will be developed which provide services to society while maintaining healthy marine ecosystems. The socio-economic effects of management options will be measured. The effects and adaptation to environmental changes, including climate change, will also be investigated along with new management tools to deal with risk and uncertainty. Activities will support research on the biology, genetic and dynamics of fish populations, on the role of key species in the ecosystems, on fishing activities and their monitoring, on fishing sector behaviours and adaptation to new markets e.g. eco-labelling on fishing industry involvement in decision making. The shared use of maritime space with other activities, in particular in the coastal zone, and its socio-economic impact will also be addressed.

Amendment

The new Common Fisheries Policy, the Marine Strategy Framework Directive and the Union's Biodiversity Strategy call for European fisheries to be more sustainable, competitive, and environmentally-friendly. ***Today, 80% of the fish stock is over-exploited or depleted.*** The move towards an ecosystem approach to fisheries management will require an in depth understanding of marine ecosystems ***and rebuilding fish stocks by keeping them above the levels which can produce the maximum sustainable yield.*** New insights, tools and models will be developed to improve understanding of what makes marine ecosystems healthy and productive and to assess, evaluate and mitigate the impact of fisheries on marine ecosystems (including deep sea). New ***sustainable*** harvest strategies will be developed which provide services to society while maintaining healthy marine ecosystems. The socio-economic ***and ecological*** effects of management options will be measured. The effects and adaptation to environmental changes, including climate change, will also be investigated along with new management tools to deal with risk and uncertainty. Activities will support research on the biology, genetic and dynamics of fish populations, on the role of key species in the ecosystems, on fishing activities and their monitoring, on fishing sector behaviours and adaptation to new markets e.g. eco-labelling on fishing industry involvement in decision making. The shared use of maritime space with other activities, in particular in the coastal zone, and its socio-economic impact will

also be addressed.

Or. en

Amendment 714

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.3 – point 2.3.2 – introductory part

Text proposed by the Commission

Amendment

2.3.2. Developing competitive European aquaculture

2.3.2. Developing **sustainable and** competitive European aquaculture

Or. en

Amendment 715

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.3 – point 2.3.2 – paragraph 1

Text proposed by the Commission

Amendment

Aquaculture has a **large** potential for the development of healthy safe and competitive products tailored to consumer needs and preferences as well as for environmental services (bioremediation, land and water management, etc) and energy production but it needs to be fully realised in Europe. Knowledge and technologies will be strengthened in all aspects of domestication of established species and diversification for new species while **taking into account** the interactions between aquaculture and the aquatic ecosystems, and the effects of climate change and how the sector can adapt to them. Innovation will also be promoted for sustainable production systems in inland,

Sustainable aquaculture has a potential for the development of healthy safe and competitive products tailored to consumer needs and preferences as well as for environmental services (bioremediation, land and water management, etc) and energy production but it needs to be fully realised in Europe. Knowledge and technologies will be strengthened in all aspects of domestication of established species and diversification for new species while **limiting the environmental impacts of the** interactions between aquaculture and the aquatic ecosystems, and the effects of climate change and how the sector can adapt to them. Innovation will also be promoted for sustainable production

on the coastal zone and offshore. Emphasis will also be given to understanding the social and economic dimensions of the sector to underpin cost and energy efficient production matching with the market and consumer **demands**, while ensuring competitiveness and attractive prospects for investors and producers.

systems in inland, on the coastal zone and offshore. Emphasis will also be given to understanding the **environmental**, social and economic dimensions of the sector to underpin **low environmental impact**, cost and energy efficient production matching with the market and consumer **needs**, while ensuring **long-term** competitiveness and attractive prospects for investors and producers.

Or. en

Amendment 716
Nuno Teixeira

Proposal for a decision
Annex 1 – section 3 – point 2 – point 2.3 – point 2.3.3 – introductory part

Text proposed by the Commission

Amendment

2.3.3. Boosting marine innovation through biotechnology

2.3.3. Boosting marine innovation through biotechnology **and protecting biodiversity**

Or. pt

Justification

Protecting biodiversity is a further key priority alongside the priority mentioned.

Amendment 717
Philippe Lamberts
on behalf of the Verts/ALE Group

Proposal for a decision
Annex 1 – section 3 – point 2 – point 2.3 – point 2.3.3 – paragraph 1

Text proposed by the Commission

Amendment

More than 90 % of the marine biodiversity remains unexplored, offering a huge potential for discovery of new species and applications in the field of marine biotechnologies, which is foreseen to

More than 90 % of the marine biodiversity remains unexplored, offering a huge potential for discovery of new species and applications in the field of marine biotechnologies, which is foreseen to

generate a 10 % annual growth for this sector. Support will be given to further explore *and exploit* the large potential offered by marine biodiversity and aquatic biomass to bring *new* innovative processes, products and services on the markets with potential applications in sectors including chemical and material industries, pharmaceutical, fisheries and aquaculture, energy supply and cosmetic.

generate a 10 % annual growth for this sector. Support will be given to further explore the large potential offered by marine biodiversity and aquatic biomass to bring innovative *and sustainable* processes, products and services on the markets with potential applications in sectors including chemical and material industries, pharmaceutical, fisheries and aquaculture, energy supply and cosmetic. *Environmental concerns regarding the use of biotechnology in open marine ecosystems have to be carefully taken into account.*

Or. en

Amendment 718

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.4 – paragraph 1

Text proposed by the Commission

The overall objective is to accelerate the conversion of fossil-based European industries to low carbon, resource efficient and sustainable ones. Research and innovation will provide the means to reduce the Union's dependency on fossil fuels and contribute to meeting its energy and climate change policy targets for 2020 (10 % of transport fuels from renewables and a 20 % reduction of greenhouse gases emissions). Estimates conclude that a shift to biological raw materials and biological processing methods could save up to 2.5 billion tons of CO₂ equivalent per year by 2030, increasing markets for bio-based raw materials and new consumer products several-fold. Reaping these potentials requires building a broad knowledge base and developing relevant (bio)technologies, focussing mainly on three essential

