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**Call Topics for International Cooperation
in Horizon 2020
EU and South Africa**

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Industrial Leadership

Horizon 2020 Pillar:	Industrial Leadership
Programme:	Leadership in Enabling and Industrial Technologies - Space
Call Title:	Space 2018-2020
Call Identifier:	H2020-SPACE-2018-2020
Topic Title:	International Cooperation Copernicus – Designing EO downstream applications with international partners
Topic Identifier:	DT-SPACE-06-EO-2019
Type of Action:	RIA Research and Innovation action
Deadline(s):	12-03-2019 (single-stage)

Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/dt-space-06-eo-2019.html>

Specific Challenges: Copernicus, the Union's Earth observation and monitoring programme produces a wealth of data and information regarding the Earth sub-systems (land, atmosphere, oceans) and cross-cutting processes (climate change, emergency and security). Cooperation with international partners is key to promoting the uptake of Copernicus globally, exploiting possibilities for integrating in-situ, space data and information technologies. Building the Copernicus full, free and open data policy, the Commission seeks to facilitate access to Copernicus data and information for interested international partners. Administrative cooperation arrangements on Copernicus data access and earth observation data exchange have already been signed with the United States and Australia, and discussions towards similar cooperation have been started with other countries and regions (including **Africa**, Latin American countries and Asia-Pacific countries).

Cooperation with partner countries should be fostered with a view to using Copernicus data to jointly develop algorithms, services and/or products which serve local user needs and/or enhance the Copernicus global product quality.

Proposals are encouraged to use the Copernicus Data and Information Access Services (DIAS), or other existing data access solutions instead of setting up their own download and processing infrastructure. They are also encouraged to integrate third-party data (including in-situ data) and envisage data assimilation into models and products made available on the Copernicus platform of the Copernicus services..

For such applications and developments to succeed in the market or with public users, the products need to be shaped according to users' needs and their value to users must be openly demonstrated to the wider user community. This needs

to be achieved in an environment integrated at the level of the user, in order for users to accept the innovative potential which the product promises. This will require also specific attention to be given to the various processes in place in the users' workflows which incorporate the EO information. Furthermore, the transition of R&D product prototypes to viable commercial product lines after the end of the EU funded phase remains a challenge to be addressed early on during product development.

Scope: Proposals shall address a wide variety of applications stemming from the use of Earth observation and their smart integration with other related technologies. Copernicus should be considered as part of the solution which may include other space or non-space inputs. This is likely to lead to greater value, opportunities and especially market uptake. Applications shall be sustained by a production process capable of delivering to the user a product which is validated and accepted as a marketable product in the international partner country. International collaboration has a key role to play in this context, as it enhances access to markets beyond the national borders, notably by enabling space application providers to absorb market-related tacit knowledge and know-how of their partners. Corresponding validations and customisations are to be undertaken, and the business case for the application is to be demonstrated. Service level models are to be developed, with appropriate quality of service definitions for the application. Application products are expected to adopt open standards for data documentation, data models and services including data processing, visualisation and cataloguing on a large scale.

Tasks shall include joint calibration and validation activities or integration of local in-situ systems to enhance the quality of data and service products. It is important to exploit the added value of integration of EO observation technologies (both satellite, airborne and ground based) with positioning ones, and ICT (enhancing new frontiers opened by cloud computing) from international partner countries through the development of applications, and encourage their insertion into the market.

The choice of EO application is left to the proposer.

Applicants are advised to consult further information on the availability of Copernicus Sentinel Data, access to Copernicus Contributing Mission data, as well as issues recommended to be detailed in the proposals via the Commission's Copernicus website^[1].

For proposals under this topic:

- Participation of at least one partner from a country that has signed a Copernicus Cooperation Arrangement^[2] is required;
- Participation of industry, in particular SMEs, is encouraged;
- Involvement of post-graduate scientists, engineers and researchers is encouraged, for example through professional work experience or through fellowships/scholarships as applicable;
- Participation of partners involved in international **GEO Initiatives** is encouraged.

The Commission considers that proposals requesting a contribution from the EU of between EUR 1 and 2 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

This topic contributes to the Horizon 2020 focus area "Digitising and transforming European industry and services".

Expected Impact:

- Establish sustainable supply chains for innovative EO value added products and services with demonstrated commercial value with international client communities;
- Complete integration, based on international standards, into the customer's existing business processes and processing chains, as well as the economic viability of the application is to be demonstrated;
- Enhance the European industry's potential to take advantage of market opportunities and establish leadership in the field and to boost business activity;
- Lead to new or improved products, processes or services on the market that are capable of generating within 3 years after the end of public funding a significant turnover for the participants, and create new jobs;
- Lead to an improved quality of the Copernicus global product, thereby enhancing the stating of Copernicus data and information in a global environment and **GEOSS**.

Cross-cutting Priorities: International cooperation

^[1] <http://www.Copernicus.eu/main/data-access>

^[2] See Copernicus.eu for list of countries concerned

Societal Challenges

Horizon 2020 Pillar:	Societal Challenges
Programme:	Climate action, environment, resource efficiency and raw materials
Call Title:	Building a low-carbon, climate resilient future: climate action in support of the Paris Agreement
Call Identifier:	H2020-LC-CLA-2018-2019-2020
Topic Title:	Human dynamics of climate change
Topic Identifier:	LC-CLA-05-2019
Type of Action:	RIA Research and Innovation action
Deadline(s):	19-02-2019, 04-09-2019 (two-stage)

Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/lc-cla-05-2019.html>

Specific Challenges: As climatic changes increasingly place populations under pressure, human beings are already adapting. However, less developed countries – particularly in **Africa** – are often less resilient to climate change and require the deployment of appropriate support to adaptation, including in the form of bespoke climate services tailored to users' needs. There is some evidence that climate change may already be playing a role in shaping population migration patterns around the world (e.g. **Africa** to Europe). It is important to make use of the wealth of available socio-economic and geophysical data to better understand these patterns in order to develop appropriate policy responses.

Scope:

Actions should address only one of the following sub-topics:

- a. Climate services for **Africa**: Actions should exploit new, relevant climate data made available by Copernicus and other relevant sources (such as **GEOS**) and create dedicated climate services for **Africa** for at least two of the following sectors: water, energy, food security, land use^[1], health and infrastructure. Actions should develop and deliver tools/applications which demonstrate clear end-user engagement, consultation and participation, and which enhance planning and implementation of climate adaptation strategies in **Africa**. Actions should consider activities addressed by other initiatives such as the Global Framework for Climate Services (GFCS), Copernicus, and development cooperation activities, and provide added value. Actions should further consider the **EU-Africa Research and Innovation Partnership** on Climate Change and Sustainable Energy^[2].

- b. Climate and human migration: Actions should identify and analyse drivers relating to climate change that may affect human migration and displacement patterns. Actions should – using a multidisciplinary approach – identify and describe climate parameters, develop analytical methodologies, and demonstrate how these relate to human migration patterns, including the probability of migration/forced displacement and design adaptation solutions that may help in alleviating migration pressures at the source. They should also provide guidelines and policy recommendations for the European Agenda on Migration. Actions may also harness local knowledge and information by engaging with civil society organisations and citizen groups.

For both of the sub-topics, in line with the strategy for EU international cooperation in research and innovation (COM(2012)497), international cooperation is encouraged^[3].

The participation of social sciences and humanities disciplines is encouraged to address the complex challenges of this topic, including challenges associated with relevant gender issues.

The Commission considers that proposals requesting a contribution from the EU of between EUR 5 million and EUR 7 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact:

The project results are expected to contribute to:

- better policy making for climate adaptation in partner countries and Europe;
- supporting international scientific assessments such as the IPCC Assessment Reports;
- stronger adaptive capacity and climate resilience.

