KBBE in Horizon 2020

Europa forscht – 7. RP im Endspurt:
Die letzte Ausschreibung zu „Lebensmittel, Landwirtschaft und Fischerei, und Biotechnologie“ im 7. RP

Dienstag, 15. Mai 2012
Haus der Forschung

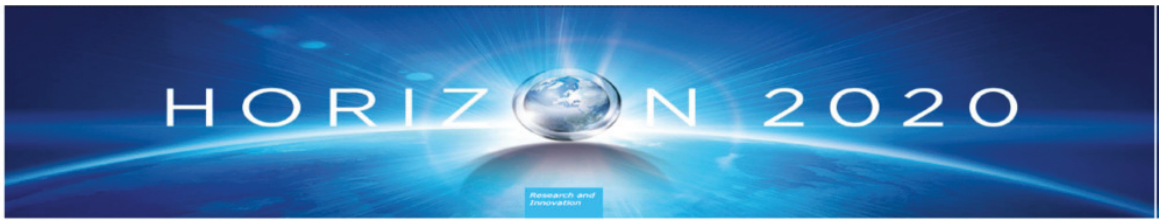
Dr. Anita Silmbrod

Abteilung II/1, Forschung und Entwicklung
Stubenring 1, 1012 Wien
Tel. +43-1-71100-6567
Fax +43-1-5131679-2158
anita.silmbrod@lebensministerium.at

lebensministerium.at

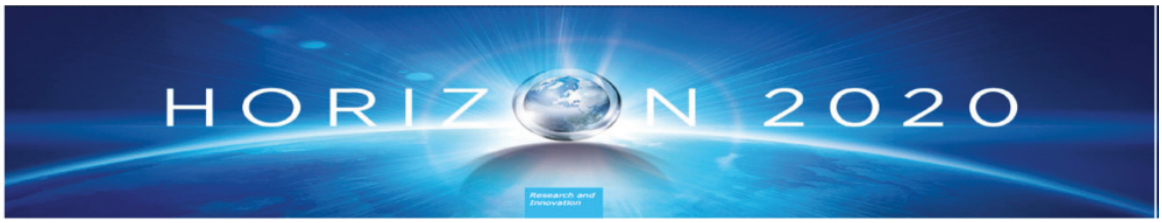
Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft

Unser Leitbild: Nachhaltig für Natur und Mensch



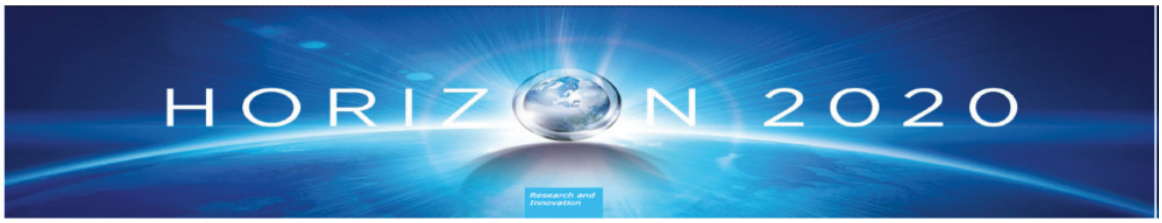
Horizon 2020: What's new

- A single programme bringing together three separate programmes/initiatives: the 7th research Framework Programme (FP7), innovation aspects of Competitiveness and Innovation Framework Programme (CIP), EU contribution to the European Institute of Innovation and Technology (EIT)
- More innovation, from research to retail, all forms of innovation
- Focus on societal challenges facing EU society, e.g. health, clean energy and transport
- Simplification: new simplified rules of participation with a reduced number of funding schemes.



