

The present Document is a screening of current Scoping Papers for future H2020 calls. Topics are still draft and under discussion, and are already available online on several sites, among which:

<http://www.eurida-research.com/horizon-2020-news/news-18/index.html>

The selection has been done by seeking for calls focussed either on Brazil, or third countries, or where international cooperation is explicitly indicated as an added value.

Orientations for Horizon 2020 Work Programmes 2016-2017

DRAFT

Marie Skłodowska-Curie Actions		
Topic	Description	Focus
<p>The MSCA funding is focused around five main schemes:</p> <ul style="list-style-type: none"> · Innovative Training Networks (ITN): support for innovative doctoral training of researchers, including joint and industrial doctorates. · Individual Fellowships (IF): support for post-doctoral researchers undertaking mobility, also between the academic and non-academic sector. · Research and Innovation Staff Exchange (RISE): support for international and intersectoral cooperation and transfer of knowledge through the exchange of research and 	<p>MSCA are open to all domains of research and innovation, from basic research up to market take-up and innovation services. Research and innovation fields are chosen freely by the applicants in a fully bottom-up manner. Therefore, the priority setting in MSCA does not concern the content of projects but rather the dimensions associated with R&I career development: skills, mobility, entrepreneurship, intersectoral and international cooperation, interdisciplinary approach.</p> <p>International cooperation is a sine qua non to create synergies, pool the expertise and resources and tackle jointly great challenges. There is also a more intangible human dimension in international cooperation. Mobility of researchers and international exchanges of R&I personnel create tighter collaboration which in turn generates new projects. Given the increasing variety of researchers' careers and the demand for balancing private life with work, short term mobility or split stays in particular may be fruitful and effective. In this respect, the MSCA RISE scheme might be especially relevant.</p> <p>Moreover, continuing the MSCA development of international networks and teams can open new opportunities for further collaboration, broaden the outlook of researchers, and strongly contribute to the development of their personal and professional competences.</p>	<p>International cooperation is a sine qua non in most of MSCA actions and projects.</p>

<p>innovation personnel.</p> <ul style="list-style-type: none"> · Co-funding of regional, national and international programmes (COFUND): support for fellowships at doctoral and post-doctoral level involving mobility. 		
<p>Societal Challenge 5 Climate action, environment, resource efficiency and raw materials</p>		
Topic	Description	Focus
<p>CONTRIBUTION TO CROSS-CUTTING CALL: ‘SMART CITIES AND COMMUNITIES – WITH NATURE-BASED SOLUTIONS’</p> <p>Topic 3: Sustainable urbanisation (2016)</p>	<p>To promote the alignment of R&I agendas and actions in the area of sustainable urbanisation</p> <p>Type of action: ERA-NET co-fund</p>	<p>Strong and lasting alliance with funding agencies of key international partners on R&I actions on sustainable urbanisation - e.g. Brazil</p>
<p>NATURE-BASED SOLUTIONS FOR RESILIENCE</p> <p>Topic 3: Multi-stakeholder dialogue platform (2016)</p>	<p>Establish a broad multi-stakeholder (science, policy, business, society) and multi-level (local, regional, national and EU) platform and launch innovation partnerships for developing and testing improved and innovative nature-based solutions (think-and-do-tank).</p> <p>Type of action: Coordination and support actions</p>	<p>Foster dialogue and collaboration across levels (stakeholders and governance) and with key strategic international partners - e.g. Brazil</p>
<p>WATER</p> <p>Topic 1: Support international cooperation activities on water (2016)*</p>	<p>Create a framework and a permanent dialogue to encourage and stimulate the opening of the Water JPI to international cooperation with key international water R&D programmes and funding institutions, including the support to Sustainable Development Goals.</p> <p>Type of action: Coordination and support action</p>	<p>The opening of Water JPI to third country partners is increasingly raising interest among its members and among third countries-between EU, third countries such as South Africa and</p>

