

Roadmap for EU – CELAC S&T cooperation

1. CELAC as a partner of the EU

Europe, Latin America and the Caribbean share deep-rooted and historical bonds. They are natural partners seeking to deepen their strategic links in the social, political and economic areas.

Launched in 2010, the Community of Latin American and Caribbean States (CELAC) is now the EU's counterpart for the bi-regional partnership process. The organisation encompasses all 33 sovereign LAC countries, representing roughly 600 million people. CELAC aims to unite all Latin American and Caribbean countries to strengthen the region's political dialogue, and social and cultural integration, improve its quality of life, stimulate economic growth, research and innovation and advance the well-being of all of its people.

The EU is the second largest trading partner for the LAC region. Trade in goods between the EU and Latin America almost doubled over the last decade – reaching €213.2 billion in 2015, i.e. 6.1% of total EU trade. The EU remains the leading foreign investor in LAC countries, with total Foreign Direct Investment (FDI) stocks amounting to €642.3 billion in 2014. This represents around one third of all FDIs in the region and more than a third of the region's total FDI stock.

[Latest EU-CELAC Summit]

The last EU-CELAC Summit took place in Brussels in June 2015, bringing together 61 EU and Latin American and Caribbean leaders. They identified ten priority areas for bi-regional cooperation for 2015-17, ranging from science and research, over sustainable development or energy to investment and entrepreneurship. The EU and CELAC leaders highlighted the value of EU-CELAC cooperation in the field of science, technology and innovation and called for a strengthened cooperation and moving towards an EU-CELAC Common Research Area based on increased research cooperation, enhanced mobility of researchers and exchange of knowledge and best practices.

In July 2018, Ministers of Foreign Affairs from the EU and CELAC met in Brussels and adopted a declaration "Building bridges and strengthening our partnership to face global challenges highlighting the key role of the Joint Initiative on Research and Innovation (JIRI) and the progress made within the EU-CELAC Common Research Area around three strategic pillars to address global challenges.

The parliamentary dimension of the EU-LAC relations – the Euro-Latin American Parliamentary Assembly (EuroLat) – also places a great importance on the advance of cooperation in Science and Technology at bi-regional level and fully supports the development and implementation of the EU-LAC Common Research Area (CRA). In June 2017, the Committee on Sustainable Development, Environment, Energy Policy, Research, Innovation and Technology issued a Motion for a Resolution welcoming the creation of the Common Research Area as the start of a new phase of research cooperation EU-LAC.

[EU-LAC non-S&T cooperation agreements]

Cooperation with Latin American and Caribbean sub-regional integration organisations is also highly important. For example, the Central America Integration System (SICA) has signed a comprehensive Association Agreement with the EU covering political, cooperation and trade matters. Also, in the Caribbean the EU and CARIFORUM have very close relations, reinforced in 2012 with the adoption of the Joint Caribbean-EU Partnership Strategy, which sets a strong common agenda towards jointly agreed, mutually beneficial goals.

Besides bi-regional cooperation, the EU maintains strategic partnerships with Brazil and Mexico, and holds regular summits with each of them. Close relations are maintained with other countries and sub-regions such as Central America and the Caribbean.

EU agreements already in place with Mexico and Chile are to be modernised and are currently under final negotiations. The EU and Mercosur remain committed to complete a balanced, comprehensive and ambitious Association Agreement, with further progress being achieved during the summer 2018 round of negotiation.

[EU-CELAC S&T cooperation agreements]

Cooperation between the EU and LAC in the field of Science, Technology and Innovation is governed by the Joint Initiative for Research and Innovation and is recognised as a key successful pillar under the overall EU-LAC partnership.

The EU-LAC Joint Initiative for Research and Innovation (JIRI) was established in 2010 to promote regular bi-regional dialogue on Research & Innovation (R&I). The JIRI is implemented through Senior Officials Meetings (SOM) with EU-LAC representatives aiming at consolidating EU-LAC cooperation by updating common priorities, encouraging mutual policy learning and ensuring the proper implementation and effectiveness of cooperation instruments through biannual Action Plans. The focus of cooperation has been on common challenges such as climate change and biodiversity, bioeconomy, energy, health and ICT.

