Opportunities for African Participation in H2020

Work Programme 2016-2017

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Building Bi-regional Partnerships for Global Challenges

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8.11.2016

Societal Challenge 1: Health, demographic change and wellbeing

http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/main/h2020-wp1415-health_en.pdf

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4.11.2013

Societal Challenge 1 – General Information

Health, Demographic Change and Wellbeing

- Aim to create opportunities for real breakthrough research and radical innovation in health and wellbeing.
- Focus on Personalising Health and Care (PHC)
  - Topics divided into 7 areas, reflecting the need for a translational and integrated approach to the challenge.

Societal Challenge 1: Objectives

Personalizing Health and Care

- To improve understanding of the causes and mechanisms underlying health, healthy ageing and diseases
- Improve the ability to monitor health, prevent, detect, treat and manage diseases
- Support older people to remain active and healthy
- Test and demonstrate new models and tools for health and care delivery

Societal Challenge 1 – General Information

Health, Demographic Change and Wellbeing

- The 7 special areas of PHC:
  - Understanding health, ageing and disease
  - Effective health promotion, disease prevention, preparedness and screening
  - Improving diagnosis
  - Innovative treatments and technologies
  - Advancing active and healthy ageing
  - Integrated, sustainable, citizen-centred care
  - Improving health information, data exploitation and providing an evidence base for health policies and regulation

Societal Challenge 1: Health

TOPIC : Implementing the Strategic Research Agenda on Personalised Medicine
Identifier: SCI-HCO-03-2017 Deadline: 11 April 2017 17:00:00

Topic Description

Personalised medicine refers to a medical model using characterization of individuals' phenotypes and genotypes (e.g. molecular profiling, medical imaging, lifestyle data) for tailoring the right therapeutic strategy for the right person at the right time, and/or to determine the predisposition to disease and/or to deliver timely and targeted prevention.By providing the right intervention to the right person at the right time, personalised medicine can improve quality of life and contribute to more sustainable healthcare.

Expected Impact

- Deepened and extended coordination of national and transnational research in the field of personalised medicine.
- Streamlined national/regional and international practices in organising research funding.
- Increased interoperability of national research programmes.
- Increased sharing of data and knowledge.

Cross-cutting Priorities:

Socio-economic science and humanities; International cooperation; Gender

Societal Challenge 1: Health

TOPIC : Comparing the effectiveness of existing healthcare interventions in the adult population

Identifier: SC1-PM-10-2017 **Deadline:** 11 April 2017 17:00:00

Topic Description

- Effective health care and prevention may be improved by additional evidence as to the most effective health interventions. Growing numbers of patients affected by chronic diseases also call for efficiently managing co-morbidities. Proposals should compare the use of currently available preventative or therapeutic (pharmacological as well as non-pharmacological) healthcare interventions in adults. While there is no restriction on the diseases or interventions to be the focus of proposals, preference will be given to proposals focusing on interventions with high public health relevance and socio-economic impact.

Expected Impact

- Improvement of individual patient outcomes and health outcome predictability through tailoring of interventions.
- Improvement of guideline development for prevention or treatment of diseases and the management of comorbidities.
- Provision of more accurate information to patients, caregivers and prescribers.

Cross-cutting Priorities:

Socio-economic science and humanities; Gender

Societal Challenge 1: Health

TOPIC : Support for large scale uptake of Digital Innovation for Active and Healthy Ageing

Identifier: SC1-HCO-17-2017 **Deadline:** 31 January 2017 17:00:00

Topic Description

- Several activities on scaling up of digital innovation for active and healthy ageing are currently pursued by the Commission in cooperation with a large number of different stakeholder groups and partner organisations. A coordination and support action is needed to promote the effective uptake and impact of these activities and to leverage additional investments by mobilising other national and regional programmes together with private investments.

Expected Impact

- Increased uptake of digital solutions for Active and Healthy Ageing, including results from relevant Horizon 2020 research and innovation activities.
- Accelerated progress on favourable framework conditions to scaling-up digital innovation for active and healthy ageing across the EU.
- Contribution of the policy activities to i. The Quality of Life of the EU population, ii. The Sustainability of Health and Care delivery and iii. Economic growth and job-creation in the EU.

Societal Challenge 1: Health

TOPIC : Clinical Research in Regenerative Medicine

Identifier: SC1-PM-11-2016-2017 **Deadline:** 11 April 2017 17:00:00

Topic Description

- Regenerative medicine is a branch of translational research in tissue engineering and molecular biology which deals with the "process of replacing, engineering or regenerating human cells, tissues or organs to restore or establish normal function". Translating basic knowledge on regenerative medicine into the clinic is often delayed by the difficulty of undertaking "first in man" studies and carrying out the specific research needed for proving safety and efficacy of new treatments. Moreover, financing for these steps in the new therapeutic field of regenerative medicine is particularly scarce, due to lack of established business and regulatory models.

Expected Impact

- Obtain results by means of in-patient regenerative medicine research that allows new therapies to safely reach the next level of testing or medical practice.
- Stimulate growth and competitiveness of European regenerative medicine including European small and medium-sized enterprises and industry operating in the sector.
- Lever existing investments in fundamental research into regenerative medicine.
- Develop new approaches to currently untreatable diseases.

Societal Challenge 1: Health

TOPIC : Methods research for improved health economic evaluation

Identifier: SC1-PM-20-2017 **Deadline:** 11 April 2017 17:00:00

Topic Description

- Health systems need to be resilient. They must be able to adapt effectively to changing environments, and tackle significant challenges with limited resources. Many changes are taking place including demographics and burdens of disease, advances in biomedical research, health technologies and personalised medicine, and the availability of large, population-based data sets. These changes highlight the need and potential to develop new or improved methods for economic evaluation.

Expected Impact

- Validated improved or new approaches for the collection and analysis of data for health economic evaluation, resulting in high-quality and comparable information within and across countries
- Validated improved or new approaches for integration of data from all relevant sources, to facilitate an informative and continuous assessment of health interventions and systems
- Validated improved or new indicators, measures and tools, to be used by decision-makers for resource allocation in health systems that are patient-centred, efficient and sustainable..