		India, and international fora like the Belmont Forum . (*Brazil is part of Belmont Forum)
CLIMATE SERVICES Topic 6: IPCC-AR5 knowledge gaps in climate-earth system (2016)	To fill key knowledge gaps in the climate-earth system, in order to better quantify the impacts of climate change on human and natural systems and design effective and cost-efficient adaptation and mitigation solutions.	Possible synergy at international level via dedicated Belmont Forum common research agenda. (*Brazil is part of Belmont Forum)
CLIMATE SERVICES Topic 5: Climate services market studies (2016 & 2017)	In order to enable the growth of the whole climate service market, there is a need to analyse and better understand the current nature and scope of both the demand and supply side and identify its potential for growth in Europe and beyond. Issues of international dimension: - defining the European and international climate service market characteristics - systematic assessment of European climate service providers/purveyors operating at national, European and international levels	Focus on international cooperation
CLIMATE SERVICES Topic 7: European platform on climate processes & impacts (2016)	Develop a European platform with the aim of fostering close cooperation among international, EU and nationally funded research actions and related initiatives in the field of climate change processes and impacts	Focus on international cooperation
CLIMATE-SMART EUROPE Sub-topic 2: Climate smart Europe initiative stakeholder platform (2016)	Create mechanisms including a platform of stakeholders that will allow the coordination of R&I activities under this policy initiative, create links and foster collaboration with relevant national and international activities	Focus on international cooperation
CONTRIBUTION TO CROSS-	The EU has committed itself to a resource efficient path. In this context, moving	The project should also

<p>CUTTING CALL: "INDUSTRY 2020 IN THE CIRCULAR ECONOMY"</p> <p>Topic 7: New markets in circular economy and macro-economic and social impacts (2016)</p>	<p>towards a circular economy looks a promising pathway. In parallel, innovation is needed to promote economic competitiveness and create new markets. There are many environmental sectors where applying innovative approaches for promoting the circular economy can be very beneficial. Such sectors include waste, water (including flooding), nature and biodiversity, air quality, soil decontamination; the list is not exhaustive.</p>	<p>elaborate a benchmark between Member States and with a set of performing Third Countries, covering both green and blue growth potentials, with a special focus on sectors like waste and water – and embedding in the analysis the role of digital economy.</p>
<p>CONTRIBUTION TO CROSS-CUTTING CALL: "INDUSTRY 2020 IN THE CIRCULAR ECONOMY"</p> <p>Topic 4: Transformations to sustainability (2016)</p>	<p>To identify and tackle the social transformations needed to make a step change in addressing global environmental challenges and the sustainability of our society and economy.</p> <p>Type of action: ERA-NET co-fund</p>	<p>Alignment of EU Member States' and international partners' research programmes towards the objectives set by the Sustainable Development Goals.</p> <p>This topic is conceived in synergy with the Belmont Forum</p>
<p>RAW MATERIALS</p> <p>Topic 4: Raw materials international cooperation (2016/2017)</p> <p>Sub-topic 2016: International network of raw materials training centres</p>	<p>Proposals should create an international network of training centres including the leading educational and research institutions in third based on specific country capabilities to cover the primary raw materials sectors.</p>	<p>Focus on international cooperation</p>
<p>RAW MATERIALS</p>	<p>Develop a platform of international key experts and stakeholders that would advance the idea of a World Forum on Raw Materials and enhance the</p>	<p>Focus on international cooperation</p>