Horizon 2020: Three priorities:

- *Excellent science (€24,6 billion)*
- *Industrial leadership (€17,9 billion)*
- *Societal challenges (€31,7 billion)*

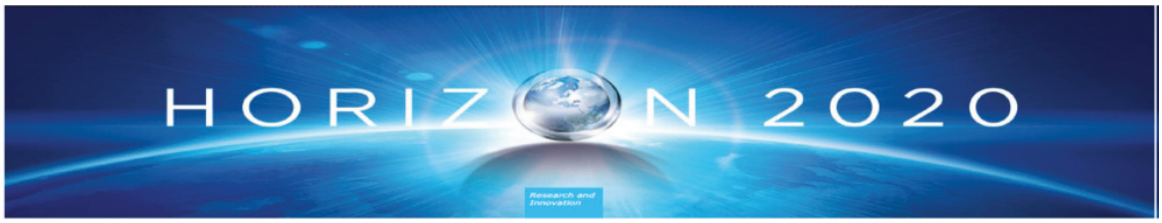


Priority 1: Excellent science

Why:

- *World class science is the foundation of tomorrow's technologies, jobs and wellbeing*
- *Europe needs to develop, attract and retain research talent*
- *Researchers need access to the best infrastructures*

European Research Council Frontier research by the best individual teams	***13 268 M€***
Future and Emerging Technologies Collaborative research to open new fields of innovation	***3 100 M€***
Marie Curie actions Opportunities for training and career development	***5 752 M€***
Research infrastructures (including e-infrastructure) Ensuring access to world-class facilities	***2 478 M€***

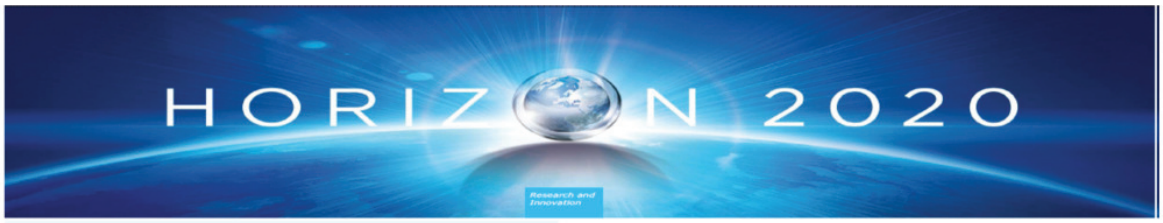


Priority 2: Industrial Leadership

Why:

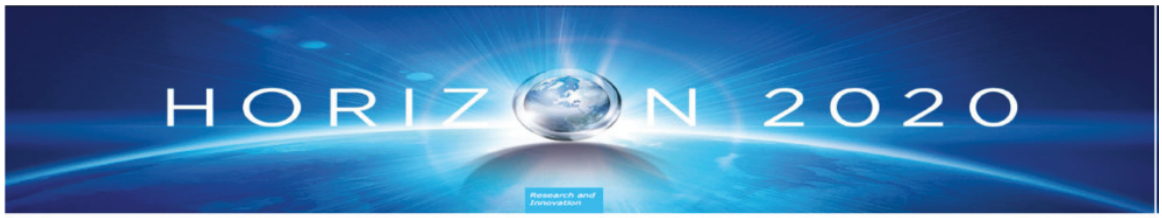
- *Europe needs more innovative SMEs to create growth and jobs*
- *Strategic investments in key technologies (e.g. advanced manufacturing, micro-electronics) underpin innovation across existing and emerging sectors*
- *Europe needs to attract more private investment in research and innovation*

Leadership in enabling and industrial technologies (ICT, nanotechnologies, materials, biotechnology, manufacturing, space)	***13 781 M€***
Access to risk finance Leveraging private finance and venture capital for research and innovation	***3 538 M€***
Innovation in SMEs Fostering all forms of innovation in all types of SMEs	***619 M€*** *complemented by 6829 M€ (expected 15% of societal challenges + LEIT*



Biotechnology (Industrial Technology)

