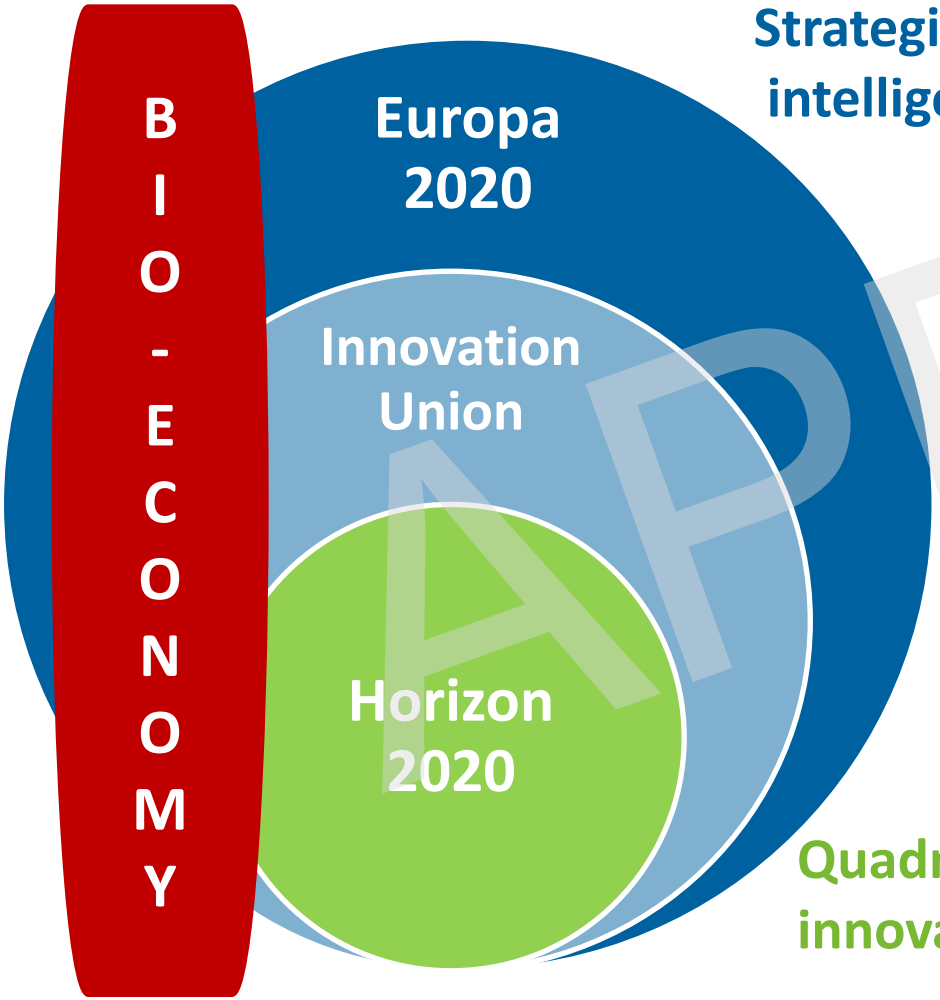
Focus

SOCIETAL CHALLENGE 2

Food Security, Sustainable Agriculture and Forestry, Marine and Maritime and Inland Water Research and the Bioeconomy



Strategia per una crescita intelligente, sostenibile e inclusiva

Iniziativa faro di sostegno alla ricerca e all'innovazione

Quadro strategico comune su ricerca e innovazione (2014- 2020)

La Innovation Union/1

Policy

COM(2012) 60: «L'innovazione per una crescita sostenibile: una bioeconomia per l'Europa (Feb. 2012)»

- **Obiettivo**: creare una società più innovatrice e un'economia a emissioni ridotte, conciliando l'esigenza di un'agricoltura e una pesca sostenibili e della sicurezza alimentare con l'uso sostenibile delle risorse biologiche rinnovabili per fini industriali, tutelando allo stesso tempo la biodiversità e l'ambiente.
- **Piano strategico:** sviluppare tecnologie e processi produttivi nuovi destinati alla bioeconomia; sviluppare mercati e competitività nei diversi settori della bioeconomia; e, infine, stimolare una maggiore collaborazione tra i responsabili politici e le parti interessate.

Research and Innovation

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Struttura del programma

Excellent Science

- **European Research Council**
  - Frontier research by the best individual teams
- **Future and Emerging Technologies**
  - Collaborative research to open new fields of innovation
- **Marie Skłodowska Curie actions**
  - Opportunities for training and career development
- **Research infrastructures** (including e-infrastructure)
  - Ensuring access to world-class facilities

Industrial Technologies

- **Leadership in enabling and industrial technologies**
  - ICT, nanotechnologies, materials, biotechnology, manufacturing, space
- **Access to risk finance**
  - Leveraging private finance and venture capital for research and innovation
- **Innovation in SMEs**
  - Fostering all forms of innovation in all types of SMEs

Societal Challenges

- **Health, demographic change and wellbeing**
- **Food security, sustainable agriculture, marine and maritime research & the bioeconomy**
- **Secure, clean and efficient energy**
- **Smart, green and integrated transport**
- **Climate action, resource efficiency and raw materials**
- **Inclusive, innovative and reflective societies**
- **Security society**

European Institute of Innovation and Technology (EIT)

Spreading Excellence and Widening Participation

Science with and for society

Joint Research Center (JRC)

	Compromise % 27.06.13	Million € (current prices
I. Excellent Science, of which:	31,73%	24.441
1. ERC	17,00%	13.095
2. FET	3,50%	2.696
3. MS Curie Actions	8,00%	6.162
4. Research Infrastructures	3,23%	2.488
II. Industrial Leadership, of which:	22,09%	17.016
Leadership in Enabling and Industrial Technologies	17,60%	13.557
Access to Risk Finance	3,69%	2.842
Innovation in SME's	0,80%	616
II.I Societal Challenges, of which:	38,53%	29.679
Health, demographic change and well being	9,70%	7.472
Food security, sustainable agriculture, marine and maritime research & the bio economy	5,00%	**3.851**
Secure, clean and efficient energy	7,70%	5.931
Smart, green and integrated transport	8,23%	6.339
Climate action, resource efficiency and raw materials	4,00%	3.081
Europe in a changing world – Inclusive, innovative and reflective society	1,70%	1.309
Secure societies – Protecting freedom and security of Europe and its citizens	2,20%	1.695
Spreading Excellence and Widening Participation	1,06%	816
Science with and for society	0,60%	462
European Institute of Innovation and Technology - EIT	3,52%	2.711
JRC Non-nuclear	2,47%	1.903
Total EU REGULATION	100,00%	77.028

EIT KIC

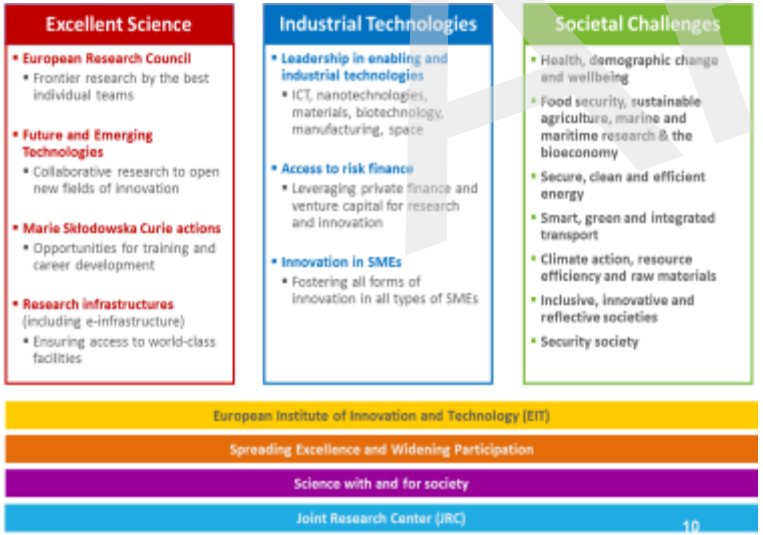
FOOD 4 FU TU RE

BOTTOM UP RESEARCH

ERC – frontiera
MSCA - mobilità
FET – high risk
SME instrument

CONTRIBUTI
LEIT – Biotechnology

SC1 - Health, demographic change and well being
SC3 - Secure, clean and efficient energy
SC 5 - Climate action, resource efficiency and raw materials (waste)



SOCIETAL CHALLENGE 2
Food Security, Sustainable Agriculture and Forestry, Marine and Maritime and Inland Water Research and the bioeconomy

PPP

BRIDGE

HORIZON 2020

SC2 - European Bioeconomy Challenges:

Food Security, Sustainable Agriculture and Forestry, Marine and Maritime and Inland Water Research, and the Bioeconomy

making the best of our biological resources in a sustainable way

OBIETTIVO: garantire un sufficiente **approvvigionamento di prodotti alimentari sicuri e di qualità** e di altri prodotti biologici, mediante lo **sviluppo di sistemi di produzione**, che siano al contempo produttivi e efficienti nell'utilizzo delle risorse, e la **promozione di servizi di filiera competitivi e a basso contenuto di carbonio**. Questo accelererà la transizione verso una **bioeconomia europea sostenibile**.

