

Innovation Agencies in Latin America and the Caribbean: A Characterization of the RELAI Network

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Abstract

This report considers the ways in which innovation agencies are currently operating across Latin America and the Caribbean. The analysis is focused on the Latin American Network of Innovation Agencies (RELAI), which is an association that brings together the main national and regional innovation agencies in the region. Although this is a study of the institutions that are members of RELAI, the insights and recommendations are intended to be useful to other innovation agencies across the region and worldwide. This research revealed six key factors that are significant in shaping an innovation agency's role in its system: Harmonized ecosystem, Institutional safeguards, Learning culture, Autonomy and influence, Skills and talent, and Networks and reach. This report considers each factor, offering a general framework to help agencies assess where they are in relation to each area and suggesting ideas for action to support the development of agency capabilities and preparedness for future challenges.

About the RELAI Network

The Latin American Network of Innovation Agencies (RELAI) is an association that brings together the main national and regional innovation agencies in Latin America and the Caribbean. Its members are organizations specialized in promoting or supporting research, development, and innovation (R+D+i) in firms. They operate as bridges between public actors responsible for innovation strategies and policymaking and those who carry out innovation and entrepreneurship activities (researchers, R&D centers, universities, start-up accelerators and incubators, firms, and entrepreneurs, among others).

RELAI was formally launched in April 2019 within the framework of the Lima Meeting. RELAI was created through a technical cooperation project of the Inter-American Development Bank (IDB), which continues to support RELAI operations.

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Acronyms

- CAF** Development Bank of Latin America
- IDB** Inter-American Development Bank
- IGL** Innovation Growth Lab
- LAC** Latin America and the Caribbean
- M&E** Monitoring and evaluation
- R&D** Research and development
- R+D+I** Research, development, and innovation
- R&I** Research and innovation
- RCT** Randomized controlled trial
- RELAJ** The Latin American Network of Innovation Agencies
- SMEs** Small and medium-sized enterprises
- STI** Science, technology, and innovation
- TAFTIE** The European Network of Innovation Agencies

Foreword

Innovation agencies are gradually gaining prominence in Latin America and the Caribbean (LAC). Agencies have evolved notably over the last decade as policies related to science, technology, and innovation (STI) are being mainstreamed into each country's growth and productivity strategies. This consolidation process of innovation policy has resulted in the diversification and increasing complexity of the mix of policy instruments managed by these agencies.

Along with the evolution of the policy instrument mix there was also a gradual strengthening of the agencies' institutional capabilities and an increase in the size of the budgets managed by these agencies. Countries such as Argentina, Chile, Colombia, Costa Rica, Panama, Peru, and Uruguay have recently reformed (or are in the midst of reforming) their STI institutional frameworks. Some countries have opted for an integrated or dominant agency that covers policy instruments from basic science to innovation. Others have opted for dual models where independent specialized agencies deal with science and advanced human capital while other independent specialized agencies focus on innovation and entrepreneurship. Internal organization, processes and capabilities, the involvement of the private sector, and the coordination mechanisms among government entities all vary among agencies and affect their performance.

The issue of capabilities of innovation agencies in the LAC region is of great importance and has been notoriously under-researched. There have been recent studies on the evolution of institutional arrangements for STI but with a more systemic or macro approach—missing the focus on the agencies themselves—or focused on strategic councils for the establishment of long-term STI policies. There are several kinds of institutional capabilities and corresponding institutional arrangements needed to implement innovation policies, namely capabilities to establish long-term strategies that transcend government periods, policy coordination capabilities to harmonize sector-focused innovation policies, and implementation capabilities.

Therefore, the objective of this study is to characterize the innovation agencies that form the Latin American Network of Innovation Agencies (RELAI) by analyzing and comparing the institutional and operational functions of its members through the study of some key aspects. This study will serve to describe in detail the universe of member agencies and the context in which they work, in order to better understand the dynamics of these organizations and to develop a focused agenda for RELAI to improve the delivery of its services and the impact of its programs. In addition, this work should provide meaningful recommendations to the future roles and direction for agencies and to finding an appropriate balance between a clear mandate and organizational agility to ensure preparedness and resilience amid uncertainty. I wish you all a great reading.

Vanderleia Radaelli

Lead Specialist, Competitiveness, Technology, and Innovation Division (IFD/CTI)
Inter-American Development Bank (IDB)

Summary

In a world characterized by high levels of turbulence, uncertainty, and change, the need for innovation—the application of new ideas to create value—has never been more urgent. Once seen as primarily about delivering national sources of competitive advantage and economic growth, innovation is increasingly being called on to address complex societal challenges and achieve transformational outcomes for people and the planet. In an era of innovation missions, we must look especially at the role of government in directing innovation towards solving the main challenges that countries and regions face (Mazzucato and Penna, 2020).

This report considers the ways in which innovation agencies—government-funded or -managed institutions that provide financial and other support to catalyze private sector innovation—are currently operating across Latin America and the Caribbean (LAC). Therefore, the analysis is focused on the Latin American Network of Innovation Agencies (RELAI), which is an association that brings together the main national and regional innovation agencies in Latin America and the Caribbean. Although this is a study of the institutions that are members of RELAI, the insights and recommendations are intended to be useful to other innovation agencies across the region and worldwide.

In comparing key characteristics of members of the RELAI network, many similarities can be observed, particularly in terms of their mandates and the instruments used to support innovators. However, clear differences are present as well, shaped by the different contexts that innovation agencies inhabit as well as the internal dynamics of these agencies themselves. As such, this is not a ranking or an evaluation of individual agencies. The intention was not to compare performance, but rather to identify the common challenges and opportunities that these organizations face and to learn more about the strategies and approaches that different agencies are using in response to them.

This research revealed six key factors that are significant in shaping an innovation agency's role in its system:



HARMONIZED ECOSYSTEM

The extent to which there is agreement about the main goals of innovation policy, and the relative roles and responsibilities of different actors in delivering it



INSTITUTIONAL SAFEGUARDS

The degree of independence afforded to an agency by its governance and financial models, which enable it to pursue a stable strategy



LEARNING CULTURE

The existence of systems and processes that facilitate continuous learning and that enable an agency to understand the impact of its activities



AUTONOMY AND INFLUENCE

The extent to which an agency is able to shape the formulation and design of national innovation policy priorities and determine its own strategy



SKILLS AND TALENT

The availability of relevant skills and expertise to apply to an agency's current and future work, and its commitment to the nurturing of talent



NETWORKS AND REACH

The breadth and depth of an agency's relationships and collaborations within its own national ecosystem and with international partners

This report considers each factor in turn, offering a general framework to help agencies assess where they are in relation to each area and suggesting ideas for action to support the development of agency capabilities and preparedness for future challenges. This self-assessment can also help agencies to think about what mode they may be operating in and the room they have to maneuver when it comes to developing their role in the innovation ecosystem.

