



## Societal Challenge 2: Food Security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy

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**Building Bi-regional Partnerships for Global Challenges**



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**Author(s):** Melissa Plath

**Organisation Name(s):** UniPID/University of Jyväskylä

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# Societal Challenge 2: General Information

## Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy

- Leveraging research and innovation to address major societal challenges: ensuring food and nutritional security, resource efficiency, and facing climate change; sustainably exploiting the potential of the oceans; promoting dynamic territorial development, through the mobilisation of rural and coastal economies; boosting investment, employment and economic growth in the EU
- Aim to bring research and innovation to the heart of major primary to face the new challenges ahead, taking advantage of new potential in the biological, ecological, technical and information technology domains
- 2016-2017 focus on:
  - Sustainable Food Security
  - Blue Growth
  - Rural Renaissance
  - Bio-based innovation for sustainable goods and services

# Societal Challenge 2: International Cooperation

## Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy

- Challenges addressed in the WP are of a global nature, requiring global solutions in cooperation with third countries and relevant international organizations or initiatives
- International cooperation will be encouraged and seek to maximize the benefits of collaboration with regions outside the EU in particular in view of solving common problems and meeting international commitments
- Particular priorities for international cooperation in this WP:
  - Blue Growth: support the implementation of the Atlantic Ocean Research Alliance (focus on Arctic) and the BLUEMED Initiative on marine and maritime research and innovation activities in the Mediterranean area;
  - Sustainable Food Security: support flagships initiatives with China and partnerships initiatives with East-Asian countries on aquaculture and **Africa on Food and Nutrition Security, Sustainable Agriculture, and the establishment of an International Research Consortium on animal health**

# Societal Challenge 2: Sustainable Food Security

## Sustainable Food Security - Resilient and resource-efficient value chains

- The focus area ‘sustainable food security’ will put greater emphasis on the resilience of primary production, coping with resource depletion and climate change, and research and innovation along the food value chain than the previous work programme (2014–2015).
- 2016-2017 focus on:
  - More resilient and resource efficient value chains
  - Environment-smart and climate-smart primary production
  - A competitive food industry
  - Healthy and safe foods and diets for all
- EU-Africa Cooperation:
  - Support to the implementation of the EU-Africa Partnership on Food and Nutrition Security and Sustainable Agriculture

# Societal Challenge 2: Food Security / Overview

## Topics

### SUSTAINABLE FOOD SECURITY – RESILIENT AND RESOURCE-EFFICIENT VALUE CHAINS

SFS 1 – 2016: Solutions to multiple and combined stresses in crop production

SFS 2 – 2016: Teaming up for good: Exploiting the benefits of species diversity in cropping systems

SFS 3 – 2016: Testing and breeding for sustainability and resilience in crops.

SFS 4 – 2017: New partnerships and tools to enhance European capacities for in-situ conservation

SFS 5 – 2016: Robotics Advances for Precision Farming

SFS 6 – 2016: Weeding – Strategies, tools and technologies for sustainable weed management

SFS 7 – 2016/2017: Organic Breeding – Increasing the competitiveness of the organic breeding and farming sectors

SFS 8 – 2017: Organic Inputs – Contentious inputs in organic farming

SFS 9 – 2016: Spotlight on critical outbreak of pests: The case of *Xylella fastidiosa*

SFS 10 – 2017: Research and approaches for emerging diseases in plants and terrestrial livestock

SFS 11 – 2016: Challenges for disease management: Perennial crops in the tropics and sub-tropics

SFS 12 – 2016: Supporting for international research on animal health

# Societal Challenge 2: Food Security / Overview

## Topics

SFS 13 – 2016: Validation of diagnostic tools for animal and crop health

SFS 14 – 2016: Understanding Host-Pathogen Interactions

SFS 15 – 2017: Breeding livestock for resilience and efficiency

SFS 16 – 2017: Bee health and sustainable pollination

SFS 17 – 2017: Innovations in plant protection

SFS 18 – 2016: Framework Partnership Agreement supporting Joint Actions towards Public-Public Partnerships in the Bioeconomy

SFS 19 – 2016: ERANET COFUND: Public-Public Partnerships in the bioeconomy

SFS 20 – 2017: Towards a science-based regionalisation of the Common Fisheries Policy

SFS 21 – 2016/2017: Advancing basic biological knowledge and improving management tools for commercially important fish and other seafood species

SFS 22 – 2017: Smart fisheries technologies for an efficient, compliant and environmentally friendly fishing sector

SFS 23 – 2016: Improving technical performance of the Mediterranean aquaculture

SFS 24 – 2016: Reinforcing international cooperation on sustainable aquaculture production with countries from South-East Asia

SFS 25 – 2016: Support Action to a common agricultural and wider bioeconomy research agenda

# Societal Challenge 2: Food Security / Overview

## Topics

SFS 26 – 2016: Legumes – Transition paths to sustainable legume-based farming systems and agri-feed and food chains

SFS 27 – 2017: Permanent grassland – farming systems and policies

SFS 28 – 2017: Functional Biodiversity – Productivity gains through functional biodiversity – effective interplay of crop pollinators and pest predators

SFS 29 – 2017: Socio-Eco-Economics – Socio economics in ecological approaches

SFS 30 – 2017: Closing loops at farm and regional levels to mitigate GHG emissions and environmental contamination: focus on carbon, nitrogen and phosphorus cycling in agro-ecosystems

SFS 31 – 2016: Farming for tomorrow: developing an enabling environment for resilient and sustainable agricultural systems

SFS 32 – 2017: Promoting and supporting eco-intensification of aquaculture production systems: inland (including fresh water), coastal zone and offshore

SFS 33 – 2016: Understanding agro-food value chain and network dynamics

SFS 34 – 2017: SFS-34-2017: Innovative agri-food chains: unlocking the potential for competitiveness and sustainability

SFS 35 – 2016: Innovative solutions for sustainable food packaging

SFS 36 – 2017: Co-fund on “One Health” (zoonoses – emerging threats)

SFS 37 – 2017: The impact of consumer practices in food safety: risks and mitigation strategies

# Societal Challenge 2: Food Security / Overview

## Topics

SFS 38 – 2016: Impulsivity and compulsivity and the link to nutrition, lifestyle and the socio-economic environment

SFS 39 – 2017: How to tackle the obesity epidemic?

