European Commission

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Horizon 2020 Work Programme for Research & Innovation 2018-2020

Societal Challenge 2 Infoday
Brussels, 4 July 2019

Call "Food and Natural resources"
H2020-FNR-2020

This presentation does not engage the Commission, please refer to the official documents.

Research and Innovation

European Commission

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Horizon 2020 Work Programme for Research & Innovation 2018-2020

Societal Challenge 2 Infoday
Brussels, 4 July 2019

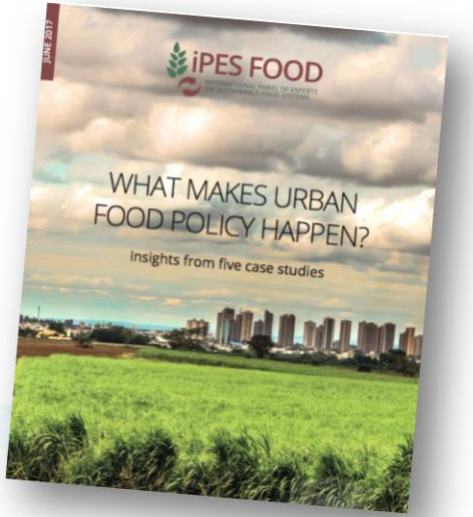
Topic CE-FNR-07-2020

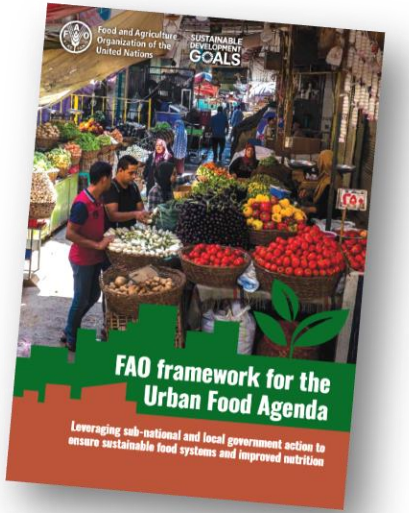
This presentation does not engage the Commission, please refer to the official documents.

Research and Innovation

"FOOD 2030 – Empowering cities as agents of food system transformation"

- *"Food systems are contributing to problems like climate change, waste, environmental degradation and economic inequality.*
  In the context of a rapidly urbanizing world, these problems have become serious challenges for cities, and cities have become increasingly implicated in food system problems that extend far beyond their own borders". (IPES-Food, 2017)





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Requirements to keep in mind

- **NUTRITION for sustainable and healthy diets**
- **CLIMATE smart and environmentally sustainable food systems**
- **CIRCULARITY and resource efficiency of food systems**
- **INNOVATION and empowerment of communities**

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Existing initiatives

- Projects from 2019 call:

FoodE

- *"Food Systems in European Cities"*
- Bologna university

FoodSHIFT2030

- *"Food System Hubs Innovating towards Fast Transition" by 2030*
- Copenhagen University

MILAN URBAN FOOD POLICY PACT

European Commission

Requirements to keep in mind

- At least **10 cities**, **diverse** for:
  - Geography
  - Type
  - Experience
- **RRI** & **MAA** → Involvement of **local authorities**
- Strong centralized **professional coordination**
- The set-up of a **living lab** in each city is required

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Useful resources

Literature

- "FAO framework for the Urban Food Agenda", FAO, 2019
- "What makes urban food policy happen? Insights from five case studies", IPES-Food, 2017

EU Policies and projects

- FOOD2030 policy framework
- FIT4FOOD2030

Initiatives

- "The role of cities in the transformation of food systems: sharing lessons from Milan pact cities", FAO, 2018

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Horizon 2020 Work Programme for Research & Innovation 2018-2020

Societal Challenge 2 Infoday
Brussels, 4 July 2019

Topic FNR-08-2020

This presentation does not engage the Commission, please refer to the official documents.