Building on the success of the dialogue conducted under the JIRI, the last EU-CELAC Summit in 2015 called for a strengthened framework for cooperation and moving towards a Common Research Area.

Building on this mandate, in March 2016, EU-CELAC Senior Officials confirmed their commitment to the implementation of the Common Research Area (CRA) based on three pillars: mobility of researchers, access to research infrastructures and jointly addressing common challenges. The VI Senior Officials Meeting in March 2017 was instrumental in launching concrete policy initiatives and actions to empower the implementation of the CRA.

An extraordinary SOM took place in October 2017 in El Salvador, officially launching the first EU-CELAC Knowledge week and confirming the key role of research and innovation for sustainable development and productivity.

The EU also maintains bilateral research and innovation relationships with four strategic partners from Latin American (Argentina, Brazil, Chile and Mexico) framed by Science and Technology (S&T) agreements.

[R&I landscape in LAC]

Traditionally, investment in R&D in the Latin America and Caribbean region has been lower than in other regions of the world. Although it has improved over the past decade, with the exception of Brazil, it has not been very notable in terms of GDP. In 2013, Latin America and the Caribbean spent on average 0.75% of GDP on research and development.¹

This low investment is connected with low innovation and technological progress. LAC countries account for 2% of the total worldwide patents². Brazil, Mexico, Chile, Argentina and Colombia are the countries with the highest number of patents applications and concessions between 2009-2013, although in terms of patents applications per capita, Chile, Brazil, Uruguay and Panama rank better³.

The ratio between the highest and lowest investing countries as a proportion of GDP is 25:1, demonstrating the great heterogeneity of the region. The R&I capacity is strongly concentrated in the biggest economies in the region, Brazil and Mexico. Together with Argentina, they concentrate 91% of the regional investment in research.

The LAC countries apply a broad array of policies and incentive mechanisms to develop R&I, and few countries have developed agencies dedicated to the financing of R&I. The institutional framework remains centred on the public sector.

CELAC scientific output

Field Weighted Citation Impact	0.87 (13% below world average)
International Collaboration	35.1% (as compared to 37.3% for EU28)
Share of the world's Scholarly Output	4.6%

Data: Scival/Scopus, data extraction date: 22/10/18. Publications published within 2014 and 2016.

¹ Source: Economic Commission for Latin America and the Caribbean (ECLAC), 2016

² ECLAC data, on the basis of World Intellectual Property Organization (WIPO).

³ Source: FP7 AlcueNet project Concept Note, "Innovation in the framework of the EU-CELAC Common Research Area", Sept 2017.

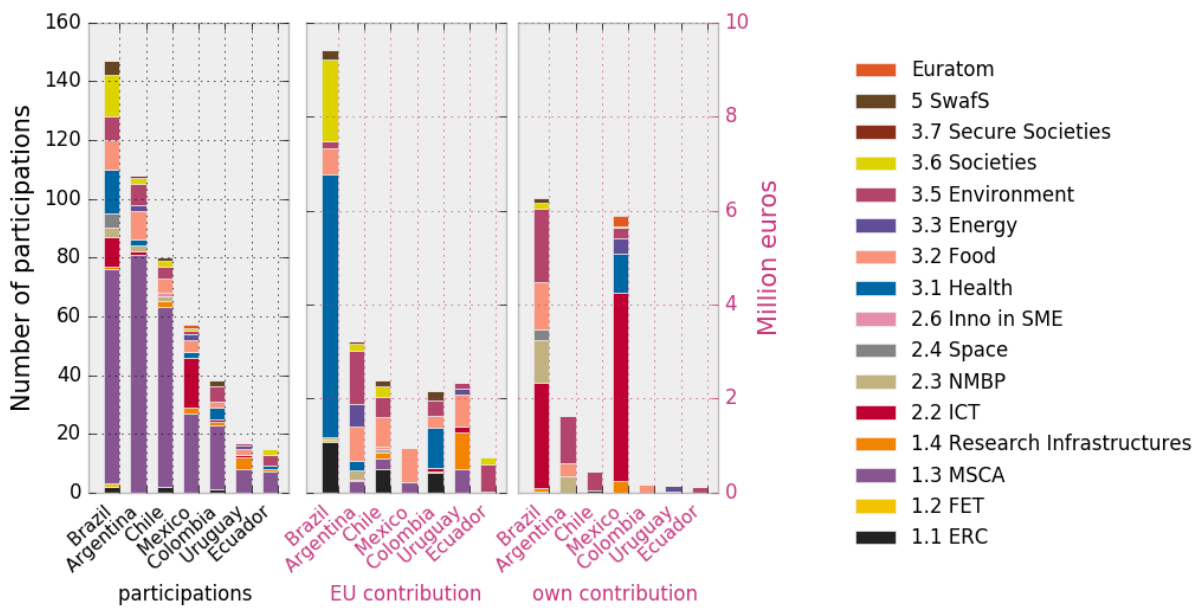
2. STATE OF PLAY OF EU-LAC S&T COOPERATION