SC2 - European Bioeconomy Challenges:

Food Security, Sustainable Agriculture and Forestry, Marine and Maritime and Inland Water Research, and the Bioeconomy

FOCUS AREA 2014 -2015:

THE SFS CALL IN THE CONTEXT OF HORIZON2020

General features

- (Most) topics are framed in a very general way have a large scope. They offer significant opportunities for proposing innovative ideas
- Integration of more basic and applied research with a clear remit to "translate" outputs into practice (farming sector, business, policy)
- Objectives of topics require participation of several disciplines and sectors
- Horizontal issues such as innovation, sustainability, climate, gender are intrinsic to projects and need to be given due consideration

Specific features

- Several topics ask for synergies with EIP: E.g. specific request for so- called "multi-actor approach" or for linking outputs to EIP tools

MULTI - ACTOR APPROACH

- aims at more **demand-driven innovation** through the genuine involvement of various actors (end-users such as farmers/farmers' groups, fishers/fisher's groups, advisors, enterprises, etc.) all along the project:
- is more than a strong dissemination requirement or what a broad stakeholders' board can deliver: it should be illustrated with sufficient quantity and quality of **knowledge exchange activities and a clear role for the different actors in the workplan.**
- **cross-fertilisation** of ideas between actors, the co-creation and the generation of co-ownership for eventual results.
- A multi-actor project needs to take **into account how the project proposal's objectives and planning are targeted to needs / problems and opportunities of end-users**, and the complementarity with existing research.

International collaboration

- Food security requires a global approach
- Problems targeted in call topics may not be specific to Europe and require that the best expertise – globally - is gathered to provide solutions
- Agricultural research is highlighted in existing commitments for international research collaboration
- General encouragement to international collaboration in several topics (e.g. SFS 5,7B,14A,15,20)
- Targeted international collaboration is proposed with partners in Africa (SFS 6,18), China (SFS 1A,1B,3B,4,13) and others in Asia, Australia and North America (SFS 10B,16,18)

How does SFS fit into H2020? (2)

European Commission

SC2, WP 2014-2015: 3 main calls

Sustainable Food Security

- Sustainable food production systems
- Safe food and healthy diets and sustainable consumption
- Global drivers of food security

Blue Growth

- Sustainably exploiting the diversity of marine life
- New offshore challenges
- Ocean observation technologies/systems
- Horizontal aspects, socio-economic sciences, engagement with society,…

Innovative, Sustainable and Inclusive Bioeconomy

- **Sustainable agriculture and forestry**
- **Sustainable and competitive bio-based industries**
- **Cross-cutting actions covering all the activities**

How does SFS fit into H2020? (3)

European Commission

Call
Sustainable Food Security

Sustainable Food Production Systems:
12 topics° 2014 and 7 topics 2015
(16 R&I actions + 1 CSA + 1 SME)*

Safe Food and Healthy Diets and Sustainable Consumption:
4 topics 2014 and 3 topics 2015
(5 R&I actions +1 Innovation action + 1 CSA)

Global Drivers of Food Security:
2 topics 2014 and 2 topics 2015
(3 R&I actions)

° For this presentation topic = SFS-X or scope Y for multiscope SFS-Z SFS-X

* Different totals, as some topics are open both in 2014 and 2015

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Call: Sustainable Food Security (SFS)

Sustainable Food Production Systems

11 (sub)topics in 2014: 102m€
8 (sub)topics in 2015: 79,5m€

Safe Food, Healthy Diets, Sustainable Consumption

4 (sub)topics in 2014: 26m€
3 (sub)topics in 2015: 9,5m€

Global Drivers of Food Security

2 (sub)topics in 2014: 10m€
2 (sub)topics in 2015: 11,5m€

European Commission

Sustainable food production systems

Topics	2014	2015
SFS-1-2014/*2015*: Sustainable terrestrial livestock production		
A: Genetics and nutrition and alternative feed sources for terrestrial livestock production R&I Action; € 7-9 million*; IC**(e.g. China); MAA***	X	
B: Tackling losses from terrestrial animal diseases R&I Action; € 7-9 million; IC (e.g. China)	X	
C: Assessing sustainability of terrestrial livestock production		*X*

**: indicative budget range for proposals*
***: International Cooperation targeted*
****: falls under concept of Multi-actor approach*

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Sustainable food production systems

Topics	2014	2015
SFS-2-2014/2015: Sustainable crop production		
A: External nutrient inputs R&I Action; € 8 million; MAA	X	
B: Assessing soil-improving cropping systems		*X*
SFS-3-2014: Practical solutions for native and alien pests affecting plants		
A. Native and alien pests in agriculture and forestry R&I Action; € 7 million; MAA	X	
B. EU-China cooperation on IPM in agriculture R&I Action; € 3 million; IC (especially China!)	X	

Sustainable food production systems

Topics	2014	2015
SFS-4-2014: Soil quality and function R&I Action; € 3-5 million; IC (e.g. China); MAA	X	
SFS-5-*2015*: *Strategies for crop productivity, stability and quality*		*X*
SFS-6-2014: Sustainable intensification pathways of agro-food systems in Africa CSA; € 1 million; IC (especially Africa!)	X	

European Commission

Sustainable food production systems

Topics	2014	2015
SFS-7-2014/*2015*: Genetic resources and agricultural diversity for food security, productivity and resilience		
A. Traditional resources for agricultural diversity and the food chain R&I Action; € 3-4 million; MAA	X	
B. Management and sustainable use of genetic resources		*X*
SFS-8-2014/*2015*: Resource-efficient eco-innovative food production and processing SME instrument. Different phases. Open call cut off dates; Phase 1: € 0,5 mio – max 6 months; phase 2: € 0,5-2,5 mio – 12-24 months	X	*X*

European Commission

Sustainable food production systems

Topics	2014	2015
SFS-9-2014: Towards a gradual elimination of discards in European fisheries R&I Action; € 5 million	X	
SFS-10-2014/*2015*: Tackling disease related challenges and threats faced by European farmed aquatic animals		
A: Scientific basis and tools for preventing and mitigating parasitic diseases of European farmed fish R&I Action; € 7 million	X	
B: Scientific basis and tools for preventing and mitigating farmed mollusc diseases		*X*

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Sustainable food production systems

Topics	2014	2015
SFS-11-2014/*2015*: Implementation of an Ecosystem-based approach for European aquaculture		
A: Optimizing space availability for European Aquaculture R&I Action; € 3 million	X	
B: Consolidating the environmental sustainability of European aquaculture		*X*

European Commission

Safe food and healthy diets (1)

Topics	2014	2015
SFS-12-2014: Assessing the health risks of combined human exposure to multiple food-related toxic substances (R&I Action; € 8 million)	X	
SFS-13-2015: Biological contamination of crops and the food chain (R&I Action; € 3-5 million)		X
SFS-14-2014/*2015*: Authentication of food products A: Authentication of olive oil (R&I Action; € 5 million) *B: Authentication of food products (CSA; € 0.5 million)*	X	X

Research and Innovation

European Commission

Safe food and healthy diets (2)

Topics	2014	2015
SFS-15-2014: Proteins of the future (R&I Action; € 9 million)	X	
SFS-16-2015: Tackling malnutrition in the elderly (R&I Action; € 9 million)		*X*
SFS-17-2014: Innovative solutions for sustainable novel food processing (Innovation Action; € 2 million)	X	

Research and Innovation

European Commission

Global drivers of food security

Topics (R&I action)	2014	2015
SFS-18: Small farms but global markets: the role of small and family farms in food and nutrition security (R&I Action; € 4,5 million)		X
SFS-19: Sustainable food and nutrition security through evidence based EU agro-food policies		
A: Strengthening the analytical capacity on FNS (R&I Action; € 5 million)	X	
B:Understanding relevant issues impacting the ago-food sector (R&I Action; € 5 million)	X	
SFS-20: Sustainable food chains through public policies: the cases of the EU Quality policy and of public sector food procurement (R&I Action; € 7 million)		X

SFS 19-2014: Sustainable food and nutrition security through evidence based agro-food policies

A: Strengthening the analytical capacity on FNS (R&I Action; € 5 million)

- Diverse FNS drivers
- Holistic approach to capture various ***factors*** (socio-economic, environmental, climatic and territorial) and their ***inter-linkages*** impacting on the agro-food sector
- Indicators and analytical tools – monitoring of EU FNS at various geographical scales
- Foresight activities to identify alternative future scenarios

SFS 19-2014: Sustainable food and nutrition security through evidence based agro-food policies

B: Understanding relevant issues impacting the ago-food sector *(R&I Action; € 5 million)*

Considerable potential of agro-food sector in addressing various multifaceted challenges on FNS.