Amendment

The overall objective is to accelerate the conversion of fossil-based European industries to low carbon, resource efficient and sustainable ones. Research and innovation will provide the means to reduce the Union's dependency on fossil fuels and contribute to meeting its energy and climate change policy targets for 2020 (10 % of transport fuels from renewables and a 20 % reduction of greenhouse gases emissions). Estimates conclude that a shift to biological raw materials and biological processing methods could save up to 2.5 billion tons of CO₂ equivalent per year by 2030, increasing markets for bio-based raw materials and new consumer products several-fold. Reaping these potentials requires building a broad knowledge base and developing relevant (bio)technologies, focussing mainly on three essential

elements: a) transforming current fossil-based processes by resource and energy efficient biotechnology based ones; b) establishing reliable and **appropriate** supply chains of biomass and waste streams and a wide network of bio-refineries throughout Europe; and c) supporting market development for bio-based products and processes. Synergies will be sought with the 'Leadership in Enabling and Industrial Technologies' specific objective.

elements: a) transforming current fossil-based processes by resource and energy efficient biotechnology based ones; b) establishing reliable, **sustainable** and **shorter** supply chains of biomass and waste streams and a wide network of bio-refineries throughout Europe; and c) supporting market development for bio-based products and processes. Synergies will be sought with the 'Leadership in Enabling and Industrial Technologies' specific objective.

Or. en

Amendment 719

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.4 – point 2.4.1 – paragraph 1

Text proposed by the Commission

Major progress towards low carbon, resource efficient and sustainable industries will be supported through discovery and exploitation of terrestrial and aquatic biological resources, while **minimising** adverse environmental impacts. Potential trade-offs between the various uses of biomass should be **examined**. The development of bio-based products and biologically active compounds for industries and consumers with novel qualities, functionalities and improved sustainability will be targeted. The economic value of renewable resources, bio-waste and by-products will be maximised through new and resource efficient processes.

Amendment

Major progress towards low carbon, resource efficient and sustainable industries will be supported through discovery and exploitation of terrestrial and aquatic biological resources, while **eliminating** adverse environmental impacts. Potential trade-offs between the various uses of biomass should be **carefully assessed, in particular ensuring that new uses of biomass does not jeopardise food production and security, not only in the Union but also in developing countries, does not lead to unsustainable land-use conversion or land-grabbing practices**. The development of bio-based products and biologically active compounds for industries and consumers with novel qualities, functionalities and improved sustainability will be targeted. The economic value of renewable resources, bio-waste and by-products will be maximised through new

and resource efficient processes.

Or. en

Amendment 720

Cristina Gutiérrez-Cortines, Pilar del Castillo Vera

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.4 – point 2.4.2 – paragraph 1

Text proposed by the Commission

Activities will be supported to boost sustainable bioproducts, intermediates and bioenergy/biofuels, predominantly focussing on a cascade approach, prioritising the generation of high added-value products. Technologies and strategies will be developed to assure the raw material supply. Enhancing the range of types of biomass for use in second and third generation biorefineries, including forestry, biowaste and industrial by-products, will help avoid food/fuel conflicts and support economic development of rural and coastal areas in the Union.

Amendment

Activities will be supported to boost sustainable bioproducts, intermediates and bioenergy/biofuels, predominantly focussing on a cascade approach, prioritising the generation of high added-value products. Technologies and strategies will be developed to assure the raw material supply. Enhancing the **availability, range and characteristics** of types of biomass for use in second and third generation biorefineries, including **agriculture, horticulture**, forestry, biowaste and industrial by-products, will help avoid food/fuel conflicts and support economic development of rural and coastal areas in the Union.

Or. en

Amendment 721

Giles Chichester, Vicky Ford

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.4 – point 2.4.2 – paragraph 1

Text proposed by the Commission

Activities will be supported to boost sustainable bioproducts, intermediates and bioenergy/biofuels, predominantly focussing on a cascade approach, prioritising the generation of high added-

Amendment

Activities will be supported to boost sustainable bioproducts, intermediates and bioenergy/biofuels, predominantly focussing on a cascade approach, prioritising the generation of high added-

value products. Technologies and strategies will be developed to assure the raw material supply. Enhancing the range of **types of** biomass for use in second and third generation biorefineries, including forestry, biowaste and industrial by-products, will help avoid food/fuel conflicts and support economic development of rural and coastal areas in the Union.

value products. Technologies and strategies will be developed to assure the raw material supply. Enhancing the **availability, range and characteristics** of biomass for use in second and third generation biorefineries, including **agriculture, horticulture,** forestry, biowaste and industrial by-products, will help avoid food/fuel conflicts and support economic development of rural and coastal areas in the Union.

Or. en

Amendment 722

Giles Chichester, Vicky Ford

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.4 – point 2.4.3 – paragraph 1

Text proposed by the Commission

Demand-side measures will open new markets for biotechnology innovation. Standardisation at Union and international levels is needed for, amongst others, determination of bio-based content, product functionalities and biodegradability. Methodologies and approaches to life-cycle analysis need to be further developed and continuously adapted to scientific and industrial advances. Research activities supporting product and process standardisation and regulatory activities in the field of biotechnology are considered essential for supporting the creation of new markets and for realising trade opportunities.