Activity Lines/ Areas	Content
Boosting cutting-edge biotechnologies as future innovation drivers	• Development of emerging tools such as synthetic biology, bioinformatics, systems biology. • Exploiting the convergence with other enabling technologies such as nanotechnology (e.g. bionanotechnology) and ICT (e.g. bioelectronics). • Transfer and implementation into new applications (drug delivery systems, biosensors, biochips, etc).
Biotechnology-based industrial processes	• Enabling the European industry (e.g. chemical, health, mining, energy, pulp and paper, textile, starch, food processing) to develop new products and processes meeting industrial and societal demands; • Biotechnology-based alternatives to replace established ones; • Potential of biotechnology for detecting, monitoring, preventing and removing pollution (enzymatic and metabolic pathways, bio-processes design, advanced fermentation, up- and down-stream processing, dynamics of microbial communities) • Development of prototypes for assessing the techno-economic feasibility of the developed products and processes.
Innovative and competitive platform technologies	• Develop platform technologies (e.g. genomics, meta-genomics, proteomics, molecular tools) • Development of bio-resources with optimised properties and applications beyond conventional alternatives; • Exploration, understanding and exploitation in a sustainable manner of terrestrial and marine biodiversity for novel applications; • Biotechnology-based healthcare solutions (e.g. diagnostics, biologicals, bio-medical devices).



Priority 3: Societal challenges

Why:

- *EU policy objectives (climate, environment, energy, transport etc) cannot be achieved without innovation*
- *Breakthrough solutions come from multi-disciplinary collaborations, including social sciences & humanities*
- *Promising solutions need to be tested, demonstrated and scaled up*

Health, demographic change and wellbeing	***8 033 M€***
Food security, sustainable agriculture, marine and maritime resources & the bioeconomy	***4 152 M€***
Secure, clean and efficient energy	***5 782 M€***
Smart, green and integrated transport	***6 802 M€***
Climate action, resource efficiency and raw materials	***3 160 M€***
Inclusive, innovative and secure societies	***3 819 M€***

HORIZON 2020

Food Security, Agriculture, Marine Research & Bioeconomy (I)

Sustainable agriculture and forestry	
Activity Lines/ Areas	**Content**
Increasing production efficiency, climate change, sustainability and resilience	• Adaptive capacity of plants, animals and production systems. • Use of biomass and by-products from agriculture and forestry for non-food applications. • Efficient resource use (water, nutrients, energy) and the ecological integrity of rural areas. • Genetic improvement of plants and animals for adaptation and productivity traits. • On-farm soil management for increasing soil fertility as a basis for crop productivity. • Animal and plant health, integrated disease/pest control measures. • Eradication of animal diseases including zoonosis, research on antimicrobial resistance. • Studying the effects of practices on animal welfare.
Providing ecosystem services and public goods	• Delivering commercial products and societal public goods (including cultural and recreational value) and important ecological services (biodiversity, pollination, water regulation, landscape, erosion reduction and carbon sequestration / GHG mitigation). • Management solutions, decision-support tools. Management of agricultural systems
Empowerment of rural areas, support to policies and rural innovation	• Development opportunities for rural communities (primary production and delivery of eco-systems services, new and diversified products (food, feed, materials, energy)) • Cohesion of rural areas and prevent economic and social marginalization, foster diversification of economic activities (including service sector); appropriate relations between rural and urban areas. • Support policy makers and other actors in the implementation of relevant strategies, policies and legislation, not only for rural areas but for the whole bio-economy. • Socio-economic and comparative assessment of farming/forestry systems

HORIZON 2020

Food Security, Agriculture, Marine Research & Bioeconomy (II)