2.1 On-going FP7 and Horizon 2020 cooperation

Under the seventh Framework Programme, LAC applicants have participated 1143 times in joint R&I projects with European partners. LAC participants have received 120.9 million euros from the European Commission and have contributed with 40.1 million euros.

Up to October 2018, CELAC entities have participated 524 times to 265 signed grants of collaborative, MSCA and ERC actions of Horizon 2020, receiving 26.3 million euros from the EU. 1295 CELAC researchers took part in the Marie Skłodowska-Curie actions and 25 were awarded the prestigious European Research Council grants.

Figure 1: Participation of the top-7 LAC countries in Horizon 2020



Note: Participations of beneficiaries, third-parties and partner-organisations.
 Source: DG Research and Innovation - International Cooperation
 Data: CORDA (JRC, EIT and art.185 not included); extraction date: 15/10/2018

2.2. Current framework conditions for EU-LAC S&T cooperation

Current framework conditions relate mainly to support participation from LAC entities in Horizon 2020, namely training activities and information days about opportunities in Latin America, support to LAC national contact points and enhanced mobility of researchers.

The overall cooperation agenda is sustained via both bottom-up research initiatives prompted by scientists of both regions, as well as via a focused policy exchange in the context of the regular EU-CELAC Senior Official Meetings (SOM) on Science and Technology that are set since 2014.

The VII Senior Officials Meeting in March 2017 was instrumental in launching concrete policy initiatives and actions to empower the implementation of the Common Research Area by :

1. Opening of the EURAXESS Worldwide Network to LAC as a way to provide information on mobility, jobs and funding opportunities for LAC researchers in Europe;
2. Endorsing the mandate of the EU-LAC Research Infrastructures working group, aiming at ensuring bi-regional policy coordination and sharing of good practices in policy development and mapping of research infrastructures. It was agreed to organize the first bi-regional meeting of the working group in 2018.
3. Defining a large scale R&I action on translational collaborative cancer research between Europe and LAC in Horizon 2020 and by the setting of a structured consultation on sustainable urbanization.
4. Agreeing on the need to strengthen the innovation dimension of the EU-LAC cooperation under the Common Research Area and committed towards the development of a common innovation agenda ahead of the next JIRI SOM. As a first step, an expert innovation event should be organised in spring 2019.

Building on the key role of research for sustainable development, in 2017 the EC launched the EU-CELAC **independent Policy Advice to support LAC countries in implementing the 2030 Agenda** through R&I. The initiative is triggered on a voluntary basis by interested LAC countries and targets especially national administrations competent in the field of R&I. The Policy Advice is implemented through a targeted support to a country or mutual learning and exchange of best practices exercises, engaging groups of countries interested in addressing specific topics of common interest, in collaboration with EU member states.

A pilot exercise began in June 2017, involving Central America and the Dominican Republic. The first objective of the Policy Advice initiative is to identify concrete projects aimed at reducing biomass residuals through processes with high technology readiness and high value-added activities, across a broad range of key areas defined by the group (biogas, biofuels, biofertilizers, value added products from biomass, and new value chain creation). By bringing together representatives from the public, private and third sectors from the EU and Central America, the initiative seeks to build on regional synergies in order to best respond to the needs of society on both sides of the Atlantic. The closing conference of this Policy Advice initiative took place in **Panama City on 25 October 2018**, with the participation of EU and Central America stakeholders from the public, private and third sector.

