



**ALCUE NET**

Latin America, Caribbean and European Network on Research and Innovation

# The Future of the CELAC-EU bi regional cooperation in science, technology and innovation: A scenario for 2030

**Carlos Aguirre-Bastos**

**Meeting of National Contact Points**

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# **Main conclusions of the Report “An exploration of the future Latin America and Caribbean (ALC) and European Union (UE) bi-regional cooperation in science, technology and innovation”**

- Carlos Aguirre-Bastos 1/; K. Matthias Weber 2/; Carlos Bermúdez 1/; Susanne Giesecke 2/; Klaus Kubeczko 2/; Doris Quiel 1/

1/ Secretaría Nacional de Ciencia, Tecnología e Innovación de Panamá; 2/ Austrian Institute of Technology

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- **The Madrid Declaration (2010):** *“Towards a new stage in the bi-regional partnership in innovation and technology for sustainable development and social inclusion”*
- Establishment of the dialogue at ministerial and EU-ALC S&T Senior Officials Meeting (SOM)
- **ALCUE Net:** Grant by the European Union, represented by the European Commission, under the 7<sup>th</sup> FP. Grant Agreement 311953 with the Ministry of Science, Technology and Productive Innovation of Argentina, Project Coordinator. Signed by 19 EU-ALC partners. 4 ½ years for the Project duration, starting on 1<sup>st</sup> December 2012.
- The main objectives of ALCUE Net are:
  - a) To support EU-ALC S&T Policy Dialogue and the JIRI implementation.
  - b) Establish a bi-regional platform bringing together players for research and innovation and funding, as well as other public and private stakeholders.
- **The SOM of April 2014, San Jose Costa Rica**
- Several national representatives expressed need to develop a strategic vision for the bi regional cooperation and ALCUE Net Project to better focus its activities. Foresight was identified as an instrument to respond to the expressed need.

- Identify the most important and relevant drivers of the ongoing and future cooperation ALC and Europe.
- Engage stakeholders in thematic areas of ALCUE Net other JIRI areas in a more structured discussion on bi-regional cooperation will develop in the next 15 years.
- Provide short-term (ALCUE Net concludes May 2017) and long-term policy orientations for better shaping the present and future bi-regional cooperation, including the identification of new key thematic areas
- Provide SOM with focused guidelines that should better shape their present deliberations and future decisions.
- Provide basis for a long-term view on the development of the regional cooperation effort in STI *within* CELAC.

- ***Constitution of a core group*** between SENACYT and the Austrian Institute of Technology; Core group met: September 2014 and November 2014 to:
  - a) Identify characteristics that define the drivers of the bi-regional cooperation
  - b) Construction of four exploratory scenarios
  - c) Definition of a survey to stakeholders of the bi-regional cooperation
  - d) Identification of specific technology areas of possible future interest
- ***Strength and Weakness and Trend analysis***
- ***Working Group meeting: 4<sup>th</sup> and 5<sup>th</sup> of March, 2015***
- ***Consultation and Survey***
- ***Bibliometric analyses***

- **Contextual influence:**
- **Environment (natural resource base)**
- **Foreign Direct Investment and resource exploitation**
- **Research and innovation system:** This feature includes innovative cooperation formats, new ways of doing R&I; the sharing of resources: human resources, mobility of students and scientists, and infrastructure.
- **Enhancing citizen and enterprise participation:**
- **Degree of cooperation within ALC and EU countries:**
- **Degree of influence of European visions:** (VERA and BOHEMIA)
- **Governance:** The governance required to define thematic areas of S&T cooperation (top-down or bottom-up).