Sustainable and competitive agri-food sector for a safe and healthy diet	
Activity Lines/ Areas	**Content**
Informed consumer choices	• Consumer preferences, attitudes, needs, behavior, lifestyle and education. • Communication between consumers and the food chain research community. • Improve informed choice, sustainable consumption and their impacts on production, inclusive growth and quality of life, especially of vulnerable groups.
Healthy and safe foods and diets for all	• Nutritional needs and the impact of food on physiological functions, physical and mental performance. • Links between diet, ageing, chronic diseases and disorders and dietary patterns. • Dietary solutions and innovations leading to improvements in health and well-being. • Chemical and microbial food and feed contamination, risks and exposures. • Food safety innovations, improved risk communication tools.
A sustainable and competitive agri- food industry	• Needs for the food and feed industry to cope with social, environmental, climate and economic change from local to global. • Food design, processing, packaging, process control, waste reduction, by-product valorization and the safe disposal of animal by-products. • Innovative and sustainable resource-efficient processes. • Diversified, safe, affordable and high quality products. • Traceability, logistics and services, socio-economic factors, the resilience of the food chain against environmental and climate risks. • Limitation of negative impacts of food chain activities and of changing diets and production systems on the environment.

HORIZON 2020

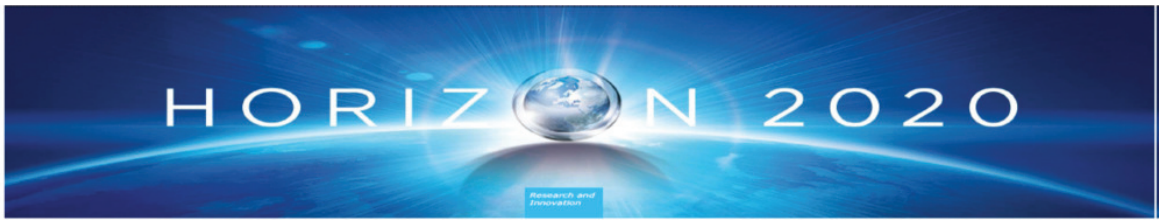
Food Security, Agriculture, Marine Research & Bioeconomy (III)

Sustainable and competitive bio-based industries	
Activity Lines/ Areas	**Content**
Fostering the bio-economy for bio-based industries	• Major progress towards low carbon, resource efficient and sustainable industries. • Discovery and exploitation of terrestrial and aquatic biological resources, minimizing adverse environmental impacts. • Potential trade-offs between the various uses of biomass. • Development of bio-based products and biologically active compounds for industries and consumers with novel qualities, functionalities and improved sustainability. • Economic value of renewable resources, bio-waste and by-products will be maximized through new and resource efficient processes.
Developing integrated biorefineries	• Bioproducts, intermediates and bioenergy/biofuels (cascade approach). • Technologies and strategies will be developed to assure the raw material supply. • Types of biomass for use in second and third generation biorefineries, including forestry, biowaste and industrial by-products.
Supporting market development for bio-based products and processes	• Demand-side measures will open new markets for biotechnology innovation. Standardisation (determination of bio-based content, 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.

HORIZON 2020

Food Security, Agriculture, Marine Research & Bioeconomy (IV)

Unlocking the potential of aquatic living resources	
Activity Lines/ Areas	**Content**
Developing sustainable and environmentally-friendly fisheries	• In depth understanding of marine ecosystems (new insights, tools and models to improve understanding of what makes marine ecosystems healthy and productive). • Evaluate and mitigate the impact of fisheries on marine ecosystems (including deep sea). • The socio-economic effects of management options will be measured. • Effects and adaptation to environmental changes, including climate change. • Biology, genetic and dynamics of fish populations; role of key species in the ecosystems; fishing activities. • Shared use of maritime space with other activities, in particular in the coastal zone, and its socio-economic impact will also be addressed.
Developing competitive European aquaculture	• Development of healthy, safe and competitive products. • Domestication of established species and diversification for new species. • Interactions between aquaculture and the aquatic ecosystems, effects of climate change. • Sustainable production systems in inland, on the coastal zone and offshore. • Understanding the social and economic dimensions of the sector to underpin cost and energy efficient production.
Boosting marine innovation through biotechnology	• Discovery of new species and applications in the field of marine biotechnologies. • Explore and exploit 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.