SFS 40 – 2016: Sweeteners and sweetness enhancers

SFS 41 – 2017: EU-Africa Research and Innovation partnership on food and nutrition security and sustainable agriculture

SFS 42 – 2017: Promoting food and nutrition security and sustainable agriculture in Africa: the role of innovation

SFS 43 – 2016: Earth observation services for the monitoring of agricultural production in Africa

SFS 44 – 2016: A joint plant breeding programme to decrease dependency of the EU and China on protein imports

SFS 45 – 2017: Increase overall transparency of processed agri-food products

SFS 46 – 2017: Alternative production system to address anti-microbial usage, animal welfare and the impact on health

SFS 47 – 2017: Management of soil water resources in EU and China and its impact on agro-ecosystem functions

SFS 48 – 2017: Resource-efficient urban agriculture for multiple benefits – contributions to the EU-China Urbanisation Partnership



# Societal Challenge 2: Food Security

## SFS-02-2016: Teaming up for good: Exploiting the benefits of species diversity in cropping systems

Call: H2020-SFS-2016-2017    Deadline: 17.2.2016

2<sup>nd</sup> Stage: 13.9.2016

**Scope:** Activities will help to unravel the mechanisms underlying beneficial plant interactions in cropping systems and lead to a better understanding of the dynamics between plants and their biotic and abiotic environments. Proposals will turn this knowledge into practical applications for breeding and crop management taking into account the corresponding changes in agronomic and breeding practices. Activities should fall under the concept of the 'multi-actor approach'<sup>14</sup> and ensure that appropriate account is taken of scientific, farming, agronomic and breeding expertise throughout the work with due attention to participatory and demonstration activities: All types of crop production and farming systems (e.g. arable farming, horticulture, grassland, fruit trees, agro-forestry), and diverse pedo-climatic conditions in Europe can be covered. Work proposed shall benefit both conventional and organic agriculture. **International cooperation is encouraged wherever it adds value to achieving the objectives of the proposed work.**

Selected projects will liaise closely with complementary activities funded under topic RUR-6 on crop diversification systems in the Rural Renaissance call.

> Research and innovation action

# Societal Challenge 2: Food Security

## SFS-06-2016: Weeding – Strategies, tools and technologies for sustainable weed management

Call: H2020-SFS-2016-2017    Deadline: 17.2.2016

2<sup>nd</sup> Stage 2: 13.09-2016

**Scope:** Proposals should set out innovative and effective strategies for improving weed management in different arable and horticulture (i.e. vegetable and fruit including perennial crop) systems. They will develop and validate novel strategies, machinery, tools and technologies for weed management that meet the demand for more environmentally sustainable approaches. Work should take due account of the labour constraints and risk management for farmers and other socio-economic dimensions of the solutions proposed. Synergies and trade-offs between different environmental issues will be analysed. The consequences of novel weed management strategies, tools and technologies for ecosystem services and wider biodiversity will be assessed. Proposals are expected to cover both conventional and organic sectors (including conservation tillage systems). Transdisciplinary research, including input from social sciences and the humanities, should be applied to maximise impact. Proposals should fall under the concept of the ‘multi-actor approach’ to ensure effective collaborations between stakeholders e.g. from farming, research and industry (incl. machine industry). **In line with the objectives of the EU’s strategy for international cooperation in R&I, proposals are encouraged that draw on good examples from outside Europe and involve relevant third country participants.**

> Research and innovation action

# Societal Challenge 2: Food Security

**SFS-08-2017: Organic inputs – contentious inputs in organic farming**

Call: H2020-SFS-2016-2017 Deadline: 14.2.2017 2<sup>nd</sup> Stage 2: 13.9.2017

**Scope:** Projects should provide a comprehensive overview of the current use of and need for external inputs in various types of organic plant and animal farming systems. Activities proposed should be aimed at reducing or gradually phasing out contentious inputs without compromising the competitiveness of the organic sector. Work shall identify and develop alternatives to contentious inputs and analyse the socio-economic conditions required for their adoption. **The products and management practices developed should be tested in different pedo-climatic and farming conditions in the EU, allowing for wide geographical coverage within Europe, associated countries and relevant third countries.** Projects should take into account the results and conclusions of previous research projects in the area. Proposals should fall under the concept of the 'multi-actor approach'.

> Research and innovation action

# Societal Challenge 2: Food Security

**SFS-09-2016: Spotlight on critical outbreak of pests: the case of Xylella fastidiosa**

Call: H2020-SFS-2016-2027

Deadline: 17.2.2017

**Scope:** Proposals will set out a comprehensive package of research and innovation actions to improve the prevention, early detection and control of X.fastidiosa in hosts and vectors. They shall increase knowledge on the biology of the pathogen and vector(s), on host/vector/pathogen interaction and epidemiology. Work shall target both the Apulian strain of X. fastidiosa and other strains that could represent a serious risk in the EU. Practical guidelines and integrated solutions for crop and disease management shall be developed to detect early, control outbreak and prevent spread of the disease in conventional and organic farming systems. Prevention measures should consider the introduction and spread of X. fastidiosa within and from outside the eU. Activities will support the development of region-specific risk assessment and eradication plans. Proposals should fall under the concept of the 'multi-actor approach', ensuring solid collaboration between research, plant health authorities farming sector. **International collaboration is highly encouraged with partners from Third Countries affected by the pest in particular to capitalize on existing knowledge.** Activities should take into account ongoing and/or recent work, e.g. funded under the EUPHRESKO ERA-NET.

> Research and innovation actions

# Societal Challenge 2: Food Security

## SFS-10-2017: Research and approaches for emerging diseases in plants and terrestrial livestock

Call: H2020-SFS-2016-2017    Deadline: 14.2.2017

2<sup>nd</sup> Stage: 13.9.2017

**Scope:** Proposals will contribute to understanding the drivers of disease emergence and to finding adequate responses to emerging diseases in plants (work on *Xylella fastidiosa* is excluded under this call topic) and newly emerging diseases in terrestrial animals. They will target one or more of the pests and diseases threatening EU agriculture/forestry (regulated or non-regulated, invasive or native) and causing significant economic losses. The choice of target species should consider the potential threat in terms of development and spread as well as potential impact on agricultural production, public health, or trade. Proposals should increase knowledge on the biology of the pest(s) as well as on the development and spread of the disease(s). They should improve methods and strategies for risk assessment, prevention and containment and enlarge the range of tools for integrated and sustainable pest/disease management. **International cooperation with countries affected or threatened by the same pest(s)/disease(s) is encouraged.** Proposals should fall under the concept of the 'multi-actor approach' and be based on the active participation of stakeholders from research, plant/animal health authorities and the farming and business sectors. Partners from non-EU regions particularly affected by the targeted pests and disease(s) should also be involved.

