LEADERSHIP

Latin America-Europe ICT Research & Innovation partnership

Policy brief on LAC

Funding Mechanisms

Mapping of Latin American Programs and Financing Mechanisms supporting International Cooperation in ICT R&I, access to programs and recommendations

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1 Introduction

The **LEADERSHIP project** supports the evolving dialogues on EU-LAC research and innovation (R&I) cooperation in ICT by providing input to bilateral and bi-regional dialogues on Science, Technology and Innovation, thus ensuring continuity and enhancing collaborative ICT R&I in Horizon 2020 and other programs. One of the initiatives in this domain is to support EU-LAC dialogues around funding mechanisms of ICT R&I. The **"Input Paper on Funding Mechanisms"** aimed at identifying the most important Latin America funding mechanisms for ICT research and innovation that could be complementary with European funds. More specifically, **the study purpose** was as follows:

- To map the main programs and financing funds supporting international cooperation in ICT research and innovation in Argentina, Brazil, Chile, Mexico, Colombia, Costa Rica and Peru;
- To identify complementary funding mechanisms for cooperation with Europe in ICT research and innovation; and
- To review access for European researchers of programs and funding mechanisms, in terms of their eligibility and reciprocity.

The **elaboration of the Input Paper**, led by CAF – Development Bank of Latin America, was based on **three primary inputs**:

1. An extensive desk research of funding programs, both in the public (national and local governments) and private (enterprises and not-for-profit foundations) sectors in Latin America in the area of ICT research and innovation; the purpose was to identify the sources of funding, what kind of research is being funded, who is eligible for funding, and those alike;
2. A survey of public and private institutions providers and recipients of funding aimed at understanding perceptions with regards to financing needs and current funding mechanisms for ICT research and innovation. Furthermore, the survey, provided insights on how to coordinate efforts and exploit synergies between different funding mechanisms to enhance ICT cooperation with Europe; and
3. Discussions with the Funding Mechanisms Working Group within the LAC-ICT Expert Group set up by LEADERSHIP, which included a workshop where a draft of the Input Paper was discussed.

This **Policy Brief on LAC Funding Mechanisms** synthesizes the knowledge and results produced in the elaboration of the Input Paper on Funding Mechanisms. It **aims to highlight main findings and recommendations** to enhance the allocation of funds as well as the alignment of funds with LAC ICT R&I objectives. The document is **structured in the following chapters**: Chapter 2 provides an overall analysis of programs and funding mechanisms supporting international cooperation in ICT R&I, Chapter 3 identifies all complementary funding mechanisms for EU-LAC R&I cooperation in ICT, Chapter 4 identifies the programs, funding amounts and terms by country that are explicitly open to European researchers. Finally, Chapter 5 drafts recommendations to LAC institutions and funding agencies, institutions responsible of EU-LAC political dialogue on science and technology, and the European Commission.

2 Main programs and financing mechanisms

A total of 122 programs were identified as relevant for the scope of the LEADERSHIP partnership, amounting to a total of US$ 20,456.29million. Of these, 54 are explicitly open to Europeans (with 33 % of total funding), while 32 do not specify whether they are open to foreign nationals (with 49% of total available funding), and 36 (with 15% of total funding) are restricted to local country nationals. The distribution, by country is depicted in the table below.

Table 1: Latin America: ICT Research and Innovation Funding Programs

Country	Programs Identified	Explicitly open to Europeans	Does not Specify whether open to foreign nationals	Only open to local country nationals
Argentina	34	8	13	13
Brazil	18	12	4	2
Chile	24	14	8	2
Colombia	15	9	3	3
Costa Rica	4	-	1	3
Mexico	19	5	2	12
Peru	8	6	1	1
Total	122	54	32	36

Source: Telecom Advisory analysis

As data in the table above indicates, the countries with the highest number of funding programs open to European citizens are Brazil, and Chile. The Argentine situation is unclear given the number of programs where information is not explicit about program eligibility.

Overall, the main funding areas for European researchers are basic and applied research, technology modernization, ICT assimilation by the productive sector, regional economic development through promotion of clusters, entrepreneurship and start-up funding.

