

Program for the Strengthening of Science and Technology Systems (FORCYT)

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Countries Involved

Andorra (AND)	Argentina (ARG)	Brazil (BRA)
Chile (CHL)	Colombia (COL)	Costa Rica (CRI)
Cuba (CUB)	El Salvador (SLV)	Honduras (HND)
Mexico (MEX)	Paraguay (PRY)	Portugal (PRT)
Uruguay (URY)		

Executive Summary

The FORCYT program's executive summary assesses the capacities for producing higher education, science, and technology indicators in Ibero-America. Over recent decades, Latin American countries have made sustained progress in developing and professionalizing national and regional science and technology statistics, driven by both national efforts and regional cooperation, notably through RICYT. However, systems remain heterogeneous, with disparities in resources,

institutional support, and data quality—especially in the private sector and non-university higher education. Key challenges include limited legal authority to collect data, insufficient and unstable technical staff, and operational and methodological difficulties. Communication of indicators has improved with digitalization, but accessibility and user understanding vary. The report highlights the need for further development of advanced indicators (e.g., internationalization, equity, innovation), greater integration of data sources, and enhanced user-oriented communication, emphasizing the importance of ongoing capacity building and regional collaboration.

Taxonomies

Themes

- **Data Governance** (Data & Governance) - Relevance: 1.0

Justification: The central focus of the document is the diagnosis and strengthening of national and regional systems for the production, management, and governance of science, technology, and higher education indicators in Ibero-America. The text dedicates extensive content to the challenges, institutional arrangements, legal frameworks, and practices around data collection, quality, access, and use, making Data Governance the most central and strategic theme.

- **Digital Governance** (Data & Governance)
- **Digital Access** (Data & Governance) - Relevance: 0.85

Justification: The document devotes significant attention to the accessibility and dissemination of statistical information, including digital publication, open data, user support, and the use of digital platforms for sharing indicators. Ensuring digital access is presented as both a challenge and a facilitator for transparency, policy-making, and stakeholder engagement, directly supporting the document's objectives.

- **Digital Agenda** (Digital Transformation & Strategy)
- **Digital Research** (Digital Transformation & Strategy)
- **Digital Skills Development** (Digital Transformation & Strategy)
- **Digital Infrastructure** (Digital Transformation & Strategy)
- **Digital Ecosystem** (Digital Transformation & Strategy)

- **Bi-regional Cooperation** (Regional & International Cooperation) - Relevance: 0.92

Justification: A key pillar of the document is the emphasis on cooperation between national and regional actors (e.g., RICYT, Red ÍndicES, OEI, EU) to harmonize standards, share best practices, and build communities of practice. The document repeatedly highlights the importance of regional and international collaboration for capacity building, standardization, and the sustainability of indicator systems, making this theme highly central and strategic.

- **Digital & Technological Partnerships** (Regional & International Cooperation)

Actors

- **Organisation of Ibero-American States** (Political Actors) - Relevance: 1.0

Justification: The Organisation of Ibero-American States (OEI) is the main author and publisher of the report, is repeatedly referenced throughout the document, and is central to the coordination and implementation of the FORCYT program. OEI's role is pivotal in the development, analysis, and dissemination of science, technology, and higher education indicators in Ibero-America, making it the most influential actor in the context.

- **European Union** (Political Actors) - Relevance: 0.8

Justification: The European Union is highlighted as the main financial supporter of the FORCYT program and is credited with enabling the study. Its standards, funding, and cooperation frameworks are repeatedly mentioned as drivers of regional convergence and capacity building, giving it significant influence over the main topics and initiatives discussed.

- **Governments** (Political Actors) - Relevance: 0.9

Justification: National governments are consistently referenced as the primary entities responsible for the production, management, and use of science, technology, and higher education indicators. Their ministries and agencies are the main implementers of the systems and policies discussed, and their cooperation is essential for the success of regional initiatives and data harmonization.

- **Government Officials** (Political Actors)
- **Universities** (Research and Innovation Actors)
- **Academic Institutions** (Research and Innovation Actors)
- **Researchers** (Research and Innovation Actors)
- **Research Performing Organisations** (Research and Innovation Actors)
- **EU-LAC Foundation** (Research and Innovation Actors)
- **Private Sector Representatives** (Economic Actors)
- **Industry Actors** (Economic Actors)
- **Research Funding Organisations** (Economic Actors)
- **Non-governmental Institutions** (Civil Society Actors)
- **Civil Society Organisations** (Civil Society Actors)

Beneficiary Groups

- **Companies** (SMEs / Businesses)
- **Public Institutions** (Public Sector / Governments)
- **Research and Development Centers** (Researchers & Academia)
- **Researchers** (Researchers & Academia)
- **Students** (Students & Youth)

Additional Beneficiary Groups

- institución
- investigador
- estudiante
- empresa
- organismo

Sustainable Development Goals (SDGs)

- SDG 4: Quality Education
- SDG 8: Decent Work and Economic Growth
- SDG 9: Industry, Innovation and Infrastructure
- SDG 10: Reduced Inequalities
- SDG 17: Partnerships for the Goals

EU Policy Alignments

- Digital Decade
- EU Cyber Strategy
- Horizon Europe
- NDICI-Global Europe

Commitments

Commitment 1

Strengthen national capacities to produce and analyze STI indicators, particularly in low-resource and underrepresented countries in the Ibero-American region.