Agencies that consider themselves to be fairly advanced in each of these areas could be seen to be operating in a transformative mode, generally in possession of the resources, influence, and skills needed to pursue their mission and capable of learning and pivoting in an agile way to respond to new opportunities or challenges. Agencies operating in a more established mode will likely have a strong position in their ecosystem, even if there are skills or capabilities gaps in some areas. Agencies that find themselves in more volatile political or economic environments may be operating in an unstable mode, struggling to develop their capabilities or the institutional security needed to pursue a long-term innovation strategy.

By reflecting on where it sits in relation to this typology and set of factors, each innovation agency in LAC and worldwide can develop a plan of action that is tailored to its own context and needs.

Recommendations

For individual innovation agencies, this research suggests a number of practical actions and next steps, including:

- **Deep diving into the survey data** to compare its own characteristics and activities with the approach taken by other agencies, focusing on those that are most similar in terms of context, organizational structure, and/or activities.
- **Using the factors and the typology as diagnostic tools** to assess areas where the agency is advanced and areas where it needs to focus its development efforts.
- **Engaging in dialogue with external funders and partners** to reach a shared understanding of the challenges and opportunities facing the agency and to develop joint action plans for developing new skills and capabilities.

For the RELAI network, this research has revealed opportunities for deepening engagement and learning between agencies, including:

- **Developing collective knowledge management systems and processes** to facilitate regular sharing of information about programs, interventions, and operational models, as well as high-level missions and goals.
- **Facilitating structured peer learning** to enable trusting relationships to be built between agencies and to create a space to identify opportunities for practical collaborations on either a bilateral or multilateral basis.
- **Providing training and technical support for member agencies** on topics of common interest. For example, the use of impact evaluation methods has been identified as an area where there is a shared desire to develop new skills and capabilities.
- **Deepening engagement with international innovation agencies and networks**, building on comparative research that has been conducted with the European Network of Innovation Agencies (TAFTIE), and connecting with agencies in other regions that may have useful lessons to share.

Introduction

Background and Rationale

Across Latin America and the Caribbean (LAC), there is a growing interest in innovation agencies. In this study, we define innovation agencies as

Institutions that promote the development of scientific and technological knowledge, the transfer of such knowledge, the strengthening of advanced human capital, innovation, and technology-based and dynamic entrepreneurship, as well as the strengthening of innovation and entrepreneurship ecosystems.

Innovation agencies generally do not perform research or innovation activities themselves, but they fund the implementation of these activities by firms, universities, research and development (R&D) centers, entrepreneurs, and researchers. The instruments they use are typically subsidies, credits, and investment or activities such as networking and information provision. Until recently, these organizations have tended to be analyzed as part of macro studies on science, technology, and innovation (STI) ecosystems, and compared to bodies that have quite a different remit or set of responsibilities (such as export promotion or investment attraction agencies). However, there is an increased recognition of the importance of developing more nuanced development strategies that take into account their distinctive roles and characteristics.

As has been noted in previous studies on innovation support in Latin America and the Caribbean, innovation agencies in this region are relatively unique institutions and there has been little research on their specific context (Angelelli, Luna, and Suaznábar, 2017).

Therefore, this report considers the ways in which innovation agencies—government-funded or -managed institutions that provide financial and other support to catalyze private sector innovation—are currently operating across Latin America and the Caribbean. The analysis is focused on the Latin American Network of Innovation Agencies (RELAI), which is an association that brings together the main national and regional innovation agencies in Latin America and the Caribbean. Although this is a study of the institutions that are members of RELAI, the insights and recommendations are intended to be useful to other innovation agencies across the region and worldwide.

The launch of the RELAI network in 2019 created a platform and a community for innovation agencies to exchange knowledge, good practices, and experiences in promoting innovation and entrepreneurship across the LAC region. Although the COVID-19 pandemic has restricted opportunities for in-person networking, RELAI is taking shape and identifying key areas where there is a desire for mutual learning and collaboration.

This “characterization” study is a part of that process: a first step in developing a better understanding of the similarities and differences between the agencies in the network, as well as the dynamics of the innovation systems that they operate within. The aim has been to develop a focused agenda for innovation agencies in LAC based on the RELAI network and its member agencies, and to provide actionable recommendations for how they can develop their roles and activities in the context of turbulent and quickly changing environments.

Research Approach

The broad aims of the study necessitated the use of mixed methods and an iterative approach to the research, involving the collection of both quantitative and qualitative data. As a first step, RELAI agencies were asked to complete a survey that was designed to generate a comparative picture of all member agencies across different dimensions. This survey was co-designed with the Inter-American Development Bank (IDB) and with agencies in the network to ensure that there was a shared understanding of definitions and that questions were relevant to their needs and interests. It was also designed to be comparable with a similar survey and study being carried out with the European Network of Innovation Agencies (TAFTIE) in 2021-22.¹

Survey questions were grouped into five main areas:

- **Organizational profile:** information about the structure, size, and scale of each agency and details of significant transformations in recent years
- **Roles and responsibilities:** information about the roles that agencies take on in their innovation ecosystems with respect to research and innovation (R&I) and with respect to other actors
- **Instruments and activities:** information about agency programs and support instruments and the innovators they support
- **Skills and capabilities:** information about how agencies work and the skills and capabilities they hold in-house or contract out
- **Evidence and evaluation:** information about approaches to gathering data, measuring and evaluating impact against agency objectives, and the design of programs and instruments

Agencies submitted their answers to the survey over a period spanning September 2021 to January 2022. As such, this report offers a snapshot of innovation agencies at that point in time. A total of 13 responses were received from across the RELAI network, from the following agencies:

1. The TAFTIE Characterisation Task Force ran from April 2021 to June 2022 and was conducted by the same team of researchers from the Innovation Growth Lab that has prepared this study and report. The final report from the TAFTIE project is available at https://taftie.eu/wp-content/uploads/2022/07/TAFTIE_Characterisation_FinalPublic.pdf. A separate comparative report that looks at both TAFTIE and RELAI agencies is also available.

