

SC2 – FOOD SECURITY, SUSTAINABLE AGRICULTURE AND FORESTRY, MARINE, MARITIME AND INLAND WATER RESEARCH AND THE BIOECONOMY



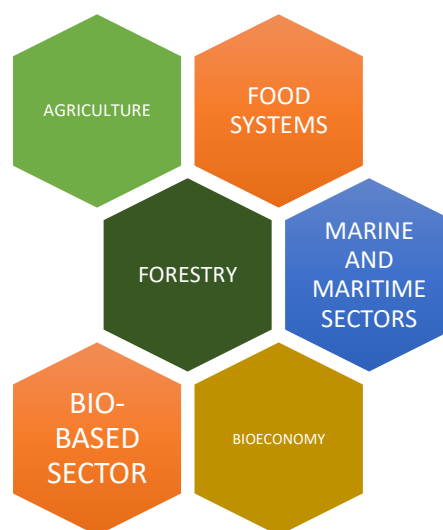
The 2018-2020 Work Programme (WP) of the Societal Challenge 2 focuses on the sustainable management of land and waters to secure healthy food as well as on the delivery of public goods such as biodiversity and clean water. Furthermore, it supports innovative food and marine industries, the bioeconomy and dynamic rural areas. The overall budget dedicated to SC2 is **€1.3 billion**. The WP focuses on the following five priorities:

- Addressing climate change and resilience on land and sea;
- Making the transition towards a circular bioeconomy;
- Fostering functional ecosystems, sustainable food systems, healthy lifestyles;
- Boosting major innovations on land and sea – new products, value chains and markets;
- Developing smart, connected territories and value chains in rural and coastal areas.

THREE CALLS



THEMATIC AREAS



SUSTAINABLE FOOD SECURITY

€753 million to use our resources more wisely and nourish people more sustainably

From sustainable food security to healthy food

Activities aim to tap into the potential of **ecosystems services for crop and animal production**, notably in relation to **pest and disease control, nutrient cycling, soil fertility and productivity**. They emphasise the relationship between modes of food production, ecosystem functions, food quality and consumer health. The importance of diversity and diversification in increasing the resilience of food systems is an underlying theme. It includes promoting a **better use of plant, animal genetic and microbial genetic resources**. A cluster of targeted **microbiome activities** will help to better understand how existing biodiversity can support processes across soils, plants, animals, the marine environment and humans.

	Action	Topic	Opening date	Deadline(s)
	RIA	Biodiversity in action: across farmland and the value chain <i>Small organisms, big effects for plants – Belowground biodiversity interaction with plants</i>	31/10/2017	13/02/2018 11/09/2018
	RIA	Biodiversity in action: across farmland and the value chain <i>Capitalising on native biodiversity in farmland landscape</i>	16/10/2018	23/01/2019 04/09/2019
SC1	IA	Microbiome applications for sustainable food systems	31/10/2017	13/02/2018
	RIA	Integrated health approaches and alternatives to pesticide use <i>Integration of plant protection in a global health approach</i>	16/10/2018	23/01/2019 04/09/2019
	RIA	New and emerging risks to plant health	31/10/2017 16/10/2018	13/02/2018 11/09/2018 23/01/2019 04/09/2019
	RIA	Stepping up integrated pest management <i>Decision support systems</i>	31/10/2017	13/02/2018 11/09/2018
	RIA	Making European beekeeping healthy and sustainable	31/10/2017	13/02/2018 11/09/2018
	RIA	Improving animal welfare <i>Organic and low-input farming</i>	31/10/2017	13/02/2018 11/09/2018
	IA	Improving animal welfare <i>Precision livestock farming</i>	16/10/2018	23/01/2019
	RIA	Anti-microbials and animal production <i>Rethinking management of health of farmed animals</i>	31/10/2017	13/02/2018 11/09/2018
	RIA	Anti-microbials and animal production <i>Alternatives to anti-microbials</i>	16/10/2018	23/01/2019 04/09/2019
	IA	A vaccine against African swine fever	16/10/2018	23/01/2019
	IA	Personalized nutrition	31/10/2017	13/02/2018
	CSA	Future proofing our plants	31/10/2017	13/02/2018
	RIA	Towards healthier and sustainable food	31/10/2017	13/02/2018 11/09/2018
	IA	Alternative proteins for food and feed	16/10/2018	23/01/2019

Environment and climate-smart food production and consumption

Proposed activities open avenues to progress on **low greenhouse gas emission agriculture, fisheries and food industries**. They will support the development of strategies and tools to better cope with more variable and **extreme weather events, changing environmental conditions** and **new emerging threats**. A number of topics target the mitigation capacity of the primary production sector and the synergies and trade-offs between adaptation and mitigation measures. Activities also tackle the stewardship and use of natural resources on land and sea and other inputs throughout food production. They aim at optimising resource use and reducing environmental footprints throughout primary production, food industries, food distribution, food service and households.