3. PRIORITIES FOR THE FUTURE IN S&T COOPERATION

3.1 Areas of future S&T cooperation agreed at latest Joint Committee/High Level Dialogues

Mobility of researchers will continue to be promoted by the European Research Council (ERC) via framework conditions to allow scientists to temporarily join research teams run by ERC grantees. Likewise, the Marie Skłodowska-Curie Actions continue to offer significant mobility opportunities in both directions, as proven by the significant number of researchers hosted by both LAC and European organisations in the first three years of Horizon 2020. Special efforts are made to tackle the innovation aspects of the actions and to promote the programmes better in Latin America and in the Caribbean, by ensuring an effective and dynamic network of National Contact Points in these countries to increase awareness of the opportunities, with a view to increasing LAC participation.

Given the importance of efficient tools and instruments to support mobility of researchers, in March 2017, EURAXESS Links Brazil was transformed into EURAXESS Links for Latin America and Caribbean Countries.

Research Infrastructures is an important pillar in the implementation of the Common Research Area (CRA), focusing on the enhancement on joint development of and access to Research Infrastructures.

The promotion of a structured dialogue on research infrastructures is a priority inside the CRA. The first EU-LAC Research Infrastructure working group meeting took place in September 2017 in Uruguay to exchange experience and knowledge on existing research infrastructures, policies of access and programmes in the CELAC and start developing a regional approach towards RI. A second meeting took place in Vienna on October 2018 to discuss and select the list of R&Is in the EU and LAC for the forthcoming study visits. The objectives of the study visit are raise awareness on the scientific potential of the facilities in order to foster their cooperation between RIs in both regions, enlarge membership or other agreements and explore potential synergies between tools and instruments used in both regions with the aim of create communities of practice between researchers and users of the instruments. Back to back to this event, the first policy workshop on research infrastructure strategic roadmapping practices allowed participants to share experiences gained in the interaction between national and regional (EU) roadmapping of RIs in order for LAC countries to take up lessons learned and apply within local and regional context.

In addition, research infrastructures from Latin America will continue to participate as beneficiaries in the Integrating Activities of the Research Infrastructure part of Horizon 2020 and to further develop links to already existing ESFRI and ERIC Infrastructures. Likewise, the access of third-country users (research teams) to European Research Infrastructures is also supported through the mentioned Integrating Activities.

The Research Infrastructures pillar also builds on the BELLA (Building Europe Link to Latin America) project, supporting a new transatlantic optic fibre cable linking Portugal to Brazil, with extensions to nearly all South American countries. The BELLA consortium has been established by 12 European and Latin American Research and Education Networks (led by the regional networks RedCLARA and GEANT) to take full advantage of the future high-capacity link and extend it to other academic networks in Latin America, ensuring capillarity and equal access for academia and non-profit organisations in the region. The installation of the trans-Atlantic submarine cable will offer opportunities to enhance joint development of and access to Research Infrastructures

in a number of scientific dimensions such as physics, cultural heritage, biodiversity and carbon cycle (in particular in connection with the ESFRI LIFEWATCH infrastructure).

Under the pillar of **jointly addressing common challenges**, Senior Officials have agreed to implement joint activities in the areas of Health, including non-communicable diseases, and sustainable urbanization, as well in other areas of common interest such as clean transport and sustainable agriculture.

In the area of **health research**, topics of future cooperation concern primarily chronic diseases, infectious diseases and anti-microbial resistance. Building on an inclusive consultation with LAC partners, Horizon 2020 Work Programme 2018-2020 dedicates a call on translational collaborative cancer research. The call establishes as eligibility criteria the mandatory participation of at least two participants from two different LAC countries.

Two other calls, encouraging international cooperation, and of particular interest for LAC, are also planned: a coordination and support action focused on building links with third countries by analysing the potential and advantages of collaboration in personalised medicine (2018, targeting LAC) and a call targeting neglected infectious diseases.

Building on the mandate from the SOM to set-up a **Task Force on sustainable urbanisation**, and on a consultation with CELAC, the Horizon 2020 Work Programme 2018-2020 includes an international cooperation call on Nature-based solutions for restoration and rehabilitation of urban ecosystems, targeting LAC.