Topic 5: Support actions for raw materials policy (2016/2017)	international cooperation among G20 Member countries as well as the other third countries active in the mining and other raw materials sectors	
CONTRIBUTION TO CROSS-CUTTING CALL: ‘BLUE GROWTH – DEMONSTRATING AN OCEAN OF OPPORTUNITIES’ Topic 1: Integrated Arctic Observing System (2016)	Climate change is deeply impacting on the sea-ice extension, on ice-sheet melting, on permafrost thawing, and on ocean and land ecosystems. These changes are bringing with them both risks and opportunities, and an integrated Arctic observing system is becoming essential for studying and assessing changes as well as for governing the sustainable development of the region.	Focus on international cooperation
Societal Challenge 6 Europe in a changing world– Inclusive, Innovative and Reflective Societies		
Topic	Description	Focus
ENG-GLOBALLY-2016-8: Centres/Networks of European research and innovation	The challenge is to strengthen the position of Europe as a global actor by reinforcing the presence of European research and innovation actors in selected international partner countries and regions. Proposals shall strive to establish new centres, or networks of centres, building as much as possible on existing European science, technology and innovation structures located in international partner countries and regions.	Proposals shall target the following international partner countries and regions: Brazil
REV-INEQUAL-2017-9: Social Sciences and Humanities - Responsible Research and Innovation (SSH-RRI) hub for information and communication technologies (ICT)	The Hub is designed to bring together the Social Sciences and Humanities (SSH) and Responsible Research and Innovation (RRI) actors and activities in ICT-related projects across H2020 and to link with activities outside H2020.	Focus on international cooperation
CO-CREATION-2017-4:	Research on intangible capital investments together with societal and qualitative	Focus on international

<p>Towards a new growth strategy in Europe - Better economic and social measurement</p>	<p>development have to be considered and measured. Revealing cross-country differences in the intangibles investment rate relative to fixed capital formation would bring important insights to the growth policy but also to cultural and institutional differences. Creation and co-creation of global markets depend on novel business models, use of internet and ICT.</p>	<p>cooperation</p>
<p>CO-CREATION-2016/2017-6: Understanding co-creation in the public sector</p>	<p>Systematic engagement and collaboration with societal actors in public service delivery and policy-making can help governments improve their ability to address user needs and innovate their problem solving capacity.</p> <p>The aim is to bring together actors inside and outside public administrations, including policy makers, politicians, civil society, organisations, initiatives, good practices both in the EU and internationally to identify good practice cases, discuss and exchange on the concept of 'government as a platform' in Europe and discuss the future role of government in this context.</p>	<p>Focus on international cooperation</p>
<p>CO-CREATION-2016/2017-10 Better evidence to underpin research and innovation policies</p>	<p>Research will focus on establishing new methodologies for assessing the performance and impact of research and innovation and the ways in which public policies and funding can influence these.</p> <p>Among impacts, at international level: A monitoring of research and innovation performance which captures the broader spectrum of ways in which research and innovation activities translate into outputs and impact, in which knowledge circulates between public and private sectors and internationally or through which quality of research and innovation can be assessed.</p>	<p>Focus on international cooperation</p>
<p>ENG-GLOBALLY-2017-3: The strategic potential of EU external trade policy</p>	<p>Research under this topic should take stock of the European Union's and its Member States' bilateral and multilateral trade strategies and policies, comparing various regional and country-specific trade policy approaches and assessing the coherence and consistency of their objectives, strategies and instruments. Bilateral trade relations with key economic players (...) should form part of such comparisons</p>	<p>Focus on international cooperation</p>
<p>CULT-COOP-2017-6:</p>	<p>Research under this topic will critically assess the current state of cultural institutions and investigate new ways to develop the role of European culture</p>	<p>Focus on international cooperation</p>