- Agencia Córdoba Innovar y Emprender (Argentina)
- Agencia Nacional de Promoción de la Investigación, el Desarrollo Tecnológico y la Innovación, Agencia I+D+i (Argentina)
- Financiadora de Estudos e Projetos, FINEP (Brazil)
- La Corporación de Fomento de la Producción, CORFO (Chile)
- iNNpulsA (Colombia)
- Promotora Costarricense de Innovación e Investigación (Costa Rica)
- Ministerio de Industria, Comercio y Mipymes, MICM (Dominican Republic)
- Secretaría de Educación Superior, Ciencia, Tecnología e Innovación, SENESCYT (Ecuador)
- Instituto Hondureño de Ciencia y Tecnología, IHCIETI (Honduras)
- Secretaría Nacional de Ciencia, Tecnología e Innovación, SENACYT (Panama)
- Consejo Nacional de Ciencia y Tecnología, CONACYT (Paraguay)
- Programa Nacional de Desarrollo Tecnológico e Innovación, ProInnovate (Peru)
- Agencia Nacional de Investigación e Innovación, ANII (Uruguay)

To deepen the picture provided by the survey data and to develop understanding of the context that RELAI agencies are operating in, each agency that responded to the survey was invited to participate in a semi-structured interview. Interviews were conducted with representatives of 13 agencies, including executive directors, evaluation managers, program coordinators, and heads of international cooperation. Over a two-week period in February 2022, the interviews were carried out remotely via Zoom by members of the Innovation Growth Lab (IGL) research team. The interviews covered topics including: institutional structures, budgetary processes, information about their ecosystems, instruments and target groups, staff and hiring processes, international collaborations, and evaluation of programs.

Structure of This Report

This report brings together analysis of the data gathered throughout the research phase. It has two main parts. Part 1 looks at the current state of play for innovation agencies in the RELAI network. Drawing on data gathered through the survey and interviews, it offers a picture of the main similarities and differences between agencies and explores a set of key determinants that influence how they take up their roles.

Part 2 looks ahead to the future, developing a framework to help agencies assess the areas where they are strong and those where capabilities will need to be built to meet the demands of a rapidly changing innovation landscape. It offers recommendations for agencies to explore and outlines a forward agenda and areas for further exploration and learning within the RELAI network and with international partners such as the TAFTIE network.

1 The Current State of Play

Policymakers are increasingly using innovation policy instruments to advance economic development and respond to societal challenges. However, there is a lack of consensus about what works when it comes to innovation policy, particularly across the LAC region (Angelelli, Luna, and Suaznabar, 2017).

Innovation agencies among the RELAI network present significant differences that we will introduce in the following sections. The historical development of agencies in the Latin American context has not been homogeneous; therefore, it is easy to find a wide heterogeneity in several factors that influence how Latin American agencies work. However, some very general trends are present in the data. In general, the average Latin American agency was formed in the last 10 years (Figure 1.1) and has an institutional structure based on a certain degree of autonomy, as it would typically be a separate agency subject to ministry control (Figure 1.2). The average agency would likely focus on SME support and provide several grants and early-stage support for innovation ventures (Figure 1.3).