Synergies are also being explored between Horizon 2020 and the EU Climate Change Regional Cooperation Programme for Latin America - EUROCLIMA to link policy making with research and innovation actions in the area of Knowledge Management for Climate Services.

The EU's strategic partners for 'Raw Materials Diplomacy'⁴ include several Latin American countries. International co-operation is therefore encouraged in the raw materials part of the Horizon 2020 Work Programme 2018-2020 and even required for some topics, particularly with advanced mining partners

In the field of **transport**, three initiatives are planned for the H2020 Work Programme 2018-2020: i) "reduction of transport impact on air quality", where international cooperation with LAC is encouraged in the areas of Low-emission oriented driving, management and assistance and of Measurement of airborne pollutants emissions from aircraft; ii) "Urban mobility and sustainable electrification in large urban areas in developing and emerging economies" aiming at bringing together European, Asian (e.g. China), LAC and African research partners, government agencies and urban authorities, private sector and civil society and fostering participatory engagement in urban electrification in order to reduce air pollution and CO2 emissions; iii) "Integrated multimodal, low-emission freight transport systems and logistics".

The European Commission's Joint Research Centre (JRC) is increasingly working with LAC. The main areas of collaboration between the JRC and scientific institutions in LAC countries are related to soil, water, climate change, deforestation, disaster risk reduction and smart specialisation.

⁴ http://ec.europa.eu/growth/sectors/raw-materials/specific-interest/international-aspects/index_en.htm

3.2. Potential new areas of future S&T cooperation proposed at latest Joint Committee/High Level Dialogue, through SFIC, or by thematic services

The last JIRI SOM in October 2017 highlighted the need to further strengthen the innovation dimension of the Common Research Area and mandated the group to develop a bi-regional innovation agenda. A conference event will be organized in 2019, gathering key actors in the EU and in the LAC region as a first step for improving mutual knowledge of respective innovation policies and experiences, contributing to build trust and paving the way for reducing obstacles and improving framework conditions to boost innovation both in LAC and in Europe.

Food security and sustainable agriculture are also of key interest for EU-LAC cooperation, where LAC participation in Horizon 2020 has resumed in topics such as tropical agriculture; plant breeding, soil management; plant diseases; food safety; animal health and fisheries management. The last JIRI SOM agreed on a principle for cooperation and the need to further strengthen the common interest in **the areas of Resource efficiency in crop production and Animal health and food safety**.

Cooperation is also encouraged on Key Enabling Technologies in particular in the field of **nanosafety** and **biomaterials**.

Annex:**Horizon 2020 Work Programme 2018-20 topics explicitly encouraging cooperation with LAC**

	Topic identifier	Topic title
2018	LC-MG-1-1-2018	InCo flagship on reduction of transport impact on air quality
	SC1-BHC-18-2018	Translational collaborative cancer research between Europe and the Community of Latin American and Caribbean States (CELAC)
	SC1-HCO-01-2018-2019-2020	Actions in support of the International Consortium for Personalised Medicine
	SC1-HCO-06-2018	Establishment of an International Network of Social Sciences Research Centres to help address governance and other challenges in the preparedness for and the response to infectious threats
	SC1-BHC-15-2018	New anti-infective agents for prevention and/or treatment of neglected infectious diseases (NID)
	SC1-BHC-16-2018	Global Alliance for Chronic Diseases (GACD) - Scaling-up of evidence-based health interventions at population level for the prevention, detection, and management of hypertension and/or diabetes
	SC5-13-2018-2019	Strengthening international cooperation on sustainable urbanisation: nature-based solutions for restoration and rehabilitation of urban ecosystems
	BG-08-2018-2019	All Atlantic Ocean Research Alliance Flagship
	SFS-32-2018	Supporting microbiome coordination and the International Bioeconomy Forum

2019	LC-CLA-06-2019	Inter-relations between climate change, biodiversity and ecosystem services
	INFRASUPP-01-2018-2019	Policy and international cooperation measures for research infrastructures
	LC-GV-05-2019	InCo flagship on “Urban mobility and sustainable electrification in large urban areas in developing and emerging economies”
	MG-2-9-2019	Integrated multimodal, low-emission freight transport systems and logistics