Amendment

Demand-side measures will open new markets for biotechnology innovation. Standardisation at Union and international levels is needed for, amongst others, determination of bio-based content, **resource use efficiency (land, water, nutrients),** product functionalities and biodegradability. Methodologies and approaches to life-cycle analysis need to be further developed and continuously adapted to scientific and industrial advances. Research activities supporting product and process standardisation, **public procurement** and regulatory activities in the field of biotechnology are considered essential for supporting the creation of new markets and for realising trade opportunities **for products produced in a more sustainable way.**

Or. en

Amendment 723

Pilar del Castillo Vera, Alejo Vidal-Quadras

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.4 – point 2.4.3 – paragraph 1

Text proposed by the Commission

Demand-side measures will open new markets for biotechnology innovation. Standardisation at Union and international levels is needed for, amongst others, determination of bio-based content, product functionalities and biodegradability. Methodologies and approaches to *life-cycle* analysis need to be further developed and continuously adapted to scientific and industrial advances. Research activities supporting product and process standardisation and regulatory activities in the field of biotechnology are considered essential for supporting the creation of new markets and for realising trade opportunities.

Amendment

Demand-side measures will open new markets for biotechnology innovation. Standardisation at Union and international levels is needed for, amongst others, determination of bio-based content, ***resource use efficiency (land, water, nutrients)***, product functionalities and biodegradability. Methodologies and approaches to ***lifecycle*** analysis need to be further developed and continuously adapted to scientific and industrial advances. Research activities supporting product and process standardisation, ***public procurement*** and regulatory activities in the field of biotechnology are considered essential for supporting the creation of new markets and for realising trade opportunities.

Or. en

Amendment 724

Teresa Riera Madurell, Dimitrios Droutsas

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.4 a (new)

Text proposed by the Commission

Amendment

2.4a. Cross-cutting marine and maritime research

2.4a.1. Climate change impact on marine ecosystems and maritime economy

Activities will be supported to increase the current understanding of the functioning of marine ecosystems, the interactions between oceans-atmosphere. This will

increase the ability to assess the role of the oceans on climate and the impact of climate change and ocean acidification on marine ecosystems and coastal areas.

2.4a.2. Develop the potential of marine resources through an integrated approach

Boosting long-term, sustainable maritime growth and create synergies across all the maritime sectors requires an integrated approach. Research activities will focus on preserving the marine environment as well as the impact of maritime activities and products on non-maritime sectors.

This will allow advances in the field of eco-innovation such as new products, processes and the application of management concepts, tools and measures to assess and mitigate the impact of human pressures on the marine environment in order to advance towards a sustainable management of maritime activities.

2.4a.3. Cross-cutting concepts and technologies enabling maritime growth

Advances in cross-cutting enabling technologies (e.g. ICT, electronics, nanomaterials, alloys, biotechnologies, etc) and new developments and concepts in engineering will continue to enable growth. Activities will allow major breakthroughs in the field of marine and maritime research and ocean observation (e.g. deep-sea research, observing systems, sensors, automated systems for monitoring of activities and surveillance, screening marine biodiversity, marine geohazards, ROVs, etc). The aim is to reduce the impact on the marine environment (e.g. underwater noise, introduction of invasive species and pollutants from sea and land, etc) and minimize the carbon foot-print of human activities. Cross-cutting enabling technologies will underpin the implementation of marine and maritime

Union policies.

Or. en

Amendment 725

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.5 – paragraph -1 (new)

Text proposed by the Commission

Amendment

The International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD), initiated by the World Bank, in open partnership with a multi-stakeholder group of organisations, including FAO, GEF, UNDP, UNEP, UNESCO, the World Bank, and the WHO, and after extensive global scientific consultation, provides a comprehensive policy response and roadmap, which should be the guiding principle to find a Union response to the challenges of finding/establishing food production and supply systems that do not degrade the resource base. This policy and roadmap should be guiding the development of specific work programmes under this challenge.

Or. en

Amendment 726

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.5 – paragraph 1

Text proposed by the Commission

Beyond the general sources of external advice, specific consultations will be sought from the Standing Committee on Agricultural Research (SCAR) on a range of issues, including on strategic aspects through its foresight activity and on the coordination of agricultural research between national and Union levels. Appropriate links will be established with the actions of the European Innovation Partnership 'Agricultural Productivity and Sustainability'.

Amendment

Beyond the general sources of external advice, specific consultations will be sought from the Standing Committee on Agricultural Research (SCAR) on a range of issues, including on strategic aspects through its foresight activity and on the coordination of agricultural research between national and Union levels. Appropriate links will be established with the actions of the European Innovation Partnership 'Agricultural Productivity and Sustainability', ***whose objectives should be centred on an ecosystem approach, especially agro-ecology, and its governance should ensure wide stakeholders' participation.***

Or. en

Amendment 727

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.5 – paragraph 1 a (new)

Text proposed by the Commission

Amendment

There is already a large volume of well recognised existing scientific evidence on the link between degradation of the natural resource base, including biodiversity, and the functioning of natural and semi-natural ecosystems to provide essential services to society; it is therefore timely to act on solutions proposed as a result of that science.

Or. en

Amendment 728

Vicky Ford, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.5 – paragraph 2

Text proposed by the Commission

The impact and dissemination of research results will be actively supported through specific actions on communication, knowledge exchange and the involvement of various actors all along the projects. Implementation will combine a wide range of activities, including substantial demonstration and pilot activities. Easy and open access to research results and best practices will be fostered, where appropriate via databases.

Amendment

The impact and dissemination of research results will be actively supported through specific actions on communication, knowledge exchange and the involvement of various actors all along the projects. Implementation will combine a wide range of activities, including substantial demonstration and pilot activities. Easy and *sustainable* open access to research results and best practices will be fostered, where appropriate via databases.