> Research and innovation actions

# Societal Challenge 2: Food Security

## SFS-11-2016: Challenges for disease management: Perennial crops in the tropics and sub-tropics

Call: H2020-SFS-2016-2017    Deadline: 17.2.2016

2<sup>nd</sup> Stage: 13.9.2016

**Scope:** The work proposed will develop integrated approaches to the management of important pests and diseases of perennial tropical and sub-tropical crops. Activities will address gaps in our knowledge on the disease cycle including climatic and cultural factors that influence the cycle and changes in farming practices. They will develop more effective and sustainable management options which are based on a holistic view of agro-ecosystems and a better understanding of the bearing that climatic changes may have on plant diseases and their management. They should propose novel solutions to improve forecasting, monitoring and information on biotic threats. Proposals should fall under the concept of the 'multi-actor approach'<sup>25</sup> based on genuine collaborations between producers (including small farmers), researchers, advisory services and the commercial sector. Dissemination and demonstration of findings and outputs shall be given particular attention. The integration of social and economic sciences will support the uptake of new methods and tools in plant disease management and take into account the specificities of farming systems. **International collaboration is essential to meet the requirements of the topic (see conditions for minimum number of participants under evaluation procedures in section "Conditions for the SFS call").**

> Research and innovation action

# Societal Challenge 2: Food Security

**SFS-12-2016: Support for international research on animal health**

Call: H2020-SFS-2016-2017

Deadline: 17.2.2016

**Scope:** This global initiative will consolidate and deepen international research cooperation in the area of animal health, in particular infectious animal diseases, including zoonoses and parasites, and related issues such as anti-microbial resistance. It will build on existing activities on f the STAR-IDAZ global network of research programme owners and funding organizations by bringing together researchers and organizations investing in animal disease research (funding bodies) in order to achieve specific targets relating to the prevention and control of priority animal diseases and zoonoses and related issues such as anti-microbial resistance. The action will lead to the setting up of a scientific secretariat to provide organizational support for the achievement of the goals of the global infectious diseases of animals and zoonoses consortium (STAR-IDAZ) in close cooperation with the European Commission, and research funding agencies in Member States and the third countries involved. It will involve assisting the consortium executive committee, establishing and running working groups on priority diseases and issues, and organizing research gap analysis meetings. It will support information exchange among members of the participating organizations at all levels. It will communicate progress on consortium research, including collecting and disseminating pertinent information and results to the researchers funded by the consortium members.

> Coordination and support action

# Societal Challenge 2: Food Security

## SFS-41-2016: EU-Africa Research and Innovation partnership on food and nutrition security and sustainable agriculture

Call: H2020-SFS-2016-2017

Deadline: 17.2.2016

**Scope:** Proposals should pool the necessary financial resources from the participating national or international research programmes with a view to implementing a joint call for proposals. The call should result in grants to third parties with EU co-funding. To achieve these objectives, a long-term research and innovation partnership would lead to a joint and coordinated effort of African and European actors in an innovation system along the lines of three broad thematic areas: **Sustainable intensification, Agriculture and food systems for nutrition, Improvement of agricultural markets and trade.**

**The joint call must be implemented jointly by European and African countries and could include other national or international funders such as foundations, public and non-governmental agencies or international research programmes (e.g. CGIAR research programmes).** The joint call should also build on earlier experiences of this kind of cooperation, such as the international ERA-NET, ERAfrica or the ERA-NET ERA-ARD. It should also launch calls for innovation projects building on research results obtained from previous projects in the domain. **Proposals will be expected to establish relevant links with other projects concerning the preparation of the EU-Africa Research and Innovation Partnership on food and nutrition and sustainable agriculture.**



# Societal Challenge 2: Food Security

## SFS-42-2016: Promoting food and nutrition security and sustainable agriculture in Africa: the role of innovation

Call: H2020-SFS-2016-2017    Deadline: 17.2.2016

2<sup>nd</sup> Stage: 13.9.2016

**Scope:** Proposals will review the various approaches towards innovation promoted and implemented in past and present activities in Africa or other regions in the world as a basis for developing a strategy for fostering innovation and enhancing the impact of the EU-Africa Research and Innovation Partnership on Food and Nutrition Security and Sustainable Agriculture (FNSSA). This strategy will look at the involvement of various categories of stakeholders in all stages of the research process and include elements related to the linkages with farmers' organizations and ways of empowering farmers, the role of civil society organizations, the role of advisory services, private sector and other intermediaries both at the value chain and territorial scale. It will develop and test relevant approaches scaling out of results achieved through EU-Africa cooperation on research and innovation. Proposals will also include mappings of national EASs in African countries, elaborating EAS typologies. The capacity of the EASs to facilitate appropriate links between researchers and other (private and public) actors in innovation systems will be assessed. Various farming approaches will be covered, including the organic sector. Particular attention will be paid to orientations given through governance mechanisms (particularly in terms of farmers' involvement in orientation and programming) and funding.

# Societal Challenge 2: Food Security

SFS-42-2016: Promoting food and nutrition security and sustainable agriculture in Africa: the role of innovation

Call: H2020-SFS-2016-2017    Deadline: 17.2.2016

2<sup>nd</sup> Stage: 13.9.2016

## **Scope:**

*(continued)*

Proposals should secure the commitment and participation of a variety of concerned partners established in the EU and in Africa and should develop and implement pilot innovation actions. Proposals will be expected to establish relevant links with other projects involved in the preparation of the EU-Africa Research and Innovation Partnership on FNSSA. Proposals should fall under the concept of the 'multi-sector approach'.

> Research and innovation action

# Societal Challenge 2: Food Security

## SFS-43-2017: Earth observation services for monitoring of agricultural production in Africa

Call: H2020-SFS-2016-2017

Deadline: 14.2.2017

**Scope:** The action should lead to substantially increasing the use of Earth observing capabilities and supporting application systems to produce timely, objective, reliable, and transparent crop and livestock production projection at the national and regional level for the African continent. It should support the GEOGLAM and AfriGEOSS initiatives and relevant aspects of the EU's development policy. Moreover, it should design and develop methods to assess/monitor agricultural production in Africa, taking into account its main drivers and the longer term impacts of its dynamics. Building on the outcomes of existing EU projects stimulating innovation for global agricultural monitoring – such as SIGMA -, the research and innovation activities should cover as a minimum all the following domains: crop and livestock identification and crop and livestock area estimation, crop and livestock condition and stress, yield prediction and forecasting, crop cover mapping, and the impact of extreme events on food production.

The action should foster participatory approaches to collecting relevant information and data, taking advantage of the growing number of mobile communication devices owned by African citizens. The participatory approaches should also take into account, and build on, widespread women's engagement in agricultural production and food supply.

# Societal Challenge 2: Food Security

## SFS-43-2017: Earth observation services for monitoring of agricultural production in Africa

Call: H2020-SFS-2016-2017

Deadline: 14.2.2017

### **Scope:** *(continued)*

There should be an emphasis on ‘consensus of evidence approaches’, integrating data from multiple sources including Earth observations, crop models, weather forecast, climate predictions and projections, surveys and ground observations to reach evidence-based assessments using repeatable and scientifically sound methods.

Large proof-of-concept actions, showing the capacity to deliver food supply prediction and agriculture risk assessment beyond the current state-of-the-art regional/pan-African level should be performed by the action. Proposals should contribute to supporting the implementation of an EU-Africa partnership on Food and Nutrition Security and Sustainable Agriculture and should include partners clearly representing the diversity of African countries.

**In line with the strategy for EU international cooperation in research and innovation, international cooperation is encouraged, in particular with African countries.** The action should establish cooperation with institutions/networks engaged in the development of climate services in Africa and with agencies which have developed mapping and assessment tools used in humanitarian decision making.