- Potential *role of financial markets* on commodity price formation and risk management
- Farmers' *access to credit* in a context of economic uncertainty and increasing capital intensity of production.
- *Policy requirements* applicable to farmers at EU/national/regional levels – mapping and tools to asses their implication on farming across the EU.
- *Functioning of the food chain*

Relazione con altri WP-H2020

SC1 - Health, demographic change and well being

- PHC 7 – 2014: Improving the control of infectious epidemics and foodborne outbreaks through rapid identification of pathogens

SC5 - Climate action, resource efficiency and raw materials

- WASTE-2-2014: A systems approach for the reduction, recycling and reuse of food waste
- WASTE-4-2014/2015: Towards near-zero waste at European and global level
- WASTE-7-2015: Ensuring sustainable use of agricultural waste, co-products and by-products

+ NMPB - Industrial leadership

+ SC3 - Secure, clean and efficient energy

Three calls

Sustainable Food Security

- Sustainable food production systems
- Safe *food and healthy* diets and sustainable consumption
- Global drivers of food security

Blue Growth

- Sustainably exploiting the diversity of marine life
- New offshore challenges
- Ocean observation technologies/systems
- Socio-economic dimension - engagement with society

Innovative, Sustainable and Inclusive Bioeconomy

- Sustainable agriculture and forestry
- Sustainable and competitive bio-based industries
- Cross-cutting actions covering all the activities

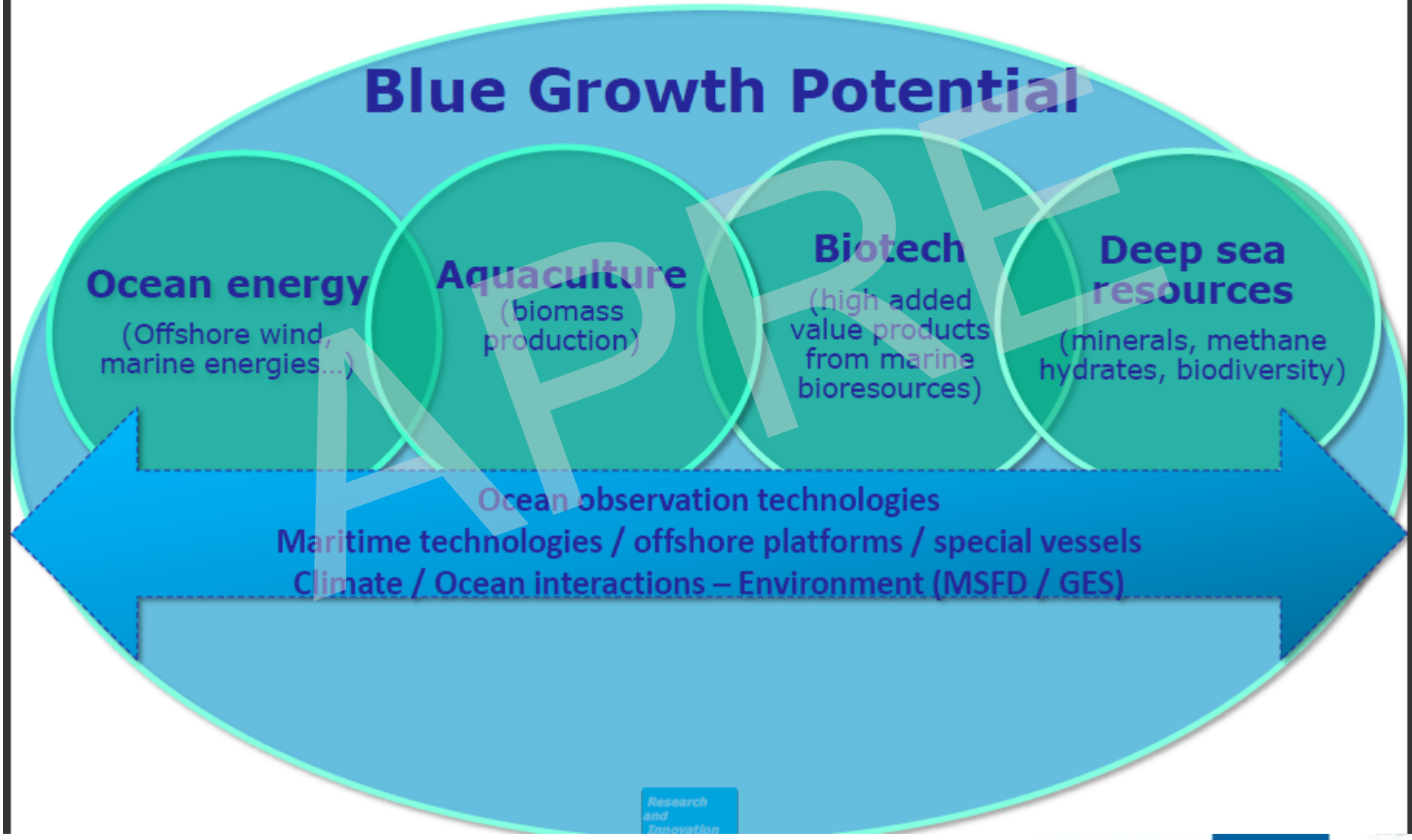
Why a Blue Growth Focus Area in H2020 ?

- New activity 2.5 in Horizon 2020 Specific programme: "cross-cutting marine and maritime research"
- Adopt a strategic approach to cross-cutting marine and maritime research to underpin Integrated Maritime Policy and Blue Growth Strategy
- Catalyse efforts of different Societal Challenges or H2020 priorities to address complex cross-cutting marine and maritime research questions that could not be tackled by a single Societal Challenge
- Take stock of and go further the FP7 experience "The Ocean of Tomorrow" (31 projects, 195M€) on cross-thematic marine and maritime research

What is the Blue Growth Focus Area in H2020 ?

- Large and complex cross-cutting initiatives in 5 priority areas :

1. Sustainably exploiting the diversity of marine life
2. New offshore challenges
3. Exploitation of deep sea resources – deep sea mining (not covered in 2014-2015)
4. Ocean observation technologies/systems
5. Socio-economic aspects


Blue Growth Potential
Ocean energy
(Offshore wind, marine energies…)
Aquaculture
(biomass production)
Biotech
(high added value products from marine bioresources)
Deep sea resources
(minerals, methane hydrates, biodiversity)
Ocean observation technologies
Maritime technologies / offshore platforms / special vessels
Climate / Ocean interactions – Environment (MSFD / GES)

European Commission

CRITERIA FOR TOPICS TO BE INCLUDED IN BLUE GROWTH FOCUS AREA

1/ High potential for innovation and growth

2/ Genuinely cross-cutting approaches

3/ Support across the innovation chain from research, to development

4/ Support to Policy: Blue Growth Strategy, Integrated Maritime Policy, Marine Strategy Framework Directive

Research and Innovation

Blue Growth Call 2014-2015

- First Blue Growth Call just launched

  145M€ for 2014-2015

- 10 topics in 2014 and 6 topics in 2015

- Involvment of SC2 (Sustainable Food Security), SC5 (Climate Action), SC4 (Transport) and SC3 (Energy)

- Strategic approach to international Cooperation

AREA 1 : Sustainably exploiting the diversity of marine life

- Focusing on the understanding of marine ecosystems and the limits for their sustainable exploitation, unlocking the biotechnological potential of marine organisms and understanding how marine life can cope with environmental change
- Address opportunities for marine biotechnological potential to contribute to global challenges such as population health, green growth and sustainable industries. Growth and jobs.
- Improve resources management and governance to preserve ecosystem diversity.

European Commission

AREA 1: Sustainably exploiting the diversity of marine life (56 M€)

BG 3 – 2014: Novel marine biomolecules (Research & Innovation action – 20 M€)

BG 4 – 2014: Potential of marine-derived enzymes (Innovation Action – 6 M€)

BG 1 – 2015: Atlantic marine ecosystems (Research & Innovation action – 20 M€)

BG 2 – 2015: Effects of climate change on fisheries and aquaculture (Research & Innovation action – 10 M€)

Research and Innovation

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BG 3 – 2014: Novel marine biomolecules and biomaterials

Specific challenge:

Topic acknowledges the extraordinary potential of the rich marine biodiversity as a source of innovative products for the biotechnology, the pharmaceutical industry or new biomaterials.

While an increasing number of this marine derived products are being commercialized, the challenge still remains: **increasing the efficiency of the marine biodiscovery pipelines** using marine resources in an environmentally sustainable manner.

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Scope:

- Technical bottlenecks : Biodiscovery pipelines
- Industry driven; innovation chain.
- Legal aspects linked to securing access to resources and related infrastructures as well as ABS.
- Environmental viability of the proposed concepts.

Expected Impact:

- Enhance competitiveness and sustainability of European Industry
- Social benefit, novel, improved, more economic, ecofriendly products
- Contribute to the implementation of the EU Blue Growth Strategy

Type of action: Research and innovation actions EUR million = 20
(indicative budget range: 6 to 10 M€/proposal)

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BG 4–2014: Industrial exploitation potential of marine-derived enzymes

Specific challenge:

With the vast reservoir of enzymes identified in the latest sequencing projects, the potential to unveil novel interesting enzymes is very high.

Better exploitation of the sequencing efforts. Limitation on the screening and expression technologies as well as IPR issues.