Cross-cutting Priorities: International cooperation, Gender, RRI, Socio-economic science and humanities, Open Innovation

^[1] Links may be established with the project(s) resulting from topic SFS-43-2017: Earth observation services for the monitoring of agricultural production in **Africa**.

^[2] COM (2017) 17 final: Joint Communication to the European Parliament and the Council for a renewed impetus of the **Africa**-EU Partnership: see <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017JC0017&from=EN>

^[3] Proposals should pay attention to the special call conditions for this topic.

Horizon 2020 Pillar:	Societal Challenges
Programme:	Climate action, environment, resource efficiency and raw materials
Call Title:	Greening the economy in line with the Sustainable Development Goals (SDGs)
Call Identifier:	H2020-SC5-2018-2019-2020
Topic Title:	Multi-stakeholder dialogue platform to promote nature-based solutions to societal challenges: follow-up project
Topic Identifier:	SC5-23-2019
Type of Action:	CSA Coordination and support action
Deadline(s):	04-09-2019 (single-stage)

Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/sc5-23-2019.html>

Specific Challenges: Nature-based solutions (NBS) have a high – but largely untapped – potential for delivering multiple ecosystem services (such as carbon sequestration, soil and water retention and purification, pollination, increased human well-being...) to address diverse societal challenges with a systemic and innovative approach. An effective and self-sustainable multi-stakeholder platform that fosters dialogue, interactions, knowledge and information sharing, collaboration and think-and-do-tanks among relevant stakeholders is necessary to support the understanding and promote the use of nature-based solutions and speed up market up-take. Stakeholders include science, policy, administration, business (including SMEs), society (including NGOs, CSOs, and citizens as appropriate), public and private investors.

The establishment of such platform is currently being undertaken by ThinkNature^[1], with support from Oppla^[2] and Biodiversa^[3]. ThinkNature is an ongoing CSA funded under SC5 WP 2016 that is due to terminate end 2019. The Oppla portal is developing as the EU NBS knowledge repository, supporting access, sharing and marketing of nature-based solutions knowledge, including from NBS EU-funded projects.

Scope: The action should aim to build upon the achievements of ThinkNature and further develop and consolidate an effective and self-sustainable EU community of innovators and practitioners and think-and-do-tanks to promote the design, development, replication and upscaling of nature-based solutions at the European and global scale.

The action should, on the basis of continuous and strategically driven stakeholder dialogue, exchanges of practices and experiences and sharing of expertise related to the various social, economic, financial, environmental, educational, institutional, regulatory and cultural NBS-relevant aspects, across multiple scales (local, regional, national and EU):

- further develop and maintain an online open source stakeholders platform that would facilitate the interactions;
- develop a business plan to make such a platform financially self-sustainable;
- identify specific domains and priorities where further research and innovation is needed for marketable nature-based solutions;
- establish NBS hubs and organize communication and outreach campaigns and regular events in all Member States, involving, as appropriate, international networks and environmental communicators and targeting all relevant stakeholders involved, including the scientific community, in the overall NBS value chain;
- facilitate the clustering of current and upcoming EU-funded nature-based solutions relevant research and innovation projects and other EU or national initiatives;
- assist the European Commission in organizing science-policy workshops and drafting briefings and contributions to EU policies related to nature, environment, climate, water, etc. Appropriate links with other relevant policy platforms such as Climate-ADAPT^[4] and BISE^[5] should be ensured;
- develop guidelines for practitioners with state-of-the-art NBS design practices, protocols and standards;
- facilitate the development and mainstreaming of NBS-related professional training and the inclusion of NBS in high-education curricula (as, for example, NBS for architects and urban planners; ecosystem services for engineers, etc.), and Masters;
- promote international cooperation with key strategic international partners^[6];
- proposals shall address all of the above points. The platform must ensure that all evidence, data and information will be accessible through the Oppla portal.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 2 million for a period of up to 4 years would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact:

Actions are expected to lead to:

- effective and self-sustainable EU community of innovators, practitioners and think-and-do-tanks; identification of knowledge gaps and user needs; assessment of market potential for NBS;
- enhanced awareness among public authorities, the private sector and society at large about the advantages and any risks of NBS and therefore a wider use of these solutions as opposed to or in combination with grey infrastructure;
- improved cooperation and synergies with key strategic international partners and the emergence of a global market for nature-based solutions.

Delegation Exception Footnote: This activity directly aimed at supporting the development and implementation of evidence base for R&I policies and supporting various groups of stakeholders is excluded from the delegation to EASME and will be implemented by the Commission services.

[1] <https://www.think-nature.eu/>

[2] <https://oppla.eu/> Developed by FP7-funded projects OPERAs and OpenNESS for knowledge on ecosystem services, natural capital and nature-based solutions;

[3] <http://www.biodiversa.org/> Funded under the Horizon 2020 ERA-NET COFUND scheme

[4] <http://climate-adapt.eea.europa.eu/>

[5] <https://biodiversity.europa.eu/>

[6] Such as CELAC countries, China, **Belmont Forum**, South East Asia

Horizon 2020 Pillar: Societal Challenges

Programme: Europe in a changing world – Inclusive, innovative and reflective societies

Call Title: MIGRATION

Call Identifier: H2020-SC6-MIGRATION-2018-2019-2020

Topic Title: International protection of refugees in a comparative perspective

Topic Identifier: MIGRATION-07-2019

Type of Action: RIA Research and Innovation action

Deadline(s): 14-03-2019 (single-stage)

Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/migration-07-2019.html>

Specific Challenges: While policy areas such as development or trade benefit from global governance structures, a global refugee governance regime is still in its infancy. The challenge is to safeguard international law standards on the treatment of asylum seekers and internally displaced persons, address imbalances in sharing responsibilities, and ensure the EU plays a key role globally while also aligning the reform of its common asylum system to feed into the emerging regime of global asylum governance.

Scope: Proposals should examine the processes and content of the emerging international protection system, e.g. following the United Nations commitment for the adoption of a global asylum compact as well as its implementation in comparative perspective, with special focus on the EU's role and engagement. They should examine how sharing responsibilities, transferring skills and capabilities, can be organised as well as the compatibility of the emerging global asylum regime with international law, including international conventions on refugees and human rights. The EU arrangements with refugees' origin and transit countries should be assessed. Proposals should advise on the future development of asylum policies and their implementation both globally and within the EU, also addressing issues around both gender issues and equality. They should include comparative assessment of existing legal responses to protection needs and explore future options and their compatibility with international refugee law, with a view to also identifying durable solutions. Particular attention should be paid to the protection of vulnerable groups such as minors, unaccompanied or with their families, including from all forms of abuse and exploitation, and women and girls from gender-based violence and

discrimination. International cooperation is encouraged, in particular with Canada, Brazil, **South Africa** and Jordan, as well as relevant international organisations. Furthermore, the involvement of refugee and migrant scientists and scholars from relevant disciplines is strongly encouraged.

The Commission considers that proposals requesting a contribution from the EU in the order of EUR 3 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact: The action will significantly advance the knowledge base on global migration and asylum governance by evaluating the process, discourses and outcomes of the planned compact on refugees. The action will assist European policymakers with identifying suitable strategies for engagement in the process leading to the implementation of the global refugee compact. They will also inform the EU's reform process of its common asylum system.