3 Complementary funding mechanisms

Beyond the national programs, there are three (3) types of complementary funding mechanisms promoting cooperation between Latin America and Europe regarding ICT research and innovation:

a. **International funding mechanisms**. Funding programs sponsored by multilateral institutions aimed at promoting cooperation between Europe and Latin America. These are divided in two types: general funding mechanisms, and multilateral agreements.

Table 2: General Funding Mechanisms

Funding Mechanism	Program
European Commission	HORIZON 2020
	Alliance for the information society@lis
	Erasmus Mundus - EACEA
Latin American and Caribbean Internet Address Registry	Erasmus Mundus - EACEA
International Development Research Center	ICT4D (Information and Communication Technologies for Development)
Ibero-American Development Program for Science and Technology	CYTED
STIC-Amsud	Cooperation initiative promoted by the French government focused on collaboration and creation of research networks in ICT through joint projects
Inter-American Development Bank	Technological Innovation Program Scientific and Technological development Program
Organization of Ibero-American States for Education, Scientific and Cultural Organization (OEI)	Cooperation on multiple programs, campaigns, research, and consultancy over three main domains: • Education • Science • Culture
CONACYT-Horizon 2020	Participation of Mexican research institutions in the European Research Initiative of H2020

Source: Compiled by Telecom Advisory Services

b. **Bilateral agreements**. Funding agreements signed between specific European and Latin American countries aimed at promoting cooperation in ICT research. As detailed in the following table, the most proactive European countries in signing bilateral agreements are Belgium, France, Germany and Spain (on the European side), while Chile and Brazil are the more active ones on the Latin American side.

Table 3: Examples of bilateral agreements

European Countries	Argentina	Brazil	Chile	Colombia	Mexico
Belgium	X	x	x	x	x
Czech Republic	X				
Denmark		x	x		
Finland	X	x	x		
France	X	x	x	x	x
Germany	X	x	x	x	x

European Countries	Argentina	Brazil	Chile	Colombia	Mexico
Greece			x		
Hungary	X		x		
Italy	X	x	x		x
Netherlands	X	x	x		
Poland					x
Portugal	X	x	x		
Rumania			x		
Spain	X	x	x	x	x
Sweden		x	x		
Switzerland		x	x		
United Kingdom		x			x

Source: Compiled by Telecom Advisory Services

c. **Latin American funding programs open to European researchers.** Funding programs sponsored by Latin American institutions (public and private) open to European researchers, detailed in the following chapter.

4 Access of programs and funding mechanisms to Europeans

When studying funding amounts, total funds budgeted for ICT research in the countries under study are approximately $20.5 billion per year. Of this amount, US$ 6.8 billion (or 33%) comprise funds that explicitly indicate European researchers eligibility. On the other hand, US$ 10.0 billion (or 49%) originate in research funds that do not clearly state the national eligibility of applicants, while US$ 3.0 billion (or 15 %) pertain to research funds targeted only to researchers that are local country nationals. While it is understood that this information might not be complete, the breakdown of categories by country provides some indication of the comparative emphasis set by each Latin American country in putting forward cooperative funding mechanisms with Europe (see table below).

Table 4: Latin American Total Funds by Geographic Eligibility (in US$ million)

Country	Total Funds	Funds with European eligibility		Funds not specifying national eligibility		Funds targeted to local country nationals	
		Total	Percent	Total	Percent	Total	Percent
Argentina	$ 165.16	$ 33.94	21%	$ 34.07	21 %	$ 97.14	59 %
Brazil	$ 16,283.37	$ 4,923.65	30 %	$ 9,817.60	60 %	$ 1,524.12	9 %
Chile	$ 173.13	$ 171.56	99 %	$ 1.57	1 %	$ 0.00	0 %
Colombia	$ 1,126.92	$ 1,091.85	97 %	$ 5.86	1 %	$ 29.21	3 %
Costa Rica	$ 78.71	$ 0.00	0 %	$ 42.27	54 %	$ 36.45	46 %
Mexico	$ 2,597.87	$ 626.72	24 %	$ 29.79	1 %	$ 1,323.11	75 %
Peru	$ 31.13	$ 0.00	0 %	$ 29.79	96 %	$ 1.34	4 %
Total	$ 20,456.29	$ 6,847.706	33 %	$ 10,023.00	49 %	$ 3,029.37	15 %