AREA 2: The new offshore challenge

Economic activities are expected to intensify and diversify - *marine renewable energy, aquaculture, deep sea resources exploitation*

- Increasing lack of space
- Access to deeper and further sea spaces
- Impact on the environment

Contribution to the development of new activities/ services at sea and new job opportunities

- More efficient & eco-friendly offshore activities
- Contribution to renewable energy targets in the EU
- Contribution to the growth of aquaculture industry and to increasing food needs and food security
- Strengthen the role of the European maritime Transport sector within offshore developments

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Scope:

- Develop and demonstrate innovative technologies for high throughput enzyme screening, and expression of marine enzymes and proteins, including purification systems and upscaling of marine enzymes.
- Screening - industrial technical specifications.
- Win-win academic and industry cooperation on issues related to IPR.

Expected Impact:

- Enhance competitiveness and sustainability of European industry using marine enzymes (pharmaceuticals, fine chemicals…).
- Social benefit, novel, improved, more economic, ecofriendly products.
- Contribute to the implementation of the EU Blue Growth Strategy and EU Strategy for Key Enabling technologies.

Type of action: Innovation action EUR million = 6
(Indicative budget range = 6 M€/proposal)

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AREA 2:
The new offshore challenge (26 M€)

BG 5 – 2014: Innovative offshore economy
(Coordination and Support Action - 2 M€)

BG 6 – 2014: Sub-sea technologies
(Research and Innovation action - 16 M€)

BG 7 – 2015 : Response capacities to oil spills and marine pollutions
(Research and Innovation action- 8M€)

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BG 5 – 2014: Future innovative offshore economy

Specific challenge: With the expected intensification of activities offshore, it is necessary to identify and analyse associated challenges (technological, operational, environmental) beforehand in order to select the best business model

Scope: Through a mechanism associating the key stakeholders, analyse and identify the social and economic developments in the offshore economy and the most promising, environmentally sustainable and economically feasible business models. Propose large scale pilot initiatives.

Expected Impact: Prepare the ground for demonstration activities for the most promising offshore activities to support the Blue Growth

Type of action: CSA
EUR million = 2M€

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BG 6 – 2014: Sub-sea technologies

Specific challenge: Working at high depths (down to 6,000m), offshore or in extreme conditions requests the ability to conduct challenging unmanned underwater operations (observation, data collection, transmission…)

Scope: Innovative design, increased performance, and cost-effectiveness of new underwater vehicles and robots and/or their main components required to work undersea. If relevant, develop demonstrators or prototypes.

Expected Impact: Enable sustainable, cost-efficient and safe offshore operations by European industries in extreme conditions (deep sea areas, Arctic conditions, corrosive products, high pressure and temperature…)

Type of action: R&I
EUR million = 16 (range: 8-10M€)

Research and Innovation

AREA 3: Ocean observation systems and technologies

What is it about?

- Improving the understanding of the complex interrelations between EO applications and the marine environment
- Monitoring the **state of the Environment** of the Atlantic Ocean,
- Enhancing **sectoral and cross-sectoral** cooperation by building on major international, regional and national initiatives
- The creation of this knowledge-base and predictive capacity **requires systematic collection of ocean observations** recorded remotely using EO satellites and in-situ stations

AREA 3: Ocean observation systems and technologies

Why does it matter?

- **EO technologies** underpin all scientific and economic activities at sea
- Implementation of **European maritime** and **environmental policies**
- Need to **reduce greenhouse gas emissions** for **jobs** and **growth**
- Increasing **performance** and **cost** efficiency of EO technologies
- **Enhancing documentation** necessary to cope with global challenges such as climate change, scarceness of natural resources and global scale hazards
- **Full and open access** to the ocean observations and facilitating the interoperable exchange of ocean observations

AREA 3: Ocean observation systems and technologies (30 M€)

BG 8 – 2014 Atlantic Ocean Observations
(Research and Innovation action- 20M€)

BG 9 – 2014: Acoustic and Imaging Technologies
(Research and Innovation action- 10M€)

European Commission

BG 8 – 2014: Developing in-situ Atlantic Ocean Observations for a better management and sustainable exploitation of the maritime resources

Specific challenge: Deployment of an Integrated Atlantic Ocean Observing System (IAOOS), building on existing capacities on both side of the Atlantic.

Scope: Support the understanding of the Ocean Process at the level of the entire basin and reduce the costs of in-situ ocean observation.

Expected Impact: Increase temporal and geographic coverage of observational data in the Atlantic Ocean. Integrate standardised in-situ key marine observations including biological, (meta)genomic data into process models and forecast systems.

Type of action: R&I
EUR million = 20 (Indicative budget range:15-20M€/proposal)

Research and Innovation

BG8 - KEY FEATURES

- **Aim** : the deployment of an Integrated Atlantic Ocean Observing System (**IAOOS**)

- Central to IAOOS is the acquisition and use of in-situ observations and their **integration** with remote sensed data across the Atlantic Ocean

- Application based on the **Copernicus Marine Monitoring service** and the European Marine Observation Data Network **(EMODnet)**

- Proposals should contribute to implementing the **Transatlantic Alliance** launched by the **Galway Statement**

BG 9 – 2014: Acoustic and Imaging Technologies

Specific challenge: Further improve performance of acoustic and imaging technology to cost effectively support characterisation of the marine environment with respect to good environmental status or enhancement of a sustainable marine economy. These developments support marine industries, the marine environment and fisheries management.

Scope: Develop innovative, cost efficient underwater acoustic and imaging sensors and survey systems (acoustic detection, imaging, LIDAR).

Expected Impact: Strengthen competitiveness and the safety of European maritime industry, Support the marine environment and fisheries policies (MSFD & CFP, including detection of marine litter), Support marine science and ocean discovery

Type of action: Research and innovation actions
EUR million = 10
Indicative budget range:4-6M€/proposal)

BG 9 – KEY FEATURES

Technologies for characterising the marine environment:

- **Acoustic:** active or passive for characterising seabed and sea column habitats, species and ecology and can strongly support marine environment and offshore activities and safety (detection of seeps, geologic events)

- **Imaging:** monitor biomass and biodiversity and provide estimates of pollution and marine litter (relevant for fisheries management)

- **Supporting** mechanisms: (fixed or mobile) platforms and signal and image processing to interpret raw data

- **Bring together** marine scientists, technology providers and end-users to support the implementation of EU marine environmental policy and the maritime economy

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Examples of Maritime research in other parts of Horizon 2020*

SC3: Secure, clean and efficient energy

⇨ *Competitive Low-Carbon Energy*

- LCE-01-2014 New knowledge and technologies
- LCE-02-2014/2015 Developing the next generation technologies of renewable electricity and heating/cooling
  -> items "Wind energy" and "Ocean energy"
- LCE-03-2014/2015 Demonstration of renewable electricity and heating/cooling technologies
  -> items "Wind energy" and "Ocean energy"
- LCE-04-2014/2015 Market uptake of existing and emerging renewable electricity, heating and cooling technologies

*this list is not exhaustive

Examples of Maritime research in other parts of Horizon 2020*

SC4: Smart, green and integrated transport

⇨ *Mobility for Growth* ⇨ *Waterborne transport*

- MG-4.1-2014 Towards the energy efficient and very-low emission vessel *(no limitation to transport vessels)*
- MG-4.2-2014 Safer and more efficient waterborne operations through new technologies and smarter traffic management *(safety part with focus on the Arctic, traffic management part not exclusive to transport services)*
- MG-4.3-2015 System modelling and life-cycle cost and performance optimisation for waterborne assets *(structures explicitly included)*

*this list is not exhaustive

Examples of Maritime research in other parts of Horizon 2020*

SC5: Climate Action, Environment, Resource Efficiency and Raw Materials

⇨ *Growing a low carbon, resource efficient economy with a sustainable supply of raw materials*

- SC5-11a-2014 Mining of small and complex deposits and alternative mining
- SC5-11c-2015 Deep mining on continent and in sea-bed
- SC5-15-2015 Strengthening the European Research Area in the domain of Earth Observation
- SC5-18a-2014 Coordinating European Observation Networks to reinforce the knowledge base for climate, natural resources and raw materials

*this list is not exhaustive

European Commission

Examples of Maritime research in other parts of Horizon 2020*

LEIT[1]: ii. Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing

⇨ *Biotechnology-based industrial processes driving competitiveness and sustainability*

- BIOTEC-5-2014-2015 SME-boosting biotechnology-based industrial processes driving competitiveness and sustainability

⇨ *Innovative and competitive platform technologies*

- BIOTEC-6–2015 Metagenomics as innovation driver

[1] *Leadership in Enabling and Industrial Technologies*

*this list is not exhaustive

5

SC2, WP 2014-2015: 3+1 calls

Sustainable Food Security

- Sustainable food production systems
- Safe food and healthy diets and sustainable consumption
- Global drivers of food security

Blue Growth

- Sustainably exploiting the diversity of marine life
- New offshore challenges
- Ocean observation technologies/systems
- Horizontal aspects, socio-economic sciences, engagement with society,…