Cross-cutting Priorities: International cooperation, Gender

Horizon 2020 Pillar:	Societal Challenges
Programme:	Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy
Call Title:	Blue Growth
Call Identifier:	H2020-BG-2018-2020
Topic Title:	All Atlantic Ocean Research Alliance Flagship
Topic Identifier:	BG-08-2018-2019
Type of Action:	RIA Research and Innovation action
Deadline(s):	23-01-2019, 04-09-2019 (two-stage)

Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/bg-08-2018-2019.html>

Specific Challenges: The Atlantic Ocean is an invaluable shared resource. The societal value of its blue economy is enormous for countries located on its shores. There are however, still considerable gaps in our knowledge and understanding of processes related to this ocean especially with regard to its chemistry, ecology, biodiversity, impacts of climate and the potential for the sustainable exploitation of its natural resources including aquaculture. The Atlantic Ocean is subject to a range of pressures, such as impacts related to climate change, pollution, fishing above sustainable levels, mining and coastal eutrophication. Both remote and local forces play a role in these changes and it is necessary to consider local, regional and basin-wide drivers and factors to understand, predict and adapt to change. Furthermore, the potential of seafood to reduce food and nutrition insecurity calls for collaboration at international level. Having already demonstrated how successful research cooperation can be in the North Atlantic Ocean^[1] in tackling some of these issues, the objective now is to take a systemic approach to tackle the scientific and socio-economic challenges and to move towards a basin-wide cooperation from Antarctica to the Arctic, through enhanced cooperation with countries bordering the South Atlantic, notably Brazil and **South Africa**^[2].

Scope: The actions shall aim at understanding and sustainably managing the Atlantic Ocean as a whole, through a large-scale basin effort involving both the northern and the southern parts of this ocean and its interlinks with the adjacent areas. In order to achieve this, it is necessary to bring together and systematically connect scientists, stakeholders, data, knowledge, expertise, capacities, and resources. This is only feasible through the synergistic cooperation among the bordering countries. With the development of a South Atlantic Ocean Science Plan^[3]

focusing on the challenges and research needs of the South Atlantic Ocean, which are also interconnected with the challenges and research needs of the North Atlantic Ocean, this cooperation can converge towards the implementation of a systemic approach by linking and jointly tackling the climate-food-ocean challenges. Overall, activities shall contribute to upscale cooperation along and across the Atlantic Ocean and the creation of long-term partnerships building on on-going initiatives such as the All Atlantic Ocean Research Alliance. In order to realise this, proposals shall address one of the following sub-topics:

[B] 2018-2019- Assessing the status of Atlantic marine ecosystems. Activities shall enhance the knowledge on the status and dynamics of Atlantic marine ecosystems, quantifying main drivers of short and long-term change, examine the interactions between different stressors, including climate change, and the role of cumulative impacts on ecosystem functioning and associated ecosystem services. They shall also contribute to improve the sustainability of the exploitation of the marine resources, through extending climate based predictions as well as testing for so-called tipping points, regimes shifts or more advanced assessments of ecosystem stability. Activities may entail 3D-mapping of the water column and high resolution seafloor mapping of selected large areas (including relevant marine ecosystems), considering the feasibility/safety and sustainability of these maritime operations. Mapping shall include variables of a different nature, such as physical, biological, chemical, habitats, seafloor characteristics and integrity (including in relation to climate change) and may require the development of new technologies. Furthermore, demonstration of cost-effective approaches to management and processing of the large quantities of data, better coordinated data sharing and operability, as well as the development of improved forecasting capabilities of stressors, tipping points, recovery and changes in ecosystem state will be important. The participation of industrial and regional stakeholders is encouraged to help define ecosystem-requirements. All data collected by the projects (including in international waters) shall be made open access by the end of the project. The choices of the selected areas need to be justified. Actions shall include capacity building and training with/in countries bordering the South and Tropical Atlantic Ocean. Links with ongoing initiatives such as EMODNet should be considered. The activities will be carried out in close co-operation with relevant Commission services (Directorate-General for Research and Innovation), ensuring coherence with related policy initiatives.

[C] 2018-2019- New value chains for aquaculture^[4] production. Activities shall explore new species, products and/or processes for aquaculture production (including algae). They shall consider existing, emerging and potential markets, take into consideration sound cost-effective production methods, sustainability and profitability. Consideration shall be given to the design of Internet of Things (IoT) approaches in the development of innovative production technologies, including new/improved biosensors, the circularity of the processes with the objective of zero waste and consider consumers' concerns and demands. The development of monitoring programmes for risk

assessment including emerging pollutants and climate change resilience and mitigation will be essential. Activities shall contribute to reduce risks to human health. They will also foster higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors. Finally, it will be important to reinforce capacity building by aligning training programmes, including through industrial apprenticeship opportunities and networking along and across the Atlantic Ocean, in particular, but not exclusively, with **South Africa** and Brazil and other Atlantic Ocean coastal states. Reinforcing links between industrial partners is also crucial to exchange best practices and to facilitate the creation of business opportunities, therefore the SME participation in this topic is encouraged.

The Commission considers that proposals requesting a contribution from the EU respectively in the range of EUR 9 million for sub-topic [B] (Research and Innovation Action) and EUR 8 million for sub-topic [C] (Research and Innovation Action) would allow this specific challenge to be adequately addressed. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts.

Consortia submitting proposals to this Flagship are encouraged to include participants from countries bordering the Atlantic Ocean (North and South) as their active participation is key to the success of the proposals.

Proposals shall include a task to cluster with other projects financed under this topic and – if possible – with other relevant projects in the field funded by Horizon 2020. Possible links with related research and innovation activities supported by the **Belmont Forum**^[5] on Ocean sustainability shall also be considered.

Expected Impact: In order to contribute to the implementation of the EU Integrated Maritime Policy and its related Atlantic Strategy and Action Plan, the EU Blue Growth Strategy, the EU Marine Strategy Framework Directive, the EU Maritime Spatial Planning Directive, the EU International Ocean Governance Communication, the EU Communication for a Sustainable European Future, the UN SDGs, the EU Food 2030^[6] process for food and nutrition security, as well as the Atlantic Ocean Research Alliance, activities shall:

In the short term:

- Contribute to the implementation of the EU-Brazil-**South Africa Belém Statement** on Atlantic Ocean Research and Innovation cooperation (sub-topics B & C)^[7].
- Contribute to create the right conditions for the development of better and accurate monitoring, modelling, planning, management and prediction capacities in the whole Atlantic (sub-topic B).
- Develop ecosystem assessments and forecasts as well as a deeper understanding of vulnerabilities and risk including those relating to the global climate system and the impacts of climate change (sub-topic B).

- Increase the competitiveness of the EU's blue economy by developing new technologies to service societal needs and new value chains (sub-topics B & C).
- Create a lasting partnership on sustainable aquaculture business opportunities for industrial partnerships between Europe and countries bordering the South Atlantic (sub-topic C).
- Contribute to creating sustainable food production systems and implementing resilient aquaculture practices that increase productivity and production, help maintain healthy and productive aquatic ecosystems and strengthen capacity for adaptation to climate change (UN SDG 2) (sub-topic C).
- Contribute to the sustainable management and protection of marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans (UN SDG 14) (sub-topic B).

In the medium term:

- Contribute to the development of ecosystem services to ensure the long-term sustainable management of marine resources (UN SDG 14) (sub-topic B).
- Ensure that nutritious and safe food is available, accessible and affordable for all while conserving natural resources and contributing to climate change mitigation (UN SDG 2 and SDG 13) (sub-topic C).
- Contribute to achieving a zero waste European aquaculture system by strengthening the sustainability, resilience and robustness of industry, by 2030 (sub-topic C).
- Increase EU leadership in ocean technology developments (sub-topics B & C).
- Increase consumers' trust and confidence in seafood products (sub-topic C).
- Create a well trained workforce able to tackle the multi-sectoral, multi-disciplinary challenges and opportunities of the Atlantic Ocean (sub-topic C).
- Improve the professional skills and competences of those working and being trained to work within the blue economy.
- Contribute to policymaking in research, innovation and technology (sub-topics B & C).