Action	Topic	Opening date	Deadline(s)
RIA	Climate smart and resilient farming <i>Microclimate management: from field to landscape</i>	31/10/2017	13/02/2018 11/09/2018
RIA	Climate smart and resilient farming <i>Efficiency and resilience of mixed farming and agroforestry systems</i>	16/10/2018	23/01/2019 04/09/2019
COFUND	European Joint Programme on agricultural soil management	16/10/2018	23/01/2019
RIA	Integrated water management in small agricultural catchments	16/10/2018	23/01/2019 04/09/2019
IA	Innovative and citizen-driven food system approaches in cities	16/10/2018	23/01/2019
IA	Integrated system innovation in valorising urban biowaste	31/10/2017	13/02/2018

RIA: Research and Innovation Action

IA: Innovation Action

CSA: Coordination and Support Action

COFUND: Co-funding of regional, national and international programmes

Building capacities

A defined set of activities addresses more fundamental research needs as well as the harmonisation and rationalisation of data, methods or infrastructures. Activities will help to test new approaches and develop new models for **business creation** and **societal engagement**. The delivery of knowledge and resources will support downstream translational research and innovations.

Action	Topic	Opening date	Deadline(s)
IA	Food cloud demonstrators	16/10/2018	23/01/2019
RIA	Monitoring food R&I investments and impacts	31/10/2017	13/02/2018 11/09/2018
CSA	Genetic resources and pre-breeding communities <i>Joining forces for GenRes and biodiversity management</i>	31/10/2017	13/02/2018
RIA	Genetic resources and pre-breeding communities <i>Adding value to plant GenRes</i>	16/10/2018	23/01/2019 04/09/2019
RIA	Innovations in plant variety testing	31/10/2017	13/02/2018 11/09/2018
RIA	Agri-Aqua Labs <i>Understanding the genome of farmed animals, its expression and translation into traits</i>	31/10/2017	13/02/2018 11/09/2018
RIA	Agri-Aqua Labs <i>Looking behind plant adaptation</i>	16/10/2018	23/01/2019 04/09/2019
ERA-NET COFUND	ERANETs in agri-food <i>ICT-enabled agri-food systems</i>	16/10/2018	23/01/2019
ERA-NET COFUND	ERANETs in agri-food <i>Climate change and food systems</i>	16/10/2018	23/01/2019
ERA-NET COFUND	ERANETs in agri-food <i>International veterinary vaccinology</i>	16/10/2018	23/01/2019

Targeted international cooperation

Activities promoted address **global challenges** and allow for **significant international cooperation, exchanges and sharing of resources**. In addition to general openings for international cooperation, targeted activities are foreseen to support the implementation of the EU-Africa Partnership on Food and Nutrition Security and Sustainable Agriculture (FNSSA) and implement the EU-China FAB Flagship initiative.

	Action	Topic	Opening date	Deadline(s)
	CSA	Supporting microbiome coordination and the International Bioeconomy Forum	31/10/2017	13/02/2018
	CSA	EU-Africa Partnership on Food and Nutrition Security & Sustainable Agriculture <i>Support to the implementation of the EU-Africa Research and Innovation Partnership on Food and Nutrition Security & Sustainable Agriculture (FNSSA)</i>	31/10/2017	13/02/2018
	RIA	EU-Africa Partnership on Food and Nutrition Security & Sustainable Agriculture <i>Food Systems Africa</i>	16/10/2018	23/01/2019 04/09/2019
	RIA	Sustainable Intensification in Africa <i>African Farming Systems, sustainable intensification pathways</i>	16/10/2018	23/01/2019 04/09/2019
	RIA	Sustainable Intensification in Africa <i>Soil system for Africa</i>	16/10/2018	23/01/2019 04/09/2019
	RIA	EU-China FAB Flagship initiative <i>Integrated approaches to food safety controls across the food chain</i>	16/10/2018	23/01/2019 04/09/2019
	RIA	EU-China FAB Flagship initiative <i>Highly efficient management of soil quality and land resources</i>	31/10/2017	13/02/2018 11/09/2018
	IA	EU-China FAB Flagship initiative <i>High-quality organic fertilisers from biogas digestate</i>	16/10/2018	23/01/2019