Innovative, Sustainable and Inclusive Bioeconomy

- **Sustainable agriculture and forestry**
- **Sustainable and competitive bio-based industries**
- **Cross-cutting actions covering all the activities**

INNOVATIVE, SUSTAINABLE AND INCLUSIVE BIOECONOMY CALL

ISIB Call

Sustainable Agriculture and Forestry: 4 topics
(3 R&I actions + 1 CSA)

Sustainable and competitive bio-based industries: 3 topics
(2 R&I actions + 1 CSA)

Cross-cutting actions covering all activities: 5 topics
(4 CSAs + 1 ERA-NET Cofund)

(+ 1 Fast track to innovation – Pilot for 2015)

Sustainable agriculture and forestry

Topics	2014	2015
ISIB-1: Provision of public goods by EU agriculture and forestry: putting the concept into practice	X	
ISIB-2: Closing the research and innovation divide: the crucial role of innovation support service and knowledge exchange	X	X
ISIB-3: Unlocking the growth potential of rural areas through enhanced governance and social innovation		X
ISIB-4: Improved data and management models for sustainable forestry A: Improve forest data B: Improve forest management models	X	X

ISIB 1-2014: Provision of public goods by EU agriculture and forestry: putting the concept into practice

***Specific challenge**:*

- Provision of public goods by agriculture and forestry is threatened due to:
  - **Expected rise in primary production and more intensive production methods**
  - **Public goods don't have market value - considered to be 'non-excludable' and 'non-rival'**
- Concept of 'public goods' is widely used, but a lack of:
  - **Operational framework**
  - **Common understanding of wider societal and non-market benefits of agriculture and forestry activities**
- Characterise and quantify demand for public goods
- Create effective incentives and policy options for their continued provision

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European Commission

ISIB 1-2014: Provision of public goods by EU agriculture and forestry: putting the concept into practice

***Expected impact**:*

- Increased understanding of the nature and processes that influence the delivery of public goods by different types of farming and forestry systems in Europe
- *The development of mechanisms and tools for:*
  - **measuring and valorising public goods**
  - **Establishing contribution of the agricultural and forestry sectors to the sustained delivery of public goods**
- Formulation of appropriate policies, incentives, service models and win-win scenarios to reduce conflicts between:
  - **productivity objectives in primary production**
  - **delivery of ecosystems services and other public goods**

5

Agriculture and Rural Development

European Commission

Thematic networks in H2020 call 2014-2015:

ISIB 2 -2014: Closing the research and innovation divide: the crucial role of innovation support services and knowledge exchange"

- Up to one network focuses on exchange and development of **methods for innovation brokering**. It will **connect innovation support services** with experience in the matter (incl advisory services) and help them in how to find innovative ideas and develop them into an innovative group project plan
- 4 other **networks on specific themes** to be proposed bottom-up: Synthesising, sharing and presenting best practices and research results **focusing on themes and issues that are near to be put into practice, but not known or tested by practitioners**

Agriculture and Rural Development

The concept of Thematic networks in Horizon 2020 Work Programme 2014-2015

- *Projects **involving all concerned actors** (researchers, farmers, advisors, enterprises, education, NGOs, administration, regulatory bodies, EIP project groups…): no pure research networks*
- *Partners should **synthesise, discuss and present existing scientific knowledge & best practices**, with a focus on: what do we have/what do we miss to be used*
- ***Projects must develop end-user material**, such as info sheets in a common format and audio-visual material, that is long-term available and easy understandable, **to be shared through the EIP** (input for education and a research web-database for end-users)*
- *Thematic networks follow the multi-actor approach (footnote 1 on p.4 of the Work programme that describes the multi-actor approach): see info in the Info Day 17/1 session on SFS*

The concept of Thematic networks in Horizon 2020 Work Programme 2014-2015

- ***Themes*** *can be linked to products or sectors, e.g. arable crops, fruits, vegetables, pig,…etc) or a broad range of cross-cutting subjects, e.g. crop rotation, certain farming practices, energy, implementation approaches of a directive, eco-system services, social services, bio-based products, short supply chains,…etc*
- *As they bring together possible actors, thematic networks help the connecting and building of EU operational groups & multi-actor projects*
- *Possible sub-networks may have a more limited focus, e.g. the local/regional/national level or for a specific crop/product/farming*

What is an EIP Operational Group (OG) ?

- Actors (researchers, farmers, advisors, enterprises etc) working together in concrete innovation projects
- A combination of different competencies (practical and scientific), needed for implementing concrete project objectives
- Groups aiming to benefit from interaction for co-creation and cross-fertilisation ("interactive innovation")
- An OG project may have various sources of funding:

Horizon 2020 (multi-actor)

National Funds

Rural Develop-ment (RD OG)

ERDF

Private Funds

ISIB 3-2015: Unlocking the growth potential of rural areas through enhanced governance and social innovation

- Smart, inclusive and sustainable growth in the EU cannot be achieved without substantial contribution of its rural areas
- Social innovation is considered as an *enabler for a transition* towards sustainable agriculture and rural development
- Thorough analysis of social innovation in agriculture, forestry and rural development is required, embracing its
  - **complexity and various dimensions**
  - **impact on unfolding the territorial capital in different regional contexts**

European Commission

ISIB 3-2015: Unlocking the growth potential of rural areas through enhanced governance and social innovation

***Expected impact (II)**:*

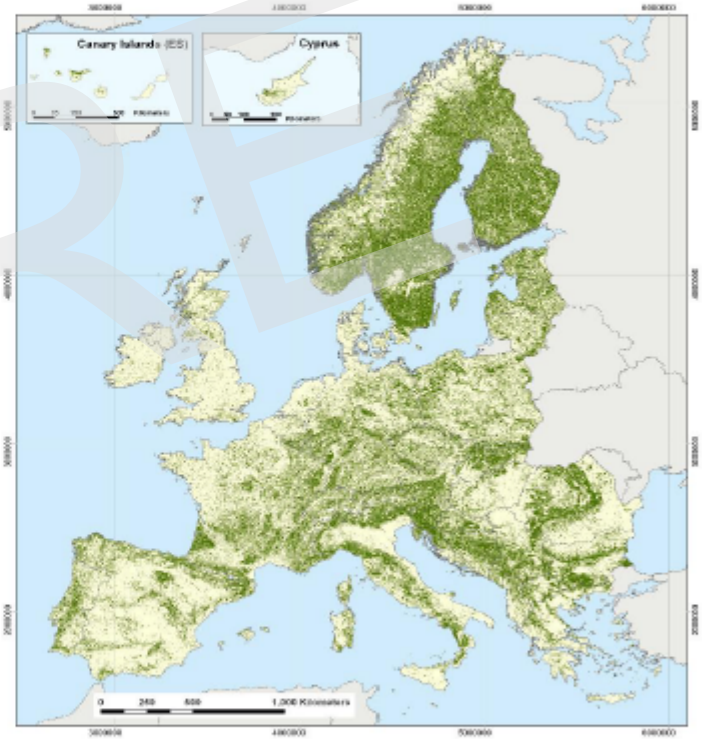
- *improve territorial governance and pave the way for an integrated approach to rural development*
- *deliver analyses of different innovative governance mechanisms with respect to social innovation in different contexts*
- *improve the formulation and delivery of relevant policies as well as to shape such programmes that explicitly foster the creation of sustainable social innovations.*

ISIB 4A – Improved forest data

Challenges

- *Multipurpose forestry – policies, societal demands (incl. bioeconomy), while forest "adaptation" potential is limited*
- *Regional characteristics, national/subnational systems of forest inventories, monitoring, cartography and planning*
- *Harmonization and accuracy of forest data systems*

Aligned with New EU Forest Strategy 2013 (3.3.5 – Knowledge base)



Source: JRC 2000

European Commission

ISIB 4A – Improved forest data (2)

Scope:

- Improvement and harmonisation of forest data flowing into European shared information systems (e.g. EFDAC), by means of national forest inventories and monitoring of SFM
  - Follow up on existing management planning and monitoring systems and previous EU projects, COST Actions, etc.
  - Innovative use of field data and EC space applications (e.g. Copernicus, Galileo), INSPIRE Guidelines
  - Priority to cross-cutting parameters, methodology and products readily available for practitioners

Expected impact

- EU information systems, GEOSS/GFOI, conventions (e.g. UNFCCC)
- Further support to forest management models (ISIB 4B - 2015)

European Commission

ISIB: Sustainable and competitive bio-based industries (18 M€)

ISIB 5– 2014: Renewable oils crops as a source of bio-based products
(Research & Innovation action – 10 M€)

ISIB 6– 2015: Converting CO_2 into chemicals
(Research & Innovation action – 6 M€)

ISIB 7– 2014: Public procurement networks on innovative bio-based products
(Coordination & Support action – 2 M€)

European Commission

ISIB 5-2014: Renewable oils crops as source of bio-based products

Specific challenge: Oil crops are an important source of bio-based products. The market demand of these products is increasing.

The challenge for Europe is to sustainably meet this demand without increasing dependency on external biomass, competing with food production or incresing environmental pressure.

