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Animal science and livestock systems in the seventh Framework Programme for research

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The European Strategy on Life Sciences and Biotechnology

The diagram is a horizontal timeline with five chevron-shaped boxes pointing right, representing key events in the strategy's development:

- 2000:** Lisbon Summit. EU: most competitive and dynamic knowledge-based economy worldwide by 2010.
- 2001:** Stockholm Summit. Potential of biotechnology for European competitiveness acknowledged.
- 2002:** European Strategy for Life Sciences and Biotechnology. Major political achievement but implementation patchy.
- 2005:** A Partnership for Growth & Employment. Re-launched Lisbon Strategy. Research & Innovation crucial.
- 2010:** Lisbon Agenda. Biotechnology as part of the knowledge-based economy.

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Additional factors

- A key aspect of Lisbon agenda
 - but the KBBE addresses major challenges beyond growth and employment
- The growing demand for safer and higher quality food from diverse sources
- Increasing interest in use of non-food products from agriculture (biomass and biofuel)
- Sustainability and security of agricultural and fisheries production
 - CAP & CFP
- Additional policies
 - Community Animal Health Policy 2007-2013
 - Action plan on the protection and welfare of animals 2006-2010
 - etc.

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The bio-economy is large....

- Annual turnover ca €1 668 billion
 - Food: €850b
 - Agriculture: €210b
 - Fisheries and aquaculture: €8b
 - Paper/pulp: €400b
 - Forestry/wood: €150b
 - Industrial biotechnology: €50b

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.... but faces significant challenges

- Climate and environment
 - Global warming; extreme weather; drought; biodiversity; sustainable fisheries; water and soil quality
- Social change and rural development
 - Demographics; lifestyle and consumer demand; attitudes to new technologies; changing use of countryside
- Health
 - Obesity, allergies, zoonoses
- Economy and trade
 - Globalisation; CAP/CFP
- Research structures
 - Converging technologies; multidisciplinary

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Animal production and health in the Framework Programmes

- FP5 (1998-2002)
 - Quality of life and management of living resources:
 - Key-Action 2: Control of Infectious Diseases
 - Key-Action 5: Sustainable Agriculture, Fisheries and Forestry, and Integrated Development of Rural Areas including Mountain Areas
- FP6 (2002-2006)
 - Thematic priority 5: Food quality and safety
 - Scientific support to policies ("priority 8")

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Animal production and health support in FP6

- Animal production and health support
 - FP5 ≈ €105million EU contribution
 - approximately 50%:50% KA5:KA2
 - FP6 ≈ €150million EU contribution
 - approximately 80%:20% TP5:SSP
- Significant increase in funding FP5:FP6
 - Primarily in terms of “Food quality and safety” (thematic priority 5)

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Projects in FP6

- Major funding
 - Animal genomics
 - Animal health
 - Animal welfare
- Specific projects:
 - Epizootic diseases
 - FMD, CSF, AI
 - Endemic and zoonotic diseases
 - Campylobacter; Johnne’s; salmonella in poultry
 - Parasitology
 - Roundworms, Liver fluke
 - Antibiotic replacements
 - Welfare
 - Laying hens; pig castration
 - Societal aspects
 - Cloning; slaughter methods

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Animal Genomics

EADGENE
 Network of Excellence
 13 partners
 Genomics of host pathogen interactions in cattle, pigs, poultry, salmon, sheep
www.eadgene.org

SABRE
 CUTTING EDGE GENOMICS FOR SUSTAINABLE ANIMAL BREEDING
 Integrated project
 33 partners
 Fundamental genomics in pig, cattle and poultry, including pig genome sequencing
www.sabre-eu.eu

FABRE TP
 Technology platform
 Farm animal breeding and reproduction
 75 signatories
www.fabretp.org

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Animal health

MED-VET-NET
 Network of excellence
 15 partners
 Prevention and control of zoonoses and food borne diseases
www.medvetnet.org