FIGURE 1.1 YEAR AGENCY WAS ESTABLISHED IN ITS CURRENT FORM

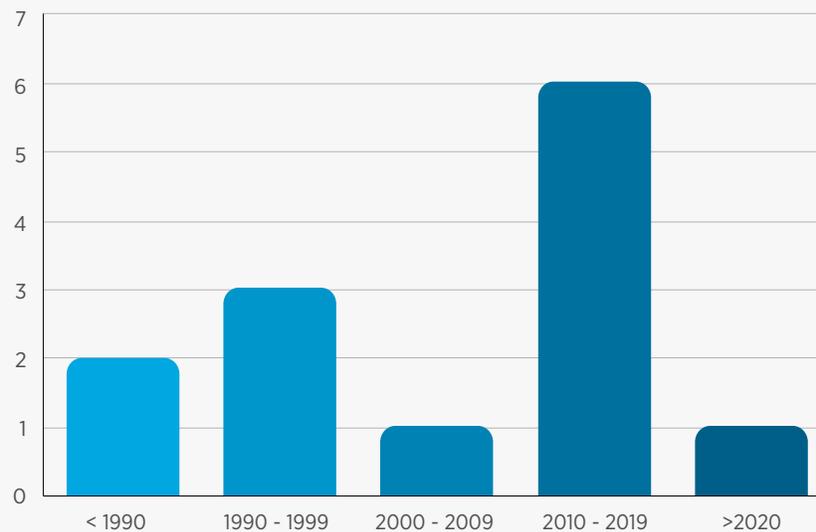


FIGURE 1.2 TYPE OF AGENCY

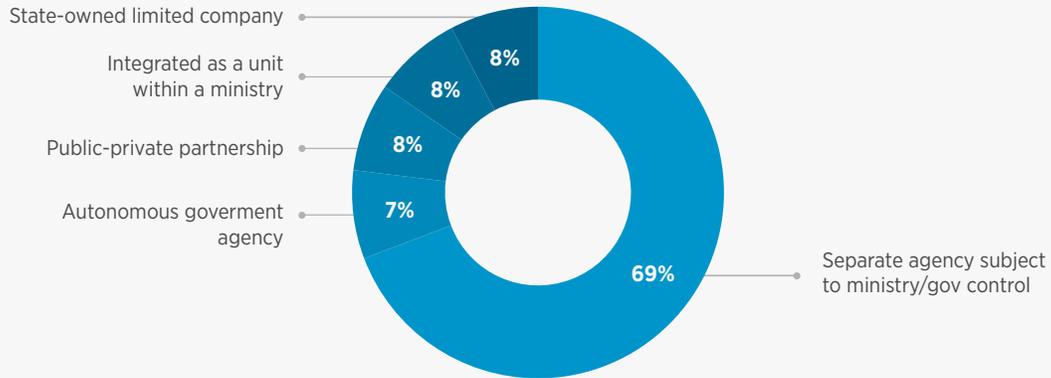
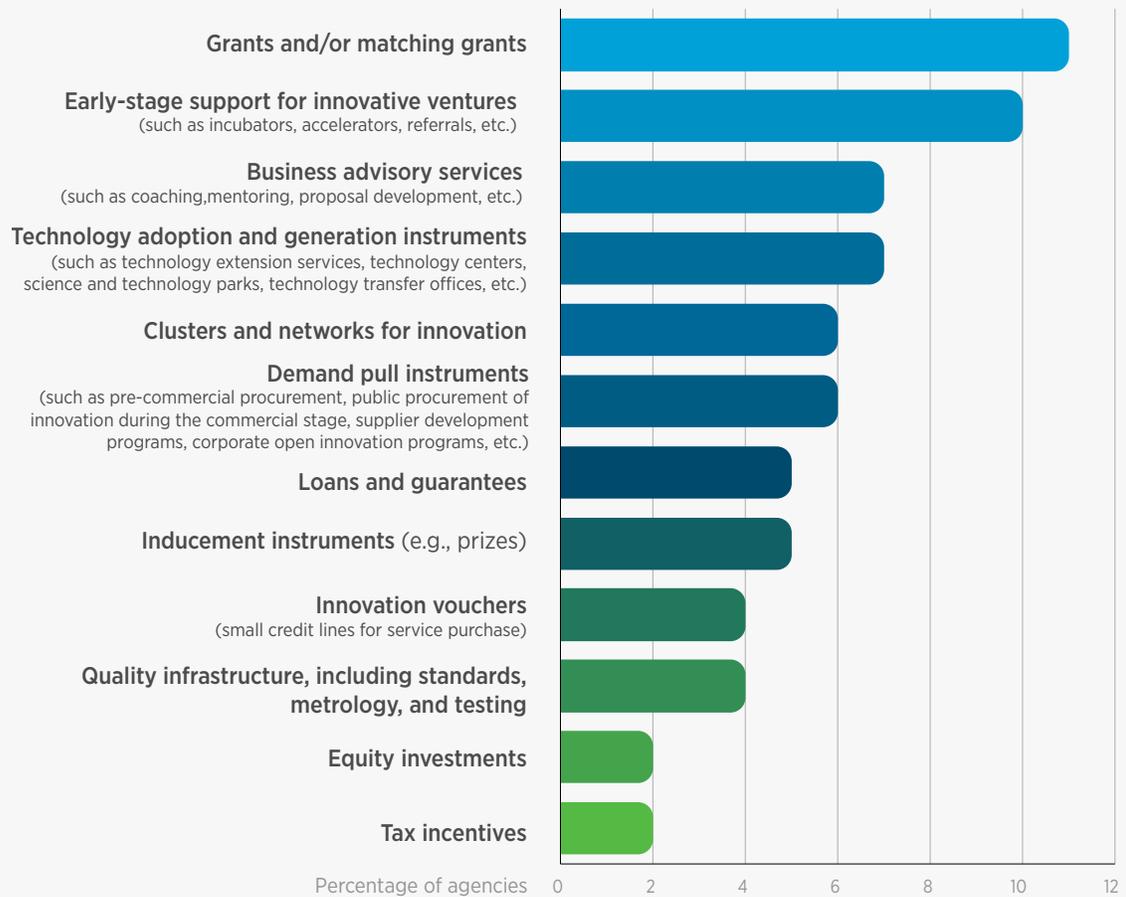


FIGURE 1.3 TYPES OF INSTRUMENTS USED BY AGENCIES



This research has sought to dig deeper into the characteristics of innovation agencies in Latin America and the Caribbean, looking at their similarities and differences and seeking to understand how they are shaped by their context. Analysis of the quantitative and qualitative data has revealed a set of key factors that can be seen to significantly influence the way agencies operate. Some of these relate to the wider system in which the agency sits, and some relate more to internal determinants.

The main factors are:

- The extent to which there is a **harmonized ecosystem** and definitions of innovation
- The existence of **institutional safeguards** to protect the agency
- The level of development of a **learning culture** to improve programs and policies
- The degree of **autonomy and influence** to develop the agency's plans
- The **skills and talent** an agency has access to
- The **networks and reach** that enable the agency to expand its work

For each factor, we consider the policy challenges involved and how they are affecting RELAI agencies and then look at strategies and approaches that different agencies across the network have taken to address them, illuminated by case studies.

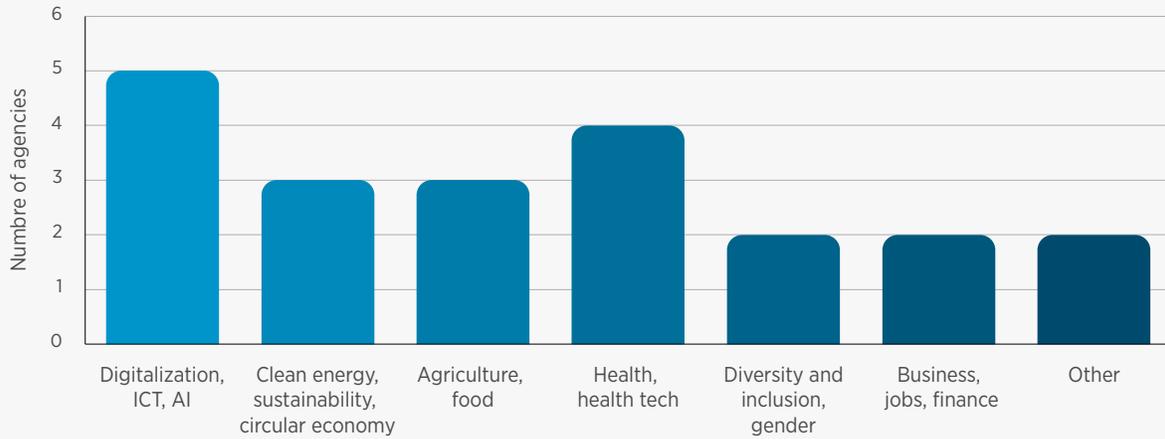
A Harmonized Ecosystem

The policy challenge

The innovation ecosystem includes all the public actors that are working on innovation policy in a certain country. In the RELAI network, 60 percent of the agencies are the primary agency in their ecosystem, which on average has between one and five other government agencies.

When it comes to the innovation support they provide, 85 percent of the agencies have thematic policy priorities. The most common priorities include digitalization, health, sustainability, and agriculture (Figure 1.4). However, the way innovation is defined and understood highly affects the country's ecosystem, and the level of harmonization among the different actors significantly shapes the role of the innovation agency as well as the resources allocated to coordination.