Scope: Develop optimised multipurpose oil crops, with the full use of biomass in a cascade approach with environmentally sound and sustainable use of natural resources.

Expected Impact: Broadening the range of oil feedstock adapted to bio-based industry needs. Measurable improvement of critical aspects of the value chain (e.g. cultivation, extraction). Contribution to EU Bioeconomy Strategy and LMI.

Type of action: Research and innovation actions
EUR million = 10 (Indicative budget range:10M€/proposal)

European Commission

ISIB 7 – 2014: Public procurement networks on innovative bio-based products

Specific challenge: By introducing requirements for sustainability in tender specifications, the demand from public authorities could significantly increase the market for bio-based products and drive technological innovation in this area.

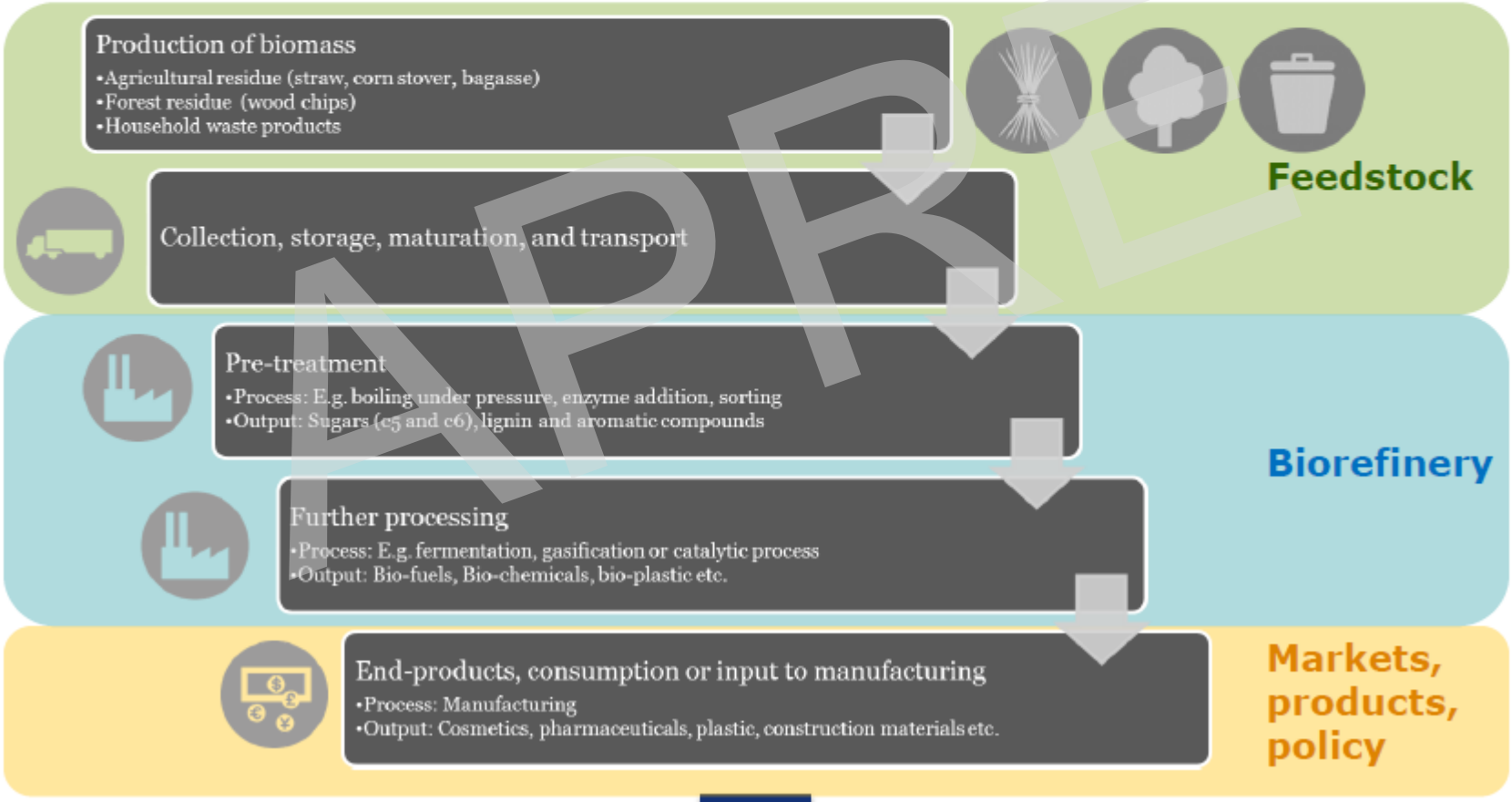
Scope: Undertake coordination and support activities to investigate the feasibility and prepare the launch of a Public Procurement of Innovation on bio-based products and servicies.

Expected Impact: Lowering barriers and increasing bio-based products market segment. Improving skills of public actors and increasing consumer awareness on bio-based products. Contribute to EU policies such as LMI on bio-base products and Green Public Procurement.

Type of action: Coordination and support actions
EUR million = 2 (Indicative budget range:2M€/proposal)

Bio-based Industries JTI

The value chain of bio-based industries



Cross-cutting actions covering all activities

ISIB 8 - *2014*: Towards an innovative and responsible bioeconomy (CSA, € 1-2 million)

- A. Engaging society, reaching end users and linking with policy makers for a participative governance of the bioeconomy
  (creation of national or regional multi-stakeholder bioeconomy platforms for informed debates; synergies with BG-13 and ISIB-3 in relation to engagement of civil society)

- B. Bridging research and innovation efforts for a sustainable bioeconomy
  (facilitation of knowledge transfer of best practices in sustainable processes and technologies; synergies with BG-11 and ISIB-2 as regards bioeconomy related information exchange)

Research and Innovation

enterprise europe network

Cross-cutting actions covering all activities

ISIB 9 - *2014*: Supporting NCPs for Horizon 2020 SC2 and the Key Enabling Technology (KET) 'Biotechnology' (CSA, € 2 million)

- Facilitation of transnational cooperation between NCPs with the aim of creating an improved and professionalised NCP service simplifying access to Horizon 2020 calls
- In line with International Cooperation Strategy, the NCPs of third countries are also welcome to participate
  (funding for them based on general rules of funding for international cooperation; where exception from these provisions is asked, it needs to be justified in the proposal)
- Submission of a single proposal is encouraged.
- Activities can be foreseen, such as benchmarking, joint workshops, enhanced cross-border brokerage events, specific trainings

Research and Innovation

Cross-cutting actions covering all activities

ERA support actions

- **ISIB 10 – 2014: *Networking of Bioeconomy relevant ERA-NETs***

  Budget 0,5 M€ ------ deadline 26 June 2014

- **ISIB 11 – 2014: *Coordination action in support of the implementation by participating States of a Joint Programming Initiative on Agriculture, Food Security and Climate Change (FACCE)***

  Budget 2 M€ ------ deadline 26 June 2014

- **ISIB 12 – 2014-2015: *Public-Public Partnerships in the Bioeconomy***
  - *A. Sustainable and resilient agriculture for food and non-food systems* *[2014]*

    Budget 5 M€ ------ deadline 26 June 2014
  - *B. Rural development* *[2015]*
  - *C. Monitoring and mitigation of agricultural GHG* *[2015]*
  - *D. Sustainable crop production* *[2015]*
  - *E. Sustainable livestock production* *[2015]*
  - *F. Biomarkers for nutrition and health* *[2015]*

    Budget 15 M€ ------ deadline 26 June 2014

European Commission

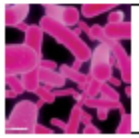
Biotechnologies Call

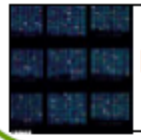
- **Background**
  - Biotechnologies and EU industrial leadership
  - FP7 KBBE Biotechnology
- **Main features WP2014-2015**
- **Three challenges**
- **Budget: € 51.7 million in 2014 & € 32 million in 2015**

European Commission

FP7 KBBE Biotech


Industrial biotechnology


Environmental biotechnology


Emerging trends in biotechnology


Novel sources of biomass and bioproducts


Marine and fresh-water biotechnology


Biorefinery

Research and Innovation

H2020 LEIT Biotech

- Biotechnology-based industrial processes
- Boosting cutting-edge biotechnologies as future innovation drivers

- Innovative and competitive platform technologies

NEW

Societal challenge 2

Food security, sustainable agriculture, marine and maritime research and the bioeconomy

European Commission

Main features of Biotechnologies Call in WP 2014-15

- From RTD to close-to-market, covering the whole innovation chain
- Balance between TRL [3-5] and [5-7] . Larger share of high TRL expected in a later stage of Horizon 2020
- Good complementarity with Societal challenge 2
- Topics broad enough to allow one or several projects to be financed
- All topics attractive to SME
- SSH: Responsible research and innovation. Embedded in topics raising potential ethical/safety issues such as synthetic biology. Gender to be consider if relevant.
- International cooperation: standardisation, global initiatives, etc.