Cross-cutting Priorities:

Socio-economic science and humanities; Gender

Summary Points on Health & Wellbeing Programmes

- Most of the topics are aimed at 100% collaboration;
- Most of the topics have appeal outside of Europe and should be of interest to Africa; in fact health and wellbeing improvement is a global challenge;
- For those in the Health Sector, there is opportunity for everyone given the core areas:
- *Understanding health, ageing and disease;*
- *Effective health promotion, disease prevention, preparedness and screening;*
- *Improving diagnosis;*
- *Innovative treatments and technologies;*
- *Advancing active and healthy ageing;*
- *Integrated, sustainable, citizen-centred care;*
- *Improving health information, data exploitation and providing an evidence base for health policies and regulation;*
- **Importantly, there are opportunities for private sector/ SME participation**

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

http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-food_en.pdf

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Building Bi-regional Partnerships for Global Challenges

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25.9.2016

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

Open Topics
SUSTAINABLE FOOD SECURITY – RESILIENT AND RESOURCE-EFFICIENT VALUE CHAINS
SFS-4-2017: New partnerships and tools to enhance European capacities for in-situ conservation
SFS-5-2017: Robotics Advances for Precision Farming
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-10-2017: Research and approaches for emerging diseases in plants and terrestrial livestock
SFS-13-2017: Validation of diagnostic tools for animal and crop health
SFS-15-2016 -2017: Breeding livestock for resilience and efficiency
SFS-16-2017: Bee health and sustainable pollination
SFS-17-2017: Innovations in plant protection
SFS-18-2017: Framework Partnership Agreement supporting Joint Actions towards Public-Public Partnerships in the Bioeconomy
SFS-19-2016-2017: ERANET COFUND: Public-Public Partnerships in the bioeconomy

Societal Challenge 2: Food Security / Overview

Open Topics
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-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-32-2017: Promoting and supporting eco-intensification of aquaculture production systems: inland (including fresh water), coastal zone and offshore
SFS-34-2017: SFS-34-2017: Innovative agri-food chains: unlocking the potential for competitiveness and sustainability
SFS-35-2017: Innovative solutions for sustainable food packaging
SFS-36-2017: Co-fund on “One Health” (zoonoses – emerging threats)

Societal Challenge 2: Food Security / Overview

Open Topics
SFS-39-2017: How to tackle the childhood obesity epidemic?
SFS-40-2017: Sweeteners and sweetness enhancers
SFS-43-2017: Earth observation services for the monitoring of agricultural production in Africa
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
SFS-49-2017 Better understanding the challenges facing agriculture and the impacts of policies – A European platform to support modelling in agriculture
SFS-50-2017 Supporting international cooperation activities on agriculture soil contribution to climate change mitigation and adaptation

Societal Challenge 2: Food Security

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

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

Specific Challenge: The new Common Fisheries Policy (CFP) envisages a regionalised ecosystem-based approach relying on detailed measures proposed jointly by Member States under the umbrella of common principles and benchmarks set up in EU legislation. This will require choosing appropriate management units (fisheries, fishing gears, sea basins, fish stocks, stock assemblages, target fleets, geographical units, etc.) and combining in an innovative manner management instruments and new governance mechanisms adapted to specific regional needs. … For Mediterranean fisheries, the challenge of regionalisation is exacerbated by the legal situation (narrow bands of EU waters with larger areas outside national jurisdictions), generally poor state of fish stocks (or lack of knowledge thereof), narrow continental shelves and the high number of small fishing vessels.

Scope: Future approaches to fisheries management must take much closer account of regional fisheries practices, the specificities of regional ecosystems, and of the diverse "multi-actor"40 interests as a basis for implementing an ecosystem-based approach, without disregarding the likely interconnections with large marine ecosystems. On a regional basis, projects should identify potential biological, technical, economic, administrative, social and societal barriers to achieving the CFP's fisheries management objectives, through regionalisation instituted by Article 18 of the new Regulation (EU) No 1380/2013. Projects should identify potential social and economic imbalances arising from changes allowing the fishing industry and fisheries managers to adapt to new knowledge and new governance arrangements. Highlighting strengths and weaknesses of the emerging regionalisation process and structures, research projects should also develop and propose ways of resolving or circumventing barriers that have been identified and the means to evaluate how effective these ways are, especially in the Mediterranean Sea. Projects should consider work being carried-out in regional seas conventions (RSCs) and explore how RSCs and regional fisheries management structures can work better together.

In line with the objective of the EU Strategy for **international cooperation** in research and innovation (COM (2012) 497), proposals addressing the Mediterranean should contribute to implement the Research and Innovation Initiative for Blue Jobs and Growth in the Mediterranean Area (The BLUEMED Initiative)41 .

Societal Challenge 2: Food Security

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

Call: H2020-SFS-2016-2017 Deadline: 14.2.2017 2nd stage Deadline: 13.9.2017 Link

Specific Challenge: More efficient fisheries management, based on science, is needed to support the continued need to manage European fisheries, the global rise in seafood demand and the need to maximise fish production sustainably. Our understanding of the biology and ecology of several fish and other seafood species is far from complete for stocks fished in European seas and in particular for multi-species fisheries. This also applies in some areas outside EU waters where EU fleets fish. Relevant stocks include species in international waters or in the waters of third countries with which the EU has signed sustainable fisheries partnership agreements. For species fished outside EU waters, the challenge often extends beyond gathering knowledge of biological characteristics to include research on management tools and appropriate stock assessment models.

Scope: Proposals should focus on an identified number of fisheries that are important for the fishing fleets of multiple EU countries and should respond to the priorities of Regional Fisheries Management Organisations (RFMOs) and of the Common Fisheries Policy (CFP). The proposals should review existing knowledge and perform multidisciplinary research to help close important knowledge gaps that have a significant impact on the management of key target and by-catch species and that currently limit the advice that relevant bodies can give. Research results should be able to be applied immediately to provide a more solid knowledge base and advice on fisheries management.

Proposals should cover one of the following geographical scopes: [2017] Strengthening the knowledge base for resilient and resource-efficient fisheries in EU waters and in international waters covered by the North-East Atlantic Fisheries Commission and the General Fisheries Commission for the Mediterranean.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 5 million would allow this challenge to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts. Projects funded under this topic will by default participate in the Pilot on Open Research Data in Horizon 2020, with the option to opt-out, as described in the introduction.

Societal Challenge 2: Food Security

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

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

Specific Challenge: The Fourth EU-Africa Summit of 2-3 April 2014 agreed on a roadmap for 2014-201764 including actions specifically targeted at delivering Earth observation services in priority domains for Africa such as food security. This topic aims to contribute to this roadmap by providing food supply projection and agricultural risk assessment for Africa. These kinds of projection remain very challenging tasks, requiring a lot of information on environmental and weather conditions, climate change, crops and livestock. This information is usually derived from both remote and in-situ Earth observation systems. The challenge is therefore to make agricultural production in Africa more predictable by using Earth observation assets, including – but not limited to – those made available through the Global Earth Observation System of Systems (GEOSS) and Copernicus programmes.

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 65 and AfriGEOSS66 initiatives and relevant aspects of the EU's development policy.

Societal Challenge 2: Food Security

Scope (continued):

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 SIGMA67 –, 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. 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 at 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 (COM(2012)497), 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.

Societal Challenge 2: Food Security

SFS-50-2017 Supporting international cooperation activities on agriculture soil contribution to climate change mitigation and adaptation

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

Specific challenge: Climate change is among one of the threats for the future capacity of agriculture to cope with increased demands on food production. This challenge can be addressed, among other options, by changes in land and soil management at the farm level. There is a strong direct link between the soil management and a significant contribution of agriculture sector to climate change mitigation and adaptation (i.e. outcome of the COP21, 4 per 1000 initiative, links to SDGs). There is a strong need to develop synergies on research in this area at EU and global level. The results of this activity should contribute to climate change mitigation and adaptation debate and consider the ongoing work on Sustainable Development Goals implementation.