Or. en

Amendment 729

Salvador Sedó i Alabart, Ramon Tremosa i Balcells

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.5 – paragraph 2

Text proposed by the Commission

The impact and dissemination of research results will be actively supported through specific actions on communication, knowledge exchange and the involvement of various actors all along the projects. Implementation will combine a wide range of activities, including substantial demonstration and pilot activities. Easy and open access to research results and best practices will be fostered, where appropriate via databases.

Amendment

The impact and dissemination of research results will be actively supported through specific actions on communication, knowledge *and technology* exchange and the involvement of various actors all along the projects. Implementation will combine a wide range of activities, including substantial demonstration and pilot activities. Easy and open access to research results and best practices will be fostered, where appropriate via databases.

Or. en

Amendment 730

Vicky Ford, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.5 – paragraph 3

Text proposed by the Commission

The specific support to SMEs will allow for an increased participation of farms, fishermen and other types of micro-enterprises in research and demonstration activities. The specific needs of the primary production sector for innovation support services and outreach structures will be taken into account. Implementation will combine a wide range of activities, including knowledge exchange actions where the involvement of farmers and intermediaries will be actively ensured in view of summarising the research needs of end-users. Easy and open access to research results and best practices will be fostered.

Amendment

The specific support to SMEs will allow for an increased participation of farms, fishermen and other types of micro-enterprises in research and demonstration activities. The specific needs of the primary production sector for innovation support services and outreach structures will be taken into account. Implementation will combine a wide range of activities, including knowledge exchange actions where the involvement of farmers and intermediaries will be actively ensured in view of summarising the research needs of end-users. Easy and **sustainable** open access to research results and best practices will be fostered.

Or. en

Amendment 731

Vicky Ford, Maria Da Graça Carvalho

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.5 – paragraph 4

Text proposed by the Commission

Support to standard setting will be used to help accelerate market deployment for novel bio-based goods and services.

Amendment

Support to standard setting will be used to help accelerate market deployment for novel bio-based goods and services ***ranging from terrestrial and aquatic production systems through to the end-consumer.***

Or. en

Justification

It must be made clear that standard setting will be used across the whole value chain, from primary production (terrestrial or aquatic) through to end-consumer. That is the only way to ensure that the whole value chain is meeting common targets.

Amendment 732

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.5 – paragraph 4

Text proposed by the Commission

Support to standard setting will be used *to help accelerate market deployment for novel bio-based goods and services.*

Amendment

Support to standard setting will be used *as appropriate.*

Or. en

Amendment 733

Giles Chichester, Vicky Ford

Proposal for a decision

Annex 1 – section 3 – point 2 – point 2.5 – paragraph 7

Text proposed by the Commission

Forward looking activities will be undertaken across the sectors of the bio-economy, including the development of data bases, indicators and models addressing global, European, national and regional dimensions. A European bio-economy observatory shall be developed for mapping and monitoring Union and global research and innovation activities, developing key performance indicators, and monitoring innovation policies in the bio-economy.

Amendment

Forward looking activities will be undertaken across the sectors of the bio-economy, including the development of data bases, indicators and models addressing global, European, national and regional dimensions. A European bio-economy observatory, *bringing together all stakeholders from science, industry and civil society* shall be developed for mapping and monitoring Union and global research and innovation activities, developing key performance indicators, and monitoring innovation policies in the bio-economy.

Amendment 734
Silvia-Adriana Țicău

Proposal for a decision
Annex 1 – Part III – point 3 – heading

Text proposed by the Commission

Amendment

3. **Secure**, clean and efficient energy.

3. **Energy efficiency and secure**, clean and efficient energy

Or. ro

Amendment 735
Silvia-Adriana Țicău

Proposal for a decision
Annex 1 – Part III – point 3.1 – introductory part

Text proposed by the Commission

Amendment

3.1. **Reducing** energy consumption and carbon footprint through smart and sustainable usage

3.1. **Increasing energy efficiency and reducing** energy consumption and carbon footprint through smart and sustainable usage

Or. ro

Amendment 736
Eija-Riitta Korhola

Proposal for a decision
Annex 1 – section 3 – point 3 – point 3.1 – introductory part

Text proposed by the Commission

Amendment

3.1. Reducing energy consumption and carbon footprint through smart and sustainable usage

3.1. Reducing energy consumption and carbon footprint through smart and sustainable **power generation and** usage

Amendment 737
Vladko Todorov Panayotov

Proposal for a decision
Annex 1 – section 3 – point 3 – point 3.1 – paragraph 1

Text proposed by the Commission

The energy sources and consumption patterns of Europe's industries, transport, buildings, towns and cities are largely unsustainable, leading to significant environmental and climate change impacts. The development of near-zero-emission buildings, highly efficient industries and mass take-up of energy-efficient approaches by companies, individuals, communities and cities will require not only technological advances, but also non-technological solutions such as new advisory, financing and demand management services. In this way energy efficiency may provide one of the most cost effective ways to reduce energy demand, thereby enhancing security of energy supply, reducing environmental and climate impacts and boosting competitiveness.