Research and Innovation

Supporting the food safety systems of the future

Coordination and support Action

- Indicative budget for the topic: €3 million
- European citizens need to have access to safe and wholesome food of highest standards (General Food Law)
- But: consumer concerns & technological developments and innovations -> reflect on the food safety system of the future
- Integrate stakeholders, map the state of play, strengthen R&I, exchange knowledge & data, improve coherence, develop innovative approaches on communication, explore avenues for long-term-science-policy-society interfaces
- Be flexible to respond in real-time to potentially fest changing policy scenarios
- Deliver a platform for European cooperation, develop innovative models for collaboration
- Develop a Food Safety SRIA
- Develop models to inform civil society on science base RA process

Useful resources

- https://ec.europa.eu/food/safety/general_food_law_en
- http://www.efsa.europa.eu/

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Societal Challenge 2 Infoday
Brussels, 4 July 2019

Topic FNR-11-2020

Research and Innovation

Prospecting aquatic and terrestrial natural biological resources for biologically active compounds

Research and Innovation Action

- Indicative budget for the topic: €30 million, suggested budget per project: €7.5 million
- Unified topic description (specific challenge, scope and impact), only divided by source environment (i.e. sub-topics A/B), due to their different specificities (and R&I communities)
- Proposals should address only one of the following sub-topics:

A: Prospecting terrestrial natural biological resources for biologically active compounds - Actions must focus on land-based biological natural resources.

B: Prospecting aquatic natural biological resources for biologically active compounds - Actions must focus on marine and fresh-water biological natural resources.

- Exception in the evaluation procedure: Grants will be awarded to proposals according to the ranking list. However, in order to ensure a balanced portfolio of supported actions, at least the highest-ranked proposal per sub-topic will be funded provided that it attains all thresholds. Cooperation with other selected proposals under this topic is encouraged.
- Read carefully the text, including definitions (e.g. footnote 255: "(...) Large macromolecules such as proteins/enzymes are excluded").

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Societal Challenge 2 Infoday
Brussels, 4 July 2019

Topic FNR-12-2020

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Research and Innovation

Industrial microbiomes – learning from nature

Research and Innovation Action

- Indicative budget for the topic: €6 million, suggested budget per project: €3 million
- Open to microbial communities with "stability" and "functional robustness"
- Challenge: to optimise existing industrial processes and/or to design and develop wholly new microbiome-based industrial processes
- Proposals should focus on concrete bio-based processes and/or products involving synthetic microbial consortia and using –omics tools; activities should optimise the use of pre-existing databases and big-data management tools; apply cross-sectorial approach, shared standards across borders, improve professional skills
- Raise awareness, improve overall knowledge of the industrial microbiome and the bio-based sector's overall sustainability; strengthen the market position and increase the market share of bio-based solutions
- Demonstrate solutions and develop strategies for innovation; enhanced cooperation between all stakeholders; deliver results for efficient feedback into policymaking in research, innovation and technology

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Societal Challenge 2 Infoday
Brussels, 4 July 2019

Topic FNR-13-2020

This presentation does not engage the Commission, please refer to the official documents.

Research and Innovation

Bio-based industries leading the way in turning carbon dioxide emissions into chemicals

Research and Innovation Action

- Indicative budget for the topic: €21 million, suggested budget per project: €7 million
- Climate change mitigation and circular economy are the base of the topic
- Includes "innovative technologies for converting CO_2 from industrial plants processing biomass" and "biotechnological processes" for the conversion of CO_2 into added-value chemicals
- Addresses technical challenges and business models, operations and logistics;
- Environmental considerations: proposals should include a life cycle assessment of the environmental performance beyond climate change mitigation
- Proposals should also explore the socio economic and regulatory measures required to support the use of CO_2 as a raw material for the production of chemicals
- Other considerations: "development of algae-based concepts is excluded", possibility of industrial symbiosis

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Societal Challenge 2 Infoday
Brussels, 4 July 2019

Topic FNR-14-2020

This presentation does not engage the Commission, please refer to the official documents.

