



Building Europe's Knowledge

**Food, agriculture and fisheries and biotechnology
in the 7th RTD Framework Programme
"Sustainable production and management of
biological resources"**

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Food, agriculture and fisheries, and biotechnology research: Rationale

Research (particularly in Life sciences and biotechnology) will...

- Develop production, management and processing of biological raw materials from plants, animals and micro-organisms, i.e. in relationship to quality, efficiency, sustainability, etc.
- Create competitive advantages for all EU industries in the area of biological resources (agriculture, nutrition, forestry, paper, new bio industries) with an annual turnover of 1500 billion €.
- Fulfil the social demand for safe and more wholesome food.
- Create new eco-efficient and sustainable manufactured products (bio fuels, bio polymers) and decrease dependence on fossil fuels.

Activity 1

Sustainable production and management of biological resources from land, forest and aquatic environment

- Enabling research ('omics', converging technologies, bio-informatics, biodiversity) for micro-organism, plants and animals
- Competitive, sustainable and multifunctional agriculture, forestry, fishery and aquaculture
- Animal health production and welfare; animal diseases incl. zoonoses
- Marine resources, fishery, aquaculture
- Development of policy strategies for knowledge based bio-economy, agriculture, fishery as well as rural and coastal areas



Activity 1

Sustainable production and management of biological resources from land, forest and aquatic environment

Area 1.1.1 Technologies

- Development of new tools and processes to support R&D in crop plants: molecular breeding
- Mining genomics information of farm animals to generate new information on the genetic basis of phenotypes important to sustainable agriculture
- Development of genetic systems for crop improvement through a systems biology approach
- Development of technologies and tools for the exploitation of livestock genomes
- Using new technologies to identify (re-)emerging pathogens from wildlife reservoirs
- Development of new tools and processes to support R&D in crop plants: gene technology breeding
- New and converging technologies for Precision Livestock Farming in European animal production systems
- Genomics to develop improved approaches to the control of endemic infectious, or metabolic, farm animal diseases



Activity 1

Sustainable production and management of biological resources from land, forest and aquatic environment

Area 2.1.2 Increased sustainability of all production systems (agriculture, fisheries and aquaculture); Plant health and crop protection (1)

- Annual Food crops with improved tolerance to multiple abiotic stresses
- Genomics for cereal improvement for food and non-food uses
- Development of more efficient risk analysis techniques for pests and pathogens of phytosanitary concern
- Reducing the need for external inputs in high-value protected horticulture
- Novel forest tree breeding
- Developing new methods for valuing and marketing of currently non-marketable forest goods and services
- Coordination of Agricultural Research in the Mediterranean
- Reduction of nitrogen excretion in ruminants
- From capture based to self-sustained aquaculture
- Improving cost-efficiency in the fisheries
- Improved indicators of the relationship between organic/low-input farming and biodiversity
- Improving water stress tolerance in European food crops



Activity 1

Sustainable production and management of biological resources from land, forest and aquatic environment

Area 2.1.2 Increased sustainability of all production systems (agriculture, fisheries and aquaculture); Plant health and crop protection(2)

- The structure of fish populations and traceability of fish and fish products
- Improving research in support of scientific advice to fisheries management outside EU waters
- Consolidate alliances with third countries in the field of aquaculture
- Mitigating adverse impacts of fisheries
- Reducing the utilisation of mineral fertilisers by improving the efficiency of nutrient use in European crops
- Essential biological functions related to the most relevant stages of aquaculture fish life-history
- Developing vaccines for the control of roundworm infestation in extensive ruminant production systems
- Framework for effort and capacity management of fisheries
- Mitigating adverse impacts of aquaculture
- Microbial control for more sustainable aquaculture
- Improved agro-forestry systems for sustainable farming (SICA)



Activity 1

Sustainable production and management of biological resources from land, forest and aquatic environment

Area 2.1.3 Optimised animal health production and welfare across agriculture, fisheries and aquaculture(1)

- Improving animal health, product quality and performance of organic and low-input livestock systems through integration of breeding and innovation management techniques.
- Breeding tools for improved livestock products
- Coordination of European research in the area of animal health, including emerging threats, infectious diseases and surveillance
- Optimising research efforts for the development of the most effective tools for controlling infectious animal diseases
- Development of rational strategies for the eradication of bovine tuberculosis
- Evaluating and controlling the risk of African Swine Fever in the EU



Activity 1

Sustainable production and management of biological resources from land, forest and aquatic environment