Research and Innovation

Main challenges/ Orientations 2014-2015

Cutting-edge biotechnologies as future innovation drivers

- Developing generic technological enablers across economic sectors such as health, agriculture and industry

Biotechnology-based industrial processes driving competitiveness and sustainability

- Bridging the gap from lab to market
- Creating a path for participants in projects, in particular SMEs and large industries, to continue investing in an array of possibilities for the commercialisation of the knowledge generated

Innovative and competitive platform technologies

- Developing generic technological enablers across economic sectors such as health, agriculture and industry

Call 2014

European Commission

BIOTEC 1: Synthetic biology – construction of organisms for new products and processes

Research & Innovation Actions, TRL 3-5

BIOTEC 3: Widening industrial application of enzymatic processes ***Innovation Actions, TRL 5-7***

BIOTEC 4: Downstream processes unlocking biotechnological transformations

Innovation Actions, TRL 5-7

Deadlines: 1st stage 12/03/14; 2nd stage 26/06/14

Budget: € 18 m (BIOTEC 1) + € 29.9 m (BIOTEC 3 & 4)

3

Call 2015

BIOTEC 2: New bioinformatics approaches in service of biotechnology

Research & Innovation Actions, TRL 3-5

BIOTEC 6: Metagenomics as innovation driver

Research & Innovation Actions, TRL 3-5

Deadlines: First stage 24/02/2015
Second stage 11/06/2015

Budget: € 29.6 million

4

European Commission

BIOTEC 5: SME-boosting biotechnology-based industrial processes driving competitiveness and sustainability

SME Instrument (70% funding), TRL 6+

Deadlines:	Phase 1	Phase 2	Phase 1 & Phase 2
	18/06/14	09/10/14	18/03/15
	24/09/14	17/12/14	17/06/15
	17/12/14		17/09/15
			16/12/15

Budget: € 3.8 million in 2014 & € 2.4 million in 2015 (of which €3.34 m and €2.11 m for Phase 2 respec.)

5

European Commission

BIOTEC 1 – 2014: Synthetic biology – construction of organisms for new products and processes

Specific challenge: Enabling the construction and redesign of biological systems which display novel functions, including functions that are not known in nature.

Scope: Proposals should be industry and application driven. RTD challenges include: artificial design and/or simplification of the genomes; the design of robust and sustainable biomolecular circuits and pathways; to develop standards and creation of orthogonal biological systems. Risk assessment, ethical, societal and intellectual property aspects. Liaise with on-going FP7 and international activities on responsible governance. Activities will span between Technology Readiness Levels 3 and 5.

Expected Impact:

Scientific breakthroughs spurring innovation across sectors such as healthcare, energy, materials, chemicals, environmental technologies and agriculture.

Technological validation of synthetic biology derived products. SMEs to capitalise on the European knowhow on synthetic biology. Educated societal debate on synthetic biology addressing ethical, safety, and intellectual property aspects.

Type of action: Research and innovation actions

EUR million = 18 (Indicative budget range: 6-10M€/proposal)

BIOTEC 3 – 2014: Widening industrial application of enzymatic processes

Specific challenge: The industry is in need of sustainable routes for important chemical reactions. Biocatalytic alternatives with reduced environmental footprint are still not accessible to large scale chemical synthesis and other industrial conversions.

Scope: Development of specific robust biocatalysts for application at a large scale. Attention should be given to oxidoreductases, oxygenases, lyases. Fast and accurate enzyme activity determination and enzyme optimization. Methods for formulation and immobilization of enzymes could be considered. Strong industry drive and include demonstration activities to bridge the gap between lab and industrial scale. Activities will span between Technology Readiness Levels 5 and 7.

Expected Impact:

The demonstration of biocatalytic routes to new chemical reactions at large scale. Demonstrated industrial concepts with economic, societal and environmental benefit. Enhanced capabilities for design and fast quantitative evaluation of enzymes. Increasing sustainability and competitive-edge of biotech's concomitant sectors. Innovation policy, such as the EU Strategy for Key Enabling Technologies.

Type of action: Innovation actions

EUR million for BIOTEC 3 and BIOTEC 4 = 29,9. Indicative budget range: 6-10M€/proposal)

BIOTEC 4 – 2014: Downstream processes unlocking biotechnological transformations

Specific challenge: The often low and complex productivity of bioprocesses make downstream processing (DSP) to cause up to 80% of the production costs. Approaching the design and scale up of the bioprocess and downstream separations as a single integrated process.

Scope: To develop and demonstrate downstream processes. This includes tools and technologies such as in-situ product removal, separation and purification technologies, newly developed materials (e.g. membranes, adsorbents, resins, etc.), reliable scale-up methods. Demonstration activities. Industrial leadership. Innovation focus. Activities will span between Technology Readiness Levels 5 and 7.

Expected Impact:
Efficient and integrated downstream processes leading to a tangible reduction of investment and operating costs of the targeted biochemical process. Improvement of the environmental footprint of the targeted biochemical process. Industrial and innovation policy, such as the EU Strategy for Key Enabling Technologies.

Type of action: Research and innovation actions

EUR million for BIOTEC 3 and BIOTEC 4 = 29,9. Indicative budget range: 6-10M€/proposal)

BIOTEC 5 – 2014/2015: SME-boosting biotechnology-based industrial processes driving competitiveness and sustainability

Specific challenge: The large number of SMEs which characterise the EU biotechnology sector are playing a crucial role in the move to competitive and sustainable biotechnology-based processes. These SMEs are characterised by their research intensity and long lead times between early technological development and market introduction. They therefore need to be supported to overcome the so-called "valley of death".

Scope: The SME instrument consists of three separate phases and a coaching and mentoring service for beneficiaries. Participants can apply to phase 1 with a view to applying to phase 2 at a later date, or directly to phase 2. Technology Readiness Levels of 6 or above are envisaged

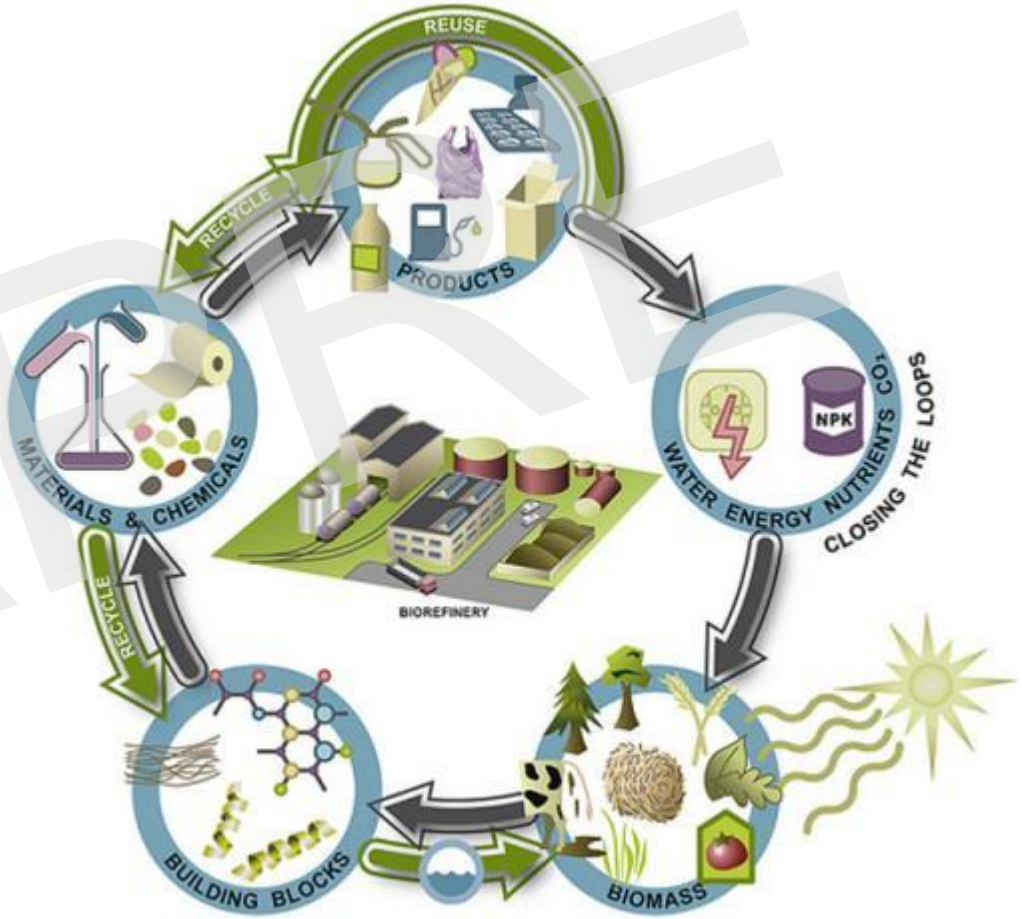
Expected Impact: Enhancing profitability and growth performance of SMEs. boosting biotechnology-based industrial processes driving competitiveness and sustainability. Market uptake and distribution of innovations. Increase of private investment in innovation. Expected impact described in qualitative and quantitative terms.