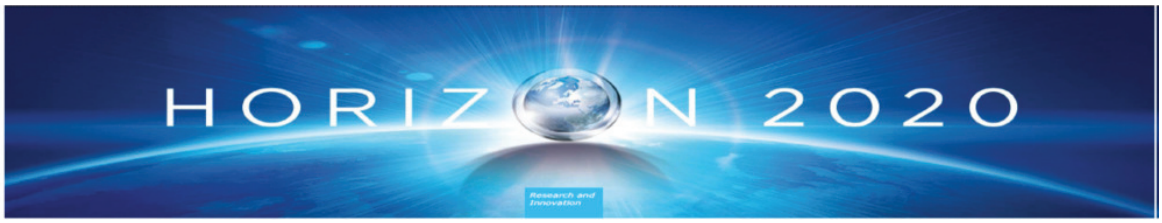


HORIZON 2020 and partnering

Public private partnerships:
Through Joint Technology Initiatives or other formal structures (Art. 187)
Through contractual agreements, which provide inputs for work programmes
Only when criteria met, e.g. clear commitments from private partners

Public public partnerships:
Through "ERA-Nets" for topping up individual calls/ actions (replacing current ERA-Net, ERA-Net Plus, Inco-Net, Inno-net)
Through participation in joint programmes between Member States (Art. 185)
Supporting agendas of Joint Programming Initiatives when in line with Horizon 2020
Only when criteria met, e.g. financial commitments of participating countries

European Innovation Partnerships
Not funding instruments, but for coordination with broader policies and programmes



European Innovation Partnership (EIP)„Agricultural Productivity and Sustainability“

Networking function of the EIP

Interlinking innovation-related actions of Rural Development Policy and the Union Research and Innovation Framework

Ensuring an effective flow of information and providing advice to partners about the opportunities provided by EU policies

Exchange on best practice and accompanying research

Systematic feedback about practice needs to the scientific community

Exchange with European Technology Platforms (ETPs), European Research Area Networks (ERA-NETs), Joint Programming Initiatives, and other relevant fora

Possible Themes

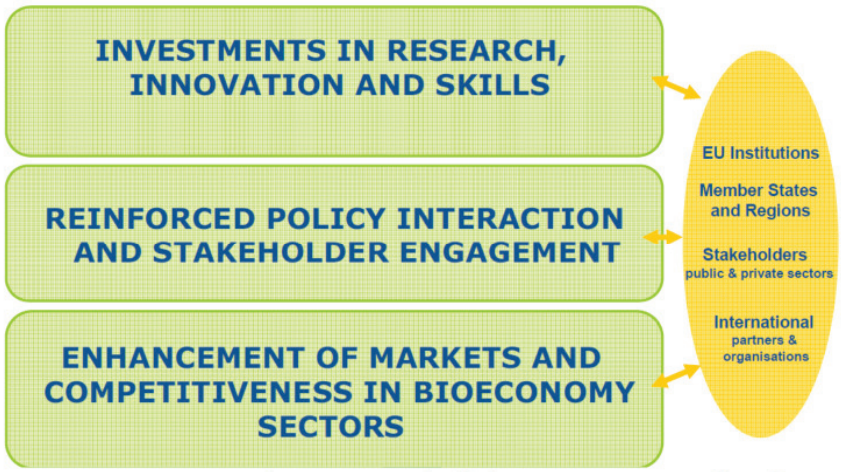
- Primary production: technical solutions to increasing productivity and economic viability
- Resource management: eco-system services, soil functionality, water management, and genetic resources (“public goods”)
- Bioeconomy: innovative technology for the bio-based economy; recyling; new products; reduction of post harvest loss
- Supply chain: integrated supply chain solutions; innovation in products and services, logistics, and management systems
- Quality and consumers: food quality, food safety, and healthy lifestyles (consumer information and consumer choice)