EPIZONE
 Network of excellence
 20 partners
 Research in epizootic diseases
www.epizone-eu.net

IFAH
 Technology platform
 Global animal health
www.ifah.be/Europe/euplatform/platform.htm

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Animal welfare

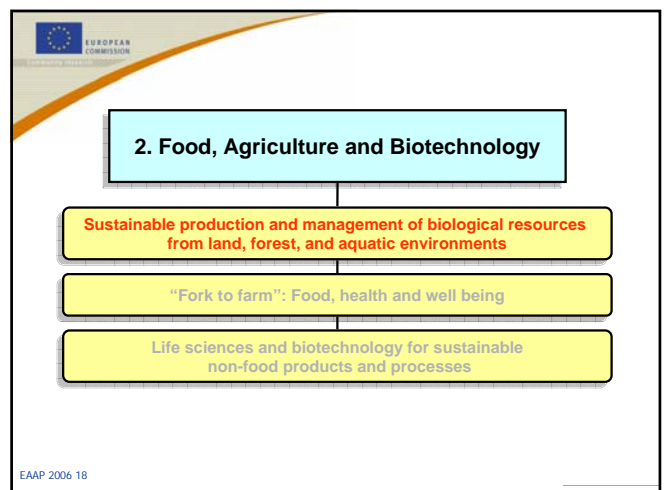
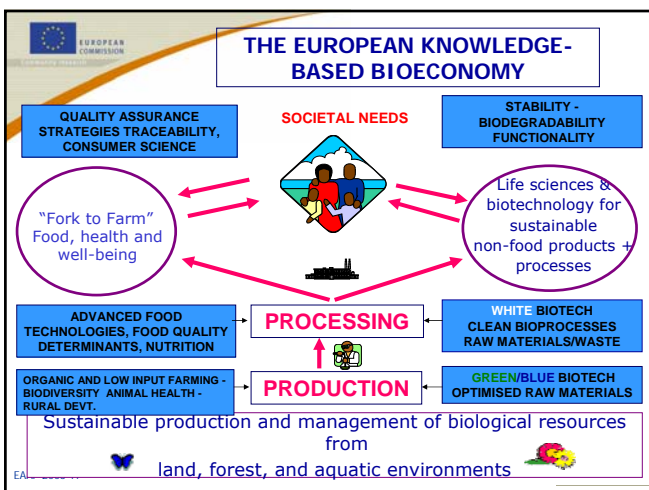
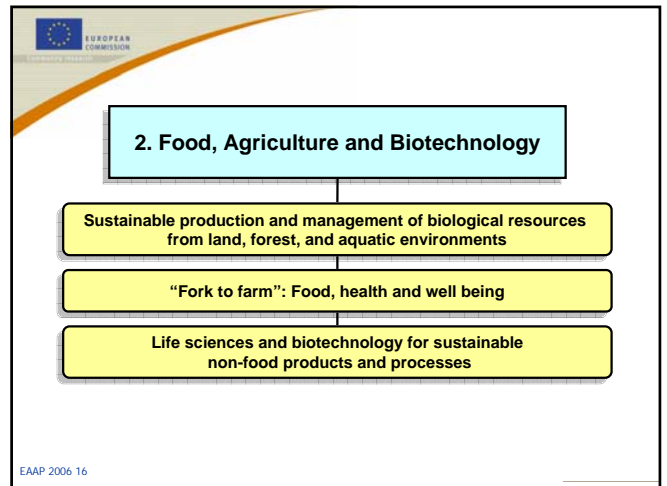
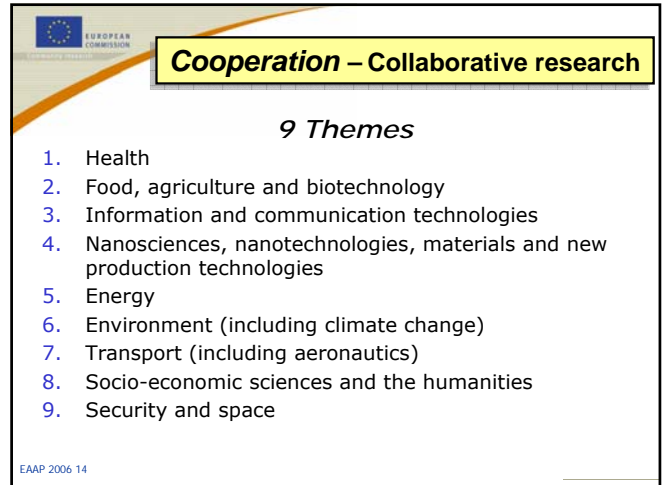
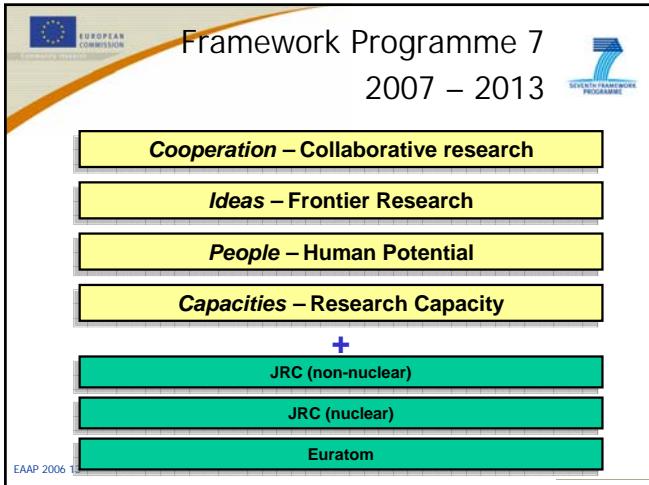
Welfare Quality
 Quality and safety improving animal welfare
 Integrated project
 41 partners
 Defining an animal-welfare standard
www.welfarequality.net