> Research and innovation action

# Societal Challenge 2: Blue Growth

## Blue Growth: Demonstrating an ocean of opportunities

- Aims at bringing technologies to the readiness level needed for commercial applications and will improve current European marine observing, surveying and monitoring capabilities in order to increase our knowledge and understanding of the complex marine environment and its interaction with human activities.
- 2016-2017 focus on:
  - Boosting innovation for emerging Blue Growth activities
  - Linking healthy oceans and seas with healthy people
  - The Arctic dimension
  - Valorising the Mediterranean Sea Basin
- International cooperation supporting the Mediterranean Sea Coast

# Societal Challenge 2: Blue Growth / Overview

## Topics

### **BLUE GROWTH – DEMONSTRATING AN OCEAN OF OPPORTUNITIES**

BG 1 – 2016: Large-scale algae biomass integrated biorefineries

BG 2 – 2016/2017: High value-added specialised vessel concept enabling more efficient servicing of emerging coastal and offshore activities

BG 3 – 2016: Multi-use of the oceans' marine space, offshore and near-shore: compatibility, regulations, environmental and legal issues

BG 4 – 2017: Multi-use of the oceans' marine space, offshore and near-shore: Enabling technologies

BG 5 – 2016: ERA-NET Cofund on marine technologies

BG 6 – 2016: Interaction between people, oceans, and seas: a strategic approach towards healthcare and wellbeing

BG 7 – 2017: Blue green innovation for clean coasts and seas

BG 8 – 2017: Innovative sustainable solutions for improving the safety and dietary properties of seafood

BG 9 – 2016: An integrated Arctic observation system

BG 10 – 2016: Impact of Arctic changes on weather and climate of the Northern Hemisphere

BG 11 – 2017: The effect of climate change on arctic permafrost and its socio-economic impact, with a focus on coastal areas

# Societal Challenge 2: Blue Growth / Overview

## Topics

### **BLUE GROWTH – DEMONSTRATING AN OCEAN OF OPPORTUNITIES**

BG 12 – 2016: Towards an integrated Mediterranean Sea Observing System

BG 13 – 2016: Support to the BLUEMED Initiative: Coordination of marine and maritime research and innovation activities in the Mediterranean

## Societal Challenge 2: Rural Renaissance

### Rural Renaissance: Fostering innovation and business opportunities

Aim to support a 'rural renaissance' by raising the natural, social, cultural and economic potential of rural areas and fostering policy coherence. It will aim to boost economic development, environmental services and entrepreneurial innovation, in particular in SMEs, in rural and coastal areas. This will be achieved by building on diversification and modernisation strategies and capitalising on local assets, including human, natural and cultural capital

- Focus areas:
  - New approaches towards policies and governance
  - New value chains and business models
  - Innovation and skills development



# Societal Challenge 2: Rural Renaissance / Overview

## Topics

### **RURAL RENAISSANCE – FOSTERING INNOVATION AND BUSINESS OPPORTUNITIES**

RUR 1 – 2016: Consolidated policy framework and governance models for synergies in rural-urban linkages

RUR 2 – 2017: Coastal-rural interactions: enhancing synergies between land and sea-based activities

RUR 3 – 2017: Towards 2030: policies and decision tools for an integrated management of natural resources

RUR 4 – 2016: WATER FARMS – Improving farming and supply of drinking water

RUR 5 – 2017: Novel public policies, business models and mechanisms for sustainable supply and payment of forest ecosystems services

RUR 6 – 2016: Crop diversification systems for the delivery of food, feed, industrial products and ecosystems services: from farm benefits to value-chain organisation

RUR 7 – 2016: Resource-efficient and profitable industrial crops on marginal lands

RUR 8 – 2016: Demonstration of integrated logistics centres for food and non-food applications

RUR 10 – 2016-2017: Thematic Networks compiling knowledge ready for practice

RUR 11 – 2016: On-farm demonstrations: deepening farmer-to-farmer learning mechanisms

RUR 12 – 2017: Networking European farms to boost thematic knowledge exchanges and close the innovation gap

# Societal Challenge 2: Rural Renaissance / Overview

## Topics

RUR 13 – 2017: Building a future science and education system fit to deliver to practice

RUR 14 – 2016: Advisor's role in functioning of AKIS and advisory policies boosting innovation in sustainable agriculture

RUR 15 – 2016: The benefits of working with others – fostering social capital in the farming sectors

RUR 16 – 2017: Optimising interactive innovation project approaches and the delivery of EU policies to speed up innovation in rural areas

# Societal Challenge 2: Rural Renaissance

## RUR-16-2017: Optimising interactive innovation project approaches and the delivery of EU policies to speed up innovation in rural areas

Call: H2020-RUR-2016-2017

Deadline: 14.2.2017

2<sup>nd</sup> Stage: 13.9.2017

**Scope:** Proposals should explore how instruments and approaches under the various policies could be further adjusted and how they contribute to innovation in the agricultural and forestry sector. **Learning also from experience at international level, proposals should investigate the design and implementation of interactive innovation projects**, on the basis of a substantial number of case studies of interactive projects in a broad range of agriculture and forestry sectors.

An essential part of this topic would develop detailed best practices/approaches for H2020 multi-actor projects and thematic networks at project level. On the basis of a series of cases of existing multi-actor projects and thematic networks, proposals should develop best practices for consortia to combine as much as possible both scientific and practical knowledge in their projects and exploit them to the full.

Proposals should fall under the concept of the 'multi-actor approach' involving key actors in the AKIS (farmers, advisors, researchers, research bodies, social scientists, managing authorities, network agents, enterprises, etc.) and using the work of the SCAR-AKIS Strategic Working Group, as appropriate. **They may include insights from outside Europe.**

> Research and innovation action

## Societal Challenge 2: Bio-based Innovation / Overview

### Bio-based innovation for sustainable goods and services: Supporting the development of a European Bioeconomy

- Aim is to embrace two main aspects of the bio-based innovation. Firstly, it will encompass the production, mobilisation and use of biomass including new business and service models, to sustainably secure raw material supply for a wide range of industrial products taking into account potential trade-offs of competing land-uses. Secondly, it will consider stakeholders' engagement and demand-side measures supporting market development of bio-based products.
- 2016-2017 focus on:
  - Securing sustainable biomass supply for bio-based goods and services
  - Building the "bio-based markets of the future"- mobilising stakeholders engagement

# Societal Challenge 2: Bio-based Innovation/ Overview

## Topics

### **BIO-BASED INNOVATION FOR SUSTAINABLE GOODS AND SERVICES – SUPPORTING THE DEVELOPMENT OF A EUROPEAN BIOECONOMY**

BB 1 – 2016: Sustainability schemes for the bio-based economy

BB 2 – 2017: Towards a method for the collection of statistical data on bio-based industries and bio-based products