Commitment 2

Foster alignment with international statistical standards, including Frascati, Oslo, and Valencia manuals, to enable regional and global comparability.

Commitment 3

Support institutional coordination and professionalization, improving data reliability, institutional memory, and staff training across national systems.

Commitment 4

Enhance access to and usability of data, including the development of interoperable platforms, open data practices, and user-focused dissemination strategies.

Commitment 5

Promote regional cooperation through RICYT and Red ÍndicES, using these networks to develop shared methodologies and expand indicator coverage (e.g., innovation, gender equity, public perception of science).

Commitment 6

Bridge statistical gaps in emerging policy areas, such as digital transformation, internationalization of higher education, equity, and science-society engagement.

Key Performance Indicators (KPIs)

KPI: Annual Production of Higher Education Indicators

Description:	In general terms, the ES indicators are generated annually in all countries, following the calendar year or the school year (which differs in Mexico, for example).
Type:	quantitative
Target Value:	1.0
Target Description:	Produce higher education indicators annually
Unit:	year
Timeframe:	annually

Measurement Method:	Review of publication frequency
Responsible Entity:	Offices of higher education statistics
Sector:	Higher Education Statistics

KPI: Capacity Building in Big Data and Impact Studies

Description:	Regarding the training of technical teams, respondents generally expressed high satisfaction. This does not mean, however, that there are no opportunities for improvement. With respect to strengthening the specific training of technical staff, the sources identified training needs related to big data and impact studies.
Type:	qualitative
Target Description:	Strengthen technical teams' training in big data and impact studies
Unit:	qualitative milestone
Measurement Method:	Training program implementation and participation records
Responsible Entity:	Offices of higher education statistics
Sector:	Higher Education Statistics

KPI: Continuity of Data Collection Series

Description:	Regarding coverage, representatives from the organizations emphasize the importance of continuous data collection over time. This objective is met to varying degrees, with some countries having data series spanning more than 20 years.
Type:	quantitative
Target Value:	20.0
Target Description:	Maintain data collection series for more than 20 years
Unit:	years
Measurement Method:	Review of historical data series length
Responsible Entity:	National science and technology statistics offices
Sector:	Science and Technology Statistics

KPI: Development of Impact, Internationalization, Research, and Innovation Indicators

Description:	Regarding unmet needs, the report mentions measuring the impact of universities on the demands and needs of their surrounding communities. It also identifies areas for strengthening internationalization, research, and innovation.
Type:	qualitative
Target Description:	Develop and strengthen indicators for university impact, internationalization, research, and innovation
Unit:	qualitative milestone
Measurement Method:	Existence and use of new or improved indicators
Responsible Entity:	Offices of higher education statistics
Sector:	Higher Education Statistics

KPI: Development of New Science and Technology Indicators

Description:	Adding value to the collected information is a shared objective of statistical agencies in science and technology. These agencies seek to propose new uses for existing indicators—or, more precisely, for the statistical information that allows them to be constructed—and to develop new indicators—beyond those of the Frascati family—such as indicators of innovation or public perception of science.
Type:	qualitative
Target Description:	Develop new indicators beyond the Frascati family, including innovation and public perception of science indicators
Unit:	qualitative milestone
Measurement Method:	Existence and implementation of new indicators
Responsible Entity:	National science and technology statistics offices
Sector:	Science and Technology Statistics

KPI: Enhancement of Indicator Communication and Accessibility

Description:	Regarding the factors that facilitate the communication of the generated indicators, the possibilities currently offered by information and communication technologies are highlighted. Specifically, the growing familiarity of the general population with reading statistical information is also mentioned. Other factors identified as facilitators that promote the communication of the results obtained include adherence to publication schedules and the publication of glossaries and metadata to facilitate the interpretation of the statistical information.
Type:	qualitative
Target Description:	Improve communication of indicators through ICT, timely publication, and provision of glossaries and metadata
Unit:	qualitative milestone
Measurement Method:	Availability of ICT tools, publication schedules, and supporting materials
Responsible Entity:	Offices of higher education statistics
Sector:	Higher Education Statistics