Research and Innovation

Innovative textiles – reinventing fashion Innovation Action

- Indicative budget for the topic: €21 million, suggested budget per project: €7 million
- Sustainability and resource efficiency in the centre of the topic: whole value chain approach
- Includes "development of innovative, techno-economically feasible materials and processes for the production of resource-efficient, sustainable and functionally performing bio-based textiles";
- Addresses "the technical, environmental and economic aspects of bio-based textile recycling, focusing on quality, i.e. targeting up-cycling, or at least, recycling into the same or similar quality applications";
- Environmental considerations: "the use of new bio-based materials and the design of textiles that are either biodegradable or do not shed microfibers and have the properties needed for performance applications".
- Part of the Circular Economy R&D: Work on the sustainability and safety of end products should embrace the use of resources as a whole and incorporate the established standards for products with a small environmental footprint, from life-cycle assessment to eco-labelling. In addition, activities should investigate the elements needed for the development of innovative circular business models for bio-based textiles.

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Societal Challenge 2 Infoday
Brussels, 4 July 2019

Topic CE-RUR-08-2018-2019-2020

This presentation does not engage the Commission, please refer to the official documents.

Research and Innovation

Topic introduction

- **Background: Circular Economy Package (December 2015)**

  → Revised **fertilisers regulation**: new fertilisers based on organic waste expected to emerge

  - Need to understand **properties and impacts** → scope 1 (2018)
  - Need to develop **new technologies** → **scopes 2 and 3**

  → Assess contribution of 2012 **EU Bioeconomy Strategy** to CE

  - Review completed in 2017 (SWD) → contribution is significant, but **bioeconomy to become more circular**
  - Bioeconomy Strategy recently updated

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Topic introduction

- **Challenges**
  - → External dependence
  - → Resource depletion
  - → Environmental concerns: energy, pollution
  - → Agro-food specialisation → regional imbalances

Topic introduction (scope C)

- **Requirements to keep in mind**
  - → Demonstrate processes for nutrient recovery and production of **novel, high-quality** fertilisers (TRL 6-7) **from by-products** of the agri-food, fisheries, aquaculture or forestry sectors
  - → **Excluded**: manure, waste water and sewage sludge (scopes B and D)
  - → Address marketability, safety, sustainability and compliance,
  - → Integrated business model assessment
  - → Multi-actor approach
  - → Other:
    - Clustering with related projects
    - **CELAC** participation encouraged

Innovation Action
€ 8 M
(≈ € 8 M/project)

European Commission

Topic introduction (scope D)

- **Requirements to keep in mind**
  - → Developing techniques for nutrients recovery **from waste water** and processes upgrading recovered nutrients; urban and industrial sectors waste water and sewage sludge
  - → Environmental aspect are key: monitoring and mitigation of **contaminants**, environmental impacts assessment of products and processes on a life-cycle approach, **energy** consumption, waste production, etc
  - → Regulation issues investigation
  - → As an asset:
    - Involvement of local governments
    - Coherence with regional strategies

Research and Innovation Action
€ 6 M

European Commission

Useful resources

- **Circular Economy:** http://ec.europa.eu/environment/circular-economy/index_en.htm
- **EU Bioeconomy Strategy:** http://ec.europa.eu/research/bioeconomy/index.cfm?pg=policy&lib=strategy
- **EU Bioeconomy Strategy review (SWD):** https://ec.europa.eu/research/bioeconomy/pdf/review_of_2012_eu_bes.pdf
- **Fertiliser Regulation (adopted May 2019):** https://data.consilium.europa.eu/doc/document/PE-76-2018-INIT/en/pdf
- **Nutrient Recovery and Reuse (NRR) in European agriculture (RISE foundation):** http://www.risefoundation.eu/images/files/2016/2016_RISE_NRR_Full_EN.pdf
- **EIP-AGRI Focus Group on nutrient recycling:** https://ec.europa.eu/eip/agriculture/en/focus-groups/nutrient-recycling

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Horizon 2020 Work Programme for Research & Innovation 2018-2020

