

2.2. Brazil

2.2.1. *Brazil as a partner of the EU*

The EU and Brazil have had a Strategic Partnership since 2007 and a bilateral Science and Technology Agreement which was signed in 2004, entered into force in 2007 and renewed in 2012 for 5 more years. A Cooperation Arrangement under the existing bilateral Agreement was signed on 24 January 2013 in Brasília between the Joint Research Centre (JRC) and the Brazilian Ministry of Science, Technology and Innovation (MCTI). In the area of Fusion Energy Research, a bilateral Cooperation Agreement under the Euratom Treaty, was signed in 2009 and entered into force in 2013. Brazil is one of the first non-ITER parties with which Euratom has signed a bilateral fusion cooperation agreement.

The importance of cooperation on research and innovation in addressing the shared economic, environmental and societal challenges within the context of overall EU-Brazil relations was reiterated at the EU-Brazil Summit of February 2014.

Brazil has made significant advances in its Science, Technology and Innovation policy, which has contributed to the institutional strengthening of the STI System. This has included an improvement in number and qualification of human resources as well as in R&D infrastructure. Brazil remains at the frontier of research in the field of agriculture as well as in tropical and infectious diseases. It is also a world-class player in the fields of ICT, nanotechnologies and energy and it hosts some of the top universities of Latin America. Its potential as a research and innovation partner therefore continues to grow.

2.2.2. *Priorities for S&T cooperation*

The Joint Steering Committee (JSC) which oversees the implementation of the EU-Brazil S&T Agreement has emphasised the need to deepen, scale up and open cooperation in selected thematic areas. This has led to a number of initiatives:

Marine research is one of the main developing areas of joint interest. In November 2015, European Commissioner Carlos Moedas signed a Declaration of Intent with the Brazilian Minister of Science, Research and Innovation to enhance marine research cooperation. The topics identified include ocean observation and forecasting systems, food security (including aquaculture), ocean technology, ocean literacy, land-sea interactions and polar research. In parallel, Brazil and South Africa signed a joint document on South-South Atlantic research cooperation aiming at developing a South Atlantic Science Plan. This initiative will match the Science Plan that has been developed for the North Atlantic together with the US and Canada. This contributes to increase cooperation with the South Atlantic countries towards an All Atlantic Ocean Research Alliance.

In the area of bioeconomy and agriculture, the EU is considering keeping a multilateral approach involving the key states all over the world. Brazil has been invited to become a member of the International Bioeconomy Forum which would create a multilateral platform for discussion and action on the bioeconomy and which will be established in the second half of 2016. In the area of biotechnology, a Biotechnology Observatory in Brazil has been funded by the Sector Dialogue Facility supported by the Commission mirroring the EU Bioeconomy Observatory managed by the EU's Joint Research Centre. This is a good example of leveraging other funding mechanisms to support infrastructure that enables or facilitates S&T cooperation. Furthermore, there is ongoing cooperation through the Sector dialogues facility in the field of Alternative Methods to animal use and Agroecology Platforms.

In the field of energy, advanced biofuels is the topic of a coordinated call in the WP 2016-17 of Horizon 2020 which aims at exploiting synergies between Brazil and Europe in terms of scientific expertise and resources in this area. Joint work can build upon the Brazilian sugarcane ethanol model and should benefit from the Brazilian and European experience in biofuels. In the coming years, Brazil will be an important partner in the context of Mission Innovation¹⁵.

Progress is also being achieved in the cooperation on the domain of nanosafety through Brazilian participation in the EU project NanoReg (A common European approach to the regulatory testing of Manufactured Nanomaterials). In the future, it is intended to broaden this cooperation to other nanotechnology areas.

In the area of health, a dedicated Horizon 2020 call on ZIKA was launched in March 2016 to set up a research network across the Latin America region to facilitate, coordinate and implement urgent research to combat the ZIKA outbreak, and lay the foundation for a preparedness research network against any future emerging severe infectious threats. Given the seriousness of the outbreak in Brazil and the risks associated to its spreading in the region and globally, on an exceptional basis, Brazilian scientists participating to the selected project(s) will be funded by the EU.