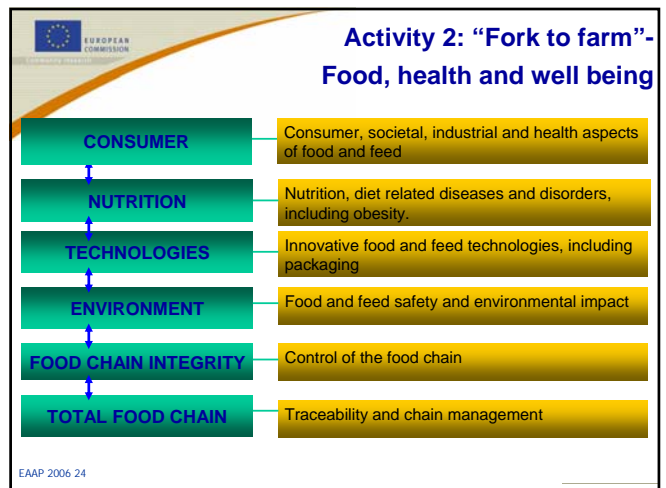
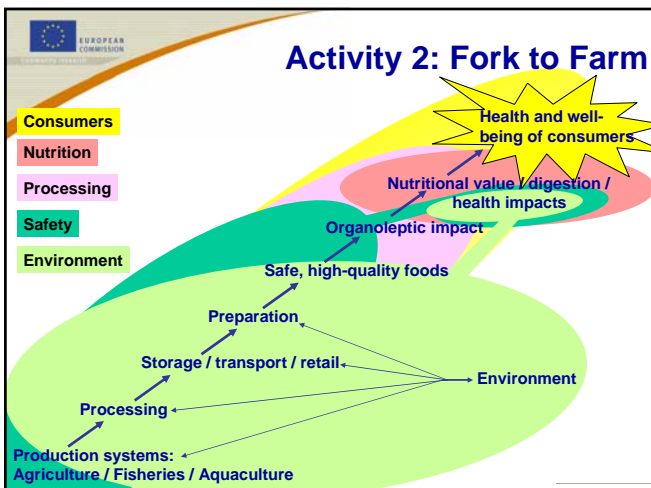
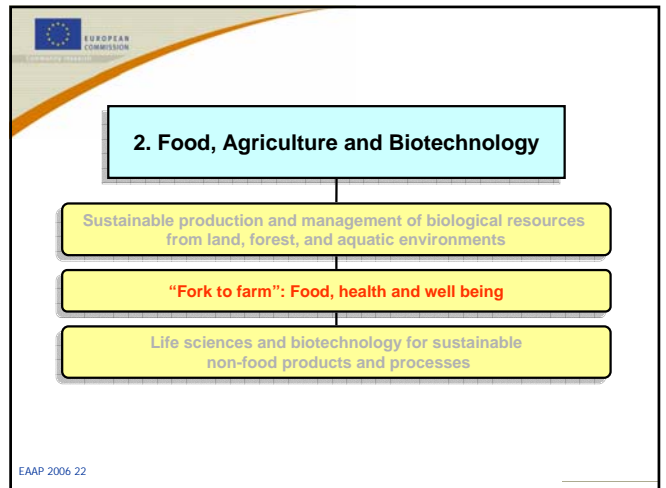
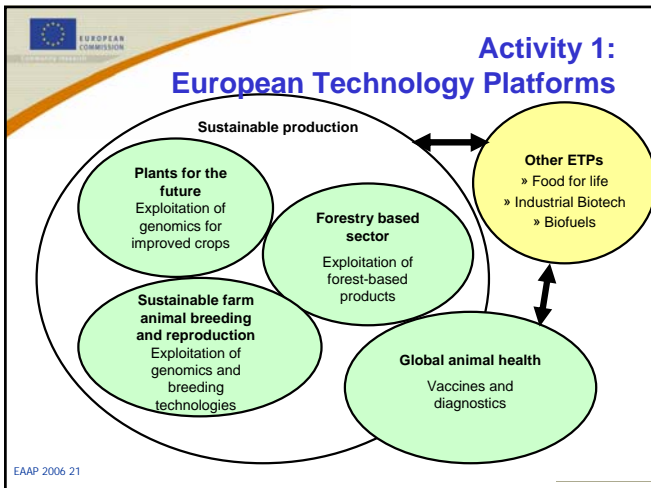
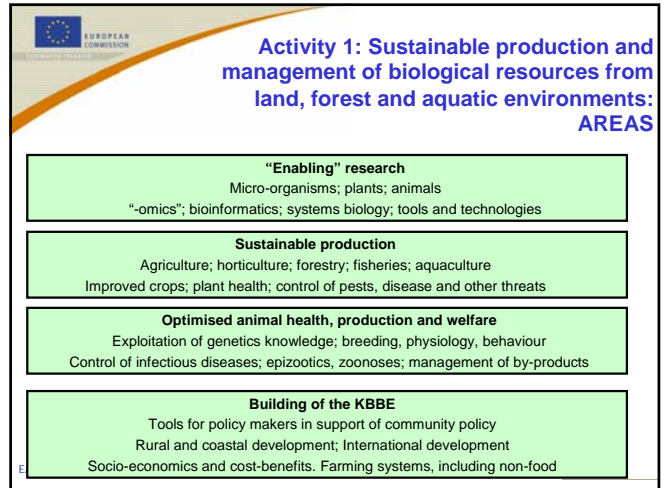