Scope: Proposals should cover the topic of soil carbon sequestration and its links with climate change mitigation from the perspective of agricultural sector. Other areas to be tackled should include land (use) management within the scope of this topic. Participation of initiatives such as the Global Research Alliance (GRA), the Joint Programming Initiative on Sustainable Agriculture, Food Security and Climate Change (FACCE) or the 4 per 1000 initiative is encouraged.

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-2-2016/2017: High value-added specialised vessel concept enabling more efficient servicing of emerging coastal and offshore activities
BG-4-2017: Multi-use of the oceans´ marine space, offshore and near-shore: Enabling technologies
BG-6-2017: 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-11-2017: The effect of climate change on arctic permafrost and its socio-economic impact, with a focus on coastal areas
BG-14-2017: Monitoring and assessing fish stocks, other pelagic species and habitats with an automated, non-invasive, opto-acoustic system

Societal Challenge 2: Food Security

BG-07-2017 Blue Green Innovation for clean costs and seas

Call: H2020-BG-2016-2017 **Deadline: 14.2.2017** Link

Specific challenge: Debris, chemical and microbial pollution and algae jellyfish blooms are huge and increasing problems in the oceans, seas and coasts. For plastics alone, the economic and ecological cost is considerable when including beach clean-ups, tourism losses, and damages to the fishing and aquaculture industries. In spite of strong legislation such as EU directives, sea and coastal pollution remains high, and prevention and innovative coast and sea clean-up schemes remain a challenge. Many solutions are available to tackle these sources of pollution, including recycling, waste water treatment, teams of collectors, and specific equipment such as skimmer boats, beach cleaning machines or algae harvesting devices. However, there is a pressing need to develop powerful innovative methods and processes to clean coasts and oceans and to restore the ecosystems to a healthy and clean state. The foremost challenge is not only to remove litter and pollution, but to transform the collected waste into a resource stream in line with the concept of the circular economy.

Scope: The proposals should be for demonstration projects to clean and lay the ground for a healthy ocean or sea and its coasts in any given large geographic area(s), including regional seas or semi-closed sea basins such as the Mediterranean. The demonstration projects should develop and scale-up innovative processes and measures to clean the selected site from visible (for example floating plastics or abandoned fishing gear) and invisible litter (micro-plastics) and pollutants, involving local communities and actors. Collected waste materials should be adequately processed so as to enable a subsequent usage/ exploitation/ re-usage. The proposals should apply an ecosystem approach, developing forecasting tools and models to identify areas where the proposed intervention is likely to be most effective in ecological and economic terms. Social acceptance and economic impact of the envisaged measures must also be considered and promoted, for example by disseminating the project results to relevant stakeholders.

In line with the objective of the EU Strategy for international cooperation in research and innovation (COM (2012) 497), proposals addressing the Mediterranean should contribute to implement the Research and Innovation Initiative for Blue Jobs and Growth in the Mediterranean Area (The BLUEMED Initiative).

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-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-5-2017: Novel public policies, business models and mechanisms for sustainable supply and payment of forest ecosystems services
RUR-9-2017: Business models for modern rural economies
RUR-10-2016-2017: Thematic Networks compiling knowledge ready for practice
RUR-12-2017: Networking European farms to boost thematic knowledge exchanges and close the innovation gap
RUR-13-2017: Building a future science and education system fit to deliver to practice
RUR-15-2017: The benefits of working with others – fostering social capital in the farming sector
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-13-2017: Building a future science and education system fit to deliver to practice

Call: H2020-RUR-2016-2017 Deadline: 14.2.2017 2nd Stage Deadline: 13.9.2017 Link

Specific Challenge: Transition towards more sustainable agriculture, forestry, food and bio-based value chains, equipped to face the challenges ahead, requires a renewal and strengthening of the technical and soft skills of all concerned. Along with ensuring delivery of peer-reviewed output from practice-oriented research, this will contribute to an efficient and interactive agricultural knowledge and innovation system (AKIS).

In 2010, 71% of European farm managers were operating on the basis of practical experience only. Education levels vary greatly depending on country, farm manager's age and gender, or farm structures, and this can hamper innovation. As the proportion of farmers with secondary and tertiary education rises, education will play an increasing role in farmers' capacity to co-create and implement new techniques and practices, anticipate and adapt to legislative, policy, market and environmental changes, design innovative ways of marketing their products and take part in interactive innovation systems and networks. New production processes and new types of supply chain in the wood, food and bio-based industry sectors also create a business demand for new skills. On the science side, there may be a shortage of researchers and capacities in fields of science of crucial importance for sustainable agriculture which are under-developed or unattractive in Europe.

While basic research remains necessary, a crucial challenge is also to remove bottlenecks to the delivery of practice-oriented research to end-users. Current research evaluation systems are based mainly on scientific publications and give little incentive, appreciation or reward to scientists willing to invest in practice-oriented research. Some front-runners are engaging in new ways of rating such research activities that deserve to be assessed, applied to agriculture and may be upscaled to a wider range of research providers and funding bodies.

Societal Challenge 2: Rural Renaissance

Scope: Proposals will involve the production of a challenge- and foresight-based inventory of skills that will be needed in agriculture, forestry and related value chains, covering primary producers, advisors, industry, businesses and scientists. Proposals will review how current science, education and training systems in a wide and varied range of EU Member States (and possibly third countries) cater for these needs, seeking to draft roadmaps for the improvement of curricula, learning methods and long-term interaction between education, science and economic players. Particular attention should be paid to soft (e.g. entrepreneurial, intermediation and communication) skills in particular for farmers, advisors and researchers, and technical skills related to new practices or processes and sustainability requirements in scientific fields of importance for the future. Needs should be differentiated in the light of the variety of farming systems, current trends in structural change, emerging business models in farming and subsequent value chains and geographical conditions. Proposals should analyse how education and training systems could improve, in particular by attracting more farmers and other players to engage in sufficient education and lifelong learning and by ensuring that these systems are fit for purpose and permanently updated. Piloting of new curricula and training methods in some of the participating institutions could be considered. The effectiveness of existing EU policy instruments on education and training in this area should also be assessed and improvements proposed. Proposals will take into account relevant EU initiatives to ensure potential synergies (e.g. Erasmus+, Marie Skłodowska-Curie actions, Knowledge and Innovation Community Food for Future, etc.).

Furthermore, proposals should develop an operational system for encouraging and measuring performance and reviewing outputs of interactive innovation and practice-oriented research, with a view to improving their effective delivery and the uptake of best practices from the field. They should build on front-running initiatives and assess different options currently being tested in the EU or elsewhere (e.g. the EIP-AGRI common format). Activities should deliver practical methodologies and criteria for i) measuring performance of research providers and projects with regard to their outputs for practice; and ii) translating academic knowledge into practical knowledge easily understandable by end-users. To this end, proposals should develop a peer-review system for research outputs ready-made for delivery to farmers and foresters, exploring all components required to operate such a system.