BB 3 – 2017: Adaptive tree breeding strategies and tools for forest production systems resilient to climate change and natural disturbances

BB 4 – 2016: Intelligent solutions and tools in forest production system, fostering a sustainable supply of quality wood for growing bioeconomy

BB 5 – 2017: Bio-based products: Mobilisation and mutual learning action plan

BB 6 – 2016: The regional dimension of bio-based industries

# Societal Challenge 2 – Topics for African Researchers Summarized

## Topics

SFS 2 – 2016: Teaming up for good: Exploiting the benefits of species diversity in cropping systems

SFS 8 – 2017: Organic inputs – Contentious inputs into organic farming

SFS 9 – 2016: Spotlight on critical outbreak of pests: The case of *Xylella fastidiosa*

SFS 10 – 2017: Research and approaches for emerging diseases in plants and terrestrial livestock

SFS 11 – 2016: Challenges for disease management: perennial crops in the tropics and sub-tropics

SFS 12 – 2016: Support for international research on animal health

SFS 41 – 2016: EU-Africa Research and Innovation partnership on food and nutrition security and sustainable agriculture

SFS 42 – 2016: Promoting food and nutrition security and sustainable agriculture in Africa: the role of innovation

SFS 43 – 2017: Earth Observation services for the monitoring of agriculture production in Africa

BG 12 – 2016: Towards an integrated Mediterranean Sea Observing System

BG 13 – 2016: Support to the BLUEMED Initiative: Coordination of marine and maritime research and innovation activities in the Mediterranean

RUR 16 – 2017: Optimising interactive innovation project approaches and the delivery of EU policies to speed up innovation in rural areas

## Societal Challenge 5: Climate action, environment, resource efficiency and raw materials

[http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016\\_2017/main/h2020-wp1617-climate\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-climate_en.pdf)

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**Building Bi-regional Partnerships for Global Challenges**



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**Author(s):** Melissa Plath

**Organisation Name(s):** UniPID/University of Jyväskylä

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# Societal Challenge 5: General Information

Climate action, environment, resource efficiency and raw materials

Objective is to achieve a resource – and water – efficient and climate change resilient economy and society, the protection and sustainable management of natural resources and ecosystems, and a sustainable supply and use of raw materials, in order to meet the needs of a growing global population within the limits of the planet's natural resources and eco-systems.

- Actions will:
  - Address gaps in the knowledge base
  - Identifying policies, methods, & tools to tackle challenges
- 2016-2017 focus on:
  - Greening the economy



# Societal Challenge 5: Climate/ Overview

## Topics

### **CLIMATE SERVICES**

SC5 1 – 2016/2017: Exploiting the added value of climate services

SC5 2 – 2017: Integrated European regional modelling and climate prediction system

SC5 3 – 2016: Climate services market research

SC5 4 – 2017: Towards a robust and comprehensive greenhouse gas verification system

SC5 5 – 2016: A 1.5 million year look into the past for improving climate predictions

### **TOWARDS A LOW-CARBON EUROPE**

SC5 6 – 2016/2017: Pathways towards the decarbonisation and resilience of the European economy in the timeframe 2030-2050 and beyond

SC5 7 – 2017: Coordinating and supporting research and innovation actions on the decarbonisation of the EU economy

### **NATURE-BASED SOLUTIONS FOR TERRITORIAL RESILIENCE**

SC5 8 – 2016: Large-scale demonstrators on nature-based solutions for hydrometeorological risk reduction

SC5 9 – 2016: Operationalising insurance value of ecosystems

SC5 10 – 2016: Multi-stakeholder dialogue platform to promote innovation with nature to address societal challenges

# Societal Challenge 5: Climate/ Overview

## Topics

### **WATER**

SC5 11 – 2016: Supporting international cooperation activities on water

SC5 12 – 2016 or 2017: Food systems and water resources for the development of inclusive, sustainable and healthy Euro-Mediterranean societies

### **RAW MATERIALS**

SC5 13 – 2016/2017: New solutions for sustainable production of raw materials

SC5 14 – 2016/2017: Raw materials Innovation actions

SC5 15 – 2016/2017: Raw materials policy support actions

SC5 16 – 2016/2017: Raw materials international co-operation

SC5 17 – 2016: ERA-NET Cofund on Raw materials

### **EARTH OBSERVATION**

SC5 18 – 2017: Novel in-situ observation systems

SC5 19 – 2017: Coordination of citizen observatories initiatives

SC5 20 – 2016: European data hub of the GEOSS information system

# Societal Challenge 5: Climate/ Overview

## Topics

### **CULTURAL HERITAGE FOR SUSTAINABLE GROWTH**

SC5 21 – 2016/2017: Cultural heritage as a driver for sustainable growth

SC5 22 – 2017: Innovative financing, business and governance models for adaptive re-use of cultural heritage

### **SUPPORT TO POLICY AND PREPARING FOR INNOVATION PROCUREMENT**

SC5 23 – 2016/2017: Support to confirmed Presidency events (conferences) – Malta, United Kingdom, Estonia

SC5 24 – 2016: Supporting to confirmed Presidency event (conferences) in Slovakia

SC5 25 – 2016: Macro-economic and societal benefits from creating new markets in a circular economy

SC5 26 – 2017: Pre-commercial procurement on soil decontamination

SC5 27 – 2016: Preparing for pre-commercial procurement (PCP) and/or public procurement of innovative solutions (PPI) in support of climate action, environment, resource efficiency and raw materials

SC5 28 – 2016: Transformations to sustainability

SC5 29 – 2016: Framework Partnership Agreement supporting Joint Actions towards a sustainable green economy in Europe and beyond

# Societal Challenge 5: Green Economy

## Climate Services

Aim to build Europe's capacity to respond to and improve resilience to climate change by strengthening significantly the nascent global market for demand-driven climate services for both climate change mitigation and adaptation needs.

- 2016-2017 focus on:
  - Exploiting the added value of climate services
  - Integrated European regional modelling and climate prediction system
  - Climate services market research
  - Towards a robust and comprehensive greenhouse gas verification system
  - A 1.5 million year look into the past for improving climate predictions

> Research and innovation actions

# Societal Challenge 5: Climate Services

## SC5-04-2017: Towards a robust and comprehensive greenhouse gas verification system

Call: H2020-climate services-2017-single-stage

Deadline: 7.3.2017

**Scope:** Actions should quantify more accurately the stocks and fluxes of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O in Europe at both regional and continental scales through improved descriptions of key processes and feedbacks, state-of-the art methodologies, models and tools and by exploiting observations from a wide range of monitoring networks (in-situ and satellite). Special attention should be given to independent verification of data reported in countries' greenhouse gas inventories and to the improvement of the methods/approaches currently used for estimating greenhouse gas emissions (e.g. national inventories, tracer transport inversion using atmospheric and oceanic measurements, land-use measurements and models). Proposals should aim to develop widely accepted and scientifically robust methodologies in order to decrease to acceptable levels uncertainties associated with emission estimates and better identify human-induced emissions. The development and improvement of methodologies should also address the need for versatility of application, for example for the tracking of land-based mitigation activities and provision of results relevant to current and potential future land-based GHG accounting systems. Furthermore, **issues such as data standards, transfer of information and tools, and replicability of methodologies and tools outside Europe (mainly in developing countries) should also be addressed.**