Cross-cutting Priorities: Socio-economic science and humanities, Blue Growth, International cooperation

^[1] EU-Canada-US Galway Statement on Atlantic Ocean Cooperation, May 2013

^[2] EU-Brazil-**South Africa Belém Statement** on Atlantic Research and Innovation Cooperation, July 2017

^[3] South-South Framework for Scientific and Technical Cooperation in the South and Tropical Atlantic and Southern Ocean

^[4] In this context, 'Aquaculture' comprises the farming of aquatic organisms (including fish, shellfish, algae and aquatic plants) in all types of controlled or natural water environments (fresh, brackish and seawater).

^[5] <https://www.belmontforum.org/>

^[6] European Research and Innovation for Food and Nutrition Security, SWD(2016)319.
<http://ec.europa.eu/transparency/regdoc/rep/10102/2016/EN/SWD-2016-319-F1-EN-MAIN.PDF>

^[7] EU-Brazil-**South Africa Belém Statement** on Atlantic Research and Innovation Cooperation, July 2017

Horizon 2020 Pillar:	Societal Challenges
Programme:	Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy
Call Title:	Sustainable Food Security
Call Identifier:	H2020-SFS-2018-2020
Topic Title:	European Joint Programme on agricultural soil management
Topic Identifier:	LC-SFS-20-2019
Type of Action:	COFUND-EJP COFUND (European Joint Programme)
Deadline(s):	23-01-2019 (single-stage)

Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/lc-sfs-20-2019.html>

Specific Challenges: Good agriculture soil management^[1] contributes to food security, climate change mitigation/adaptation and ecosystem services. Preserving and increasing fertility of soils, not least through their organic content and water retaining capacity, increases agricultural production. Soils and their carbon, nitrogen and phosphorus content are also important for climate change mitigation. A number of good soil management practices have been developed to deal with some of the challenges; however serious knowledge gaps exist, e.g. on the characteristics of soils in various regions of Europe, the factors influencing their fertility functions including their capacity to store carbon, depending on different climate and environment conditions. The European Union is committed to addressing climate change with ambitious targets. An integrated framework for soil research in Europe is required to overcome current fragmentation and unleash the potential of agricultural soils to contribute to climate change mitigation/adaptation, while preserving or increasing agricultural functions.

Scope: The European Joint Programme will boost soil research with main emphasis on agricultural soil management and its contribution to climate change mitigation and adaptation. The aim is to construct a sustainable framework for an integrated community of research groups working on related aspects of agricultural soil management^[2]. The activities should look at how management of agricultural soils can reduce degradation of land and soils (in particular soil erosion and loss of organic matter), preserve and increase fertility of soils and how the processes related to organic content and water retaining capacity can support mitigation and adaptation to climate change. The EJP will evaluate and foster implementation of novel technologies for soil management and carbon sequestration. The aim of the EJP is also to look for synergies between different

approaches used in Europe for farm level accounting of emissions and removals from agricultural activities and particularly of carbon storage. In doing so, activities will contribute to improving inventories, measurements, reporting and accounting activities at different scales. Sustainable agricultural productivity and environmental aspects will also be targeted in connection with climate change mitigation and adaptation, so that optimisation of land management is ensured.

The European Joint Programme will include joint programming and execution of research and other joint integrative activities such as education and training (e.g. short-term missions, workshops), knowledge management, access to experimental facilities and databases, including also harmonisation, standardisation. Farmers, landowners and other stakeholders should be included in research activities as appropriate in the spirit with the multi-actor approach^[3].

State-of-art technologies for mapping and soil sampling and analysis (physical, chemical and biological parameters) should be explored for wider and simple use at various levels. In return, by e.g. developing new ICT tools, this could help farmers to protect and manage soils in line with current scientific understanding of processes. The EJP should also facilitate sampling and further development of LUCAS^[4] –European Soil Database as well support EU contribution to global soil mapping activities.

Participating legal entities must have research funding and/or management responsibilities in the field of agriculture soil management.

The proposal should include a five-year roadmap describing the key priorities and governance processes as well as the first annual work plan.

The acquired knowledge should support policy making in the domain of agricultural soil management and related areas, such as agriculture, climate and environment, and when feasible and appropriate knowledge exchange between science and practice for better agricultural soil management by farmers should be envisaged.

The activities will need to be coordinated as appropriate with other international soil related activities under the United Nations umbrella among them the **Global Soil Partnership** and more particularly with European Soil Partnership node; with **The Global Research Alliance on Agricultural Greenhouse Gases**; Horizon 2020 project CIRCASA^[5]; 4% Initiative: soils for food security and climate; Joint Programming Initiatives (FACCE, CLIMATE); the **Belmont Forum** and soil activities coordinated by the European Commission Joint Research Centre ^[6] when relevant and appropriate. The work of the EJP will also support a number of policies: the Common Agricultural Policy, Climate Change related policy and relevant environmental policies, in particular the implementation of the EU Soil Thematic Strategy^[7].

Financial support provided by the participants to third parties is one of the aims of this action and, in order to achieve the objectives of the action, the 60 000 EUR threshold provided for in Article 137(1)(c) of the Financial Regulation N°966/2012 and Article 210(a) of the Rules of Application Regulation N°1268/2012 can be exceeded.

Considering the budget available, the scope covered and the potential entities for the EJP, the Commission considers that an EU contribution to a maximum 50% of the total eligible costs of the action or up to 40 million EUR would allow this specific challenge to be addressed appropriately.

Expected Impact: The project will lead to significant long term alignment and implementation of soil-related research strategies and activities at national and EU level by:

- fostering understanding of soil management and its influence on climate mitigation and adaptation, sustainable agricultural production and environment;
- understanding how soil carbon sequestration can contribute to climate change mitigation at regional level including accounting for carbon;
- strengthening scientific capacities and cooperation across Europe including training of young soil scientists;
- Supporting harmonised European soil information, including for international reporting;
- fostering the uptake of soil management practices which are conducive to climate change adaptation and mitigation;
- developing region-specific fertilisation practices considering the local soil, water and pedo-climatic conditions;

In the long term, the programme will strengthen the role of the farming sector as a steward of land and soil resources. It will increase its capacity to adapt to climate change and contribute to mitigation and carbon sequestration.

^[1] Soil management includes: soil conservation, soil fertility and soil biodiversity.

^[2] Agro-forestry is included in the topic.

^[3] See definition of the 'multi-actor approach' in the introduction of this Work Programme part.

^[4] Land use/cover area frame statistical survey, abbreviated as LUCAS, is a European field survey program funded and executed by Eurostat http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Land_use/cover_area_frame_survey_%28LUCAS%29

^[5] Project selected under SFS-50-2017 topic

^[6] European Soil Data Centre; EIONET - European Environment Information and Observation Network – soil network

^[7] COM(2006)231

Horizon 2020 Pillar:	Societal Challenges
Programme:	Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy
Call Title:	Sustainable Food Security
Call Identifier:	H2020-SFS-2018-2020
Topic Title:	Food Systems Africa
Topic Identifier:	LC-SFS-34-2019
Type of Action:	RIA Research and Innovation action
Deadline(s):	23-01-2019, 04-09-2019 (two-stage)

Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/lc-sfs-34-2019.html>

Specific Challenges: Nutritional imbalances in both Europe and **Africa** are increasing, characterised by growing diet-related, non-communicable diseases and persistent under-nutrition. The UN projects that the global population will increase from 7 billion to more than 9 billion by 2050^[1], of which the majority is expected to occur in **Africa**. To anticipate such population growth and challenges associated with enhanced climate change, agricultural systems need to become more sustainable and better linked to nutrition performance by strengthening the agro-biodiversity of resilient cropping systems, thereby increasing the range of food products for a balanced, healthy diet. Furthermore, resource-efficient, resilient food value chains need to be developed to deliver sufficient, safe, affordable and nutritious food to local consumers and for high value global markets. **Africa** has a wealth of local varieties, food intelligence and healthy **African** diets including plant based proteins, which are currently largely untapped and not reaching the market, neither in **African** cities nor in Europe.