HORIZON 2020

Commission Communication COM(2012)60

«Innovating for Sustainable Growth: A Bioeconomy for Europe»

The Bioeconomy Strategy and Action Plan



http://ec.europa.eu/research/bioeconomy/index_en.htm

HORIZON 2020

INVESTMENTS IN RESEARCH, INNOVATION AND SKILLS

- Ensure substantial EU and national funding for bioeconomy and innovation
- Increase the share of multi-disciplinary and cross-sectoral research and innovation
- Promote the uptake and diffusion of innovation in bioeconomy sectors; create feedback mechanisms on regulation and policy
- Build the human capacity required to support growth and integration of bioeconomy sectors

REINFORCED POLICY INTERACTION AND STAKEHOLDER ENGAGEMENT

- Create a Bioeconomy Panel to enhancing synergies and coherence between policies; foster participation of researchers, end-users, policy- makers and civil society
- Establish a Bioeconomy Observatory and develop forward-looking and modelling tools
- Support the development of regional and national bioeconomy strategies
- Develop international cooperation to jointly address global challenges (e.g.food security, climate)

ENHANCEMENT OF MARKETS AND COMPETITIVENESS IN BIOECONOMY SECTORS

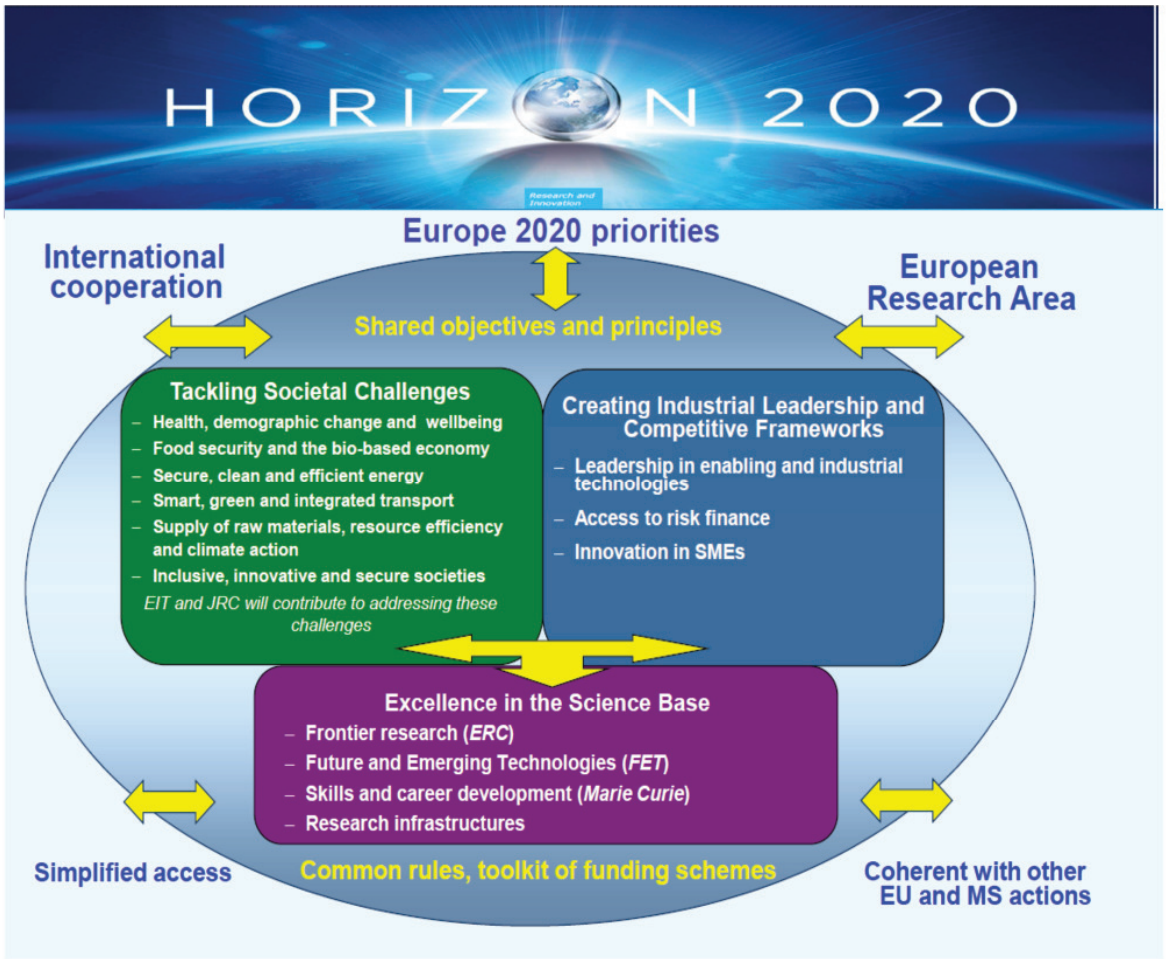
- Provide the knowledge-base for sustainable intensification of primary production;
- Promote the setting up of networks for integrated and diversified biorefineries; establish a PPP for bio-based industries
- Support expansion of new markets; facilitate green procurement for bio-based products
- Develop science-based approaches to inform consumers about product properties