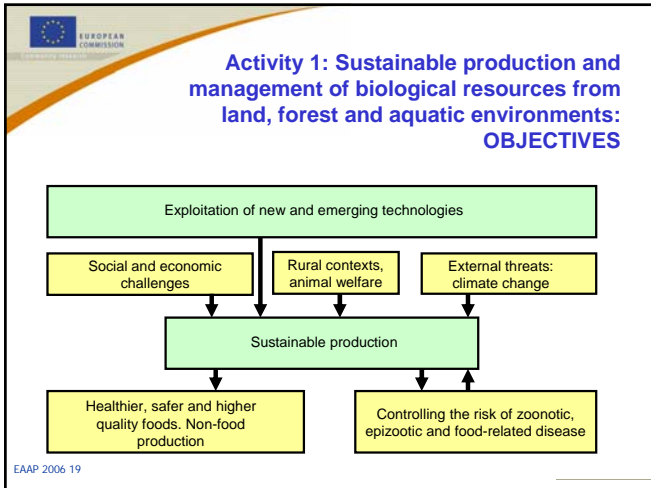
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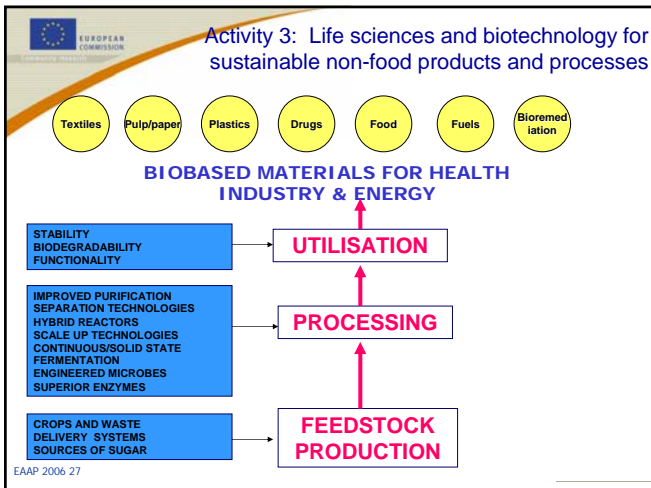
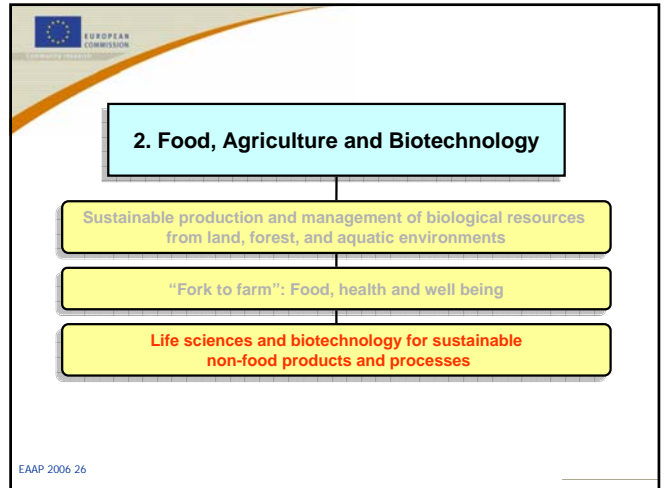
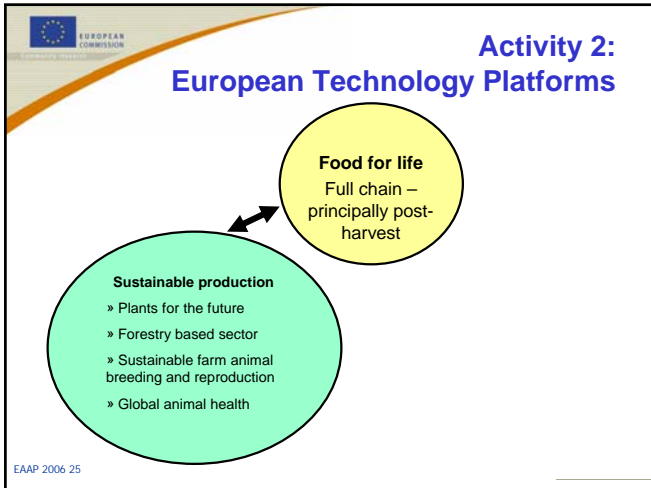
Towards FP7