Societal Challenge 2 Infoday
Brussels, 4 July 2019

Topic FNR-03-2020

Research and Innovation

Topic introduction

- **Challenges**
  - → Proliferation of initiatives, projects, studies, etc. typically focusing on one specific dimension
  - → Need holistic perspective and comprehensive vision

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Topic introduction

- **Requirements to keep in mind**
  - → Build on existing knowledge and data
  - → Bring together actors representing various approaches and locations (including LDCs)
  - → Holistic look: consider different contexts and motivations (urban development, environment, social, business, food security, etc.)
  - → Vision: formulate guidance and recommendations to stakeholders and policy makers (including R&I)
  - → Cooperation with relevant projects and actors outside the EU

Coordination and Support Action
€ 2 M
(≈ € 2 M/project)

European Commission

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Horizon 2020 Work Programme for Research & Innovation 2018-2020

Societal Challenge 2 Infoday
Brussels, 4 July 2019

Topic FNR-06-2020

Research and Innovation

Topic introduction

- **Challenges**
  - → Bioeconomy expected to contribute to de-fossilisation, but agriculture still reliant on fossil energy.
  - → Potential to use renewable energies still untapped:
    - ➢ Technical issues: complexity, cost-effectiveness
    - ➢ Policy: design pathways

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Topic introduction

- **Requirements to keep in mind (Scope A)**
  - → Knowledge and policy **hub**
  - → Benchmark policies and technologies
  - → Develop attractive materials, including **roadmaps** for energy-intensive
    - ➢ Farming systems
    - ➢ Agricultural practices
    - ➢ Agricultural inputs
  - → Assess approaches (economic, social and environmental)
  - → **Vision** of de-fossilisation of agriculture

Coordination and Support Action (≈ € 2 M/project)

European Commission

Topic introduction

- **Requirements to keep in mind (Scope B)**

  → **Test and demonstrate** cost-effective solutions, tackling

  - Renewable energy production
  - Adaptation of machinery and facilites
  - Energy storage

Innovation Action (≈ € 5 M/project)

→ **Focus** on a specific farm practice → common, energy-intensive

→ Sustainability assessment

→ TRL 6-7

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Topic introduction

- **Requirements to keep in mind (Scopes A and B)**
  - → Multi-actor
  - → Include a task to cluster with related projects

Useful resources

- **EIP-AGRI Focus Group**

  "Enhancing production and use of renewable energy on the farm"

  https://ec.europa.eu/eip/agriculture/en/focus-groups/enhancing-production-and-use-renewable-energy-farm

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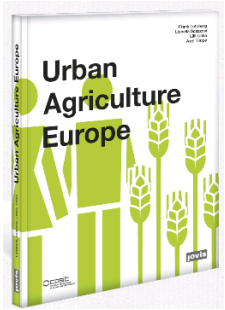
Useful resources

- **FAO - Urban agriculture:** http://www.fao.org/urban-agriculture/en/
- **COST action "Urban Agriculture Europe":** http://www.urban-agriculture-europe.org/
- **RUAF foundation**: https://www.ruaf.org
- **Project SiEUGreen**: https://www.sieugreen.eu/



Food and Agriculture Organization of the United Nations

RUAF Foundation

SiEUGreen

European Commission

European Commission

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Horizon 2020 Work Programme for Research & Innovation 2018-2020

Societal Challenge 2 Infoday
Brussels, 4 July 2019

FNR-10-2020: Public engagement for the Bioeconomy

This presentation does not engage the Commission, please refer to the official documents.

Research and Innovation

Topic introduction. FNR-10-2020: Public engagement for the Bioeconomy

Challenge

- ✓ **Raising public awareness and knowledge** about the environmental and socio-economic impact of activities on all **bioeconomy** areas among a **wide range of stakeholders**

- ✓ **Requirements to keep in mind: definition of bioeconomy**

The bioeconomy includes **sectors and systems** that use, produce, process or are driven by **biological resources**

BioE is a cross-cutting issue and its **awareness** should require a **wide range of stakeholders** (public authorities, young students, citizens, etc.,)

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Expected impact

- Contribute to the implementation of the updated **2018 EU Bioeconomy Strategy**
- Contribute to the overall **awareness** by European citizens about the bioeconomy.