Scope: Proposals shall assess and deliver better nutrition performance of **African** farming systems, strengthening the agro-biodiversity (and integrated aquaculture systems) and food diversity. They shall address innovative approaches in local food systems while covering technological, food safety, social and gender issues^[2], and address sustainable postharvest technologies, including bio-based packaging, to reduce food waste along the post-harvest/consumer chain and plastic littering. Empowerment of small farmers (including aquafarmers) and processors benefitting rural areas leading to diversity of diets and improving food identity is essential. Food supply chains (conventional and organic) for both local urban markets and high value global markets shall be targeted. Proposals need to ensure the commitment and participation of a

variety of partners established in the EU and in **Africa**, and shall establish relevant links with other projects involved in the **EU-Africa Research and Innovation Partnership** on Food and Nutrition Security & Sustainable Agriculture (FNSSA). Proposals should include a task to cluster with other projects involved in the **EU-Africa R&I Partnership on FNSSA** and with the cooperation platform established under SFS-33-2018.

The Commission considers that proposals following a multi-actor approach including civil society organisations requesting a contribution from the EU of the order of EUR 7 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact: In the framework of SDG no 1, 2, 3, 8, 10, 12, 13, 15 and 17, the **EU-Africa R&I Partnership on FNSSA**^[3], the EU's Bioeconomy Strategy 2012, and the FOOD 2030 SWD^[4], proposals shall describe how projects can contribute to:

- Improved food systems resulting in sustainable, healthy **African** diets (comparable to the Mediterranean diet) that on the short term are to become mainstream in 10 **African** cities;
- Empowerment of small farmers (including aquafarmers) combined with sustainable growth of food chain operators (SMEs) in rural areas in **Africa**, both for internal markets and export;
- New market opportunities for novel food products, tools and processes applicable in **Africa** that are taking into account food safety issues across the entire food value chain (e.g. improved food storage under mycotoxins free conditions) and reduce food waste;
- Significant reduction of malnutrition in **Africa** and particularly in relation to children, including those within the first 1,000 days of life, by implementing nutritional recommendations (proportion/figures to be specified in the proposals as well as reflections on specific food strategies for crisis and civil war situations);
- Major progress towards the establishment of the **EU-Africa Research and Innovation Partnership on FNSSA** and impact at local level;
- Development and implementation of pilot innovation actions for the benefit of **African** and European consumers at TRL 4-5.

Cross-cutting Priorities: RRI, Blue Growth, Gender, Socio-economic science and humanities, International cooperation

^[1] <http://www.un.org/en/development/desa/news/population/2015-report.html>

^[2] Applicants may be interested in a separate but connected call topic on " Implementation research for maternal and child health" under Societal Challenge 1.

^[3] Joint communication to the EP and Council for a renewed impetus to the **Africa-EU Partnership**, JOIN (2017) 17

^[4] European Research and Innovation for Food and Nutrition Security, SWD(2016)319.
<http://ec.europa.eu/transparency/regdoc/rep/10102/2016/EN/SWD-2016-319-F1-EN-MAIN.PDF>

Horizon 2020 Pillar:	Societal Challenges
Programme:	Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy
Call Title:	Sustainable Food Security
Call Identifier:	H2020-SFS-2018-2020
Topic Title:	A vaccine against African swine fever
Topic Identifier:	SFS-12-2019
Type of Action:	IA Innovation action
Deadline(s):	23-01-2019 (single-stage)

Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/sfs-12-2019.html>

Specific Challenges: **African** swine fever (ASF) is a devastating viral disease of swine which is endemic in **Africa** and has been present in Europe for several years, after its introduction from Trans-Caucasian countries. It is a transmissible disease that has the potential for very serious and rapid spread, irrespective of national borders. It has a serious socio-economic impact on farming sector and is of major importance in the international trade of animals and animal products. While in the EU, strict control measures including in particular biosecurity, culling of infected pigs, killing of wild-boars, have so far managed to contain the spread of the disease, restrictions on farming and trade remain. The threat is permanent (including incursion of exotic strains from endemic countries) and concerns are raised on the possibility to eradicate the disease without vaccination.

No vaccine is currently available and the development of effective and safe ASF vaccines is urgent as an additional tool to re-inforce control and eradication strategies currently in place. For details of potential strategies and possible research steps for vaccine development, see the blueprint and roadmap^[1] produced by the EU Reference Laboratory for ASF.

Scope: The research proposals will address the necessary steps for developing safe vaccines against ASF for domestic pigs and wild boars. Proposals should build on past or ongoing EU funded research and on current knowledge of the characteristics of the viruses and research gaps, with the overall purpose of developing pilot vaccines and their companion DIVA test. Activities should address vaccination as part of a control strategy in different scenarios and should consider the potential impact on animal production and trade. Particular focus should be put on the European situation and the role of wild boars in the spread of the disease, so the proposals should address at least the ASF viruses

circulating in Europe, and may also cover all or the most relevant exotic ones. Wild fauna other than wild boars, that are involved in the epidemiology and for which vaccination may help control the disease, may also be addressed. Participation by non-EU regions particularly affected by ASF is recommended.

The selected project should take into consideration the EU animal health regulatory framework, and follow the policies and contribute to the objectives of the STAR-IDAZ international research consortium^[2].

Proposals should fall under the concept of the 'multi-actor approach'^[3] and be based on the active participation of stakeholders from research, animal health authorities and the farming and business sectors. Involvement of the pharmaceutical industry is highly recommended.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 10 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts.

Expected Impact:

- Pilot ASF vaccines and their companion DIVA tests for the possible prevention and/or eradication of the disease in domestic pigs and wild boars, at target TRL 5-6;
- Contribution to international cooperation on animal health research, potentially reducing the threats from the introduction of exotic ASF virus strains in the EU and reducing the burden of ASF in countries outside the EU.
- More generally, the selected project will contribute to a reduction of economic losses by the farming sectors and contribute to healthy livestock production. It will contribute to reduce the sanitary barriers to trade in swine and products therefrom.

Cross-cutting Priorities: International cooperation, RRI

^[1] http://ec.europa.eu/food/animals/animal-diseases/control-measures/asf_en#bmrp

^[2] <http://www.star-idaz.net/>

^[3] See definition of the 'multi-actor approach' in the introduction to this Work Programme part.

Horizon 2020 Pillar:	Societal Challenges
Programme:	Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy
Call Title:	Sustainable Food Security
Call Identifier:	H2020-SFS-2018-2020
Topic Title:	Sustainable Intensification in Africa
Topic Identifier:	SFS-35-2019-2020
Type of Action:	RIA Research and Innovation action
Deadline(s):	23-01-2019, 04-09-2019 (two-stage)

Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/sfs-35-2019-2020.html>

Specific Challenges: **African** and European agriculture share the common challenge of moving towards more sustainable ways of agricultural production. Both regions aim to ensure food production and reduce the environmental impact of agricultural activities in the face of climate change, more unpredictable water supply and increased degradation of (land) resources. Systems approaches are needed to optimise agricultural productivity as well as the delivery of ecosystem services.

Scope:

- A. [2019]: **African** Farming Systems, sustainable intensification pathways (RIA)
- Activities shall seek to implement and test systems approaches for the sustainable intensification of primary production in **Africa**, taking into account its long term economic support to local communities. The proposed research should address the improvement of agricultural practices by tackling land and water management (including land degradation where appropriate) plant protection and pest control (including integrated pest management) and sustainable soil management (including its quality and nutrients uptake) for sustainable intensification. The importance of traditional agricultural practices like grazing methods, livestock, crops and legumes should be duly reflected. Emphasis should be given to farming systems that support restoration of land, increase land productivity and/or bring land back into production. Proper attention should be given to the importance of gender in **African** agricultural production.
- For proper analysis, a range of different systems should be included (e.g. organic farming, agroecology, agroforestry). While presenting results the

importance of scale of the analysis and its applicability should be taken into account. The analysed systems should include socio-economic aspects, analyse its resilience to climate change, farm income and where pertinent also cultural aspects of farming. Preference will be given to proposals focusing on specific regions of **Africa**.