Proposals should build on the analysis to make further policy recommendations on how to develop education, training and science in the future. Proposals should fall under the concept of the 'multi-actor approach' and be highly participatory, involving specialised education bodies, farming/forestry sector representatives and advisors from the outset of project development to maximise bottom-up elaboration and final uptake of project results. It may be useful to involve authorities in charge of curriculum development and measuring rch impact. Communication and dissemination activities should reach out far beyond the consortium to ve t

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 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 5 – 2017: Bio-based products: Mobilisation and mutual learning action plan
BB-07-2017: Plan Molecular Factory
BB-08-2017 Strategies for improving the bioeconomy knowledge of the general public

Societal Challenge 2 – Topics for International Cooperation / Summarized

Topics
SFS-8-2017: Organic inputs – Contentious inputs into organic farming
SFS-10-2017: Research and approaches for emerging diseases in plants and terrestrial livestock
SFS-13-2017: Validation of diagnostic tools for animal and crop health
SFS-18-2017: Framework Partnership Agreement supporting Joint Actions towards 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-27-2017 Permanent grassland – farming systems and policies
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-43-2017: Earth Observation services for the monitoring of agriculture production in Africa
SFS-50-2017 Supporting international cooperation activities on agriculture soil contribution to climate change mitigation and adaptation
BG-7-2017: Blue green innovation for clean coasts and seas
RUR-3-2017: Towards 2030: policies and decision tools for an integrated management of natural resources
RUR-13-2017: Building a future science and education system fit to deliver to practice
RUR-16-2017: Optimising interactive innovation project approaches and the delivery of EU policies to speed up innovation in rural areas

Societal Challenge 3: Secure, Clean and Efficient Energy

http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-energy_en.pdf

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Building Bi-regional Partnerships for Global Challenges

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Organisation Name(s): CSIR-STEPRI, UniPID/University of Jyväskylä, FORTH

6/02/17

Societal Challenge 3 – General Information

Secure, Clean and Efficient Energy

Framed in consonant with the European Union framework strategy to increase energy security, solidarity and trust that seek to provide secure, sustainable, competitive and affordable energy for households and businesses

Activities include two focus areas:

- Energy efficiency
- Competitive Low Carbon Energy

Cross Cutting

- SME Instrument
- Smart and sustainable cities
- Fast Track to Innovation Pilot
- Blue Growth: Demonstrating an ocean of opportunities

Others……

Energy Efficiency Calls: Overview

Topics
Heating and cooling
EE-01-2017: Waste heat recovery from urban facilities and re-use to increase energy efficiency of district or individual heating and cooling systems
EE-02-2017: Improving the performance of inefficient district heating networks
EE-04-2016-2017: New heating and cooling solutions using low grade sources of thermal energy
Engaging consumers towards sustainable energy
EE-06-2016-2017: Engaging private consumers towards sustainable energy
EE-07-2016-2017: Behavioural change toward energy efficiency through ICT
EE-09-2016-2017: Engaging and activating public authorities
Buildings
EE-11-2016-2017: Overcoming market barriers and promoting deep renovation of buildings
EE-12-2017: Integration of Demand Response in Energy Management Systems while ensuring interoperability through Public Private Partnership (EeB PPP)
EE-14-2016-2017: Construction skills

Information and Communication Technologies Calls: Overview

Topics
Industry, services and products
EE-15-2017: Increasing capacities for actual implementation of energy efficiency measures in industry and services
EE-16-2016-2017: Effective implementation of EU product efficiency legislation
EE-17-2016-2017: Valorisation of waste heat in industrial systems (SPIRE PPP)
EE-18-2017: Energy efficiency of industrial parks through energy cooperation and mutualised energy services
EE-19-2017: Public Procurement of Innovative Solutions for energy efficiency
EE-20-2017: Bringing to market more energy efficient and integrated data centres
Innovative financing for energy efficiency investments
EE-22-2016-2017: Project Development Assistance
EE-23-2017: Innovative financing schemes
EE-24-2016-2017: Making the energy efficiency market investible

COMPETITIVE LOW-CARBON ENERGY: Overview

Topics
Towards an integrated EU energy system
LCE-01-2016-2017: Next generation innovative technologies enabling smart grids, storage and energy system integration with increasing share of renewables: distribution network
LCE-04-2017: Demonstration of system integration with smart transmission grid and storage technologies with increasing share of renewables
Support Actions
LCE-05-2017: Tools and technologies for coordination and integration of the European energy system
LCE-37-2017: ERA-NET Co-Fund Enhanced cooperation in Smart Local and Regional Energy Networks of the European Energy System

Competitive Low Carbon Energy

Renewable energy technologies
LCE-06-2017: New knowledge and technologies
LCE-07-2016-2017: Developing the next generation technologies of renewable electricity and heating/cooling
LCE-08-2016-2017: Development of next generation biofuel technologies
LCE-10-2017: Reducing the cost of PV electricity
LCE-11-2017: Near-to-market solutions for reducing the water consumption of CSP Plants
LCE-12-2017: Near-to-market solutions for the use of solar heat in industrial processes
LCE-14-2017: Demonstration of large >10MW wind turbine

Competitive Low Carbon Energy (2)

Topics
LCE-16-2017: 2nd Generation of design tools for ocean energy devices and arrays development and deployment
LCE-17-2017: Easier to install and more efficient geothermal systems for retrofitting buildings
LCE-18-2017: EGS in different geological conditions
LCE-19-2016-2017: Demonstration of the most promising advanced biofuel pathways
LCE-20-2016-2017: Enabling pre-commercial production of advanced aviation biofuel.
LCE-21-2017: Market uptake of renewable energy technologies
Enabling the decarbonisation of the use of fossil fuels during the transition to a low-carbon economy
LCE-27-2017: Measuring, monitoring and controlling the potential risks of subsurface operations related to CCS and unconventional hydrocarbons
LCE-28-2017: Highly flexible and efficient fossil fuel power plants
LCE-29-2017: CCS in industry, including Bio-CCS

Other Calls

Topic
Social, economic and human aspects of the energy system
LCE-31-2016-2017: Social Sciences and Humanities Support for the Energy Union
Supporting the development of a European research area in the field of energy
LCE-35-2017: Joint Actions to foster innovative energy solutions in renewable energy technologies
Cross-cutting issues
LCE-36-2016-2017: Support to the energy stakeholders to contribute to the SET-Plan

Budget (2)

No	Topics 11th May 2017	Budget (Eur Million)	Deadline
	Date of Publish: 11th May 2017		7th September 2017
1	LCE-10-2017 (IA)	10	
2	LCE-11-2017 (IA)	12	
3	LCE-12-2017 (IA)	8	
4	LCE-14-2017 (IA)	25	
5	LCE-16-2017 (IA)	7	
6	LCE-17-2017 (IA)	8	
7	LCE-18-2017 (IA)	10	
8	LCE-19-2016-2017 (IA)	15	
9	LCE-20-2016-2017 (IA)	10	
	Total	105	