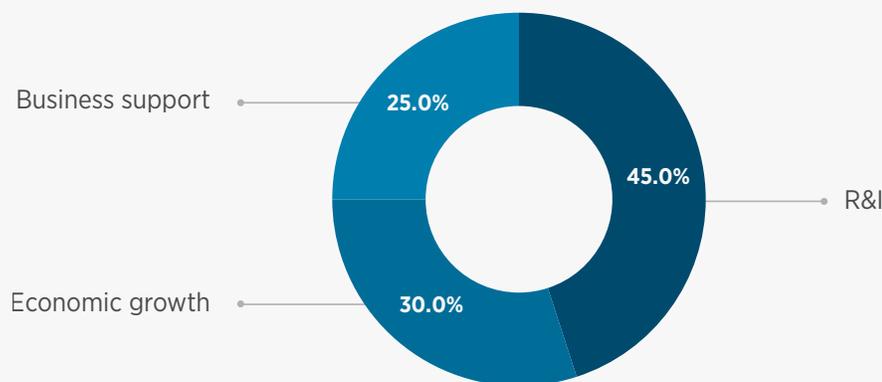
FIGURE 1.4 THEMATIC PRIORITIES OF RELAI AGENCIES



Innovation can be defined in several ways. Historically, innovation has been seen as a linear process, where science generates new ideas which are then transformed into innovations in the markets by firms (Schot and Steinmueller, 2018). Nearly half of the agencies in the RELAI network follow a similar approach, as their main mission is focused primarily on R&I (Figure 1.5). As pointed out by some researchers, one of the problems of this model is semantic in origin:

It has to do with confusing innovation with creativity. Creativity is about coming up with the ideas, while innovation requires converting ideas into a successful business. In Latin America, ideas are overrated. There are plenty. But there is a tremendous deficit of the ordered, flawless, everyday execution required to transform them into valued goods (Gutiérrez, 2018).

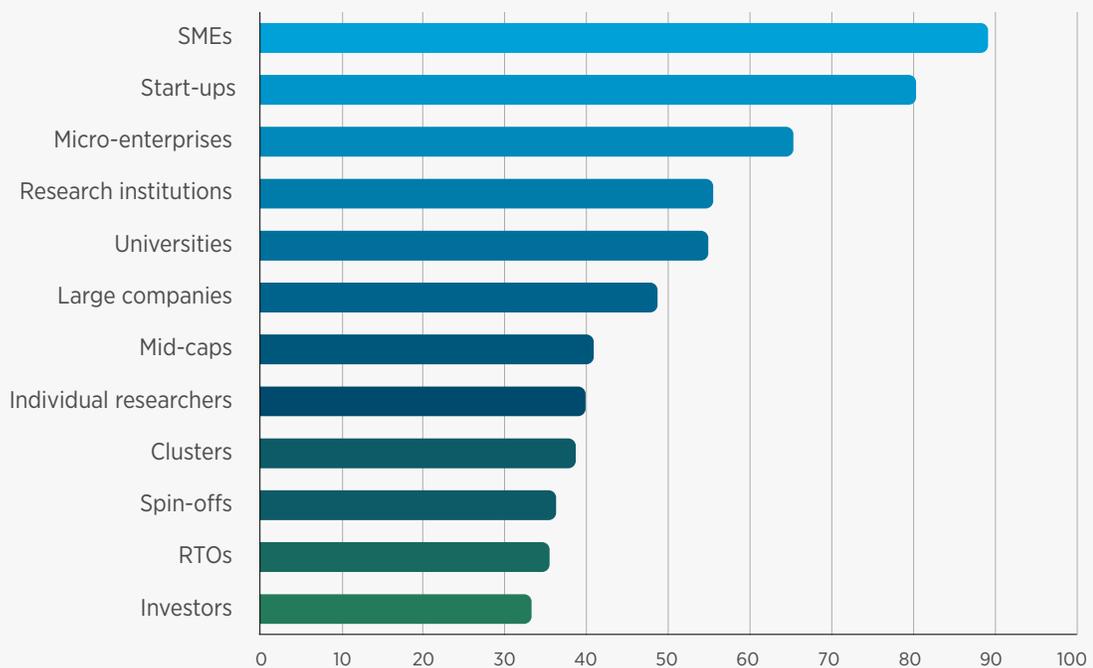
FIGURE 1.5 WHAT IS THE MAIN MISSION OF YOUR AGENCY?



This model, which has been very influential in defining innovation policies, is biased toward more radical, disruptive, and novel innovations. While such innovations are of course important, the model misses the fact that most firms can gain substantial improvements in productivity by adopting knowledge and technologies that already exist. The traditional model helps increase inputs to innovation, but does not necessarily increase capabilities or improve framework conditions for innovation, which are also essential.

SMEs are still the most common entity receiving support among the RELAI agencies, followed by start-ups and micro-enterprises (Figure 1.6). Support for research centers and universities is less widespread; they are a priority target group for some agencies but not for others.

FIGURE 1.6 TYPES OF ENTITIES RECEIVING MORE SUPPORT FROM RELAI AGENCIES (100-POINT SCALE RANKING USE AND PRIORITY OF SELECTED ENTITIES)



Countries that take a traditional view of innovation (more focused on invention) are likely to adopt a strategy and set of instruments that prioritize science and early-stage research and development. These risk leaving gaps in support for companies that might successfully increase innovation and productivity through other means, such as by adopting new technologies, or by seeking to internationalize and enter new markets.

“We have two ecosystems, one of entrepreneurship and another of innovation, but we try to unify them. All the business projects we finance must have an innovative component. Many projects are commercially viable, but if they are not innovative, they do not receive financing from SENACYT.”

Secretaría Nacional de Ciencia, Tecnología e Innovación, SENACYT (Panama)

When the type of support provided by the innovation agency is focused mostly on STI policies, as is the case for at least 15 percent of the agencies within the RELAI network, other policies that tend to support firm capabilities are usually fragmented in various strategies and spread across institutions dealing with competitiveness, exports, SMEs, etc.

This lack of harmonization highly influences the relationship among agencies and ministries in the innovation ecosystem, which may not always include a strong coordination with the units focused on the private sector (Cirera et al., 2020). The situation could lead to overlapping and fragmented policies across industries, with agencies shaped by different or even conflicting views about the most appropriate way to support innovation, leading to confusion within the private sector about who is responsible for providing support. In such cases coordination can be challenging.

Addressing the challenge

To make sure that new knowledge inputs are translated into innovations and productivity gains in firms, innovation policies should also be designed to help firms develop the necessary capabilities to undertake this more incremental type of innovation. This is essential to attaining sizable improvements in innovation and productivity. This more nuanced understanding of innovation can be seen in the approach taken by policymakers in Argentina, Brazil, and Paraguay, challenging the long-standing view that innovation is primarily about science, formal research and development, and inventions. These are indeed very important but form only a part of the innovation process.