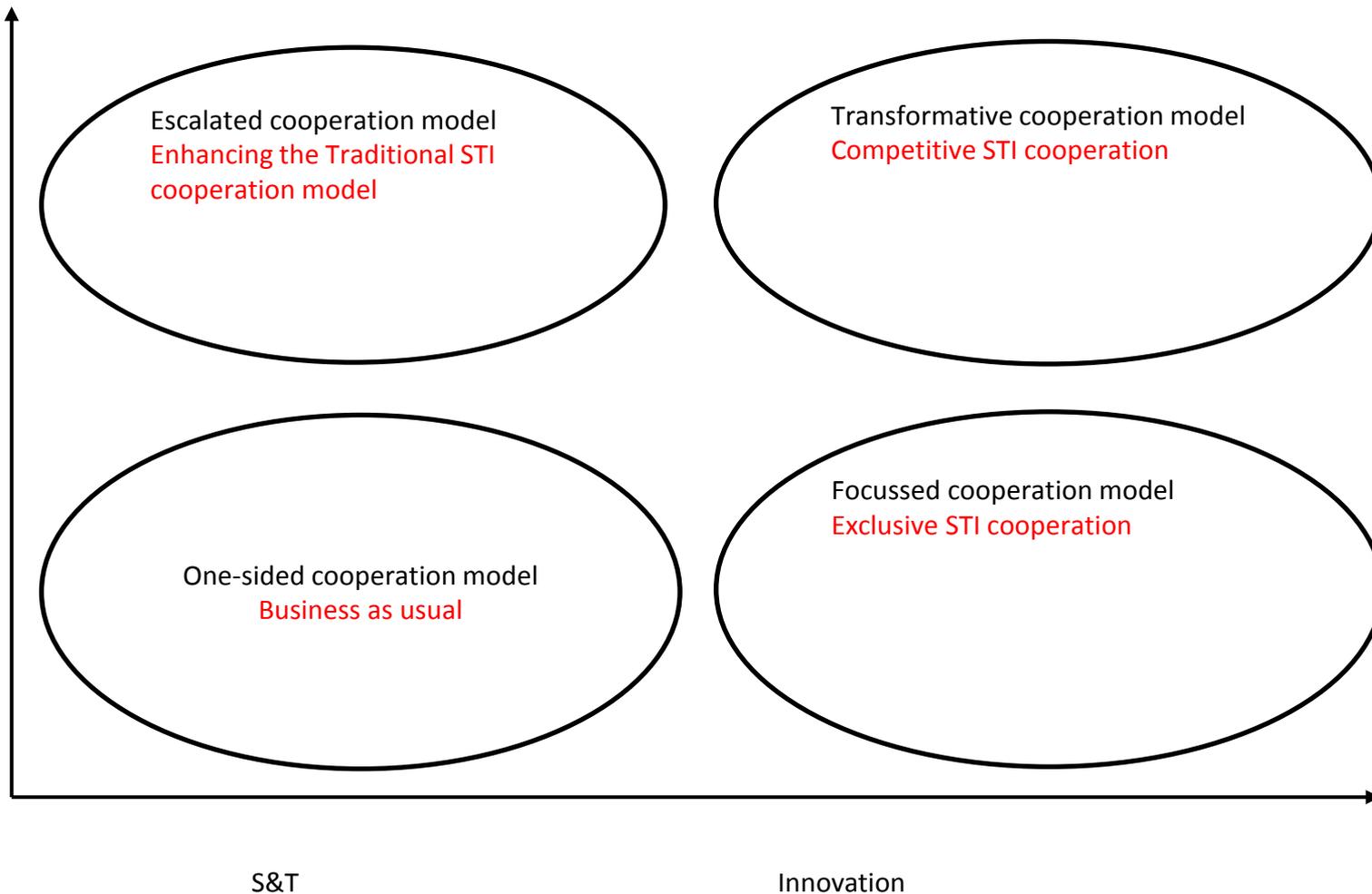


## The exploratory scenarios

- Scenario 1: One-sided cooperation model: Business as usual
- Scenario 2: Escalated cooperation model: Enhancing the traditional STI
- Scenario 3: Focused cooperation model: Exclusive STI cooperation
- Scenario 4: Transformative cooperation model: Competitive STI cooperation

# The exploratory scenarios

Intensity of LAC-EU Cooperation



- In 2030, the bi regional cooperation between ALC and the EU is taking place largely unaltered when compared to the situation some 15 years back. The cooperation is characterized by the presence of asymmetrical relations, which strengthens the big players of the ALC region and to a much lesser degree favors the smaller players. The cooperation is also characterized by its emphasis on research.

- In 2030, the bi-regional cooperation is enhanced but continues to be focused on research. The process is dominated by a handful of some eight countries in ALC, which are more prosperous and have defined better STI policies, including availability and access to increased funding; 85% of the research effort in the ALC region is conducted in the hands of these countries. In several countries, the bi-regional cooperation is limited by visions managed by weak institutions that prevent future planning and capitalization of results.

- In 2030 the bi regional cooperation has moved its focus from research towards innovation led activities. Each participating country, from both sides, has identified issues of strategic interests (grand challenges) to be faced by STI. The bi-regional cooperation is also characterized by the realization of outputs in national markets and the increased ability of negotiation for marketing. This focus, however, has weakened the bi regional cooperation, as a more fierce competition between countries has emerged.

- In 2030 the bi-regional cooperation is enhanced when compared to some fifteen years ago and is now innovation led. This situation is the result of a set of structural changes and practices in the collaboration process. New flexible cooperation instruments have been introduced that take into account the heterogeneity of countries in ALC and the continuous build-up of trust among collaborating partners.

- The bi-regional cooperation in STI develops in 2030 under a context characterized by a large number of global political, economic, societal, social and environmental challenges, including an unprecedented acceleration in the production of knowledge. The cooperation contributes to face such challenges.
- The cooperation strives to develop a collective intelligence capacity under new forms of organizations and processes, different from the past decades. An overarching organization works on the basis of the former SOM arrangement.
- The cooperation ***takes place on equal grounds***. The process is overcoming a large set of weaknesses at the national and inter-regional levels that include the heterogeneous policy and strategic approaches to STI and the need to turn the rhetoric on the importance of STI for development into action.
- The cooperation process allows closing the R&I gap within and between regions. There is an increase of R&D expenditures. A characteristic that remains is that research in ALC is still largely executed in the larger public universities.