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

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Organisation Name(s): UniPID/University of Jyväskylä

25.9.2016

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: 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/ Overview

Topics
SC5-1-2016/2017: Exploiting the added value of climate services
SC5-2-2017: Integrated European regional modelling and climate prediction system
SC5-4-2017: Towards a robust and comprehensive greenhouse gas verification system
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
SC5-8-2017: Large-scale demonstrators on nature-based solutions for hydrometeorological risk reduction
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
SC5-18-2017: Novel in-situ observation systems
SC5-19-2017: Coordination of citizen observatories initiatives
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

Societal Challenge 5: Climate/ Overview

Topics
SC5-26-2017: Pre-commercial procurement on soil decontamination
SC5-30-2017: ERA-NET on Climate Services Roadmap: Cross-sector impact assessments (evaluation, comparison, and integration)
SC5-31-2017: Widening international cooperation activities on climate adaptation and mitigation
SC5-32-2017: Biodiversity scenarios
SC5-33-2017: Closing the water gap

Societal Challenge 5: Climate Change

SC5-02-2017: Integrated European regional modelling and climate prediction system

Call: H2020-SC5-2016-2017 **Deadline: 7.3.2017** Link

Specific Challenge: European decision makers and businesses currently lack access to a consistent and authoritative Europe-wide set of climate simulations at appropriate spatial and temporal scales upon which regional, national and local climate-related risk assessments and climate change adaptation programmes and businesses could be built. There is high demand for, and an urgent need to develop, integrated multi-model ensemble climate predictions at European scale which can provide actionable climate information and assessments. This integrated climate prediction system should go hand in hand with coordinated regional modelling and observational studies to constitute a robust foundation for Europe-wide climate service activities. It should be based on user requirements and provide trustworthy and easily accessible climate information which can be utilised across Europe and beyond.

Scope: The main research objective of this action is to develop an innovative European regional ensemble climate prediction system based on a new generation of high-resolution climate models, covering timescales from seasons to decades initialised with observations. The action should conduct a series of multi-method and multi-model experiments in order to better capture uncertainties, and provide user-centred and demand-driven information which addresses user needs at various levels. The system should focus on near term (~1-40 years) predictions, which is the time span most relevant for many decisions of businesses and public authorities for infrastructure and other planning.

The regional downscaling programme, an integral part of the multi-model ensemble prediction system, should target Europe at the best technically achievable spatial resolution. Methodologies should be transferable to other geographical areas. Evaluation of model results against observations is considered essential.

Climate model data should be widely disseminated, and therefore need to be easily accessible and available in line with Copernicus Climate Change service specifications.

Societal Challenge 5: Climate Change

Scope: (*continued*)

Strong engagement with stakeholders and climate information end-users, including public sector policy-makers, business organisations and customers representing specific market sectors is an essential requirement of this action.

In line with the strategy for EU international cooperation in research and innovation (COM(2012)497), **international cooperation** is encouraged, in particular with countries having developed similar systems and with countries wishing to develop capacities.

Societal Challenge 5: Climate Services

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

Call: H2020-SC5-2016-2017 **Deadline: 7.3.2017** Link

Specific Challenge: According the IPCC's 5th Assessment Report, atmospheric concentrations of CO_2, CH_4 and N_2O have increased to levels unprecedented in at least the last 800 000 years. CO2 alone has increased by 40% since pre-industrial times, primarily from fossil fuel emissions and also from net land use change emissions. Trust in any international agreement under UNFCCC aimed at limiting global warming will depend on our ability to make accurate estimates of greenhouse gas (GHG) emissions as well as provision of mitigation services allowing robust reporting and verification against independent data and analyses.

However, a better understanding of the carbon and nitrogen cycle in the earth-climate system remains one of the key knowledge gaps. It is therefore essential that we increase our capability to identify more accurately the stocks and fluxes of these important greenhouse gases and at the same time develop methods and technologies that will enable us within the next five to ten years to accurately estimate and also verify CO_2, CH_4 and N_2O emissions from key sources.

Scope: Actions should quantify more accurately the stocks and fluxes of CO2, CH4, and N2O 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.**

Societal Challenge 5: Climate Change

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

Call: H2020-SC5-2016-2017 **Deadline: 7.3.2017** Link

Specific Challenge: Economic damage costs from extreme hydro-meteorological events (such as floods, droughts, storm surges, landslides) are increasing throughout Europe. Further investment in traditional, engineering solutions for risk prevention is no longer possible in several cases, due to the very high costs, and to the limited flexibility offered by such solutions to cope with extreme events for which changes in frequency, intensity and distribution may be expected due to climate change. Nature-based solutions can be flexible, multi-beneficial alternatives to traditional engineering, but adequate proof-of-concept for their upscaling and replication is lacking.

Scope:

Via large-scale demonstration, projects should aim 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. Solutions should be incorporated in an integrated design concept for land management and planning and be co-designed and co-deployed in a trans-disciplinary multi-stakeholder and participatory context with due consideration to and integration of social and cultural aspects and climate change effects;
- 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.;

Societal Challenge 5: Climate Change

Scope *(continued)*:

Via large-scale demonstration, projects should aim to:

- identify and assess barriers related to their social and cultural acceptance and policy regulatory frameworks and propose ways to overcome them;
- develop methodologies , tools and best practices enabling the replication and up-scaling of nature-based solutions in different contexts, including replication of innovative investment strategies, governance and business models, as well as performance assessment tools, protocols and standards for the design, operation and maintenance of these solutions;
- provide a consolidated evidence-base on co-development processes, performance standards, cost-effectiveness, operational requirements, life cycle costs and the multiple benefits of nature-based solutions as economically, socially, culturally and environmentally viable alternatives for hydro-meteorological risk reduction and climate change adaptation at watershed/landscape level, also considering the potential and limits of the solutions under different circumstances and conditions;
- establish long-term sustainable data platforms considering existing initiatives and alternative options, such as pan-European web-based repositories, securing open, consistent data and performance measurements and interoperability of data infrastructures to ensure effective communication, public consultation, exchange of practices and sharing of experiences and a continuous building up of the 'knowledge portfolio' in the longer term (i.e. following project completion).

Proposals shall address **all** of the above points. The contribution of social sciences and humanities to these processes is considered necessary.

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. The project proposals could already indicate which interested regions/countries or other partners have been pre-identified for contact during the project.

Societal Challenge 5: Climate Change

SC5-31-2017: Widening international cooperation activities on climate adaptation and mitigation

Call: H2020-SC5-2016-2017 **Deadline: 7.3.2017** Link

Specific Challenge: The aim of this CSA is to further open the JPI Climate to international cooperation partners, including in Latin America, **Africa** or Asia, and to encourage engagement of a wider group of EU Member States and thus contribute to creating a coherent European Research Area open to the world. In addition, this action should consolidate the alignment of the R&I agendas of national, European Commission and other key players related to climate issues. Providing integrated, qualified climate knowledge and decision support services across sectors internationally is the main target, well in line with Horizon 2020 and SFIC strategies for internationalization of European skills at a time when research and innovation requirements for the Sustainable Development Goals (2016-2030) have been launched at United Nations level.