Proposals fall under the concept of the 'multi-actor approach'^[1]. Proposals should include a task to cluster with other projects financed under the topic and with the cooperation platform established under SFS-33-2018.

B.[2019]: Soil system for **Africa** (RIA)

For the implementation of the **EU-Africa R&I Partnership on FNSSA** a comparable and open database on agricultural soils information is needed. It is expected that a minimum of 20 000 sampling points will be sufficient to create a database with standard soil properties (a similar procedure to the one used for LUCAS^[2] - European database - should be developed).

The soil samples will only be taken from the agricultural land and analysed by one laboratory for the: physical and chemical parameters. As a minimum the following parameters should be analysed: particle size (clay, silt and sand content), pH (acidity and alkalinity), organic carbon, carbonate content, phosphorus content, total nitrogen content and extractable potassium content. In addition an analysis of heavy metal content and other chemical residues in selected sub-samples might be proposed in order to assess the risk of soil contamination. Based on the analysed samples a set of indicators for monitoring of state of land soil, water and ecosystem should be proposed. Other physical, chemical and biological parameters for soil test might be proposed along with the specific indicators for which they will be used. The indicators should be developed as a part of the long-term implementation of FNSSA and its contribution to the SDGs discussion. Presentation of data should be provided in an open data and map viewer and should include four aspect pictures of where the soil sample was taken and should link with open earth data from e.g. the Copernicus programme and the project funded under H2020 topic SFS-43-2017^[3]. It is expected that the open database will contain at least a minimum of 20 000 soil sample analysed by one laboratory. The final methodology should be developed in cooperation with and validated by the Joint Research Centre and the **Global Soil Partnership** – ITPS **African** members.

Proposals should include a task to cluster with other projects financed under the topic and with the cooperation platform established under SFS-33-2018.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 7.5 million for sub-topic A and EUR 5 million for sub-topic B would allow this specific challenge to be addressed properly. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact:

In the short to medium term:

- Boost the impact of **Africa**-EU joint research at local level by addressing the entire value-chain, strengthening capacity-building and focusing on

demonstration projects and pilot actions to bring research and innovation results to the users (sub-topic A);

- Provide simple tools and solutions for preserving and increasing natural resources of specific agro-system (sub-topic A);
- Identification of methods and tools for improving soil condition for water retention, increase in nutrient and organic matter (sub-topic A);
- Proposed methods and solutions for different farming systems should include potential of transferability and scale at which solution can be implemented (sub-topic A).
- Solutions and tools for increasing farm income within sustainability of long term farming (sub-topic A);
- Based on the soil sample analysis, provide a set of key indicators for soil assessment in **Africa** (sub-topic B).

In the long term: for sub-topic A - improve agricultural production potential and income of farmers and for sub-topic B- provide an open soil dataset with a set of key indicators with methodology for which soil samples and the time line of indicators can be independently repeated in support of monitoring of soil and land degradation. The set of indicators should as much as possible support the relevant SDGs implementation discussion.

Delegation Exception Footnote: It is expected that this topic will continue in 2020

Cross-cutting Priorities: Gender, Socio-economic science and humanities, International cooperation, RRI

^[1] See definition of the 'multi-actor approach' in the introduction to this Work Programme part.

^[2] Number of publications related to LUCAS soil component can be found under the following link:
<http://esdac.jrc.ec.europa.eu/resource-type/documents>

^[3] https://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-food_en.pdf

Horizon 2020 Pillar:	Societal Challenges
Programme:	Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy
Call Title:	Blue Growth
Call Identifier:	H2020-BG-2018-2020
Topic Title:	The Future of Seas and Oceans Flagship Initiative
Topic Identifier:	BG-07-2019-2020
Type of Action:	IA Innovation action
Deadline(s):	23-01-2019 (single-stage)

Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/bg-07-2019-2020.html>

Specific Challenges: Our future is intimately linked to the future of the seas, oceans and coasts. The seas, oceans and coasts provide multiple ecosystem services and a wealth of resources, influence climate and provide many economic opportunities. To fully profit from the seas and oceans also in the future, we have to preserve those valuable resources and ensure that their exploitation is sustainable. Furthermore, without appropriate ocean observations for forecasting and for the protection of property and human activities, the global economy would lose hundreds of billions of euros annually. For this, we need to have the technologies for observations, integrated ocean observing systems, data management systems, and appropriate models and services. This action will contribute to make ocean observations and data management in European seas and the Atlantic Ocean fit for the future, in line with the G7 Future of the Oceans Initiative (Tsukuba Communiqué of the G7 Science Ministers^[1]). It will also support the Collaborative Research Action on Oceans of the **Belmont Forum**^[2] and the International Ocean Governance Communication^[3]. Similarly, ocean observation data must be available to effectively address local, national and global challenges such as the forecasting of ocean conditions and climate change, to take stock of biomass and biodiversity, to mitigate the impact of climate change and ocean acidification, to ensure food security and food safety (also in fresh water), and to contribute to the UN 2030 Sustainable Development Agenda, notably UN SDGs 2, 13, 14 and 15, and monitoring their targets for 2020 and 2025.

Scope: Proposals shall address one of the following sub-topics: blue cloud services, or ocean observations and forecasting^[4], or technologies for observations (in 2020). Actions shall demonstrate integration, capacity and (scientific, economic etc)

potential. They shall complement and build on existing observation tools and systems such as EuroGOOS/EOOS, IOOS, **GEO/GEOS**, COPERNICUS Marine Service or EMODnet, European research infrastructures such as Euro-Argo ERIC and EMSO ERIC as well as funded H2020 projects such as SeaDataCloud^[5]. The interdisciplinary and cross-sectorial nature of the proposal should also apply to training activities improving the professional skills and competencies of workers and supporting the creation of new jobs in the blue economy.

[A] 2019 - Blue Cloud services

Activities shall develop cloud services for applications that are specific for oceans, seas and fresh water bodies and are necessary for marine ecosystems research, conservation, forecasting and innovation in the Blue Economy, building and implementing also Blue Cloud demonstrators as needed. Blue Cloud demonstrators should integrate the Essential Ocean Variables^[6], notably the biological variables, including plankton biomass and diversity. They shall build on ongoing efforts (data, tools, EOSC, including its Pilot Blue Cloud, Data and Information Access Services (DIAS) of COPERNICUS, etc) and take account of the parallel EOSC thematic initiatives being developed – such as the Food Cloud Demonstrator.^[7] The action shall contribute to unlocking the innovation potential of the Blue Cloud, and demonstrate its potential in promoting the blue economy shortening the time span between research and innovation in frontier fields, such as micro-organisms and genomics-enabled innovations^[8]. Activities shall build on existing research infrastructures, take advantage of existing data sharing activities (for example EMODnet), and build on relevant results of past and on-going global, national and EU projects such as SeaDataCloud^[9], BlueBridge, the EOSC Pilot and other relevant projects funded under Horizon 2020, including those under Information and Communication Technologies^[10]. Proposals should include a task to cluster with other projects financed under this topic and – if possible – with other relevant projects in the field funded by Horizon 2020.