> Research and innovation action

# Societal Challenge 5: Green Economy

## TOWARDS A LOW-CARBON EUROPE

The objective is to deepen the analysis of possible cost-effective trajectories for Europe to achieve its medium and long-term climate objectives while maximising societal benefits and economic prosperity. The EU is committed to pursuing policies which are consistent with the overall political objective of keeping the global mean temperature increase below 2°C. The EU has confirmed its target to achieve domestic emissions reduction of at least 40% by 2030. Furthermore, based on the 'Roadmap for moving to a low-carbon economy in 2050', pursuing a deep decarbonisation pathway will require at least an 80% reduction of domestic greenhouse gas emissions in the EU by 2050 (compared to 1990).

- 2016-2017 focus on:
  - Pathways towards the decarbonisation and resilience of the European economy in the timeframe 2030-2050 and beyond
  - Coordinating and supporting research and innovation actions on the decarbonisation of the EU economy

> Research and innovation action

# Societal Challenge 5: TOWARDS A LOW-CARBON EUROPE

SC5-06-2016-2017: Pathways towards the decarbonisation and resilience of the European economy in the timeframe 2030-2050 and beyond

Call: H2020-SC5-2016-single-stage

Deadline: 8.3.2016

## Scope:

**b) Assessment of the global mitigation efforts in the perspective of the long-term climate goal (2016):** The Parties of the United Nations Framework Convention on Climate Change (UNFCCC) agreed to limit the rise of global mean temperature to 2°C compared to pre-industrial levels, in order to prevent dangerous anthropogenic (i.e. human-caused) interference with the climate system. The 21st Conference of Parties of the UNFCCC, known as COP21, which will be held in December 2015 in Paris, will mark a milestone in the course of international efforts to engage on global climate action consistent with the 2°C target.

In line with the strategy for EU international cooperation in research and innovation (COM (2012)497), international cooperation is encouraged, in particular with countries that substantially contribute to global greenhouse gas emissions. Proposals should include partners from (non-European) high-, middle- and/or low-income countries.

> Research and innovation action

# Societal Challenge 5: Green Economy

## NATURE-BASED SOLUTIONS FOR TERRITORIAL RESILIENCE

The objective of this part of the call is to position Europe as world leader in innovation through nature based solutions to these challenges to simultaneously improve economic (new products, services, business models, mobilization of new investments), social (jobs, well-being, community solidarity and health) and environmental (preservation and restoration of biodiversity, ecosystems and ecosystem services, sustainable land use and spatial planning, land take and soil sealing, as well as reduced air and noise pollution) resilience of rural and natural areas by taking into account the wider system and aiming at ecological stability.

- 2016-2017 focus on:
  - Large-scale demonstrators on nature-based solutions for hydro-meteorological risk reduction
  - Operationalising insurance value of ecosystems
  - Multi-stakeholder dialogue platform to promote innovation with nature to address societal challenges

> Research and Innovation action



# Societal Challenge 5: NATURE-BASED SOLUTION FOR TERRITORIAL RESILIENCE

## SC5-08-2017: Large-scale demonstrators on nature-based solutions for hydro-meteorological risk reduction

Call: H2020-SC5-2017-two-stage Deadline: 7.3.2017

2<sup>nd</sup> Stage: 5.9.2017

**Scope:** The objective is to develop, demonstrate and deploy innovative systemic and yet locally attuned nature-based solutions, including green and blue infrastructure and ecosystem-based management approaches, in rural and natural areas, including particularly sensitive ones such as mountainous and coastal areas, for hydro-meteorological risk reduction at watershed/landscape scale; develop a comprehensive framework for the comparison of green and blue/grey/hybrid hydro-meteorological risk prevention and reduction solutions, taking into account wider land use and adaptation to the effects of climate change, considering impacts on landscape, local communities and cultural acceptance as well as co-benefits such as biodiversity conservation/enhancement, more sustainable local livelihoods, human health and well-being, climate change mitigation, etc.

**In line with the strategy for EU international cooperation in research and innovation (COM (2012)497), cooperation and synergies with similar international demonstration activities on nature-based solutions for hydro-meteorological risk reduction and climate change adaptation, funded under different financial arrangements or programmes, is encouraged to facilitate mutual learning, sharing of experience, networking and follow-up.**

> Innovation action

# Societal Challenge 5: NATURE-BASED SOLUTION FOR TERRITORIAL RESILIENCE

SC5-10-2016: Multi-stakeholder dialogue platform to promote innovation with nature to address societal challenges

Call: H2020-SC5-2016-single-stage

Deadline: 8.3.2016

**Scope:** The EU multi-stakeholder innovation platform should aim to develop an integrated evidence base and a European reference framework on nature-based solutions and to promote the co-design, testing and deployment of improved and innovative nature-based solutions in an integrated way and at multiple scales and levels (from European to national, regional and local). This can be best achieved through strategic, effective and sustained dialogue, interactions and exchanges between science, policy, business and society to mainstream both the available knowledge into policy making and practice, and the needs of policy makers and practitioners into research and innovation policy and agendas. The platform must take due account of the outcomes of the large-scale demonstration projects to be funded under the 'Nature-based solutions for territorial resilience' part of this call as well as those on sustainable cities through nature-based solutions funded under the 'Smart and Sustainable Cities' call in part 17 of this Work Programme.

Action should foster dialogue and collaboration across levels and with key strategic international partners. **In line with the strategy for EU international cooperation in research and innovation (COM(2012)497), international cooperation is encouraged, in particular with key strategic international partners such as Latin America, countries participating in the Belmont Forum, and South East Asia.**

> Coordination and support action

# Societal Challenge 5: Green Economy

## WATER

The objective of this part of the call is to harness the strong potential for European industry (including SMEs) to become global market leader in the water sector by continuing the efforts undertaken in the 2014-2015 Focus Area call 'Water Innovation: Boosting its value for Europe', i.e. bringing innovative water solutions to the market and supporting the implementation of the objectives of the European Innovation Partnership (EIP) and the Joint Programming Initiative on Water.