Amendment

The energy sources and consumption patterns of Europe's industries, transport, buildings, towns and cities are largely unsustainable, leading to significant environmental and climate change impacts. The development of near-zero-emission buildings, highly efficient industries and mass take-up of energy-efficient approaches by companies, individuals, communities and cities will require not only technological advances, but also non-technological solutions such as new advisory, financing and demand management services. In this way energy efficiency may provide one of the most cost effective ways to reduce energy demand, thereby enhancing security of energy supply, reducing environmental and climate impacts and boosting competitiveness. ***Horizon 2020 could support the Union in going beyond the 20% targets through stronger promotion of renewable energy development and uptake and innovation in energy efficiency.***

Amendment 738
Britta Thomsen

Proposal for a decision
Annex 1 – section 3 – point 3 – point 3.1 – paragraph 1

Text proposed by the Commission

The energy sources and consumption patterns of Europe's industries, transport, buildings, towns and cities are largely unsustainable, leading to significant environmental and climate change impacts. The development of near-zero-emission buildings, highly efficient industries and mass take-up of energy-efficient approaches by companies, individuals, communities and cities will require not only technological advances, but also **non-technological** solutions such as new advisory, financing and demand management services. In this way energy efficiency may provide one of the most cost effective ways to reduce energy demand, thereby enhancing security of energy supply, reducing environmental and climate impacts and boosting competitiveness.

Amendment

The energy sources and consumption patterns of Europe's industries, transport, buildings, towns and cities are largely unsustainable, leading to significant environmental and climate change impacts. The development of **new and existing** near-zero-emission buildings, **renewable energy technology**, highly efficient industries and mass take-up of energy-efficient approaches by companies, individuals, communities and cities will require not only technological advances, but also **non - technological** solutions such as new advisory, financing and demand management services. In this way energy efficiency may provide one of the most cost effective ways to reduce energy demand **and, together with renewable energy**, thereby **decarbonising the energy sector**, enhancing security of energy supply, reducing environmental and climate impacts and boosting **and confirming Europe's global competitiveness and leadership. Funding for research and development of fossil fuel-based power generation is therefore not eligible under this societal challenge.**

Or. en

Justification

Renewable energy and energy efficiency have been identified in the EC Energy Roadmap 2050 as the 'no regrets options', together with infrastructure. Both energy efficiency and renewable energy technology R&D need to be given push in order to meet these objectives and to sustain Europe's leadership in this field. Therefore during the times of limited public funding, any single Euro from the Horizon 2020 budget spent on fossil fuel technology should be seen as contradicting the objectives outlined under the 'Secure, clean and efficient energy'.

Amendment 739

Fiona Hall, Kent Johansson

Proposal for a decision

Annex 1 – section 3 – point 3 – point 3.1 – paragraph 1

Text proposed by the Commission

The energy sources and consumption patterns of Europe's industries, transport, buildings, towns and cities are largely unsustainable, leading to significant environmental and climate change impacts. The development of near-zero-emission buildings, highly efficient industries and mass take-up of energy-efficient approaches by companies, individuals, communities and cities will require not only technological advances, but also non-technological solutions such as new advisory, financing and demand management services. In this way energy efficiency **may** provide **one of** the most cost effective **ways** to reduce energy demand, thereby enhancing security of energy supply, reducing environmental and climate impacts and boosting competitiveness.

Amendment

The energy sources and consumption patterns of Europe's industries, transport, buildings, towns and cities are **often inefficient and** largely unsustainable, leading to significant environmental and climate change impacts. The development of **new and existing** near-zero-emission **and positive energy** buildings, highly efficient **and sustainable** industries and mass take-up of energy-efficient approaches by companies, individuals, communities and cities will require not only technological advances, but also non-technological solutions such as new advisory, financing and demand management services. In this way energy efficiency **and savings will** provide the most cost effective **way** to reduce energy demand, thereby enhancing security of energy supply, reducing environmental and climate impacts and boosting **Europe's competitiveness and global leadership. Funding for research and development of fossil fuel technologies is therefore not eligible under this societal challenge.**

Or. en

Amendment 740

Eija-Riitta Korhola

Proposal for a decision

Annex 1 – section 3 – point 3 – point 3.1 – paragraph 1

Text proposed by the Commission

The energy sources and consumption patterns of Europe's industries, transport, buildings, towns and cities are largely unsustainable, leading to significant environmental and climate change impacts.

Amendment

The energy sources and consumption patterns of Europe's industries, transport **(including maritime transport)**, buildings, towns and cities are largely unsustainable, leading to significant environmental and

The development of near-zero-emission buildings, highly efficient industries and mass take-up of energy-efficient approaches by companies, individuals, communities and cities will require not only technological advances, but also non-technological solutions such as new advisory, financing and demand management services. In this way energy efficiency may provide one of the most cost effective ways to reduce energy demand, thereby enhancing security of energy supply, reducing environmental and climate impacts and boosting competitiveness.

climate change impacts. The development of near-zero-emission buildings *and ships*, highly efficient industries and mass take-up of energy-efficient approaches by companies, individuals, communities and cities will require not only technological advances, but also non-technological solutions such as new advisory, financing and demand management services. In this way energy efficiency may provide one of the most cost effective ways to reduce energy demand, thereby enhancing security of energy supply, reducing environmental and climate impacts and boosting competitiveness.

Or. en

Amendment 741

Ioannis A. Tsoukalas

Proposal for a decision

Annex 1 – section 3 – point 3 – point 3.1 – paragraph 1

Text proposed by the Commission

The energy sources and consumption patterns of Europe's industries, transport, buildings, towns and cities are largely unsustainable, leading to significant environmental and climate change impacts. The development of near-zero-emission buildings, highly efficient industries and mass take-up of energy-efficient approaches by companies, individuals, communities and cities will require not only technological advances, but also non-technological solutions such as new advisory, financing and demand management services. In this way energy efficiency may provide one of the most cost effective ways to reduce energy demand, thereby enhancing security of energy supply, reducing environmental and climate impacts and boosting

Amendment

The energy sources and consumption patterns of Europe's industries, transport, buildings, towns and cities are largely unsustainable, leading to significant environmental and climate change impacts. The development of near-zero-emission buildings, *renewable energy technologies*, highly efficient industries and mass take-up of energy-efficient approaches by companies, individuals, communities and cities will require not only technological advances, but also non-technological solutions such as new advisory, financing and demand management services. In this way energy efficiency may provide one of the most cost effective ways to reduce energy demand, thereby enhancing security of energy supply, reducing environmental and climate impacts and boosting competitiveness *and Union leadership in*

competitiveness.

this field.