Redressing this R&D/science bias is critical for effectively targeting innovation policies. The objective should not be to stop funding instruments to foster R&D, but to balance the composition of budget allocations to be more aligned with the capabilities of the private sector. This would reduce the fragmentation of the ecosystem and increase levels of harmonization. To gain more balance and equilibrium, some countries have opted to establish innovation councils that coordinate the innovation policies of all line ministries. This can be useful to bring the different actors to participate in the design stage but does not necessarily ensure the needed coordination to implement innovation policies, which requires a de facto alignment of all the government's policies.

A necessary condition—although not a sufficient one—for ensuring coordination is to have an overarching innovation policy strategy with clearly stated objectives, targets, and indicators that can be monitored (Cirera et al., 2020). Without this strategy, it is difficult to align line ministries and agencies around a common set of policies.

Effective coordination across innovation institutions is needed to maximize the combined impact of multiple efforts and instruments, as the performance of an innovation system depends not just on the strength of each actor but on the quality of the links between them. Strong and formal coordination mechanisms are required to effectively organize functions to advance innovation policies between several institutions and to ensure policy coherence, especially in large innovation ecosystems. However, a more ambitious coordination effort would go beyond seeking to avoid duplication and would make sure to exploit complementarities, regardless of the level of formality.

CASE STUDY: **ARGENTINA**

The National Agency for the Promotion of Research, Technological Development, and Innovation in Argentina (Agencia Nacional de Promoción de la Investigación, el Desarrollo Tecnológico y la Innovación, Agencia I+D+i) has a long history of supporting businesses and encouraging innovation across the ecosystem. It is the connection point between productive innovation and the scientific-technological system. The agency takes a broad definition of innovation and has a larger range of instruments and policies than other agencies in Latin America.

The agency develops very different projects with all actors across the ecosystem. It has 20 years of experience in supporting scientific development and R&D projects, but it also offers more traditional and general business support, including the improvement of productive equipment and technological adoption.

The agency has to coordinate with other actors in the Argentinian ecosystem, such as CONICET (the National Council for Scientific and Technical Research), which has a strong territorial presence and budget. However, CONICET has a very different role as it focuses on helping individual researchers, training scientists to develop a research career, and therefore it doesn't necessarily overlap with the agency's activities, which is focused on supporting businesses and entrepreneurs.

The agency has very strong links with CONICET. However, given that the potential overlap in their activities is not very large, coordination is based on necessity rather than institutionalized mechanisms. For instance, when sectoral issues have arisen, ad hoc coordination groups have been set up and used to facilitate the necessary arrangements. This is a process that allows the agency to respond quickly to specific needs, as they fear that more formal coordination structures could hinder agility.

(continues on the next page)

CASE STUDY: **ARGENTINA** *(continued)*

Agencia I+D+i is also increasing its efforts to monitor what local and regional agencies are doing, and collaborating with them when necessary. As a result of the monitoring process of local dynamics, regional agencies can maintain their autonomy while also building a strong relationship with the national agency, strengthening institutions and agreeing on joint actions.

There are other actors that the agency has to coordinate with as well, such as the Ministry of Productive Development. Here there is sometimes overlap in the sectors where the agency also provides support, which led to some coordination problems in the past. However, after additional efforts Agencia I+D+i has clarified its distinctive role, making sure that the agency is closer to the early stages of business support while the ministry provides support closer to the scaling-up phase.

Institutional Safeguards

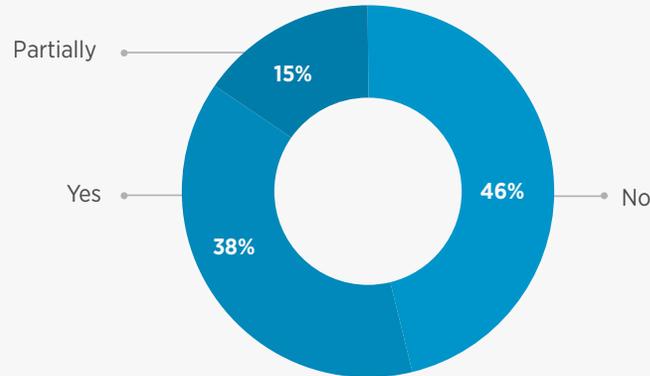
The policy challenge

An innovation agency is often the implementer of policies developed in a national innovation plan. Agencies need to work in a sustained and coordinated way with other government departments and agencies to succeed in achieving their policy goals. However, sometimes the strong dependency on government structures and resources hinders their ability to run these programs, especially if the political situation is unstable.

Within the RELAI network, 60 percent of agencies are subject to direct ministerial control and 75 percent of agencies are funded primarily by either their respective line ministries or by the central government. For these agencies, the strong connection to the national government could affect innovation in several ways.

For example, political instability affects how governments design and implement policy in a wide range of areas. This disruption exists in innovation policy even more profoundly given the importance of long-term planning for effective innovation development. As several RELAI agencies have their budget partially or totally connected to political cycles, political swings can affect both the financial resources and institutional capabilities to successfully run effective and independent innovation policies and programs (Figure 1.7).

FIGURE 1.7 IS THE AGENCY’S BUDGET CONNECTED TO POLITICAL CYCLES?



As observed by some researchers on innovation policy:

[T]he timing of political cycles do [sic] not coincide with the cycles of the “real” variables that policy aims to affect. Generating knowledge and building production and technological capacities is a long-term process that goes beyond the horizons of democratically elected administrations. Often, the political dynamics create incentives that prevent the adoption of costly selective measures that can be expected to yield results only on a time horizon beyond that of the administration implementing them. (Primi, 2014)

It is important that connections between the agencies and their funding ministries stay in a stable balance. If that is not the case, innovation agencies can find themselves subject to constant institutional changes and the competing priorities of government units or policymakers. Indeed, 85 percent of RELAI agencies have experienced significant changes in their organizational structure in the last five years (beyond the disruptions caused by COVID-19), which points to considerable institutional instability in the region.

The nature of funding arrangements not only influences agencies’ operations, activities, and the services they provide, but also their autonomy and their requirements for reporting and accountability. For example, all RELAI agencies have one-year budget cycles, which greatly limits their ability to develop long-term plans and programs.

If an innovation agency is strongly financially and/or politically dependent on its funders, this can compromise its ability to plan and commit to a larger agenda for change. This has the potential to limit the success of existing programs and hinder the agency’s motivation and willingness to take risks, improve, and learn.

Addressing the challenge

To overcome the limitations of agencies operating with short-term budgets and volatile political environments, innovation agencies must have adequate and dependable political and financial resources to achieve their mission. Agencies can develop institutional and financial safeguards to have more long-term plans and be less dependent on government shifts. However, this could be especially difficult for agencies that belong directly to a ministry, as is the case in the Dominican Republic.