- More information on the [EU-Africa partnership](#)
- More information on the [EU-China Flagship initiative](#)

Other opportunities for Food security across Horizon 2020

SC3 ENERGY	• Call on building a low-carbon and resilient future: secure, clean and efficient energy
SC5 CLIMATE	• Call on building a low-carbon, climate-resilient future: climate action in support of the Paris Agreement • Call on greening the economy in line with Sustainable development goals
INDUSTRIAL LEADERSHIP LEIT-ICT	• Call on information and communication technologies • Call on digitising and transforming European industry and services
INDUSTRIAL LEADERSHIP INNOVATION FOR SMEs	• Call on better innovation support to SMEs



BLUE GROWTH

€239 million to sustainably harvest the potential of aquatic and marine resources, while protecting biodiversity and enhancing climate resilience

The **Blue Growth** Call aims at sustainably harvesting the potential of resources from seas, oceans and inland waters for different uses and across the range of marine and maritime industries, while protecting biodiversity and enhancing climate resilience. It supports sustainable growth in the marine and maritime sectors through a responsible management of marine resources for healthy, productive, safe, secure and resilient seas and oceans, which are essential for thriving ecosystems, climate regulation, global food security, human health, livelihoods and economies. This call will boost the **blue economy** by:

- Improving our integrated knowledge about the reciprocal impact of climate change on marine ecosystems and biological resources in order to effectively manage their response, mitigation and resilience capacities;
- Preserving and sustainably exploiting marine and coastal ecosystems, and biological resources to deliver improved nutrition and health;
- De-risking major investments and boosting blue innovations on land and at sea to develop new bio-based marine value chains and open up new markets;
- Developing smart and connected territories between land and sea;
- Strengthening the international research and innovation cooperation around seas and oceans, to promote a globally sustainable blue economy.

Action	Topic	Opening date	Deadline(s)
CSA	Towards a Baltic and North Sea research and innovation programme	31/10/2017	13/02/2018
ERA-NET COFUND	Blue Bioeconomy Public-Public Partnership	31/10/2017	13/02/2018
RIA	Sustainable harvesting of marine biological resources	31/10/2017	13/02/2018 11/09/2018
IA	Sustainable European aquaculture 4.0: nutrition and breeding	31/10/2017 16/10/2018	13/02/2018 23/01/2019
IA	Multi-use of the marine space, offshore and near-shore: pilot demonstrators	16/10/2018	23/01/2019
IA	Sustainable solutions for bio-based plastics on land and sea	16/10/2018	23/01/2019
IA	The Future of Seas and Oceans Flagship Initiative <i>Blue Cloud services</i>	16/10/2018	23/01/2019
IA	The Future of Seas and Oceans Flagship Initiative <i>Observations and forecasting</i>	16/10/2018	23/01/2019
CSA	All Atlantic Ocean Research Alliance Flagship <i>Coordination of marine and maritime research and innovation activities in the Atlantic Ocean</i>	31/10/2017	13/02/2018
RIA	All Atlantic Ocean Research Alliance Flagship <i>Assessing the status of Atlantic marine ecosystems</i>	31/10/2017	13/02/2018 11/09/2018
RIA	All Atlantic Ocean Research Alliance Flagship <i>New value chains for aquaculture production</i>	16/10/2018	23/01/2019 04/09/2019
CSA	Coordination of marine and maritime research and innovation in the Black Sea	16/10/2018	23/01/2019

Other opportunities for Blue Growth across Horizon 2020

SC3 ENERGY	- Wave energy - Offshore wind
SC4 TRANSPORT	- Ships emissions - Unmanned and autonomous activities - Maritime transport safety
SC5 CLIMATE	- Recovery of sea resources - Sea level changes - Ice-core drilling
INDUSTRIAL LEADERSHIP LEIT	- SPACE: Copernicus Marine Services; Ocean models - NMBP: Off-shore energy materials
RESEARCH INFRASTRUCTURES	Research vessels



RURAL RENAISSANCE

€263 million for rural territories to become smarter, younger, greener, more circular and better connected

From farm to society: understanding dynamics and modernising policies

The objective is to **better understand the assets and long-term drivers of rural territories and land use** and establish how they are impacted by current policies. The design of **innovative policy instruments/approaches and governance models** through which to improve socio-economic and environmental conditions will be addressed. This includes activities on policies impacting the delivery of ecosystem services and public goods.