- Smaller universities and research centers are being brought into the research landscape. ERA Net type initiatives accommodate or facilitate their participation, by providing information services and facilitating contacts with more well established research universities and public research organizations.
- Vision 2030 highlights the collective wisdom of invention, expressions of multiculturalism and multi-territoriality by strengthening local economies and regional identities, with characteristics that distinguishes the cooperation with other partners such as USA or China.
- In 2030 the bi-regional cooperation is innovation-led. A key mission is to develop innovations for inclusive development. This understanding of innovation is related to the underlying model of inclusive development.
- Solutions are being developed and maintained through self-organized and bottom up approaches and/or supported by the public (through regulatory measures, subsidies, institution building, etc.) as solutions for social integration that are necessary in both ALC and UE countries.

- In 2030, the policies of long-term collaboration are developed to solve big challenges at the bi-regional, inter-regional, and local levels. The policies focus on promoting new public-private instruments for cooperation, the establishment of long-term budgets, establishing mechanisms to solve common problems, increase the participation of smaller players, opening transparent processes to promote citizen participation and declining shares of organized crime.
- In 2030 the execution of bi-regional cooperation actions is facilitated by a more common understanding of the role of the public sector in the innovation system.
- The networks that have been created as a result of the joint initiatives, including joint calls, are today key drivers for progress in R&I at the bi-regional, regional, national and local levels. Networks involving enterprises are developing at a much faster pace than in the past.
- The networks that have involved universities are contributing to the fulfillment of their “new mission” and are also driving local communities into a more active role in the definition of policies in the national innovation systems.

- The bi regional cooperation should deepen its efforts on the search for innovations for inclusive development.
- The bi regional cooperation should be addressed to strengthen strategic intelligence capacities (foresight, think tanks, PRO, etc.)
- SOM itself should become a bi regional cooperation “think tank”. It is thus necessary that a “permanent” technical body be established at the bi regional level. The present ALCUE Net project has already been able to structure a partnership that needs to be kept active.
- Policy dialogues (not just between scientists) will set the way to a better understanding of the bi regional efforts. An understanding of the cultural factors fostering and hindering innovation activities can be an important outcome of such policy dialogues.

- Among the new instruments it may be considered by the European Commission to launch **specific calls** for the ALC-UE bi-regional cooperation.
- Such calls could cover the issues related to the application of STI to inclusive development that will serve as a testing laboratory with outputs that will serve as examples of experiences that can be transferred among countries in both regions.
- The **inclusion of public and private financial sector** in the bi-regional cooperation should be considered. For example Inter-American Development Bank and the Latin American Development Bank should be invited to participate.
- Strengthen **research and innovation networks**, including social networks. For these networks to operate and contribute reaching Vision 2030, the SOM under a new format is required, considering that a lot of orchestration is required.

- Better definition or strengthening of R&D priorities, along thematic and sectorial lines. This means reducing the present number of thematic areas so as to have a better impact on those remaining. At the same time thematic areas of technologies under development must be considered: examples:
  - Grapheme - 3d printing - energy storage - augmented and virtual reality –
  - Quantum computing - driverless drone lanes - wearable technology –
  - Cloud computing – bionics - nuclear fusion - open source
  - Microelectronmechanical systems - Artificial photosynthesis – spintronics - 5G
  - Artificial intelligence - Black phosphorus - Blockchain (Bitcoin technology)
  - Neuromorphic technology - precision agriculture - Smart personal assistants
  - 4d printing - wireless electricity - Adaptive security - fuel cell vehicles
  - Containerization - digital genome nano Solar Cells



# Project BOHEMIA (Beyond the Horizon: Foresight in Support of the Preparation of the European Union's Future Policy in Research and Innovation)

ALCUE NET

ALCUE Network, Decision and Commission Union Networks on Research and Innovation

- Objective: To identify priorities and themes for Future European R&I policy and provide a description of the issues that should be addressed by R&I policy and funding. Time horizon 2040.
- Five main tasks:
  - Task 1 Analyses of foresight and strategic intelligence source
  - Task 2 Develop meta-scenarios at two levels: 1) global meta-scenarios of wider societal and global developments, and domain-specific meta-scenarios. 2) Meta-scenarios of two different kinds: perseverance scenarios (assuming that major trends will be maintained) and change scenarios (assuming fundamental changes in the way context may evolve).
  - Task 3 Preparation of Delphi and Task 4 Implementation: Drawing on a unique and innovative methodology (“Dynamic Argumentative Delphi” DAD) that allows assessing Delphi statements, and support or question the statements by proposing and assessing arguments associated to the statements.
  - Task 5 from Delphi to policy analysis. Six building blocks: (i) Delphi Analysis of assessments; (ii) Rationality Analysis of the potential of the priorities to further European policy goals; (iii) Robustness Analysis; (iv) Feasibility Analysis; (v) Policy Relevance Analysis; (vi) The Policy Relevance Analysis looking into the consequences