Source: Telecom Advisory Services analysis

As data indicates, some specific patterns of collaboration with Europe across Latin American countries emerge. Chile, and Colombia appear to have a large portion of program funds eligible to European researchers. On the other hand, the reverse is the case for Argentina, Mexico, Peru and Costa Rica, where a high percentage of program funds are only eligible for local country nationals. Brazil is a special case. Despite the fact that only 30% of surveyed program funds are eligible for European researchers, the total size of ICT funding makes the amount available to promote European collaboration to be fairly sizable (US$ 4.9 billion) among the countries studied.

To have detailed information by LAC country of all funding programs identified that are specifically open to European researchers, including: areas covered, mechanisms for applying to it, budget, and length of funding; download the complete Input Paper on LAC Funding Mechanisms at http://www.leadershipproject.eu/?page_id=3442.

5 Recommendations

The fragmentation across ICT research funding mechanisms, programs, and agencies continues to be pervasive across Latin America. When adding private funding sources, the fragmentation increases exponentially. This state of affairs hampers the efficient allocation of funds as well as the alignment of funds with ICT development objectives. Certainly, this fragmentation cannot be fully addressed over the short run. However, some initiatives can incrementally improve the efficiency in resource allocation.

The first recommendation points to the need to develop a country-by-country comprehensive institutional framework that enhances the alignment between the various funding sources and programs and national ICT development objectives. Additionally, this framework would facilitate the potential coordination of programs in order to avoid redundancies.

The second recommendation focuses on the development of country specific maps of funding mechanisms with again, the purpose of rationalizing the sources of funding. In addition, these maps could serve as a basis for providing researchers with a tool that enhances their visibility of potential funding programs. This matching platform could enhance efficiency in resource allocation.

Both recommendations are presented in more detail in the sections below.

5.1 The need of a comprehensive institutional framework

LEADERSHIP identified the existence of multiple funding programs focused on supporting ICT research and innovation in Latin America. At an aggregate level, US$ 20.45 billion in funds have been identified. Seemingly, more resources and programs exist beyond these, but those could not be identified due to the lack of information. Within this universe, 51 % (or US$ 12.5 billion) is open to European researchers. Some of these programs are integrated within institutional frameworks typically laid out at the country level. For example, by offering multiple ICT research funding programs, CONICET (Argentina), CONACYT (Mexico), FINEP (Brazil) and CORFO (Chile) function as coordinating institutions providing consistency across funding principles, eligibility frameworks, and allocation transparency across programs.

However, considering that each country comprises many funding programs beyond those handled by institutions such as the one mentioned above, the need to deploy a country-wide comprehensive institutional framework for defining basic principles guiding funding of ICT research and innovation is apparent. Developed and managed by each country entities such as the Ministry of Science and Technology or Ministry of ICT, these institutions are expected to act as a link translating the objectives of a country's ICT national strategy into guidelines for the allocation of funds to be followed by the different

programs offered by public (national and sub-national) and private sector institutions (see figure 1).