Scope:

Proposals should aim to create a framework and permanent dialogue to encourage, in a structured and strategic manner, the opening of the JPI Climate to **international cooperation** with key international climate research and innovation programmes, as well as funding and investment institutions. Proposals should also undertake activities to align with and support the 2030 Agenda for Sustainable Development, in particular on climate change resilience, adaptation, mitigation and disaster risk reduction. Flagship actions for possible joint funding with members of the JPI Water, JPI Urban Europe, JPI Oceans or key international cooperation partners and international programmes of strategic importance for the EU, such as the Belmont Forum, should also be identified and prepared for in advance.

Societal Challenge 5: Climate Change

Scope *(continued)*:

This action should also organize and develop the knowledge base required to address climate challenges and EU policy priorities within a global perspective. This can be accomplished by providing open and integrated analysis of research results and recommendations to the United Nations Framework Convention on Climate Change to combat climate change and its impacts. It should aim to contribute to: strengthening resilience and adaptive capacity to climate related hazards; integrating climate change measures into national policies, strategies, and planning; improving education, awareness raising and human and institutional capacity on climate change mitigation, resource efficiency, adaptation, impact reduction, early warning and resilience to disasters; supporting LICs/LMICs in the context of meaningful mitigation actions and transparency on implementation, operationalization and evaluation of the Green Climate Fund; promoting mechanisms for raising capacities for effective climate change related planning and management in LICs/LMICs, including focusing on women, youth, local and marginalized communities.

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
SC5-08-2017: Large-scale demonstrators on nature-based solutions for hydro-meteorological risk reduction
SC5-13-2016-2017: New solutions for sustainable production of raw materials
SC-14-2016-2017: Raw materials innovation actions
SC5-16-2016-2017: Raw materials international co-operation
SC5-21-2016-2017: Cultural heritage as a driver for sustainable growth
SC5-31-2017: Widening international cooperation activities on climate adaptation and mitigation

Societal Challenge 7: Secure Societies - protecting freedom and security of Europe and its citizens

http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-security_en.pdf

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Organisation Name(s): UniPID/University of Jyväskylä

25.9.2016

Secure Societies: Objectives

1. Fight crime, illegal trafficking and terrorism, including understanding and tackling terrorist ideas and beliefs
2. Protect and improve the resilience of critical infrastructures, supply chains and transport modes
3. Strengthen security through border management
4. Improve cyber security
5. Increase Europe's resilience to crises and disasters
6. Ensure privacy and freedom, including in the Internet and enhancing the societal legal and ethical understanding of all areas of security, risk and management
7. Enhance standardisation and interoperability of systems, including for emergency purposes
8. Support the Union's external security policies including through conflict prevention and peace-building

Secure Societies: Focus Areas

Secure Societies in Horizon 2020:

- Maintains the mission driven character
- Supports EU internal and external security policies
- Strengthens the involvement of the end-users
- Takes more into account the Societal Dimension
- Includes Cyber-Security

Areas of activity:

- Critical Infrastructure Protection
- Disaster-resilience: safeguarding and securing society
- Fight against Crime and Terrorism
- Border Security and External Security
- Digital Security

Call dates:

2017:

- Opening: 01 Mar 2017,
- Deadline: 24 Aug 2017

Secure Societies: Focus Areas

Topics
SEC-04-DRS-2017: Broadband communication systems
SEC-05-DRS-2016-2017: Chemical, biological, radiological and nuclear (CBRN) cluster
SEC-07-FCT-2016-2017: Human Factor for the Prevention, Investigation, and Mitigation of criminal and terrorist acts
SEC-09-FCT-2017: Toolkits integrating tools and techniques for forensic laboratories
SEC-10-FCT-2017: Integration of detection capabilities and data fusion with utility providers' networks
SEC-12-FCT-2016-2017: Technologies for prevention, investigation, and mitigation in the context of fight against crime and terrorism
SEC-13–BES–2017: Next generation of information systems to support EU external policies
SEC-15-BES–2017: Risk-based screening at border crossing
SEC-16-BES–2017: Through-foliage detection, including in the outermost regions of the EU
SEC-17-BES-2017: Architectures and organizations, big data and data analytics for customs risk management of the international goods supply chain trade movements
SEC-18-BES–2017: Acceptance of "no gate crossing point solutions"

Secure Societies: Focus Areas

Topics
DS-06-2017: Cryptography
DS-07-2017: Addressing Advanced Cyber Security Threats and Threat Actors
DS-08-2017: Privacy, Data Protection, Digital Identities

Societal Challenge 7: Secure Societies

CIP-01-2016-2017: Prevention, detection, response and mitigation of the combination of physical and cyber threats to the critical infrastructure of Europe.

Call: H2020-CIP-2016-2017 Deadline: 24.8.2017 Link

Specific Challenge:

Disruptions in the operation of our countries' infrastructure may put at risk the functioning of our societies and their economies. Such disruptions may result from many kinds of hazards and physical and/or cyber-attacks on installations and systems. Recent events demonstrate the increased interconnection among the impact of hazards, of the two kinds of attacks and, conversely, the usefulness for operators to combine cyber and physical security-solutions to protect installations of the critical infrastructure of Europe: A comprehensive, yet installation-specific approach is needed to secure the integrity of existing or future, public or private, connected and interdependent installations. Since the global financial crisis has imposed unprecedented budgetary restrictions on both the public and private sectors, new security solutions must be more efficient and cost-effective than the ones currently available.

Scope: Proposals should focus on one of the following critical infrastructures: Water Systems, Energy Infrastructure (power plants and distribution), Transport Infrastructure and means of transportation, Communication Infrastructure, Health Services, Financial Services.

Proposals should cover: prevention, detection, response, and in case of failure, mitigation of consequences (including novel installation designs) over the life span of the infrastructure, with a view to achieving the security and resilience of all functions performed by the installations, and of neighbouring populations and the environment. They should not only address in details all aspects of both physical (e.g. bombing, plane or drone overflights and crashes, spreading of fires, floods, seismic activity, space radiations, etc.) and cyber threats and incidents, but also systemic security management issues and the combinations of physical and cyber threats and incidents, their interconnections, and their cascading effects. Innovative methods should be proposed for sharing information with the public in the vicinity of the installations, and the protection of rescue teams, security teams and monitoring teams.

Societal Challenge 7: Secure Societies

Scope: (*continued*)

Only the installations not covered in 2016 will remain eligible in 2017. A list of topics that remain eligible in 2017 will be published in due time in the section "Topic Conditions & Documents" for this topic on the Participant Portal.

The participation of SMEs is strongly encouraged.