Underfunding (especially in economically constrained environments) is a common problem, and it has been exacerbated by the COVID pandemic. Developing safeguards would lead to higher diversification of the funding model and would increase the capacity to develop and implement long-term plans, irrespective of the political situation.

“During the pandemic we had a significant reduction of resources, as the priority was focused on other policy areas. For now, we can’t generate our own resources nor sell our services The law included a Science & Technology Fund in 2014. However, it has not been developed yet for political reasons.”

Instituto Hondureño de Ciencia y Tecnología, IHCIETI (Honduras)

RELAI agencies have found various ways to increase their institutional stability, including the use of endowment or trust funds, budgetary processes, and long-term projects with international actors or the private sector. Endowment funds, if well designed and avoiding excessive strains and bureaucracy, can provide agencies with a permanent and foreseeable funding mechanism, such as that in Peru or those currently being planned in Costa Rica and Paraguay.

Other agencies such as FINEP in Brazil or CORFO in Chile have developed very sophisticated budgetary processes, based on formal and systematic procedures to include different views. For instance, CORFO’s budget needs to be validated by several stakeholders and approved by Parliament every year, which not only increases accountability and transparency but also provides more opportunities to embed a long-term perspective within the funds’ allocation.

The most common safeguard cultivated by RELAI agencies is the diversification of funding sources, based on international agreements such as in Peru or Ecuador. Accessing international funds by joining projects and receiving service-based funds from multinational organizations such as the IDB, the Development Bank of Latin America (CAF), or other regional actors has been a successful strategy to avoid high levels of dependency and to counteract volatile political situations. Some agencies are considering additional sources of funding such as fee-based services and investment income.

An agency's ability to develop long-term plans and become an institutionally distant collaborator is often a crucial factor in its success. Some agencies are still very institutionally close to their government funders, which has some benefits but also leaves the agency in a more vulnerable position.

CASE STUDY: **BRAZIL**

The Funding Authority for Studies and Projects (Financiadora de Estudos e Projetos, FINEP) in Brazil is a unique organization. Primarily as a result of the huge geographical area that it needs to cover, the agency provides very specific types of services and uses its governance and budgetary power to develop long-term plans across the country. Even though Brazil has had many different governments in the last 20 years, some of the priorities they had in the early 2000s are still a priority currently (e.g., biofuels, innovation in defense, health).

The agency is able to make multiyear plans in most of the priority areas it focuses on. This was not always the case; previously, FINEP had a strong council that would exert its power to decide on a lower budget that was set on an annual basis. But over the years, FINEP developed institutional safeguards based on effective budgetary systems that allowed them to plan ahead and prepare for the next 5-10 years.

FINEP is linked to the Ministry of Science, as it is a public enterprise. However, it acts quite independently because it does not need public funding to sustain itself. It has its own resources that allow it to function effectively, although it also manages a lot of public funding to support research and innovation programs across the ecosystem, for instance supporting innovation with the Ministry of Health.

The agency's sophisticated governance system and involvement of external actors in committees (such as representatives of universities and enterprises) gives FINEP the opportunity to increase its impact and—to a certain degree—avoid having to make too many internal changes as a result of political shifts.

In 2021, Brazil approved a new law that gives more stability to FINEP. Even though the Ministry of Economy still has some power over its budget, especially in challenging fiscal situations, and political decisions still have some impact, the agency is able to influence them as they are part of the decision group and have strong interpersonal ties at the technical level.

Learning Culture

The policy challenge

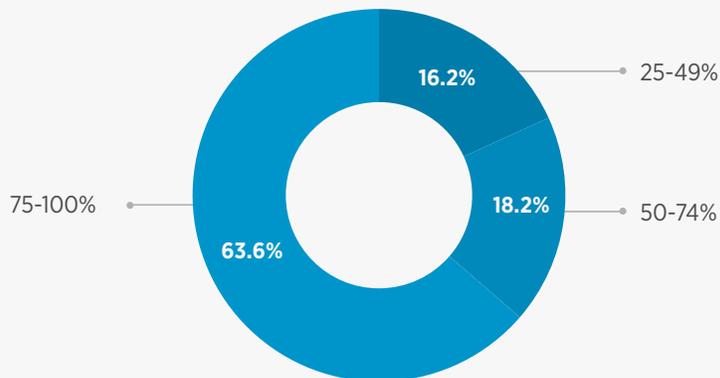
The effectiveness of an innovation agency and its ability to influence the system is often determined by its approach to learning and to monitoring and evaluating programs and policies. Policy evaluation has historically been weak in innovation programs, but in recent years there has been increasing interest in the evaluation strategies that can be applied to innovation, entrepreneurship, and business support policies (Bravo-Biosca, 2019).

As in other policy areas, innovation policy design and development is sometimes harder than it seems. Programs that in theory should work may suffer from significant implementation issues that ultimately impact their ability to reach their goals. For instance, if there are diagnostic problems or the solution is not the right one, the program may not have the expected impact, even if it is well implemented.

This can be difficult to record and measure in a context where beneficiaries tend to be polite and provide positive feedback even when the training program was not necessarily that effective. There is also the challenge of measuring the “additionality” of the program. In essence, how can an agency be sure that it is addressing a market failure that no one else is addressing? Could the beneficiaries have benefitted from private investment and become equally successful and innovative if the public sector hadn’t provided that support? Ultimately, innovation agencies should ask themselves whether the service they are offering is the best possible way of spending public funds. Evaluation and learning are crucial elements to respond to those challenges.

Among the RELAI network, 85 percent of the agencies evaluate programs regularly and most of them do it in the majority (75–100 percent) of their programs (Figure 1.8). RELAI agencies mostly rely on interviews, administrative data, and surveys to run the evaluations.

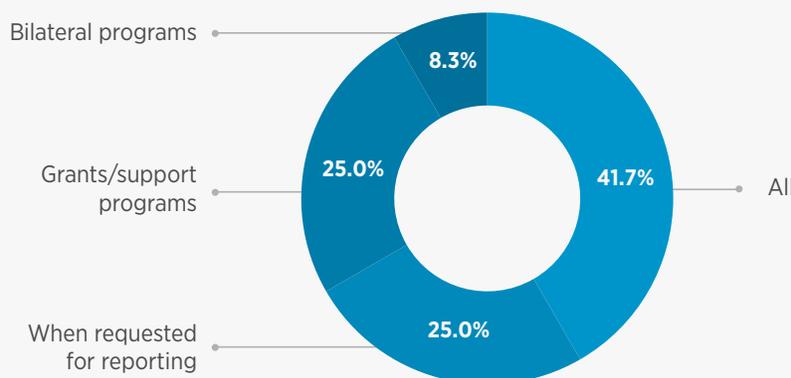
FIGURE 1.8 WHAT PERCENTAGE OF PROGRAMS ARE EVALUATED?