Area 2.1.3 Optimised animal health production and welfare across agriculture, fisheries and aquaculture (2)

- Emerging vector-borne diseases: 'in particular' West Nile fever, Rift Valley Fever and Crimean-Congo haemorrhagic fever
- Improved epidemiological tools for food-borne zoonoses: application of geographical information for live animals and animal products
- Neglected zoonoses in developing countries: integrated approach for the improvement of their control in animals
- Biosafety measures for Campylobacter at primary production
- Development of a new generation vaccine for FMD
- Improving production through investigating the gut physiology of farm animals and its interaction with the gastro-intestinal microflora

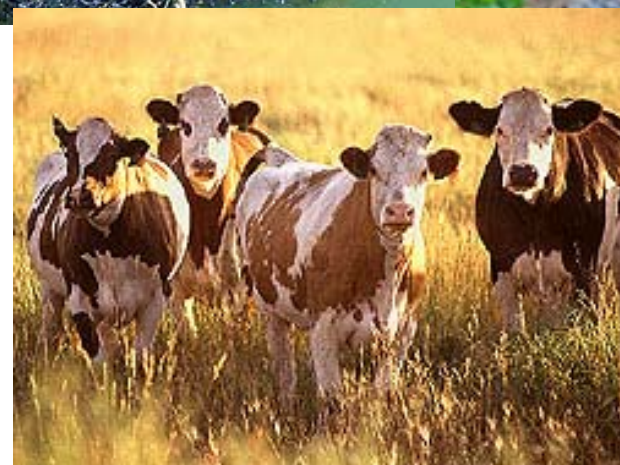


Activity 1

Sustainable production and management of biological resources from land, forest and aquatic environment

Area 2.1.4 Socio-economic research and support to policies (1)

- Developing the knowledge-based bio-economy (KBBE)
- Enabling efficient transfer of technology in the knowledge-based bio-economy
- The farm of tomorrow
- GMO cost effective and crop-specific co-existence measures
- Containment of Sharka virus in view of EU-expansion
- Assessing the socio-economic consequences and costs benefits of measures promoting good animal welfare
- Establishment of an information platform on the protection and welfare of animals
- Models for the extrapolation of maximum residue limits (MRLs) in the food chain
- External costs of pesticides
- Governance for an operational regional ecosystem approach to fisheries management
- Addressing uncertainty and complexity – governance for fisheries management
- Interactions of fisheries and aquaculture of bluefin tuna
- Deep sea fisheries management



Activity 1

Sustainable production and management of biological resources from land, forest and aquatic environment

Area 2.1.4 Socio-economic research and support to policies(2)

- Comparative analysis of factor markets for agriculture across the Member States
- Enlargement network - Agro-economic policy analysis of the accession and the candidate states and the countries of the Western Balkans
- Drivers and limits of enhanced trade in agricultural and food products
- Non-tariff barriers
- Trade and agricultural policies - India
- Policy and institutional aspects of sustainable agriculture and rural development in the Mediterranean partner countries
- Costs of different standard setting and certification systems for organic food and farming
- New sources of employment in rural areas.
- Cost of production using FADN data



Activity 1

Sustainable production and management of biological resources from land, forest and aquatic environment

Area 2.1.4 Socio-economic research and support to policies(3)

- Assessing the impact of rural development policies (including Leader)
- Assessing the pros & cons and monitoring the perception of GM animals
- GMO crops and possible long-term impacts on biodiversity
- Improving the stakeholder dialogue towards a common vision and joint research priorities for the knowledge-based bio-economy
- Novel approaches for reusing nitrogen
- Valorisation of Andean microbial biodiversity for agroindustry of basic crops, for environmental protection and as a source of novel bioactive compounds – SICA (Latin America-Andean region)
- Spatial analysis of area-based measures in rural development programmes
- Societal Benefits of Organic Farming
- Assessing the impact of decoupling and of the implementation of cross compliance on the environment and rural economies.



Further information

- EU research: <http://europa.eu.int/comm/research>
- Sixth Framework Programme:
<http://www.cordis.lu/fp6/home.html>
<http://www.cordis.lu/fp6/food.html>
- Seventh Framework Programme:
<http://www.cordis.europa.eu/fp7/home.html>
- Research DG Site:
http://europa.eu.int/comm/research/index_en.html
- RTD info magazine:
<http://europa.eu.int/comm/research/rtdinfo/>
- Information requests, Europe Direct
<http://ec.europa.eu/research/index.cfm?pg=enquiries>