Or. en

Amendment 742

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 3 – point 3.1 – paragraph 1

Text proposed by the Commission

The energy sources and consumption patterns of Europe's industries, transport, buildings, towns and cities are largely unsustainable, leading to significant environmental and climate change impacts. The development of *near-zero-emission* buildings, highly efficient industries and mass take-up of energy-efficient approaches by companies, individuals, communities and cities will require not only technological advances, but also non-technological solutions such as new advisory, financing and demand management services. In this way energy efficiency may provide one of the most cost effective ways to reduce energy demand, thereby enhancing security of energy supply, reducing environmental and climate impacts and boosting competitiveness.

Amendment

The energy sources and consumption patterns of Europe's industries, transport, buildings, towns and cities are largely unsustainable, leading to significant environmental and climate change impacts. The development of *near-zero-energy* buildings, highly efficient industries and mass take-up of energy-efficient approaches by companies, individuals, communities and cities will require not only technological advances, but also non-technological solutions such as new advisory, financing and demand management services. In this way energy efficiency may provide one of the most cost effective ways to reduce energy demand, thereby enhancing security of energy supply, reducing environmental and climate impacts and boosting competitiveness.

Or. en

Amendment 743

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 3 – point 3.1 – paragraph 1 a (new)

Text proposed by the Commission

Amendment

By 2050 greenhouse gas emission reductions of 80-95% should be achieved. All scenarios in the Energy Roadmap 2050 show that renewable energy technologies will by the middle of this century account for the biggest share of energy supply technologies and that energy efficiency will play a crucial role for meeting the objectives. It is therefore appropriate for 85% of the budget under this Challenge to go towards research and innovation in renewable energy and end-use energy efficiency.

Or. en

Amendment 744
Oreste Rossi

Proposal for a decision
Annex 1 – Part III– point 3.1.1

Text proposed by the Commission

3.1.1. Reducing energy consumption and eliminating energy waste, while providing the services that society and economy need, requires not only that more, efficient, cost-competitive, environmentally-friendly, and smarter products and services are brought to mass market but also the integration of components and devices in such a way that they cooperate to optimise the overall energy use of buildings, services and industry.

Amendment

3.1.1. Ensuring energy efficiency and eliminating energy waste, while providing the services that society and economy need, requires not only that more, efficient, cost-competitive, environmentally-friendly, and smarter products and services are brought to mass market but also the integration of components and devices in such a way that they cooperate to optimise the overall energy use of buildings, services and industry.

Or. it

Amendment 745
Fiona Hall, Kent Johansson

Proposal for a decision

Annex 1 – section 3 – point 3 – point 3.1 – point 3.1.1 – paragraph 2

Text proposed by the Commission

To ensure full adoption and full benefits for consumers (including the possibility for them to monitor their own consumption), energy performance of these technologies and services needs to be customised and optimised for and in their application environments. This requires not only researching, developing and testing innovative Information and Communication Technologies (ICT) and monitoring and control techniques but also large-scale demonstration projects and pre-commercial deployment activities to ensure interoperability and scalability. Such projects should aim to develop common procedures to collect, collate and analyse energy consumption and emissions data to improve the measurability, transparency, social acceptability, planning and visibility of energy use and its environmental impacts.

Amendment

To ensure full adoption and full benefits for consumers (including the possibility for them to monitor their own consumption), energy performance of these technologies and services needs to be customised and optimised for and in their application environments. This requires not only researching, developing and testing innovative Information and Communication Technologies (ICT) and monitoring and control techniques but also large-scale demonstration projects and pre-commercial deployment activities to ensure interoperability and scalability. Such projects should aim to develop common procedures to collect, collate and analyse energy consumption and emissions data to improve the measurability, transparency, **accuracy**, social acceptability, planning and visibility of energy use and its environmental impacts.

Or. en

Amendment 746

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 3 – point 3.1 – point 3.1.1 – paragraph 2

Text proposed by the Commission

To ensure full adoption and full benefits for consumers (including the possibility for them to monitor their own consumption), energy performance of these technologies and services needs to be customised and optimised for and in their application environments. This requires not only researching, developing and testing

Amendment

To ensure full adoption and full benefits for consumers (including the possibility for them to monitor their own consumption), energy performance of these technologies and services needs to be **improved**, customised and optimised for and in their application environments. This requires not only researching, developing and testing

innovative Information and Communication Technologies (ICT) and monitoring and control techniques but also large-scale demonstration projects and pre-commercial deployment activities to ensure interoperability and scalability. Such projects should aim to develop common procedures to collect, collate and analyse energy consumption and emissions data to improve the measurability, transparency, social acceptability, planning and visibility of energy use and its environmental impacts.

innovative Information and Communication Technologies (ICT) and monitoring and control techniques but also large-scale demonstration projects and pre-commercial deployment activities to ensure interoperability and scalability. Such projects should aim to develop common procedures to collect, collate and analyse energy consumption and emissions data to improve the measurability, transparency, social acceptability, planning and visibility of energy use and its environmental impacts.