KPI: Improvement of Data Collection Instruments and Consistency

Description:	Emphasis is placed on the need for the questionnaires to be clear, for those who answer them in each organization that provides primary information to have the capacity to obtain the information requested, for the responses to be quick, for the consistency to be verified between the information that the institutions report and the information they previously reported or between the information they report and that which can be obtained from other sources, etc.
Type:	qualitative
Target Description:	Ensure clarity of questionnaires, rapid responses, and consistency of reported information
Unit:	qualitative milestone
Measurement Method:	Quality checks and validation procedures
Responsible Entity:	National science and technology statistics offices
Sector:	Science and Technology Statistics

KPI: Maximizing Usefulness of Produced Information

Description:	Statistical agencies in science and technology share a concern to ensure that the information produced is of the greatest possible benefit to its potential recipients.
Type:	qualitative
Target Description:	Ensure that produced information is as useful as possible for target audiences
Unit:	qualitative milestone
Measurement Method:	Stakeholder feedback and usage analysis
Responsible Entity:	National science and technology statistics offices
Sector:	Science and Technology Statistics

KPI: Prevalence of Methodological, Operational, and Training Difficulties

Description:	Of the thirteen Latin American countries that responded to the survey, 46% identified methodological difficulties in the production of indicators, 62% reported operational difficulties, and 31% indicated a lack of training.
Type:	quantitative
Target Description:	46% report methodological difficulties, 62% operational difficulties, 31% training deficiencies
Unit:	percentage
Measurement Method:	Survey of 13 Latin American countries
Responsible Entity:	Offices of higher education statistics
Sector:	Higher Education Statistics

KPI: Technical and Methodological Knowledge Level

Description:	According to the perception of the actors themselves, the technical and methodological knowledge of the organizations constitutes a strength (85% of the respondents considered it high or very high).
Type:	quantitative
Target Value:	85.0

Target Description:	85% of respondents consider technical and methodological knowledge to be high or very high
Unit:	percentage
Measurement Method:	Survey of responsible actors
Responsible Entity:	Offices of higher education statistics
Sector:	Higher Education Statistics

Practical Applications

Application 1:

The FORCYT program supports the ongoing production and improvement of science, technology, and higher education indicators in Ibero-America, with active participation from national offices and the Ibero-American Network of Science and Technology Indicators (RICYT).

Application 2:

National and regional cooperation through RICYT has established a community of practice among officials, specialists, and decision-makers, leading to sustained improvements in indicator production and interpretation.

Application 3:

Many national offices of science and technology statistics are integrated into ministries or secretariats responsible for science and technology policy, and maintain institutional relationships with other relevant agencies, such as those for higher education.

Application 4:

The Observatorio Colombiano de Ciencia y Tecnología operates as a mixed civil association with state participation, serving as a model for institutional arrangements in indicator production.

Application 5:

Offices of statistics in science and technology and higher education regularly publish annual reports, statistical tables, and datasets online, often in PDF and spreadsheet formats, with some offering infographics, maps, and interactive platforms for data consultation and download.

Application 6:

RICYT annually publishes "El estado de la ciencia," a comprehensive report on science, technology, and innovation indicators, available in print and open-access digital formats, and provides a web platform with dynamic data exploration tools and downloadable datasets.

Application 7:

The Red ÍndicES (Network of Higher Education Indicators) has been established to standardize and improve the production of higher education statistics across the region, facilitating exchange and development of new indicators, including those on internationalization.

Application 8:

Several countries (e.g., Brazil, Costa Rica, Mexico, Uruguay) provide high levels of data accessibility, including downloadable datasets, access to microdata, publication of metadata, and user support services.

Application 9:

Most countries in the region have implemented legal frameworks guaranteeing public access to information, and national offices have improved mechanisms for data access and user support.

Application 10:

Some countries have developed systems for collecting nominal (individual-level) data on students, graduates, and staff, enabling longitudinal tracking and integration with other state databases.

Application 11:

National offices provide user support through telephone, email, and, in some cases, automated query systems, and generally allow unrestricted reuse of published data, subject to statistical confidentiality and source citation.

Application 12:

There is ongoing development of new indicators in areas such as internationalization, equity, and university-society linkages, with the Red ÍndicES actively working on these topics.

Application 13:

Capacity-building and technical training activities are regularly identified and, in some cases, implemented to strengthen methodological skills, data processing, and the use of big data and impact studies among technical staff.

Application 14:

Many countries have diversified their communication products to reach different audiences, including specialized reports, infographics, videos, and platforms for self-service data queries.

Application 15:

The RICYT web platform offers comparative tables, dynamic reports, country infographics, and a data explorer application for custom visualizations, supporting broad and flexible data use.

Source Files

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