Brazil is active in high-speed aerospace and aviation technologies and an active partner in EU projects including as a supplier of rocket stages¹⁶ and participation in projects on alternative fuels for aviation.

In the area of environment, Brazil became a member of the Belmont Forum in 2012 and cooperation is being explored in the area of sustainable urbanization, with focus on 'sustainable and re-naturing cities' and on the building of a platform of technologies inspired by nature. The Research Foundation of the State of São Paulo (FAPESP) is a member of Belmont Forum and will take over the co-presidency as of January 2016.

ICT is another prominent cooperation area with Brazil. The three coordinated calls funded jointly by Brazil and the EU implemented so far, will be followed by a fourth joint call under the LEIT-ICT part of WP 2016-17 of Horizon 2020, addressing the areas of 5G, Cloud Computing and IoT Pilots. Further cooperation priorities go beyond the current research areas - Next Generation Internet, building on FIWARE collaboration. In addition to this, regular EU-Brazil ICT Dialogues were established on an annual basis to discuss ICT policies, especially in domains related to the research and innovation topics addressed in the coordinated/joint calls.

In the field of research infrastructures, cooperation with Brazil is explicitly foreseen in the area of biodiversity and carbon cycle in particular in connection with the LIFEWATCH ESFRI project (on the ESFRI roadmap since 2006). A relevant initiative which could positively impact is the Trans-Atlantic submarine cable for connectivity to Latin America, aimed at ensuring very high capacity, cost benefit, short route and stimulating diversity over the trans-Atlantic segment. The Commission will also support a group of public actors gathered in the consortium BELLA (Building European Link to Latin America)¹⁷.

The development of regional innovation systems is considered by the Brazilian National Plan for Regional Development - PNDR (2011) as a priority for social-economic

¹⁵ <http://mission-innovation.net/>

¹⁶ http://www.esa.int/Our_Activities/Space_Engineering_Technology/High-Speed_Experimental_Fly_Vehicles_-_INTERNATIONAL

¹⁷ <https://ec.europa.eu/digital-single-market/en/news/planned-new-submarine-cable-between-europe-and-latin-america-joint-venture-agreement-signed>

development. In this context, the North-west region of Brazil (in particular the state of Pernambuco) is being jointly analysed by the European Commission and the Brazilian MI - Ministério da Integração Nacional, CGEE – the Center for Strategic Studies and Management Science, Technology and Innovation, and SECTI/PE – the Secretaria de Estado de Ciência Tecnologia e Inovação do Estado de Pernambuco.¹⁸ This cooperation experience offers unique conditions for piloting the adaptation of the European Smart Specialisation Strategy approach to the Brazilian context.

2.2.3. *Framework Conditions*

Framework conditions for research cooperation with Brazil have been improving over the last decade. The government adopted two consecutive National Science, Technology and Innovation Strategies, whose key elements included an improved innovation regulatory framework, a larger and more accessible funding structure and international cooperation. The setup of a co-funding scheme by the Research Foundation of the State of São Paulo (FAPESP) and by the Brazilian National Council of Research Foundations (Confap) will provide Brazilian researchers with funding sources to support their participation in Horizon 2020 projects. The nomination of a National Contact Point for Horizon 2020 at the University of São Paulo is also an important step to facilitate Brazilian participation in Horizon 2020.

EU-Brazil cooperation will also be strengthened by supporting two-way mobility of researchers and academic staff. There are ongoing discussions for an Implementing Arrangement between Brazilian institutions and the European Research Council. Additionally, Confap has recently been nominated a National Contact Point for the Marie Skłodowska-Curie Actions with the objective of providing targeted assistance to Brazilian researchers interested in working for limited periods in the EU.

¹⁸ The project builds on a previous preparatory action that was supported by the EU-Brazil sectoral dialogues Support Facility (Projeto Apoio aos diálogos setoriais Uniao Europeia – Brasil) and made a proposal of terms of reference to support the development of the regional innovation system of Pernambuco.