Or. en

Amendment 747
Paul Rübzig

Proposal for a decision
Annex 1 – section 3 – point 3 – point 3.1 – point 3.1.2 – introductory part

Text proposed by the Commission

Amendment

3.1.2. Unlock the potential of efficient and renewable heating-cooling systems

3.1.2. Unlock the potential of **cost-competitive**, efficient and renewable heating-cooling systems

Or. en

Amendment 748
Fiona Hall, Kent Johansson

Proposal for a decision
Annex 1 – section 3 – point 3 – point 3.1 – point 3.1.2 – paragraph 1

Text proposed by the Commission

Amendment

A substantial share of energy is consumed for heating or cooling purposes across the Union and the development of cost-effective and efficient technologies, system integration techniques e.g. network connectivity with standardised languages

A substantial share of energy is consumed for heating or cooling purposes across the Union and the development of cost-effective, **sustainable** and efficient technologies, system integration techniques e.g. network connectivity with standardised

and services in this area would have a major impact in reducing energy demand. This requires research and demonstration of new systems and components for industrial as well as residential applications, for example in decentralised and district supply of hot water, space heating and cooling. This should encompass different technologies: solar thermal, geothermal, biomass, heat pumps, combined heat and power etc, and meet the requirements of near-zero energy buildings and districts. Further breakthroughs are needed, in particular, in thermal storage from renewable energy sources and to foster the development and deployment of efficient combinations of hybrid heating and cooling systems, for centralised and de-centralised applications.

languages and services in this area would have a major impact in reducing energy demand. This requires research and demonstration of new systems and components for industrial as well as residential applications, for example in decentralised and district supply of hot water, space heating and cooling. This should encompass different technologies: solar thermal, geothermal, biomass, heat pumps, combined heat and power etc, and meet the requirements of near-zero energy buildings and districts. Further breakthroughs are needed, in particular, in thermal storage from renewable energy sources and to foster the development and deployment of efficient combinations of hybrid heating and cooling systems, for centralised and de-centralised applications.

Or. en

Amendment 749
Paul Rübzig

Proposal for a decision
Annex 1 – section 3 – point 3 – point 3.1 – point 3.1.2 – paragraph 1

Text proposed by the Commission

A substantial share of energy is consumed for heating or cooling purposes across the Union and the development of **cost-effective** and efficient technologies, system integration techniques e.g. network connectivity with standardised languages and services in this area would have a major impact in reducing energy demand. This requires research and demonstration of new systems and components for industrial as well as residential applications, for example in decentralised and district supply of hot water, space heating and cooling. This should encompass different technologies: solar thermal, geothermal, biomass, heat pumps,

Amendment

A substantial share of energy is consumed for heating or cooling purposes across the Union and the development of **cost competitive** and efficient technologies, system integration techniques e.g. network connectivity with standardised languages and services in this area would have a major impact in reducing energy demand. This requires research and demonstration of new systems and components for industrial, **commercial** as well as residential applications, for example in decentralised and district supply of hot water, space heating and cooling. This should encompass different technologies: solar thermal, geothermal, biomass, heat

combined heat and power etc, and meet the requirements of near-zero energy buildings and districts. Further breakthroughs are needed, in particular, in thermal storage from renewable energy sources and to foster the development and deployment of efficient combinations of hybrid heating and cooling systems, for centralised and de-centralised applications.

pumps, combined heat and power etc, and meet the requirements of near-zero energy buildings and districts. Further breakthroughs are needed, in particular, in thermal storage from renewable energy sources and to foster the development and deployment of efficient combinations of **energy sources and technologies in** hybrid heating and cooling systems, for centralised and de-centralised applications.

Or. en

Justification

Heating and cooling accounts for nearly 50% of the final energy demand in the European Union and this share is even larger - more than 80% - in buildings. Having the capacity to provide a clean and efficient answer to these energy needs, renewable heating and cooling (RHC) technology and its infrastructures are an important corner-stone to achieving Europe's energy and climate objectives. However, policies at European and national level fail to address properly the huge potential of renewable heating and cooling systems. The Energy Roadmap 2050 (COM(2011) 885 final) makes only a minor reference to the importance of renewable heating and cooling. Similarly, RHC technologies are largely overlooked in the current version of the proposal for a Council Decision on "Horizon 2020". They are merely mentioned in a paragraph (3.1.2.) of the energy efficiency chapter. Europe's well-being and industrial future depends on clean, safe and affordable energy supply for all types of demand. This requires active policy support! Proper acknowledgment of heating and cooling technology in Europe's future research, development and deployment program will also maintain the region's technological leadership in these sectors. The proposed amendment will give more prominent acknowledgment to heating and cooling by shifting it to the same level as electricity. This is necessary if we are to send a strong message to the markets and society as a whole and to put Europe in the front row in developing tomorrow's energy scenario.

Amendment 750

Vladko Todorov Panayotov

Proposal for a decision

Annex 1 – section 3 – point 3 – point 3.1 – point 3.1.2 – paragraph 1 a (new)

Text proposed by the Commission

Amendment

In order to reduce demand for heating and cooling more successfully, efficiency measures must be accompanied by simultaneous introduction of low-carbon

and carbon-free heating and cooling sources on the supply side. Unlocking the potential of renewable heating and cooling (RHC) technologies requires a substantial intensification of research and development activities. To provide the right impulse to the deployment of RHC technologies, their efficiency must be increased and costs reduced. New solutions must be developed, especially for near-zero energy buildings and districts. In particular, it is necessary to: develop sustainable and highly efficient biomass supply chain and use, develop cost-competitive solar thermal systems and solar heated buildings, as well as efficient and cost-effective geothermal heating systems, cost-optimized heat pumps, efficient enabling technologies (thermal energy storage and hybrid systems), and smart thermal energy networks.