In particular on …

- **sustainability and environmental** protection;
- **sustainable** production, consumption and lifestyles;
- Information on consuming products;
- Encourage the deployment of **Bioeconomy Strategies** at local level;
- Contribute to the **European Bioeconomy Network.**

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Useful resources

- **Policy background documents:**

2018 EU Bioeconomy Strategy

- **Links**

https://ec.europa.eu/research/bioeconomy/pdf/ec_bioeconomy_strategy_2018.pdf#view=fit&pagemode=none

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Horizon 2020 Work Programme for Research & Innovation 2018-2020

Societal Challenge 2 Infoday
Brussels, 4 July 2019

Topic FNR-15-2020

Research and Innovation

A network of European bioeconomy clusters to advance bio-based solutions in the primary production sector

Coordination and support action

- Indicative budget for the topic: €2 million, suggested budget per project: €2 million
- Implementing the 2018 EU bioeconomy strategy, Action 3.1.1. "Mobilise public and private stakeholders, in research, demonstration and deployment of sustainable, inclusive and circular bio-based solutions".
- Stimulating adoption of the business models by the stakeholders (especially primary producers), with a clear emphasis on agriculture and forestry.
- Focus on establishing a pilot network of national/regional 'bioeconomy clusters' gathering relevant actors in the bioeconomy (e.g. EU, national/regional policy and funding bodies, industry, academia, farmer associations and cooperatives, industry, researchers, civil society and NGOs).
- Avoid overlaps and build on synergies (footnote 262: "projects resulting from topics RUR-09-2018 ("Realising the potential of regional and local bioeconomies"), and RUR-10-2019 ("Circular bio-based business models for rural communities"").

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Horizon 2020 Work Programme for Research & Innovation 2018-2020

Societal Challenge 2 Infoday
Brussels, 4 July 2019

Topic FNR-16-2020

This presentation does not engage the Commission, please refer to the official documents.

Research and Innovation

Enzymes for more environment-friendly consumer products

Research and Innovation Action

- Indicative budget for the topic: €6 million, suggested budget per project: €2 million
- Focus on enzymes used in the consumer products
- Challenge - to expand the use of enzymes for greener consumer products, combining economic competitiveness and greater sustainability
- Proposals should address the development of novel or improved enzyme(s) for the processing and/or the formulation of one or more consumer products (e.g. washing agents or textiles); bioprospecting or exploitation of existing databases could be involved
- Activities should assess the environmental impact and improve the environmental performance; cooperation with other selected proposals under this topic is encouraged
- Proposals should develop efficient production system of enzymes(s) and cover the management of safety aspects in combination with the development of generic platform technologies
- Deliver market transition strategies, engage stakeholders, provide efficient policy feedback, enhance the competitiveness and sustainability of EU industry (biotechnology and consumer products)

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Horizon 2020 Work Programme for Research & Innovation 2018-2020

Societal Challenge 2 Infoday
Brussels, 4 July 2019

Topic FNR-17-2020

Research and Innovation

Pilot circular bio-based cities – sustainable production of bio-based products from urban biowaste and wastewater

Innovation action

- **Indicative budget for the topic: €8 million**
- **Proposals shall provide Project Development Assistance (PDA) to a pilot group made up of at least 5 European cities (and/or clusters of cities) to build their technical, economic and legal expertise needed for leading to concrete investments in projects to valorise urban biowaste and wastewater through the production of safe and sustainable bio-based products, including the innovative ones.**
- **Delivery sustainable circular bio-based economy investments and support the launch of the related projects embedded in urban circular bio-based economy strategies to valorise urban biowaste and wastewater through the production of bio-based products, including the innovative ones.**
- **Creation of a European network to facilitate the exchange of good practices and lessons learned among circular bio-based cities.**

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Horizon 2020 Work Programme for Research & Innovation 2018-2020

Societal Challenge 2 Infoday
Brussels, 4 July 2019

Topic FNR-18-2020

This presentation does not engage the Commission, please refer to the official documents.