- Commission proposal 2005
 - 7 years; €70 billion
- Revision by Council and Parliament
 - General support, but:
 - budgetary limits
 - general amendments
 - specific issues, such as research on human stem cells
- Expecting finalisation November 2006
 - Budget € 54 billion
 - First work-programme in December 2006

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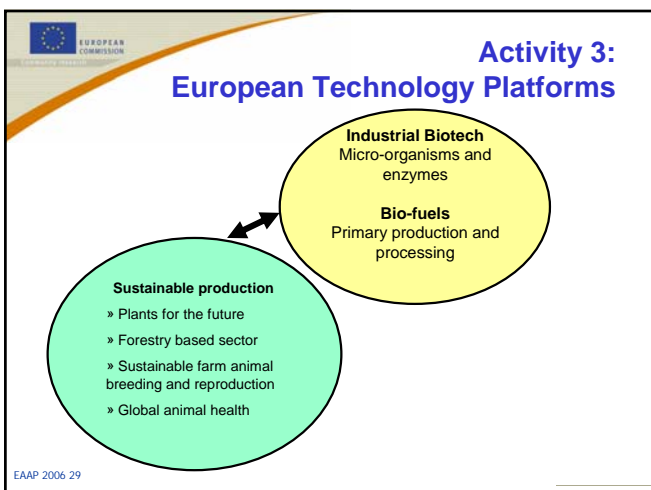