Type of action: SME Instrument (70% funding)

EUR million BIOTEC 5 in 2014= 3.8 million of which 0.38 for phase 1, 3.34 for phase 2 and 0.08 for mentoring & coaching support and phase 3

bridge 2020

APRE
AGENZIA PER LA PROMOZIONE DELLA RICERCA EUROPEA



enterprise europe network

BRIDGE 2020: *Biobased and Renewable Industries for Development and Growth in Europe*

Iniziativa di partenariato pubblico - privato proposta dalla Commissione Europea nel contesto di H2020, specchio delle *FP7 Joint Technology Initiatives*. Sostiene la ricerca industriale e l'innovazione attraverso una stretta collaborazione lungo al catena del valore di attori pubblici e privati.

BRIDGE è composta da un consorzio di **42** industrie europee (BIC) e collabora attivamente con associazioni europee, istituti di ricerca e università.

Investimenti 2014-20 20: € 1 Mlr (da EU – H2020) + € 2.8 Mlr (da industria e altri)

PUBLIC PRIVATE PARTNERSHIP ON BIO - BASED INDUSTRIES

"to develop new and competitive bio-based value chains that replace the need for fossil fuels and have a strong impact on rural development"

**COM(2013) 494/2 Public-private partnerships in Horizon 2020: a powerful tool to deliver on innovation and growth in Europe*

BRIDGE 2020: Obiettivi

1. **Creare nuove catene di valore basate su biomassa sostenibile e sistemi di approvvigionamento più produttivi**, e un migliore utilizzo delle materie prime, sviluppando allo stesso tempo un sistema di impiego e valorizzazione dei rifiuti e delle biomasse lignocellulosiche;

2. **Migliorare e sviluppare le catene di valore esistenti**, attraverso l'utilizzo ottimizzato delle materie prime e delle flussi secondari industriali, e offrire prodotti innovativi e con un maggiore valore aggiunto per il mercato, rafforzando così la competitività delle industrie collegate alla silvicoltura e all'agricoltura europea;

3. **Sviluppare nuove ed esistenti tecnologie attraverso la ricerca e l'innovazione, e tramite l'aggiornamento e la costruzione bioraffinerie di dimostrazione**, nelle quali processare le biomasse per la produzione di una nuova gamma di prodotti provenienti da fonti rinnovabili innovative.

- sviluppare sistemi che garantiscano l'approvvigionamento sostenibile sia per le applicazioni alimentari che per quelle industriali
- ottimizzare l'utilizzo delle materie prime esistenti (biomasse di origine agricola e silvicola) e lo sviluppo di nuove catene di approvvigionamento delle materie prime (residui silvicoli, residui agricoli lignocellulosici o altre colture)
- rafforzare le economie rurali e introdurre sul mercato bio-prodotti, contribuendo in tal modo al raggiungimento di un'economia basata su di essi e agli obiettivi 2020.

BRIDGE 2020: Attori

INDUSTRIE

Italia : Chemtex Italia (Gruppo M&G), Novamont

UNIVERSITA' E CENTRI DI RICERCA:

Italia: ENEA, Innovhub SSI, Università di Bologna, Università di Napoli "Federico II".

ASSOCIAZIONI EUROPEE ED ETP

BRIDGE 2020: Piano Strategico

CATENE DI VALORE:

1. Dalla materia prima lignocellulosica ai biocarburanti avanzati, prodotti chimici provenienti da fonti rinnovabili e biomateriali
2. Una nuova generazione di **catene del valore basate sulle foreste**: sfruttare il potenziale delle biomasse silvicole per la realizzazione di nuovi sistemi e prodotti per il mercato biobased
3. Una nuova generazione di **catene del valore agro-based**: raggiungere la massima sostenibilità e valore per il miglioramento della produzione agricola e l'introduzione di nuovi prodotti agricoli con valore aggiunto sul mercato
4. Nuove catene del valore per i (bio)rifiuti per trasformarli da problema a opportunità economiche
5. Bioraffinerie integrate per energia, cellulosa e prodotti chimici

PUBBLICAZIONI

Cover	Title and Link to electronic version	Pages	Summary
	Bioeconomy Leaflet: A Bioeconomy Strategy for Europe Catalogue Num.: KI-02-13-205-EN-C e-Library	4 p.	This leaflet gives a brief but complete overview of the Europe's Bioeconomy Strategy launched in 2012.
	Innovating for sustainable growth: A Bioeconomy for Europe ISBN 978-92-79-25376-8 e-Library	64 pp	Communication from the EC to the EP, the Council, the Economic and Social Committee and the Committee of the Regions "Innovating for Sustainable Growth: A Bioeconomy for Europe" and the "Commission Staff Working Document".
	Investing in European Success developing a Bioeconomy using resources from land and sea ISBN 978-92-79-23342-5 e-Library	42 p.	This booklet presents a selection of projects that show Europe's investment in Research and Innovation as the cornerstone of the Bioeconomy strategy.
	Bioeconomy Poster Two sizes: - A0 (84,1x118,9cm) - A1 (59,4x84,1cm) EU Bookshop		Poster

PUBBLICAZIONI

Interim Catalogue of Projects (FP7 - COOPERATION - THEME 2) Catalogue Num.: KI-32-13-034-EN-N	448 pp.	This interim catalogue presents 411 projects selected for funding under FP7 Theme 2 “Food, Agriculture and Fisheries, and Biotechnologies” during 5 years (2007-2012).
FP7 projects with the Group of African, Caribbean and Pacific States (ACP) in the area of Food, Agriculture and Fisheries, and Biotechnology research Catalogue Num.: KI-01-13-121-EN-C	64 pp	The African, Caribbean and Pacific catalogue presents 51 projects selected for funding under FP7 Theme 2 during 5 years (2007-2012).
FP7 projects with Asia Research and Innovation in the area of Food, Agriculture and Fisheries, and Biotechnology research Catalogue Num.: KI-01-13-122-EN-C	80 pp.	The Asian countries catalogue presents 65 projects selected for funding under FP7 Theme 2 during 5 years (2007-2012).
FP7 projects with Brazil in the area of Food, Agriculture and Fisheries, and Biotechnology research Catalogue Num.: KI-01-13-123-EN-N	36 pp.	The Brazil catalogue presents 24 projects selected for funding under FP7 Theme 2 during 5 years (2007-2012).
FP7 projects with China in the area of Food, Agriculture and Fisheries, and Biotechnology research Catalogue Num.: KI-02-13-059-EN-N	56 pp.	The China catalogue presents 41 projects selected for funding under FP7 Theme 2 during 5 years (2007-2012).
FP7 projects with Eastern Europe and Central Asia (EECA) in the area of Food, Agriculture and Fisheries, and Biotechnology research Catalogue Num.: KI-02-13-062-EN-N	40 pp.	The Eastern Europe and central Asia countries catalogue presents 28 projects selected for funding under FP7 Theme 2 during 5 years (2007-2012).
FP7 projects with India in the area of Food, Agriculture and Fisheries, and Biotechnology research Catalogue Num.: KI-02-13-060-EN-N	28 pp.	The India catalogue presents 18 projects selected for funding under FP7 Theme during 5 years (2007-2012).
FP7 projects with Mediterranean Partners Countries (MPC) in the area of Food, Agriculture and Fisheries, and Biotechnology research Catalogue Num.: KI-01-13-120-EN-C	48 pp.	The Mediterranean countries catalogue presents 33 projects selected for funding under FP7 Theme 2 during 5 years (2007-2012).
FP7 projects with Russia in the area of Food, Agriculture and Fisheries, and Biotechnology research Catalogue Num.: KI-02-13-061-EN-N	40 pp.	The Russia catalogue presents 25 projects selected for funding under FP7 Theme 2 during 5 years (2007-2012).

SUPPORT TO POLICIES

interactions between the Directorate for Food, Agriculture and Fisheries and Biotechnology Research and other Directorates General o the European Commission

Interactions with **Directorate-General for Health and Consumers** (DG SANCO) in the fields of

- plant health and plant protection,
- animal health and welfare (including fish and seafood),
- food security and food safety
- sustainability,
- obesity,
- cloning and food from cloned animals.

Interactions with **Directorate-General for Agriculture and Rural Development** (DG AGRI) in the fields of

- organic farming,
- quality products,

SUPPORT TO POLICIES

Interactions with **Environment Directorate-General** (DG ENV) in the fields of

- soil protection,
- water,
- waste management,
- use of plant and microbial genetic resources in agriculture and forestry and fostering functional biodiversity,
- forest protection.

Interactions with **Directorate-General for Maritime Affairs and Fisheries** (DG MARE) in the fields of

- Common Fisheries Policy (FCP)
- aquaculture – fish farming,
- maritime policy including its environment pillar, the Marine Strategy framework directive.

SUPPORT TO POLICIES

Interactions with **Directorate-General Enterprise and Industries** (DG ENTR) in the fields of

- eco-innovation in the food industry, particularly SMEs
- practical industrial application of new technologies or research results and in development of industrially relevant technologies.
- A number of topics in WP2010 are specifically designed to encourage participation by SMEs and industry in research and innovation