[B] 2019 - Observations and forecasting

The action shall contribute to the development and demonstration of the feasibility of the European component of a future Global Ocean Observing System in line with the G7 Tsukuba Communiqué^[11]. It will support activities in the different EU sea basins and the Atlantic Ocean, including the deep sea (below 2000 m), also supporting the needs of food security and safety as outlined in Food 2030^[12]. It will also support the future Collaborative Research Action on Oceans of the **Belmont Forum**^[13]. It will underpin forecasting of the state of the ocean, climate change impact and weather. Activities shall include the demonstration of methods and technologies and their integration in existing systems to collect information on the state and variability of European seas and the Atlantic Ocean, including the impact of stressors and marine litter, and underpin sustainable management of the marine environment and its resources (e.g. the effect of networks of protected areas and other spatial protection measures). They shall take account of the needs deriving from the G7 Future of the Seas and Oceans Initiative^[14], from actions such as the Atlantic Ocean Research Alliance and its related South Atlantic

Flagship, the BLUEMED Initiative, and notably common priorities with the WestMED Initiative^[15] and the EUSAIR^[16], and actions addressing other European regional seas. The inclusion of forecasting tools (for example to protect aquaculture installations or to inform fisheries decision making) shall be an advantage. Similarly, the sustainability of the approach selected, the integration of innovative observations solutions and existing systems, the smooth storage of data in open access data centres and the improvement of the predictive capability shall be demonstrated. Observations and data handling may also include pilots for Essential Ocean Variables (EOVs)^[6] under consideration (for example, nutrients, carbonate, sound and microbes/omics) and variables that are of importance in European regional seas as well as the integration of “augmented” observatories (i.e. genomic-enabled multidisciplinary observatories)^[17]. Flow of information across variables and disciplines shall be included. Data collected shall be in line with agreed standards, be openly available via portals (including EMODnet) and feed into the Pilot Blue Cloud (part of the European Open Science Cloud). International cooperation with Third Country partners is encouraged.

The Commission considers that proposals requesting a contribution from the EU in the range of EUR 6 million for sub-topic [A] and EUR 12 million for sub-topic [B] would allow this specific challenge to be adequately addressed. Nonetheless, this does not preclude the submission and selection of proposals requesting other amounts.

Proposals shall include a task to cluster with other projects financed under this topic and – if possible – with other relevant projects in the field funded by Horizon 2020. Possible links with related research and innovation activities supported by the **Belmont Forum**^[18] on Ocean sustainability shall also be considered.

[C] 2020 - Technologies for observations

Expected Impact: Contributing to the ongoing implementation of EU Policies such as the Bioeconomy Strategy, the Circular Economy Strategy, the European Open Science Cloud Initiative, the Blue Growth Strategy, the Common Fisheries Policy, the Maritime Spatial Planning Directive, the Marine Strategy Framework Directive, the International Ocean Governance Communication and the UN SDGs, activities shall:

In the short term:

- Support the implementation of the Future of the Oceans Initiative of the G7 Science Ministers.
- Deliver cloud services with work starting at technology readiness level (TRL) between 4 and 5 and achieving TRL between 6 and 7 or higher (sub-topic A).
- Achieve at least TRL 6 for ocean observations' systems and tools (sub-topic B).
- Contribute to regularly measure 50% of biological and biogeochemical EOVs, including in the sea below 2000 m, and predict negative impacts of ocean acidification and other selected stressors to take timely prevention, notably to protect aquaculture resources by 2020 (sub-topic B).

- Lay the foundations for and contribute to the sustainable management and protection of marine and coastal ecosystems to avoid significant adverse impacts (UN SDG 14) (sub-topic).

In the medium term:

- Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health (UN SDG 14).
- Improve forecasting of climate change, weather and ocean conditions to protect human activities in support of UN SDG 14 and other relevant goals, and of the objectives of related Conventions (for example, on biodiversity).
- Shorten the time span between research and innovation and foster economic value in the blue economy.
- Improve the professional skills and competences of those working and being trained to work within the blue economy and in the context of open data sharing.
- Contribute to policymaking in research, innovation and technology.
- Increase data sharing and increase integration of data.

Delegation Exception Footnote: This topic is expected to continue in 2020.

Cross-cutting Priorities: Socio-economic science and humanities, International cooperation, Blue Growth

^[1] <http://www8.cao.go.jp/cstp/english/others/20160517communique.pdf>

^[2] **Belmont Forum** <https://www.belmontforum.org/>

^[3] (JOIN(2016) 49)

^[4] All proposals under B) must include an observation part.

^[5] This will also include mutual feedback processes with the Copernicus Programme and other relevant actions such as those undertaken by IOC/IODE or the Marine Environment Monitoring Service.

^[6] http://goosoocean.org/index.php?option=com_content&view=article&id=14&Itemid=114

^[7] See topic DT-SFS-27-2019 under this Work Programme's SC2 Sustainable Food Security Call.

^[8] Following up on the Communication "European Cloud Initiative – Building a competitive data and knowledge economy in Europe", the European Open Science Cloud (EOSC) will soon become an important tool for scientists, citizens and policy makers <https://ec.europa.eu/digital-single-market/en/news/communication-european-cloud-initiative-building-competitive-data-and-knowledge-economy-europe>

^[9] This will also include mutual feedback process with the Copernicus Programme and other relevant actions such as those undertaken by IOC/IODE or the Marine Environment Monitoring Service.

^[10] <https://ec.europa.eu/digital-single-market/en/information-communication-technologies-horizon-2020>

^[11] <http://www.japan.go.jp/g7/userdata/common/data/20160517communique.pdf>

^[12] European Research and Innovation for Food and Nutrition Security, SWD(2016)319. <http://ec.europa.eu/transparency/regdoc/rep/10102/2016/EN/SWD-2016-319-F1-EN-MAIN.PDF>

^[13] <https://www.belmontforum.org/collaborative-research-actions>

^[14] Recommendations 1, 3 and 4 on ocean observations and data sharing

[15] Initiative for the sustainable development of the blue economy in the Western Mediterranean

[16] <http://www.adriatic-ionian.eu/>

[17] The development of such laboratories is not part of this call.

[18] <https://www.belmontforum.org/>

Horizon 2020 Pillar:	Societal Challenges
Programme:	Health, demographic change and wellbeing
Call Title:	Better Health and care, economic growth and sustainable health systems
Call Identifier:	H2020-SC1-BHC-2018-2020
Topic Title:	Support for the functioning of the Global Research Collaboration for Infectious Disease Preparedness (GloPID-R)
Topic Identifier:	SC1-HCO-15-2019
Type of Action:	CSA Coordination and support action
Deadline(s):	16-04-2019 (single-stage)

Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/sc1-hco-15-2019.html>

Specific Challenges: Human health worldwide is increasingly threatened by potential epidemics caused by existing or newly emerging infectious diseases, including those that are resistant to antimicrobial agents. With globalisation, people movement and trade at record highs, pathogens can spread further and faster than ever before in human history. To fight such an international challenge, the EU must think globally and coordinate with international infectious disease research funders.

It is for this reason that the **Global Research Collaboration for Infectious Disease Preparedness (GloPID-R)**^[1] was established in 2013 in response to a request for coordination by the Heads of International Research Organizations. Years on, **GloPID-R** now provides an important platform for infectious disease research funders to work together to better tackle deadly outbreaks such as Ebola, yellow fever, Zika and plague.

In order to save lives, a research response to an epidemic needs to be quick, flexible, comprehensive and global. For this reason, besides directly coordinating research to infectious disease outbreaks **GloPID-R** Members also work to improve the underlying international framework in which this research takes place. Ongoing efforts with the network include in-depth discussions on improved data-sharing during outbreaks, creating links between clinical trial networks, and the inclusion of social science into research responses to public health emergencies.

The above work, and more, requires a large amount of administrative support to **GloPID-R** Members. To maintain **GloPID-R**, facilitate its ongoing and new work

streams, and to increase the effectiveness of the network, further administrative and technical support in the form of a secretariat is warranted.