Water is a key resource and intervention at EU level is crucial to meet water demand from increased urbanisation and agriculture, and to manage the competition for scarce water from multiple uses and the water/energy nexus. **Moreover, water, as part of the Sustainable Development Goals agenda, can provide additional opportunities for international co-operation (e.g. in the Mediterranean region).**

- 2016-2017 focus on:
  - Supporting international cooperation activities on water
  - Food systems and water resources for the development of inclusive, sustainable and healthy Euro-Mediterranean societies

> Coordination and support action

# Societal Challenge 5: Water

SC5-12-2016: Food systems and water resources for the development of inclusive, sustainable and healthy Euro-Mediterranean societies

Call: H2020-water-2016-single-stage

Deadline: 26.1.2016

**Scope:** The objective of this action is to bring together the main national research funding owners and/or managers involved in the PRIMA joint programming process, including the non-European participating states and their institutions, around a jointly designed Strategic Research Agenda with appropriate governance and implementation structures. **A critical mass of players and increased synergies between all relevant stakeholders (e.g. relevant ministries responsible for sustainable agricultural production systems and water resources management, research institutions and universities, farmers' organisations) will be key elements for addressing the challenge.**

> Coordination and support action

# Societal Challenge 5: Green Economy

## RAW MATERIALS

The actions in the raw materials part of the Societal Challenge 5 are expected to contribute to the implementation of both the Raw Materials policy and the Strategic Implementation Plan of the European Innovation Partnership (EIP) on Raw Materials. The actions are complementary to and synergetic with the new Knowledge and Innovation Community (KIC) on Raw materials, selected under the Horizon 2020 call of the European Institute of Technology (EIT) in support of the objectives of the EIP on Raw materials.

The main focus of the raw materials part of this call is on securing the supply of minerals and metals through sustainable innovative production technologies for primary and secondary raw materials. This part is complementary to the cross-cutting call on 'Industry 2020 in the Circular Economy', which focuses more on resource efficiency, re-use and product life cycles.

- 2016-2017 focus on:
  - New solutions for sustainable production of raw materials
  - Raw materials Innovation actions
  - Raw materials policy support actions
  - Raw materials international co-operation
  - ERA-NET Cofund on Raw materials

> Coordination and support action

# Societal Challenge 5: Raw Materials

**SC5-16-2016-2017: Raw materials international co-operation**

**Call: H2020-SC5-2017-single-stage**

**Deadline: 8.3.2016**

**Scope:** Proposals shall address one of the following issues:

**c) International network of raw materials training centres (2017):** Proposals should create a self-sustainable long-term lasting international network of training centres for professionals. **The proposals should involve educational and research institutions in the EU and the leading counterparts in third countries, based on specific country expertise in the primary and secondary raw materials sectors.** The network should map skills and knowledge in the EU and the third countries, identify key knowledge gaps and emerging needs, develop roadmap for improving skills and knowledge, as well as establish common training programmes in the raw materials sectors.

In line with the EU's strategy for international co-operation in research and innovation (COM (2012)497), **international collaboration is required.** Where appropriate, synergies with the relevant EU Member States initiatives are to be explored and fostered.

> Coordination and support action

# Societal Challenge 5: Green Economy

## EARTH OBSERVATION

The overall objective of this Earth Observation package is to maximise the benefits for European citizens of the Earth observation infrastructure by developing innovative services (e.g climate services and disaster risk and emergency management services) that support more sustainable production and consumption patterns and resilient societies. The research and innovation actions in this part of the call aim to develop innovative solutions to complete the in-situ component of GEOSS and Copernicus and make available an operational information system, enabling the sharing and full, open and unrestricted access to validated Earth observation datasets, through engaging with the private sector to leverage emerging technologies and develop services.

- 2016-2017 focus on:
  - Novel in-situ observation systems
  - Coordination of citizens' observatories initiatives
  - European data hub of the GEOSS information system

> Research and Innovation action

# Societal Challenge 5: Earth Observation

**SC5-18-2017: Novel in-situ observation systems**

**Call: H2020-SC5-2017-single-stage**

**Deadline: 7.3.2017**

**Scope:** Proposals shall address one of the following issues:

Actions should develop new, in-situ Earth observation systems, taking advantage of new technology and the latest developments in sensor science so that measurements can be performed using low energy sensors and communication systems, requiring less demanding maintenance. Actions should focus on the transfer and adaptation of new technologies into operational systems, enabling a real breakthrough in the efficiency of deploying and maintaining new in-situ observing systems in a cost-effective way. The research and innovation activities under this topic may take into account concepts such as citizens' observatories, disposable sensors, and the use of unmanned platforms. The project should take into account as much as possible relevant research outcomes from programmes of the European Research Council, the Leadership in Enabling and Industrial Technologies and the European Metrology Research Programme.

**Proposals should establish formal links, where appropriate, with the GEO Global Initiatives (e.g. GEOGLAM, GEOBON, GFOI, GMOS, AFRIGEOSS, BLUE PLANET)** and with the relevant Copernicus services so that the new monitoring and observing platforms fulfil well-identified needs under these two major initiatives.

> Research and innovation



# Societal Challenge 5: Green Economy

## CULTURAL HERITAGE FOR SUSTAINABLE GROWTH

The objective of the actions in this part of the call is to harness the full potential of cultural heritage as a production rather than a cost factor and a strategic resource for a sustainable Europe and thus ensure its sustainability, safeguarding, resilience and enhancement. The focus is therefore to maximise the intrinsic economic, cultural and societal value of cultural heritage in promoting well-being, cultural diversity and social cohesion. Sectoral and country-based studies have highlighted the significant economic contribution of the heritage sector and its spill-over effects on other sectors of the economy. However, since heritage is constantly being produced and recognised as well as being a shared, non-renewable, non-replaceable, unique resource and a common good confronted with important environmental challenges and disaster risks, possible over-exploitation and under-funding, looking after it to avoid neglect and possible decay is a common responsibility. The outcomes of the Horizon 2020 Expert Group on Cultural Heritage have largely been taken into account to prioritise the challenges to be addressed through this part of the call.

> Coordination and support action

# Societal Challenge 5: CULTURAL HERITAGE FOR SUSTAINABLE GROWTH

SC5-21-2016-2017: Heritage-led urban/rural regeneration

Call: H2020-SC5-2016-2017-two-stage Deadline: 8.3.2016

2<sup>nd</sup> Stage: 6.9.2016

**Scope:** Proposals shall address all the above:

**For both**, actions should develop and deploy via large-scale demonstration projects novel heritage-led systemic approaches and solutions for sustainable growth. In order to pave the way for their rapid replication and up-scaling, a 'Role models' and 'Replicators' approach should be implemented.

The 'Role models' are urban or rural landscapes which have demonstrably and successfully pursued a heritage-led regeneration.

The 'Replicators' are urban or rural landscapes that will be assisted/mentored by 'Role models' and committed to their heritage-led regeneration within the duration of the project, replicating the heritage-led regeneration 'blueprints' of the 'Role models', properly contextualised to fit their particular contexts. The 'Replicators' will therefore proactively seek advice, assistance and mentoring from the 'Role models', have privileged contact with them and access to their know-how, and will participate in the definition of user requirements and the methodology for transferability of solutions, data collection etc.

**Beyond this and in line with the strategy for EU international cooperation in research and innovation (COM (2012)497), participation of 'Role models' from non-EU countries is encouraged**, since this would further enrich the evidence base of successfully implemented heritage-led regenerations and would thus enhance the replication and impact potential of such activities in non-EU regions (e.g. Latin America) and countries.