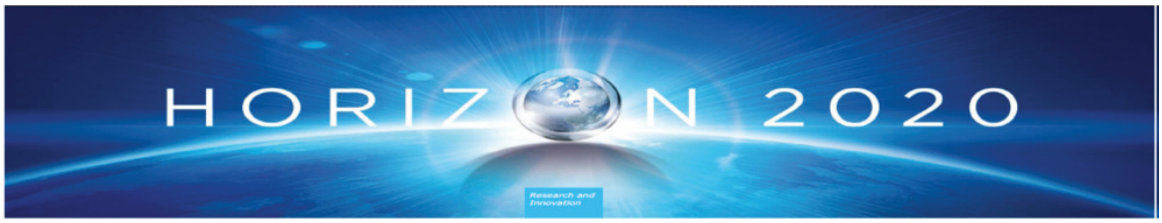
EU Institutions

Member States

Stakeholders

International organisations





Simplification: summary

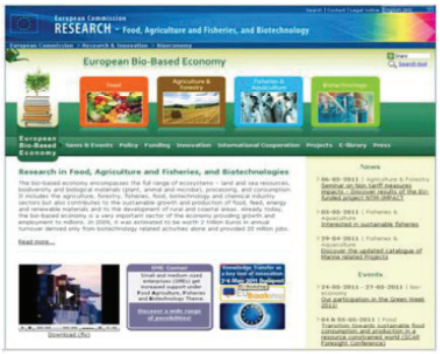
- **Single set of** simpler and more coherent participation **rules**
- New **balance between trust and control**
- Moving from several **funding rates** for different beneficiaries and activities to just two
- Replacing the four methods to calculate overhead or «indirect costs» with a **single flat rate**
- Major simplification under the **forthcoming financial regulation**
- **Successful applicants to get working more quickly**: reduction of average time to grant by 100 days (current average of around 350 days under FP7)

Next steps

Ongoing:	Parliament and Council negotiations on the basis of the Commission proposals
Ongoing:	Parliament and Council negotiations on EU budget 2014-2020 (including overall budget for Horizon 2020)
Mid 2012:	Final calls under 7th Framework Programme for research to bridge gap towards Horizon 2020
Mid 2013:	Adoption of legislative acts by Parliament and Council on Horizon 2020
1/1/2014:	**Horizon 2020 starts, launch of first calls**

More information:

http://ec.europa.eu/research/bioeconomy



- Up-to-date news and events, press material, videos, success stories
- An "innovation" section with a SMEs corner
- A unique e-Library compiling publications related to the Bioeconomy

EU next Funding Programme for R&I: HORIZON 2020

http://ec.europa.eu/research/horizon2020/index_en.cfm