Activity 3: Life sciences and biotechnology for sustainable non-food products and processes

- Improved crops, feed-stocks, marine products and biomass for energy, environment, and high added value industrial products; novel farming systems
- Bio-catalysis; new bio-refinery concepts
- Forestry and forest based products and processes
- Environmental remediation and cleaner processing

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Cooperation – Collaborative research

- Under each theme there will be flexibility to address emerging needs and unforeseen policy needs
- Dissemination of knowledge and transfer of results will be supported in all thematic areas
- Support will be implemented across all themes through:

Collaborative research
(Collaborative projects; Networks of Excellence; Coordination/support actions)

Joint Technology Initiatives

Coordination of non-Community research programmes
(ERA-NET; ERA-NET+; Article 169)

International Cooperation

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Work-programme

- Informed by:
 - Community (including the TPs)
 - Advisory groups
 - Directorates General (policy)
- Informed and finalised by the Programme Committee
 - Member States and Associated States
- 1 call per year for "Cooperation"
- Publication foreseen in December 2006

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Inputs from the community: EC-US task force on biotechnology research

- EC-US task-force established 1990, renewed 2006
- Aims to:
 - Examine trends in biotechnology
 - Exchange ideas among US and EU programme managers on future directions of biotechnology research
- Satellite workshops on specific subjects

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Inputs from the community: EC-US task force on biotechnology research

- EC-US satellite meeting on "The future of livestock genomics", Brussels, July 2006
- Key issues for collaboration
 - Tools and resources, specifically
 - Genome sequencing
 - Curation of genomes
 - Development of SNP panels
 - Development of phenotype databases
 - Mobility of researchers
 - Genomics of microbial communities, including hosts, pathogens and their interactions.

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Draft topics for first WPs: genomics and breeding