> Innovation action

# Societal Challenge 5: SUPPORT TO POLICY AND PREPARING FOR INNOVATION PROCUREMENT

SC5-25-2016: Macro-economic and societal benefits from creating new markets in a circular economy

Call: H2020-SC5-2016-single-stage

Deadline: 8.03.2016

**Scope:** Within the context of the European Semester, the action should:

facilitate a better understanding and operational use of the current evidence base, including reliable datasets and projections;

- identify market and societal impacts of resource and waste flows – from extraction to end of life;
- identify innovative approaches based on the circular economy concept in Member States;
- assess their economic, societal and resource-efficiency impact on existing or new markets;
- estimate such impacts in the short, medium and long term; and
- estimate and assess the macro-economic, societal and environmental costs and benefits of mainstreaming such approaches.

**The project should also elaborate a benchmark between Member States and with a set of performing Third Countries, covering both green and blue growth potentials,** further building on achievements in the waste and water sectors, and embedding the role of the digital economy in the analysis.

> Coordination and support action

# Societal Challenge 5: Green Economy

SC5-28-2016: Transformations to sustainability

Call: H2020-SC5-2016-single-stage

Deadline: 8.3.2016

## Scope:

Actions will provide solutions through a new approach to research and action on global environmental change and global sustainability that factors in complex social behaviours and social transformation. This will require transdisciplinary research on the complex processes of social transformation to secure effective, equitable and durable solutions that are targeted to local contexts, to comply with the Sustainable Development Goals. The approach should take into account existing experiences and programmes addressing the issue of transformation to sustainability and low-carbon economies and societies, such as FP7, JPI Climate, Urban Europe, the NORFACE network of funding agencies and the International Social Science Council (ISSC) programme, with a strong focus on developing countries.

**In line with the strategy for EU international cooperation in research and innovation (COM(2012)497), actions will contribute to implementing multilateral activities such as the Belmont Forum and Future Earth initiatives to address cultural, economic, institutional and political barriers and opportunities and identify which sustainable development pathways linking economic prosperity with social justice and a healthy biosphere are actionable in different contexts.**

> ERA-NET Cofound

# Societal Challenge 5 – Topics for African Researchers Summarized

SC5 2 – 2017: Integrated European regional modelling and climate prediction system

SC5 4 – 2017: Towards a robust and comprehensive greenhouse gas verification system

SC5 5 – 2016: A 1.5 million year look into the past for improving climate predictions

SC5 6b – 2016: Assessment of the global mitigation efforts in the perspective of the long-term climate goal

SC5 11 – 2016: Supporting international cooperation activities on water

SC5 12 – 2016–2017: Food systems and water resources for the development of inclusive, sustainable and healthy Euro-Mediterranean societies

SC5 13 – 2016–2017: New solutions for sustainable production of raw materials

SC5 16b – 2016: Advancing the idea of a World Forum on Raw Materials

SC5 16c – 2017: International network of raw materials training centres

SC5 18 – 2017: Novel in-situ observation systems

SC5 21a – 2016: Heritage-led urban regeneration

SC5 21b – 2017: Heritage-led rural regeneration

SC5 25 – 2016: Macro-economic and societal benefits from creating new markets in a circular economy

# Societal Challenge 5 – Topics for African Researchers Summarized

SC5 28 – 2016: Transformations to sustainability

# Other Topics of Interest

## Topics

### EXCELLENT SCIENCE

Marie Sklodowska-Curie Actions	<ul style="list-style-type: none"> <li>• H2020-MSCA-IF-2016-2017: Marie Sklodowska-Curie Individual Fellowships</li> <li>• H2020-MSCA-RISE-2017: Marie Sklodowska-Curie Research and Innovation Staff Exchange</li> </ul>
Future and Emerging Technologies	
European Research Infrastructures, including e-Infrastructures	<ul style="list-style-type: none"> <li>• INFRAIA-1-2016-2017: Integrating and opening research infrastructures of European interest</li> <li>• EINFRA-12-2017: Data and distribution computing e-infrastructures for open science</li> </ul>
Information and Communication Technologies	<ul style="list-style-type: none"> <li>• H2020-ICT-2016-2017: International partnership building in low and middle income countries</li> </ul>
Space	<ul style="list-style-type: none"> <li>• H2020-COMPET-4-2016: Scientific data exploitation</li> <li>• H2020-Galileo-4-2017: Awareness raising and capacity building</li> </ul>

# Other Topics of Interest

## Topics

### SOCIETAL CHALLENGES

Smart, green, and integrated transport

- H2020-MG-2016: Euro-African initiative on road safety and traffic management
- H2020-MG-2016: Addressing aviation safety challenges
- H2020-MG-2016: Safer waterborne transport and maritime operation

Europe in a changing world – inclusive, innovative, and reflective societies

- H2020-REV-INEQUAL-2016: An empirically informed European theory of justice and fairness
- H2020-REV-INEQUAL-2016: Contemporary radicalisation trends and their implications for Europe
- H2020-ENG-GLOBALLY-2017: Strengthening Europe's position in the global context: science diplomacy and intercultural relations
- H2020-ENG-GLOBALLY-2017: Shifting global geopolitics and Europe's preparedness for managing risks, mitigation actions and fostering peace (Sub-Saharan Africa)
- H2020-ENG-GLOBALLY-2017: The European Union and the global challenge of migration

Secure societies – protecting freedom and security of Europe and its citizens

- H2020-DRS-2016: Situational awareness systems to support civil protection preparation and operational decision making



# Other Topics of Interest

## Topics

### SCIENCE WITH AND FOR SOCIETY

- H2020-SwafS-2016: Participatory research and innovation via Science Shops
- H2020-SwafS-2017: Putting Open Science into action
- H2020-SwafS-2017: A Linked-up Global World of RRI (South Africa)
- H2020-SwafS-2016: Mapping the Ethics and Research Integrity Normative Framework
- H2020-SwafS-2016: The Ethics of technologies with high socio-economic impact and Human Right relevance
- H2020-SwafS-2017: Responsible research and Innovation (RRI) in support of sustainable and governance, taking account of the international context

### EURATOM

- NFRP-1-2016: Continually improving safety and reliability of Generation II and III reactors
- NFRP-4-2016: Research on the safety of small modular reactors
- NFRP-7-2016: Research and innovation on the overall management of radioactive waste other than geological disposal
- NFRP-9-2016: Impacts of low dose radiation exposure
- NFRP-12-2016: Support for careers in the nuclear field
- NFRP-14-2016: Cross-cutting support to improve knowledge on tritium management in fission and fusion facilities

## Thank you



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**Author(s):** Melissa Plath, Masahudu Fuseini, Constantine Vaitsas

**Organisation Name(s):** UniPID, CSIR-STEPRI, FORTH