Social innovation in culture	ministries, cultural institutions and their networks as cultural service providers and hubs of social innovation. It should take into account recent international, European and national research results and best practices.		
Societal Challenge 2 Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research, and the Bioeconomy			
<p>Context: Europe must adapt its systems to find alternatives to our fossil-based economies by unlocking the potentials of the available bio-resources in the different bioeconomy and blue-economy sectors in a sustainable way, which is accepted by the citizens. At the same time, Europe must continue to address resource efficiency in light of the increasing pressure on global food systems to meet demand from population and income growth. Europe has to turn these challenges into real actions, bringing together the nexus among agriculture, nutrition and health, and the nexus among food, water and energy. Many of the challenges are of global nature, requiring global solutions in cooperation with important international cooperation partners. The final objective is to explore and develop win-win solutions, to overcome the trade-offs among agriculture, nutrition and health, and environmental sustainability.</p>			
Topic	Description	Focus	
3.2. Blue Growth - Demonstrating an ocean of opportunities C) Strengthening the European ocean observing, surveying and monitoring capability	All existing and future sea-related activities depend on a good knowledge and understanding of the complex marine environment, currently largely incomplete. A strong underpinning ocean observation infrastructure is critical to realise the economic, geostrategic and geopolitical potential of the EU. For this reason, the creation of an inter-operational ocean and sea basin observation system, as well as the development/deployment of technologies necessary to accelerate the production of a high-resolution map of EU Sea Basins are crucial.	Focus on International Cooperation - specified with Brazil	
3.3. A Rural Renaissance - Fostering innovation and business opportunities	The objective of this call is to develop, test and upscale new approaches to boost economic development, environmental services and entrepreneurial innovations – in particular in SMEs and environmental services in rural and coastal areas. This will be achieved by building on diversification and modernisation strategies, capitalising on local assets including human, natural and cultural capital.	Significant openings for international cooperation	
3.4. Bioeconomy - Bio-based innovation for sustainable goods and services	The new wave of industrialisation comes from bio based industries that produce and use sustainable bio-based resources at competitive prices and convert them into innovative, sustainable and viable industrial products. Bio-based products will provide new markets to biomass producers, strengthening also rural	Openings to international cooperation	

	<p>economies and generating high-skilled jobs.</p> <p>This call will 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.</p>	
<p>Societal Challenge 3 Secure, clean and efficient energy</p>		
<p><u>Context: Strategic orientations for 2016-2017</u></p> <p>The triangle of policy objectives will be translated in the Work Programme 2016-2017 as follows:</p> <p>1) Energy security will be enhanced by diversifying energy sources and technologies, increasing the share of production from renewables, increasing low-carbon indigenous energy production, moderating energy demand, improving energy efficiency along the whole energy value chain, developing supply chains, ensuring a sufficient level of autonomy for Europe in critical technology areas, anticipating future trends affecting the energy mix in the long-term and securing acceptability of new energy sources and infrastructures.</p> <p>2) Increasing the sustainability of the energy system requires a growing share of renewables, higher energy efficiency, reducing energy wastage as well as environmental impact of energy technologies (sustainable use of resources and business-models), decarbonising the use of fossil fuels using CCS technology and encouraging the active/automated role of consumers. These developments need to be embedded in new ICT-based approaches to the smart management of the energy system as a whole, including in particular the electricity grid as well as centralised and decentralised heating systems.</p> <p>3) Affordable energy is important for ensuring the support of consumers for the transformation of the energy system and for boosting the EU's industrial competitiveness in a globalised economy. This requires to further develop, improve and integrate advanced energy management systems, to reduce energy demand, and to provide competitive energy services.</p> <p>Cross-cutting aspects like social and behavioural, gender, public acceptance, education and training, health and environmental impacts (e.g. "circular economy" for renewable energy technologies, extending the life-cycle of biomass products), data management and security, and international cooperation will be embedded across all relevant activities.</p>		
Topic	Description	Focus
3.2 Competitive Low-Carbon Energy	International cooperation will target Brazil on second generation biofuels : a coordinated call EU-Brazil should be launched in 2016	Brazil
3.3 Smart Cities and Communities with Nature-based Solutions	The objective of this focus area is to bring together cities, industry and citizens to improve urban life through sustainable integrated energy, resource efficient and nature-based solutions.	Focus on international cooperation