Research and Innovation

Sustainability of bio-based products – international governance aspects and market update

Coordination and support action

- Indicative budget for the topic: €1.5 million, suggested budget per project: €1.5 million
- Focus on sustainability of renewable, innovative, industrial bioproducts
- Contributing to 2018 Bioeconomy Strategy, Action no. 3, point 3.1.3 "Study and analysis of enablers and bottlenecks and provide voluntary guidance to the deployment of bio-based innovations".
- International cooperation / global outreach: "Cooperation with key European and non-European bioeconomy leaders and international organisations, and the bio-based industry is strongly encouraged". See footnote 267, and impact section "(…) feed into ongoing international efforts in this regard (e.g. OECD)"
- Read carefully the text, including definitions (e.g. footnote 268: "(…) Taking account of the principle of cascade use, existing criteria for bioenergy product sustainability and existing approaches to indirect land-use change (ILUC) for bioenergy for the development of ILUC factors for bio-based products.)".

Useful resources

- EU Bioeconomy Strategy (2018)
- EU Industrial Policy Strategy (2017)
- Key definitions: see individual topics with footnotes

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Horizon 2020 Work Programme for Research & Innovation 2018-2020

Societal Challenge 2 Infoday
Brussels, 4 July 2019

Topic CE-SFS-36-2020

This presentation does not engage the Commission, please refer to the official documents.

Research and Innovation

Topic introduction

- **Challenges**

  → Subsistence agriculture → lack of investment, low productivity and diversification → vulnerability, migration

  → Deforestation, soil degradation

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Topic introduction

- **Requirements to keep in mind**

  → **Screen** bio-based technologies that can be adapted and transferred to rural African contexts

    - Simple, robust, local
    - Sustainability, circularity
    - Variety of end-products → do not focus on energy / fuels

European Commission

Topic introduction

- **Requirements to keep in mind**
  - → **Integration** into existing systems → residues, multicropping
  - → Replicability
  - → **Test and adapt**
  - → Sustainability assessment
  - → Practice guides and policy recommendations
  - → Stakeholder collaboration
  - → Clustering
  - → Increase innovation capacities and scientific collaboration

Research and Innovation Action
€ 18 M
(≈ € 9 M/project)

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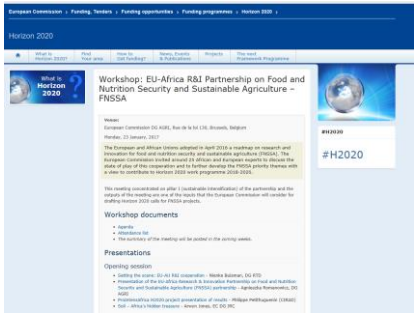
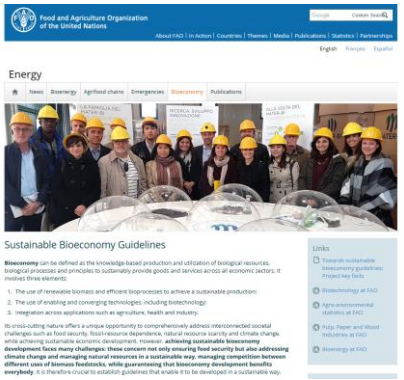
Useful resources

- **Workshop: EU-Africa R&I Partnership on Food and Nutrition Security and Sustainable Agriculture – FNSSA :** https://ec.europa.eu/programmes/horizon2020/en/news/workshop-eu-africa-ri-partnership-food-and-nutrition-security-and-sustainable-agriculture
- **FAO site Bioeconomy:** www.fao.org/energy/bioeconomy/en/





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Thank you!

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www.ec.europa.eu/research

www.ec.europa.eu/agriculture

Funding and Tender Portal:
https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/h2020

Join the FOOD 2030 Stakeholder list

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