In line with the EU's strategy for international cooperation in research and innovation international cooperation is encouraged, and in particular with international research partners involved in ongoing discussions and workshops, with the European Commission. Legal entities established in countries not listed in General Annex A and international organisations will be eligible for funding only when the Commission deems participation of the entity essential for carrying out the action.

Societal Challenge 7: Secure Societies

SEC-07-FCT-2016-2017: Human Factor for the Prevention, Investigation, and Mitigation of criminal and terrorist acts

Call: H2020-SEC-2016-2017 **Deadline: 24.8.2017** Link

Specific Challenge:

The European Union (EU) consists of more than 500 million people across the twenty-eight countries which make up the Union. Economic growth, together with the opportunities provided by a free and democratic society based on the rule of law, generate prosperity amongst Europe's citizens who benefit from increased mobility across national borders, and from globalized communication and finance infrastructure – but with such opportunities also come risks, as terrorists and criminals seek to pursue destructive and malicious ends. There are a number of significant common threats which have a cross-border impact on security and safety within the EU[1], and security has become a key factor in ensuring a high quality of life in the European society and in protecting our critical infrastructures through preventing and tackling common threats. The European Union must prevent, and if necessary investigate and mitigate the impact of criminal acts, whilst protecting fundamental rights of its citizens. The consistent efforts made by the EU Member States and the Union to that effect are not enough, especially when criminal groups and their activities expand far beyond national borders.

Scope:

The Lisbon Treaty enables the EU to act to develop Europe as an area of justice, freedom and security. The new European Agenda on Security underlines that, an EU-wide approach to security, integrating prevention, investigation and mitigation capabilities in the area of fight against crime is increasingly required.

The definition of a European Security Model which builds upon the analysis of the human factors[2], at the roots of the design of security strategies and methodologies, is needed. Such a Model would encompass: the development of a common understanding of security issues among EU security practitioners, as well as of the causes and effects of insecurity among EU citizens; common EU methodologies to be implemented by security practitioners (about enhancing prevention and anticipation and/or the timely involvement of all the actors that have a role in protection from the political, economic and social scene).

Societal Challenge 7: Secure Societies

Scope: (*continued*)

The globalization of communications and finance infrastructure allows for cybercrime to develop, and corruption and financial crime to take new forms. Cyber criminality is a phenomenon by which criminal acts with new tools and within a new environment, which is not satisfactorily understood, nor properly addressed. The same applies to the innovative technologies and methodologies for financial crime. Law Enforcement Agencies need new equipment to counter such developments.

Proposals should address only one of the following aspects:

Sub-topic 1.New methods for the protection of crowds during mass gatherings;

Sub-topic 2.New methods to prevent, investigate and mitigate cybercriminal behaviours;

Sub-topic 3.New methods to prevent, investigate and mitigate corruption and financial crime to fight the infiltration of organised crime in the European Union (licit) economy;

Sub-topic 4.New methods to prevent, investigate and mitigate high impact petty crimes;

Sub-topic 5.New methods to prevent, investigate and mitigate high impact domestic violence.

Only the sub-topics not covered in 2016 will remain eligible in 2017.

In line with the EU's strategy for international cooperation in research and innovation[3] international cooperation is encouraged, and in particular with international research partners involved in ongoing discussions and workshops, with the European Commission.

Societal Challenge 7: Secure Societies

SEC-17-BES-2016-2017: Architectures and organizations, big data and data analytics for customs risk management of the international goods supply chain trade movements

Call: H2020-SEC-2016-2017 Deadline: 24.8.2017 Link

Specific Challenge:

Effective management of risks in the international supply chain is crucial to ensuring the security (and safety) of EU residents, the protection of the financial and economic interests of the EU, while at the same time facilitating legitimate trade. The "EU Strategy and Action Plan for customs risk management" (COM (2014) 527 final) Communication of the Commission drafts a strategy and an action plan for improving customs risk management and supply chain security. It identifies the need for customs and other competent authorities to acquire quality data on supply chain movements, to exploit them for risk assessment purposes, and to consequently adapt organizations and strategies for checks to make more efficient.

Scope:

Risk management of the movement of goods through the international supply chain requires identifying, evaluating and analysing the full range of largely diverse threats and risks associated with goods and their movements, at the EU, national, and intercontinental levels. It starts with the identification, by the custom authorities themselves, of the most serious risks, so that necessary controls are carried out at the most appropriate time and place.

Strategies and tools are needed for the timely submission to customs authorities of relevant high-quality and comprehensive data on goods moving and crossing borders, whilst taking into consideration the national and EU legal, procedural and IT systems where they exist. Realistic methodologies and organisations need to develop, that facilitate collaboration among the relevant authorities (not only customs but also law enforcement, transport, security and border control agencies). Data governance policies and mechanisms for data sharing need to be agreed internationally.

Societal Challenge 7: Secure Societies

Scope: (*continued*)

Common repositories that take advantage of existing instruments such as the Advance Cargo Information System (advance electronic notification of cargo coming into EU before it leaves the third country) which are under-utilised and under-exploited for risk management purpose, can support the intelligent use and management of complex and large amount of data, exploiting unstructured data, supporting operational and situational awareness of customs authorities, adding intelligence (trends analysis, correlation analysis, etc.) by means of state-of-the-art technologies including in the fields of Big Data, Data Analytics, Data mining, Visualization, Intelligent User's Interfaces, Insight knowledge and knowledge representation, artificial intelligence, automatic language translation. The governance of access to such repositories need to be addressed.

In line with the EU's strategy for international cooperation in research and innovation[3] international cooperation is encouraged, and in particular with international research partners involved in ongoing discussions and workshops, with the European Commission.

Industrial Leadership: Information and Communication Technologies (ICT)

http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-leit-ict_en.pdf

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Building Bi-regional Partnerships for Global Challenges

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06/02/17

Information and Communication Technologies – General Information

Digital technologies underpin innovation and competitiveness across a broad range of market sectors

Areas:

1. Key enabling technologies
2. Networking technologies
3. Robotics
4. Content and Information management Technologies

To promote more innovation orientation to ensure the EU industry remains strong in the core technologies

- How?
  1. To support core ICT industries through road map based PPP
  2. Building of innovation capacity by stregthening of the ‘open and disruptive innovation’
  3. International dimension of ICT reinforced

  Novelty: Pilot on Open Research Data and Data Management Plans

Information and Communication Technologies Calls: Overview

Topics
A new generation of components and systems
ICT-04-2017: Smart Anything Everywhere Initiative
Advanced Computing and Cloud Computing
ICT-05-2017: Customized and low energy computing (including Low power processor technologies)
Future Internet
ICT-07-2017: 5G PPP Research and Validation of critical technologies and systems
ICT-08-2017: 5G PPP Convergent Technologies
ICT-09-2017: Networking research beyond 5G
ICT-11-2017: Collective Awareness Platforms for Sustainability and Social Innovation
Robotics and Autonomous Systems
ICT-25-2016-2017: Advanced robot capabilities research and take-up
ICT-27-2017: System abilities, SME & benchmarking actions, safety certification
ICT-28-2017: Robotics Competition, coordination and support