	Key challenges are to significantly increase the overall energy efficiency of cities, to exploit better the local and renewable resources both in terms of energy supply and to make the energy systems of our homes, districts, communities and cities smarter.	
Societal Challenge 2 Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research, and the Bioeconomy		
<p>Context - Strategic orientations for 2016-2017</p> <p>In the next programming period, the work programme part on LEIT-ICT will:</p> <p>Consolidate the innovation drive</p> <p>Pursuing the change initiated under Work Programme 2014-2015, it will continue to promote a more innovation-oriented mind-set among participants. This will be done through three major axes:</p> <p>a) Supporting core ICT industries through roadmap-based PPPs</p> <p>The work will contribute to maintaining and developing the technology leading edge in key areas such as electronics, photonics, embedded systems, computing, robotics or network technologies and systems</p> <p>b) Facilitating disruptive innovation</p> <p>The innovation capacity will be further supported through a strengthening of the 'Open and Disruptive Innovation' topic directed towards SMEs and through the new open call on 'Fast Track to Innovation' (FTI). All available demand-side instruments and some accompanying measures will continue to be exploited in order to reinforce the involvement of end users, support digital entrepreneurship, strengthen support to start-ups and SMEs and as a result more effectively embed innovation in LEIT-ICT.</p> <p>c) Introducing new cross-cutting actions and reinforcing large scale piloting in real world environments</p> <p>New cross-cutting initiatives combining different technologies such as internet, components, big data, cloud or advanced computing and linking them up to use cases in societal challenges will create major opportunities for innovation, help develop new industries and ensure greater impact of EU action.</p> <p>Reinforce the international dimension of the LEIT-ICT</p> <p>In addition, LEIT-ICT will contribute to a focused international strategy through a limited number of coordinated calls with Brazil, on a set of specific topics</p>		
Topic	Description	Focus

3 Translation into calls 2016-2017 Coordinated calls with third countries	Coordinated calls with Brazil will be launched.	Focus Brazil
Science with and for Society		
<p>Context - Strategic orientations for 2016-2017</p> <p>"... it appears through the public consultation, the international cooperation beyond EU borders is seen as imperative for Science with and for Society as present challenges are seen as global and necessitating a global approach to solutions."</p> <p>Impacts on society:</p> <ul style="list-style-type: none"> • More and better R&I jobs and careers, including in the third sector, in the government sector and in the business sector, • Increased interest of young people (boys and girls) towards R&I, • Enhancement of scientific collaboration between academia, industry, public authorities/policy makers and civil society (CSOs, citizens); • Better exchange between different parts of the innovation systems, leading to better creativity, diversity and acceptability in terms of R&I outputs, • Material improvements e.g. in health, energy and transport systems, better adapted to the needs and expectations, as technologies become more gender-aware and inclusive, improving the lives of a greater number of citizens, women as well as men; • Reduction of unintended effects of emergent technologies and anticipation of socio-technological disasters; • Better exchange between Europe and the world; <p>Impacts on R&I human resources and governance:</p> <ul style="list-style-type: none"> • A larger and more diverse talent pool for science and industry, by greater civil society engagement in R&I and an increase of the number of female researchers; • Creation of new generation of graduates with S&T knowledge combined with broad innovation skills; • Open recruitment widely applied and more jobs published on EURAXESS; • Attracting more researchers to Europe by creating the best research environment; • Modernising the governance of academia, including career evaluation of researchers; • Increased number of Gender Equality Plans implemented in RPOs and RFOs and elimination of gender bias in scientific careers, • Enhanced effectiveness of the science system, and better fit of R&I outputs to new market as it responds more closely to citizen's needs, especially due to easier and more open access to and re-use of research outputs; • Reinforcement of research integrity and reduction in the number of misconduct cases thanks to improved reproducibility of research results; • Incorporation of research integrity in education systems. 		

**LEIT Leadership in Enabling and Industrial Technologies-
Nanotechnologies, Advanced Materials, Biotechnology, and Advanced Manufacturing and Processing**

A concerted effort to identify new opportunities for international cooperation, mostly based on the general opening of Horizon 2020, beyond the established activities (e.g. in nanosafety) and potentially leading to new markets.