Action	Topic	Opening date	Deadline(s)
CSA	Building modern rural policies on long-term visions and societal engagement Rural society-science-policy hub	31/10/2017	13/02/2018
RIA	Building modern rural policies on long-term visions and societal engagement Building resilient mountain value chains delivering private and public goods	16/10/2018	23/01/2019 04/09/2019
RIA	Building modern rural policies on long-term visions and societal engagement Socio-economic impacts of digitisation of agriculture and rural areas	31/10/2017	13/02/2018 11/09/2018
RIA	Contracts for effective and lasting delivery of agri-environmental public goods	31/10/2017	13/02/2018 11/09/2018
RIA	Analytical tools and models to support policies related to agriculture and food Developing new models supporting policies related to agriculture	31/10/2017	13/02/2018 11/09/2018
RIA	Analytical tools and models to support policies related to agriculture and food Modelling international trade in agri-food products	16/10/2018	23/01/2019 04/09/2019

Organising sustainable food and non-food value chains under changing conditions

The objective is to boost the development of **innovative and sustainable food and non-food chains and services** to support the diverse needs of communities and businesses, in a responsible and ethical way, hence fostering sustainable growth and jobs in rural areas and connecting territories (e.g. coastal-inland, rural-urban).

Action	Topic	Opening date	Deadline(s)
RIA	Closing nutrient cycles Understanding properties and impacts of bio-based fertilisers	31/10/2017	13/02/2018 11/09/2018
IA	Closing nutrient cycles Bio-based fertilisers from animal manure	16/10/2018	23/01/2019
CSA	Realising the potential of regional and local bio-based economies	31/10/2017	13/02/2018
IA	Circular bio-based business models for rural communities	16/10/2018	23/01/2019
IA	Sustainable wood value chains Building with wood	16/10/2018	23/01/2019

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Taking advantage of the digital revolution

ICT tools can play a key role in rural growth through a variety of impacts such as increased efficiency and competitiveness, social inclusion, new business models and opportunities, modernisation of services, renewal of governance models through, for example, improved participation of society. This call section will explore the conditions under which benefits of ICT applications can be maximized.

Action	Topic	Opening date	Deadline(s)
IA	ICT Innovation for agriculture – Digital Innovation Hubs for Agriculture	31/10/2017	13/02/2018
CSA	Enabling the farm advisor community to prepare farmers for the digital age	31/10/2017	13/02/2018
IA	Digital solutions and e-tools to modernise the CAP	31/10/2017	13/02/2018

Boosting innovation and enhancing the human and social capital in rural areas

The objective is to support sustainable growth by encouraging innovation. This involves two main strands of activities: 1) **strengthening the skills, human and social capital of farmers, foresters and rural dwellers by improving cooperation, knowledge transfer and networking**; 2) **investing into the knowledge and innovation systems to improve their delivery**. In particular, support to the implementation of the EIP-AGRI "interactive innovation approach" will be provided.

Action	Topic	Opening date	Deadline(s)
CSA	Thematic networks compiling knowledge ready for practice	31/10/2017	13/02/2018
		16/10/2018	23/01/2019
CSA	Fuelling the potential of advisors for innovation	16/10/2018	23/01/2019

Other opportunities for Rural Renaissance across Horizon 2020

SC3 ENERGY

- Call on [building a low-carbon and resilient future: secure, clean and efficient energy](#)

SC5 CLIMATE

- Call on [building a low-carbon, climate-resilient future: climate action in support of the Paris Agreement](#)
- Call on [greening the economy in line with Sustainable development goals](#)

INDUSTRIAL LEADERSHIP LEIT-ICT

- Call on [information and communication technologies](#)
- Call on [digitising and transforming European industry and services](#)

INDUSTRIAL LEADERSHIP INNOVATION FOR SMEs

- Call on [better innovation support to SMEs](#)

The policy context

GLOBAL COMMITMENTS:



<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>



https://ec.europa.eu/clima/policies/international/negotiations/paris_en#tab-0-0



United Nations
Framework Convention on
Climate Change

http://unfccc.int/paris_agreement/items/9485.php

EUROPEAN POLICIES:



https://ec.europa.eu/agriculture/cap-overview_en



<https://ec.europa.eu/eip/agriculture/>



<https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/2030-energy-strategy>



Bioeconomy strategy

<https://publications.europa.eu/en/publication-detail/-/publication/1f0d8515-8dc0-4435-ba53-9570e47dbd51>



Circular economy

http://ec.europa.eu/environment/circular-economy/index_en.htm



Integrated maritime and Common Fisheries Policies

https://ec.europa.eu/fisheries/cfp_en



Digital single market

<https://ec.europa.eu/digital-single-market/>