Information and Communication Technologies Calls: Overview

Topics
Content
ICT-14-2016-2017: Big Data PPP: cross-sectorial and cross-lingual data integration and experimentation
ICT-15-2016-2017: Big Data PPP: Large Scale Pilot actions in sectors best benefitting from data-driven innovation
ICT-16-2017: Big data PPP: research addressing main technology challenges of the data economy
ICT-17-2016-2017: Big data PPP: Support, industrial skills, benchmarking and evaluation
ICT Key Enabling Technologies
ICT-30-2017: Photonics KET 2017
ICT-31-2017: Micro- and nanoelectronics technologies
Innovation and Entrepreneurship support
ICT-32-2017: Startup Europe for Growth and Innovation Radar
ICT-33-2017: Innovation procurement networks

IC Technologies Calls: Overview

Topics
Responsibility and Creativity???
International Cooperation Activities
ICT-39-2016-2017: International partnership building in low and middle income countries
Support Actions
ICT-40-2017: Reinforcing European presence in international ICT standardisation
ICT-41-2017: Next Generation Internet

Budget for 2017 Calls (1)

	Topics (Type of Action)	Budget (EUR Million)	Deadline
	Opening: 08 Dec 2016		
1	ICT-05-2017 (RIA)	30	25-Apr-17
2	ICT-05-2017 (CSA)	2	
3	ICT-11-2017 (IA)	9	
4	ICT-11-2017 (CSA)	1	
5	ICT-14-2016-2017 (IA)	27	
6	ICT-15-2016-2017 (IA)	25	
7	ICT-16-2017 (RIA)	33	
8	ICT-17-2016-2017 (RIA)	2	

Budget for 2017 Calls (2)

9	ICT-20-2017 (RIA)	17	
10	ICT-23-2017 (RIA)	10	
11	ICT-23-2017 (IA)	4	
12	ICT-25-2016-2017 (RIA)	15	
13	ICT-25-2016-2017 (IA)	19	
14	ICT-27-2017 (RIA)	30	
15	ICT-27-2017 (IA)	11	
16	ICT-27-2017 (PCP)	7	
17	ICT-28-2017 (CSA)	5	
18	ICT-30-2017 (RIA)	43	
19	ICT-30-2017 (IA)	43	

Budget for 2017 Calls (3)

20	ICT-30-2017 (CSA)	3	
21	ICT-31-2017 (RIA)	19	
22	ICT-31-2017 (IA)	3	
23	ICT-31-2017 (CSA)	1	
24	ICT-32-2017 (IA)	10	
25	ICT-32-2017 (CSA)	2	
26	ICT-33-2017 (CSA)	4	
27	ICT-39-2016-2017 (IA)	13	
28	ICT-40-2017 (CSA)	2	
29	ICT-41-2017 (CSA)	2	
	Overall budget	**625.5**	

ICT – Topics for African Researchers

ICT-39-2016-2017: International partnership building in low and middle income countries

Specific Challenge: To reinforce cooperation and strategic partnership with selected countries and regions in areas of mutual interest.

- *Targeted countries: Low and middle income countries*50 *in sub-Saharan Africa and ASEAN countries*

The topic 'ICT-39-2016-2017: International Partnership building in low and middle income countries' includes both innovation actions and coordination and support actions (for Africa) to reinforce cooperation and strategic partnership with low and middle income countries in sub-Saharan Africa and ASEAN countries.

a. Innovations Actions

Actions will address the requirements of end-user communities in developing countries. This may include technological improvements and adaptations as well as innovative service creation based on existing technologies.

Proposals could include specific technological targets such as co-design, adaptation, demonstration and validation (e.g. pilots) of ICT related research and innovation in relevant thematic areas addressed by Horizon 2020 including Content Technologies and Societal Challenges. Proposals are expected to address take up and scalability of the proposed solutions.

b. Coordination and Support Actions for Africa

The coordination and support action focuses on fostering research and coordination and supporting collaborative activities between Europe and Africa.

http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-health_en.pdf

Industrial Leadership: Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, and Biotechnology

http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-leit-nmp_en.pdf#page=27

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Organisation Name(s): UniPID/University of Jyväskylä

25.9.2016

Nanotechnologies: General Information

Nanotechnologies, Advanced Materials, Biotechnology and Production

- The Horizon 2020 programme aims to bridge the gap between nanotechnology research and markets, and to realise the potential contribution to sustainable growth, competitiveness, environment, highly skilled jobs and increased quality of life.
  A number of barriers need to be addressed, in order to leverage large scale market introduction of innovative, safe and sustainable nano-enabled products.
- Horizon 2020 activities addressing this challenge will therefore implement the next steps towards the deployment and market introduction of lightweight, multifunctional, economical and environmentally friendly nano-enabled products for different applications, by scaling up laboratory experience to industrial scale and by demonstrating the viability of a variety of manufacturing technologies.
- In order to ensure the safe development and application of nanotechnologies, Horizon 2020 aims to advance scientific knowledge of the potential impact of nanotechnologies on health or on the environment, and to provide tools for risk assessment and management along the entire life cycle.

Nanotechnologies: General Information

Nanotechnologies, Advanced Materials, Biotechnology and Production

- 2016-2017 Focus Areas:
  - Advanced Materials and nanotechnologies for high added value products and process industries
  - Green Vehicles
  - Advanced materials and nanotechnologies for healthcare
  - Advanced materials and nanotechnologies for energy applications
  - Eco-Design and new sustainable business models
  - Biotechnology
  - Computational Materials Modelling for the development of nanotechnologies and advanced materials
  - Science-based risk assessment and management of nanotechnologies, advanced materials and biotechnologies
  - Innovative and responsible governance of new and converging enabling technologies
- Currently no open calls

Marie Sklodowska-Curie Actions

http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-msca_en.pdf

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Different Kinds of MSCA

1. Innovative Training Networks
2. Individual Fellowships
3. Research and Innovation Staff Exchange
4. Co-funding for regional, national and international programmes
5. European Researchers' Night

Current and Upcoming MSCA Calls

Upcoming calls:

- MSCA-RISE-2017 Research and Innovation Staff Exchange, deadline 05 April 2017
- MSCA-NCP-2017 MSCA National Contact Points, deadline 04 May 2017
- MSCA-IF-2017 Individual Fellowships, deadline 14 September 2017
- MSCA-COFUND-DP and MSCA-COFUND-FP Co-funded Doctoral and Fellowship Programmes, deadline 28 September 2017

Want more information?

Horizon 2020: http://ec.europa.eu/programmes/horizon2020/

All Open Calls: http://bit.ly/1NsU9yZ

International Cooperation in Horizon 2020:
http://bit.ly/1mupFMK

Reference Documents: http://bit.ly/IFEGf1

Check out the **2018-2020 Work Programme Preparation** from the sections' sites:
http://ec.europa.eu/programmes/horizon2020/h2020-sections

Thank you

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CAAST-Net Plus **Building bi-regional partnerships for global challenges**

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