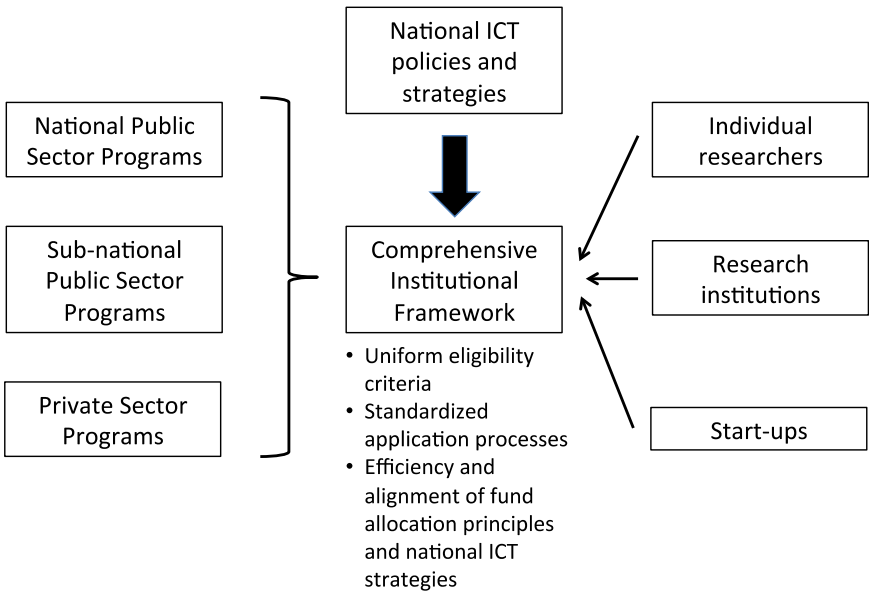

Figure 1: ICT Research National Framework

The framework would provide a single set of eligibility principles aligned with the objectives of the ICT national strategies and Digital Agendas. Along these lines, in order to compete for funds, institutions and researchers should be aligned with the national ICT policies and strategies, and funds would be steered to strategically important areas of research. Such a framework would be a highly effective mechanism for improving alignment and efficiency in the allocation of funds across researchers, research centers, and start-ups. Furthermore, the framework could standardize application processes reducing redundant efforts that currently need to be carried out by units seeking for funds. Along these lines, the framework not only serves as a mechanism to streamline funding applications, but it also becomes a "matching platform", aligning the need for funds with the suitable programs in light of a unified view of national priorities.

The framework would serve as a basis to build a platform that would enhance visibility of all sources of funding programs to facilitate visibility by individual researchers and institutions. It is then clear that some partial efforts are already being deployed in that regard. For example the *Comunidad de Estados Latinoamericanos y Caribeños* (CELAC) is evaluating the possibility of developing such a platform. Similarly, the *Federación de Asociaciones de América Latina, España y Portugal de Entidades de Tecnologías de Información y Comunicación* (ALETI), as well as different local associations of venture capital firms conducting similar efforts. The recommendation should not aim at developing a redundant framework, but aims at integrating the existing ones within a single platform.

5.2 The need to develop a comprehensive map of funding sources

Since funding sources originate from multiple programs, the need to understand how these are deployed in support of ICT research and innovation is a critical task. A conventional view of funding mechanisms along the ICT innovation life cycle remains a useful framework to identify potential gaps and redundancies (see figure 2).

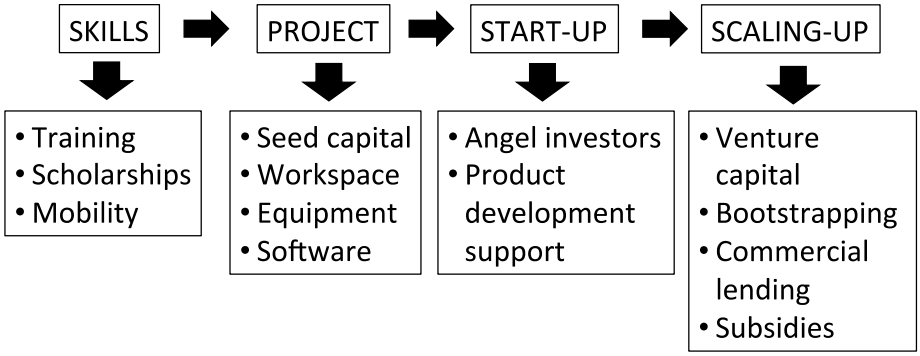

Figure 2: Funding Mechanisms and the ICT Innovation Life Cycle

Along these lines, it would be useful to conduct a detailed mapping effort to understand the availability of funding programs or lack thereof in support of ICT research at the country level. Such a map for each country would also be useful to identify the potential relative scarcity of funding programs for specific stages of the ICT project life cycle.

Download the complete report at:
http://www.leadershipproject.eu/?page_id=3442

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