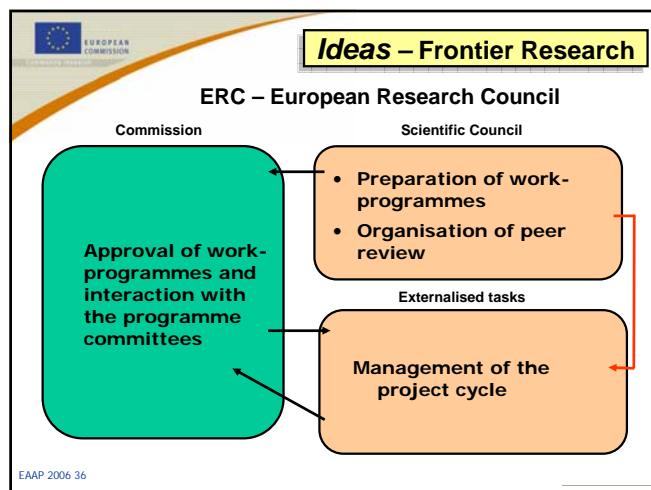
- Food, Agriculture and Biotechnology (theme 2)
 - Mining genomics information of farm animals to generate new information on the genetic basis of phenotypes important to sustainable agriculture.
 - Development of technologies and tools for the exploitation of livestock genome
 - Genomics to develop improved approaches to the control of endemic infectious, or metabolic, farm animal diseases
 - Breeding tools for improved livestock products
- Health (theme 1)
 - Genome-wide association studies in mammalian non-rodent models for the identification of genes relevant to human health and disease

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Further draft topics related to animal production and health

- Using new technologies to identify (re-)emerging pathogens from wildlife reservoirs
- New and converging technologies for Precision Livestock Farming in European animal production systems
- Optimising research to develop effective tools for controlling infectious animal diseases
- Improving animal health, product quality and performance of organic and low-input livestock systems through breeding
- Improving production through investigating the gut physiology of farm animals and its interaction with the gastro-intestinal microflora
- Coordination of European research in the area of animal health, including emerging threats, infectious diseases and surveillance
- Plant made recombinant pharmaceuticals for animals
- Novel methods of treatment of animal by-products for the production of substances with biologically valuable functional properties
- Plus additional, specific animal health and welfare based topics

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People – Human Potential

- Initial training of researchers**
Marie Curie Networks
- Life-long training and career development**
Individual Fellowships
Co-financing of regional/national/international programmes
- Industry-academia pathways and partnerships**
Industry-Academia Scheme
- International dimension**
Outgoing International Fellowships; Incoming International Fellowships
International Cooperation Scheme; Reintegration grants
- Specific actions**
Excellence awards

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Capacities – Research Capacity

1. Research Infrastructures
2. Research for the benefit of SMEs
3. Regions of Knowledge
4. Research Potential
5. Science in Society
6. Activities of International Cooperation

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Participation in FP7

- Minimum participation depends on the type of action (instrument)
 - Associated and candidate states have same rights as member states
 - Associated candidate countries:
 - Bulgaria and Romania (expected to be MS in 2007)
 - Croatia and Turkey
 - Associated states
 - Iceland, Israel, Liechtenstein, Norway and Switzerland
 - Collaborative projects: at least three participants from at least two member or associated states
- For ICPC (International Cooperation Partner Countries – INCO) targeted project, specific requirements detailed in the work-programme
- IDEAS programme (ERC)
 - Single applicants allowed

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Evaluation in FP7

- Based on FP6 system
 - FP6 working well – no fundamental changes (*but see "criteria"*)
- On-line submission (EPSS)
- Evaluation mechanisms:
 - One or two-stage
 - Hearings may be used
 - Remote evaluation/reading
 - External experts database

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Evaluation criteria in FP7

- Simplified since FP6
- 3 criteria: **NEW**
 - Quality
 - Implementation
 - Impact
- Further defined for each action in the work-programmes

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Miscellaneous issues:

- New IPR framework
 - Background limited to that needed for project
- Rates of reimbursement
 - 75% for SMEs
 - 75% for secondary/higher education (full cost accounting)
- Encouragement to use funds from the European Investment Bank
 - Additional funds from FP7 so that the bank can take on more risky lending
 - "Risk-sharing finance facility"
- "Guarantee mechanism"
 - Financing guarantee for defaulting private institutions

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Information

- EU research: ec.europa.eu/research
- Agriculture research:
ec.europa.eu/research/agriculture/index_en.html
- Seventh Framework Programme:
ec.europa.eu/research/future/index_en.cfm
- Information on research programmes and projects: cordis.europa.eu