Scope: Proposals should provide administrative and organisational support to the Chair and Vice Chairs of **GloPID-R**, in close collaboration with the European Commission. This includes, but is not limited to, the organisation of meetings and teleconferences, including basic costs associated therewith as required; note-taking and record-keeping; management of information dissemination and communication between the Chairs, Members, Scientific Advisory Board (SAB), Industry Stakeholder Group (ISG), working groups, enquiries, and outside stakeholders. Proposals should also maintain and expand **GloPID-R**'s external communications activities, such as the website and newsletter, as requested by the Chairs.

Further to administrative and organisational issues, proposals should also provide more technical support on topics requested by the **GloPID-R** Chairs or groups such as the SAB or ISG. This may include preparing briefings, reports, mapping exercises or presentations. Furthermore, proposals shall take the lead in facilitating the work of the SAB, ISG and a number of **GloPID-R** working groups. For these reasons, proposals should have a familiarity with research preparedness and responses to infectious disease outbreaks, as well as the ability to facilitate and follow-up on discussions between high-level individuals in a professional manner.

Proposals should also provide a high level of adaptability. The **GloPID-R** secretariat primarily supports the work of the Chairs of **GloPID-R**, and should this work alter in scope or direction, remove or add work streams, or otherwise change the activities of the secretariat then it will be expected to have flexibility to change accordingly. In this regard, the selected consortium will be expected to submit an annual work plan to the Commission each year following the annual meeting of **GloPID-R**. This will take into account the conclusions of the annual meeting and will lay out an adapted plan for activities of the secretariat over the following 12 months as a result. Despite this, changes that alter the grant agreement will require approval by the Commission.

The Commission considers that proposals requesting a contribution from the EU of around EUR 1 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. Funding may be complemented at a later date by additional funding from other members of **GloPID-R**.

Expected Impact:

- Effective operation of **GloPID-R** for at least three years.
- Reinforced international cooperation in funding of research in new and emerging infectious diseases, both between for-profit and not-for-profit research funders.
- Improved framework for a rapid and effective research response to prepare for or respond to public health emergencies, in areas such as data sharing, social science, clinical trial networks and others.

- Better communication of the activities of **GloPID-R** members, both as a group and individually, to the research community and other stakeholders.

Cross-cutting Priorities: International cooperation

^[1] **GloPID-R** website: <https://www.GloPID-R.org/>

Horizon 2020 Pillar:	Societal Challenges
Programme:	Smart, green and integrated transport
Call Title:	Building a low-carbon, climate resilient future: Green Vehicles
Call Identifier:	H2020-LC-GV-2018-2019-2020
Topic Title:	InCo flagship on “Urban mobility and sustainable electrification in large urban areas in developing and emerging economies”
Topic Identifier:	LC-GV-05-2019
Type of Action:	IA Innovation action
Deadline(s):	25-04-2019 (single-stage)

Participant Portal Weblink:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/lc-gv-05-2019.html>

Specific Challenges: Climate change, energy security and local air pollution are some of the key questions for the 21st century. Urban areas in developing and emerging countries are major driving factors in growing global energy demand and Greenhouse Gas emissions.

Although cities cover only 2% of the earth's surface, 50% of the world's population lives in cities, but they are responsible for three-quarters of the global energy consumption as well as approximately 80% of the global greenhouse gas emissions. While the trend towards urbanisation and the associated increase of personal and freight transport creates massive challenges, in particular in developing and emerging economies, it also offers the unique opportunity to shape energy use especially in the transport and urban form towards a low carbon pathway. Moving towards sustainable mobility will also help addressing urban congestion, access to jobs and public services, and local air pollution.

This is why urbanisation requires integrated mobility solutions that bring together technology opportunities with local and national policy, including land use and mobility planning. Efficient transport and mobility, based on a balanced mix of public and private transport and dependent on the characteristics of each city, is and will continue to be the backbone of cities' growth and competitiveness.

Whereas environmental issues are very high on urban mobility agendas, the importance of transport in urban social and economic structures is often neglected in discussions. All three aspects of urban sustainability must be treated with equal importance and have to be examined in parallel.

Scope: Actions should bring together European, Asian (e.g. China), CELAC (Community of Latin American and Caribbean States) and **African** research partners, government agencies and urban authorities, private sector and civil society with relevant expertise and competence within the corresponding cooperation framework and foster participatory engagement in urban electrification in order to reduce air pollution and CO2 emissions. All types of vehicle are considered under this topic (powered 2 wheelers, cars, buses, trucks and LDV).

Proposals should address all of the following activities:

- Development of a toolbox for advanced management strategies towards a more efficient private and public electric mobility: E-mobility management strategies, focusing on smart deployment and operation of vehicles, in particular electrified vehicle, to increase mobility and energy efficiency, emission reduction and user acceptance of electrified vehicles
 - A smart and cooperative management of the vehicle in urban operation, (intermodal route planning, ecorouting eco-driving charging and parking infrastructure availability...).
 - Deployment and operation of infrastructure use charging infrastructure (conventional and wireless) and network, availability of parking places. Adaptation and integration of existing/ adapted vehicles of different types if necessary.
 - Efficient integration of the operations of different electrified road public transport, from e-bike to bus rapid transit (e- BRT) including mini-buses, taxi and mobility services on demand through smart navigation and routing, coordinated traffic management, demand-responsive service and dispatching
- Comparative demonstrations activities and pilots in cities will include at least one demonstrator in the following regions: Europe, Asia, **Africa** and CELAC (leading to a minimum of 4 city demonstrators). Demonstrations will involve local partners. Innovative concepts for electrified road public transport (passenger and freight), jointly designed through International Partnerships as a contribution to a wider sustainable mobility concept, from the perspective of a seamless mobility, taking in account the acceptance of users (travellers or freight operator).
- Implementation concepts to scale up the demonstration activities. Evaluation of the relative outputs and accordingly the development of implementation concepts to scale up the demonstration activities and exploration of the sustainable mobility planning in the city transformation process :
 - Sustainable planning of city and transportation infrastructure: link city planning with policy discussion and implementation solutions and city goals and with any Air Quality Plans
 - Dedicated plans for financing solutions, including public and private operations.
 - Regional and international replication conditions to reach out to a larger number of cities and countries

Cooperation and synergies with ongoing activities undertaken with international initiatives such as Decarbonising Transport (International Transport Forum) and

the Urban Electric Mobility Initiative (UN-Habitat) and other joint initiatives of European Member States international cooperation initiatives and the European Commission (e.g. Mobilise Your City) should be sought where appropriate.

In line with the strategy for EU international cooperation in research and innovation^[1], international cooperation is encouraged.

The Commission considers that proposals requesting a contribution from the EU in the range of EUR 15 and 18 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact:

Proposals are expected to contribute to:

- Capability to quantify the potential reduction of greenhouse gas and pollutant emissions as well as traffic congestion, by demonstrating improvements that can be achieved with new urban mobility systems and electrification, for each stakeholder in the value chain (in line with the objectives set by the COP21 and the New Urban Agenda)
- UN's Sustainable Development Goals 11 "Sustainable cities and communities" and 13 "Climate Action"
- Reference models of the mobility system to provide a basis in order to assess the ability to replicate sustainable concepts by demonstrating the short- and long-term benefit for the stakeholders involved, and especially considering the relevant boundary conditions (i.e infrastructure, vehicle, usage needs and patterns, governance, financing schemes, urban organisation, etc) and how the result contributes to key EU policy goals (including climate goals and competitiveness of European industry)
- A basis for strengthening the collaboration of the European Union with Asia (e.g. China, India, etc), Latin America (CELAC) and **Africa**, which also offers both a common starting point for common future legislative efforts, as well a favourable setting for new business opportunities for innovative local and European entrepreneurs.

Cross-cutting Priorities: Open Innovation, Clean Energy, Contractual Public-Private Partnerships (cPPPs), EGVI, RRI, Socio-economic science and humanities, International cooperation

^[1] (COM (2012) 497)