Or. en

Amendment 751

Cristina Gutiérrez-Cortines, Pilar del Castillo Vera, Alejo Vidal-Quadras, Salvatore Tatarella

Proposal for a decision

Annex 1 – section 3 – point 3 – point 3.1 – point 3.1.3 – paragraph 1

Text proposed by the Commission

Urban areas are one of the largest consumers of energy in the Union and emit a correspondingly large share of greenhouse gases, while generating a substantial amount of air pollutants. At the same time, urban areas are affected by decreasing air quality and climate change and have to develop their own mitigation and adaptation strategies. Finding innovative energy solutions (energy efficiency, electricity and heating and cooling supply systems), integrated with transport, waste and water treatment as

Amendment

Urban areas are one of the largest consumers of energy in the Union and emit a correspondingly large share of greenhouse gases, while generating a substantial amount of air pollutants. ***In that context, there is a need of promoting integrated systemic urban development strategies that take into account: energy efficiency, accessibility, green spaces, adaptation of habitats and social integration.*** At the same time, urban areas are affected by decreasing air quality and climate change and have to develop their

well as ICT solutions for the urban environment are therefore crucial in the transformation towards a low carbon society. Targeted initiatives in support to the convergence of industrial value chains of the energy, transport and ICT sector for smart urban applications need to be envisaged. At the same time, new technological, organisational, planning and business models need to be developed and tested at full scale according to the needs and means of cities and communities. Research is also needed to understand the social, economic and cultural issues that are involved in this transformation.

own mitigation and adaptation strategies. Finding innovative energy solutions (energy efficiency, electricity and heating and cooling supply systems), integrated with transport, waste and water treatment as well as ICT solutions for the urban environment are therefore crucial in the transformation towards a low carbon society. Targeted initiatives in support to the convergence of industrial value chains of the energy, transport and ICT sector for smart urban applications need to be envisaged. At the same time, new technological, organisational, planning and business models need to be developed and tested at full scale according to the needs and means of cities and communities. Research is also needed to understand the social, economic and cultural issues that are involved in this transformation.

Or. en

Amendment 752

Philippe Lamberts

on behalf of the Verts/ALE Group

Proposal for a decision

Annex 1 – section 3 – point 3 – point 3.1 – point 3.1.3 – paragraph 1

Text proposed by the Commission

Urban areas are one of the largest consumers of energy in the Union and emit a correspondingly large share of greenhouse gases, while generating a substantial amount of *air* pollutants. At the same time, urban areas are affected by decreasing air quality and climate change and have to develop their own mitigation and adaptation strategies. Finding innovative energy solutions (energy efficiency, electricity and heating and cooling supply systems), integrated with transport, waste and water treatment as well as ICT solutions for the urban

Amendment

Urban areas are one of the largest consumers of energy in the Union and emit a correspondingly large share of greenhouse gases, while generating a substantial amount of pollutants. At the same time, urban areas are affected by decreasing air quality and climate change and have to develop their own mitigation and adaptation strategies. Finding innovative energy solutions ***to reduce the overall energy consumption as well as to increase innovative energy systemic solutions (renewable energy, energy efficiency, electricity and heating and***

environment are therefore crucial in the transformation towards a **low carbon** society. Targeted initiatives in support to the convergence of industrial value chains of the energy, transport and ICT sector for smart urban applications need to be envisaged. At the same time, new technological, organisational, planning and business models need to be developed and tested at full scale according to the needs and means of cities and communities. Research is also needed to understand the social, economic and cultural issues that are involved in this transformation.

cooling supply systems), integrated with transport, waste and water treatment as well as ICT solutions for the urban environment are therefore crucial in the transformation towards a **renewable based and energy efficient** society. Targeted initiatives in support to the convergence of industrial value chains of the energy, transport and ICT sector for smart urban applications need to be envisaged. At the same time, new technological, organisational, planning and business models need to be developed and tested at full scale according to the needs and means of cities and communities. Research is also needed to understand the social, economic, **environmental** and cultural issues that are involved in this transformation.

Or. en

Amendment 753
Eija-Riitta Korhola

Proposal for a decision
Annex 1 – section 3 – point 3 – point 3.1 – point 3.1.3 – paragraph 1

Text proposed by the Commission

Urban areas are one of the largest consumers of energy in the Union and emit a correspondingly large share of greenhouse gases, while generating a substantial amount of air pollutants. At the same time, urban areas are affected by decreasing air quality and climate change and have to develop their own mitigation and adaptation strategies. Finding innovative energy solutions (energy efficiency, electricity and heating and cooling supply systems), integrated with transport, waste and water treatment as well as ICT solutions for the urban environment are therefore crucial in the transformation towards a low carbon society. Targeted initiatives in support to

Amendment

Urban areas are one of the largest consumers of energy in the Union and emit a correspondingly large share of greenhouse gases, while generating a substantial amount of air pollutants. At the same time, urban areas are affected by decreasing air quality and climate change and have to develop their own mitigation and adaptation strategies. Finding innovative energy solutions (energy efficiency, electricity and heating and cooling supply systems), integrated with **clean transport (including maritime transport) and vehicles**, waste and water treatment as well as ICT solutions for the urban environment are therefore crucial in the transformation towards a low carbon

the convergence of industrial value chains of the energy, transport and ICT sector for smart urban applications need to be envisaged. At the same time, new technological, organisational, planning and business models need to be developed and tested at full scale according to the needs and means of cities and communities. Research is also needed to understand the social, economic and cultural issues that are involved in this transformation.

society. Targeted initiatives in support to the convergence of industrial value chains of the energy, transport and ICT sector for smart urban applications need to be envisaged. At the same time, new technological, organisational, planning and business models need to be developed and tested at full scale according to the needs and means of cities and communities.

Focus should be on linking together a broader range of research activities for new market solutions and technologies that provide long-term vision. Research is also needed to understand the social, economic and cultural issues that are involved in this transformation.

Or. en