Strategic orientations for 2016-2017

The following flagship areas will be supported using the cPPP approach:

i: The Factories of the Future cPPP (FoF) initiative will help EU manufacturing enterprises, including SMEs, to adapt to global competitive pressures by developing and deploying the necessary key enabling technologies to support EU manufacturing across a broad range of sectors.

International collaboration will be envisaged to maximise the benefit for European industry and society, including the Intelligent Manufacturing Systems initiative (IMS).

Actions to support developments in, and acceptance of, nanotechnologies, advanced materials and biotechnology

Innovative and responsible governance of new and converging enabling technologies

International cooperation is important in all areas of EIT NMBP industrial activities.

Industry 2020 and Circular Economy

This focus area will be at the heart of how Horizon 2020 contributes to boosting and renewing Europe's industrial capacities and the real economy, by taking a circular economy approach, ensuring economic, environmental and social sustainability.

The expected impact is a leap towards a more resource-efficient and hence competitive European industrial economy, through a reduction of costs, energy, emissions and raw materials, low-carbon technologies for energy-intensive industries, optimisation of processes, as well as by exploring new markets.

Exchanges of best practice at international level will be pursued to the benefit of European business: to foster the potential of strong markets for European technologies and businesses.

Topic	Description	Focus
NMBP 35-2016: Promoting safe innovation through global consolidation and networking of nanosafety centres and strengthening the European industry through cooperation in nanosafety.	The objective of this topic is to support safe innovation related aspects by providing the technology, skills, and processes, necessary for science based best NanoSafety practices in industrial and commercial activities. The proposed CSA should aim at networking these platforms, including the nanosafety cluster, at European level and cooperate with third countries. Proposals requesting a contribution from the EU between € 1 and 2 million would allow this specific challenge to be addressed appropriately.	International cooperation according to the current rules of participation is encouraged, in particular with Brazil

Societal Challenge 4
Smart, green and integrated transport

International cooperation will have a key role to play. Global challenges such as CO2 and polluting emissions, oil dependency, transport safety and security, and standardisation of many services, products and procedures will benefit from global solutions. Other aspects that are more local in nature such as traffic congestion, land use planning, behavioural issues could profit from the exchange of best practice identified in effective international collaborations. Activities at the international level are important to enhance the competitiveness of world leading European industries by promoting the take-up and trade of novel technologies, in particular where the applicable regulatory regime is international and can thus result in barriers to the market introduction of innovative solutions coming from EU actors. Demand for high-end European produced vehicles as well as for European know-how is very strong in the **emerging markets**. With most of future transport growth occurring outside Europe, access to knowledge and to new markets will become increasingly important, and therefore cooperation as well as exchanges on transport R&I strategies and investment priorities with major partner countries, for example US, Japan, China, **Brazil** and the Euro-Mediterranean region will be pursued.

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

Topic	Description	Focus
Overarching target: developing international cooperation in security research		
International cooperation is possible through the Challenge. Existing or future implementing arrangements of science and technology agreements (e.g. with the US Department of Homeland Security S&T Directorate) are encouraging cooperation further in some more specific areas referred to in such arrangements (e.g. innovation for first responders; global maritime security).		
2.1.2. Fight against crime and terrorism	The ambition in this area is to provide research results and knowledge necessary to avoid an incident and to mitigate its potential consequences, including new technologies and innovative capabilities for fighting and preventing crime (including cyber-crime), illegal trafficking, and terrorism (including cyber-terrorism), and for understanding and tackling terrorist ideas and beliefs.	Focus on international cooperation
2.1.4. Cybersecurity for all	One top challenge of the coming years is to translate cyber security concepts into workable and available services for citizens and small enterprise so that levels of cybersecurity can gradually increase to enhance the trust of online users. Apart from focussing on the needs of citizen users, particular focus will have to be placed on SMEs to reduce their burden for implementing cyber protection.	