However, having evaluation systems in place is not always enough to have effective learning mechanisms. Only 9 percent of RELAI agencies have systematic mechanisms in place to act on the results of all of their evaluations; in most agencies it highly depends on the program. This shows that in practice it is difficult to recognize the value of the feedback, and evaluation results are sometimes underutilized in decision making or used only for reporting purposes (Figure 1.9). When it comes to innovation policy, the World Bank pointed out that in Latin America:

Evaluation is thought of mostly as an auditing or legitimizing tool applied at the tail end of policy implementation. Little attention is paid to the complementarity of external and internal evaluation to maximize learning and improvement, as opposed to final adjudication of effects and worthiness of the policy as a whole. (Cirera and Maloney, 2017)

FIGURE 1.9 WHAT TYPE OF PROGRAMS ARE EVALUATED?



Sometimes, a lack of effective evaluation practices affects not only the design of new policies but also the implementation of existing ones, as some are also continued or terminated without solid empirical reasons (Teirlinck et al., 2013). Often, these decisions are driven more by ideological concerns, pressures from interest groups, or perceptions of program ineffectiveness than as the result of analytical performance assessment. Sometimes, programs survive for decades with no demonstration of efficacy.

This also connects with the use of more scientific methods for impact evaluation, specifically on the use of experimental and quasi-experimental methods such as randomized controlled trials (RCTs), difference-in-difference, propensity score matching, or regression discontinuity designs. Among RELAI agencies that conduct evaluations, 62 percent are familiar with these methodologies, although not all use them regularly. The use of rigorous impact evaluation methods normally needs to be planned from the outset of the program and requires a set of quantitative skills that are not always easy to find among public sector employees. There are also political dimensions to consider: if evaluations provide strong evidence on the effectiveness (or lack thereof) of a program, this could challenge some assumptions about what works across the agency.

Addressing the challenge

Innovation agencies can develop mechanisms to learn what works and what doesn't in order to improve the provision of innovation services. Evaluation mechanisms can also be used to improve the effectiveness of innovation policies and shape new plans, as is common in Chile and Colombia.

Experimental agencies have monitoring and evaluation systems and tools in place to learn from their existing programs in order to improve, cancel, or redesign future plans. They generate evidence that is regularly used to inform the design, implementation, and scaling of programs. However, not all evaluation systems go beyond traditional monitoring of process indicators, which fail to provide more accurate information or help the decision-making process.

“We have some evaluation processes at the state level, but unfortunately, they don't go deep enough... For instance, when we provide training, we don't always measure what happens: what skills we develop or how they are implemented.”

Secretaría de Educación Superior, Ciencia, Tecnología e Innovación, SENESCYT (Ecuador)

In these cases, the evaluation function doesn't always become tightly integrated with the design and information dissemination tasks. However, effective evaluation can provide a dynamic feedback loop for policy design, as policies should go from design to implementation to evaluation and back to design.

Instilling a culture of evaluation encourages a more transparent and professional innovation policy, as it increases the efficacy of implementation and ensures that knowledge generated in monitoring and evaluation (M&E) systems and impact evaluations is preserved and that policy lessons are learned. The key processes to ensure effective learning are:

- documentation of experiences and decisions to adapt to new circumstances,
- identification of challenges for implementation that were not addressed in the original design,
- documentation of the specific solutions that were adopted and of the problems that remain, and
- relevant data showing how the solution improved performance.

This learning capability is especially important in systems where a rotation of civil servants is the norm, because political changes and human resource policies can inhibit institutional memory and learning.

Weak capabilities can limit the impact of evaluations, as they require high levels of human capital to be implemented properly. However, 27 percent of RELAI agencies who evaluate their programs only use internal evaluators. Using external evaluators is normally a way for assuring transparency and accountability, as partnering with external academics or multilateral agencies can help kick-start the evaluation agenda. Increasing the methodological knowledge and use of these types of evaluations would improve the learning culture of the agency and increase the effectiveness of the resources spent.

CASE STUDY: **CHILE**

The Production Development Corporation (La Corporación de Fomento de la Producción, CORFO) in Chile has had a long history of monitoring and evaluation, even before the budget management system was implemented. The agency has always been active in generating measurements that guide them in the policies they have to promote.

In CORFO it is normal that even before accepting the program, each instrument to be launched has to go through a design committee that delves into the logic of the instrument and compares it with the desired outcomes. It is an internal screening, as it is done regardless of the ex ante evaluations conducted by management. Now that they have more information and sources, evaluation has become easier.

CORFO'S evaluation system is highly professionalized and transparent, as it uses an open data architecture. There is a website (<https://datainnovacion.cl/>) where anyone can find all the projects that innovation management has supported since 2010. Some are cross-referenced with information from the central bank of Chile, in order to have information on the outcomes of these projects.

CORFO also has a track record of building strong partnerships and collaborations to improve program design and increase transparency. For instance, CORFO participates in the Civil Society Council of Chile, which debates the main guidelines of the previous year's budget. The agency has run experiments with the support of the IGL (via Start-up Chile) and also has partnerships with Harvard University in the United States and with other research organizations.

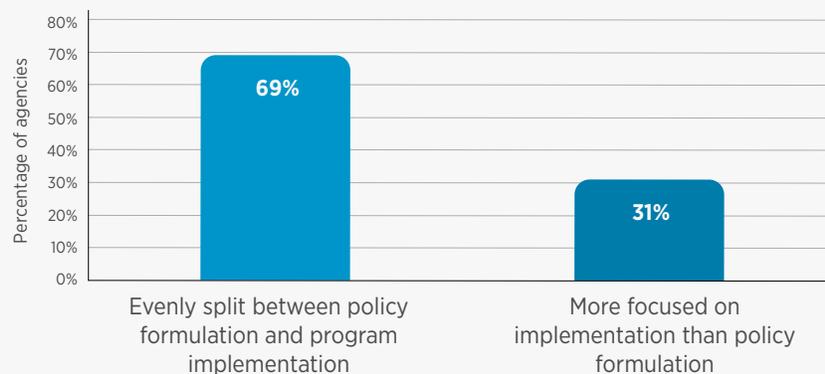
It is the most advanced innovation agency in the region when it comes to using rigorous impact evaluations. CORFO has run RCTs that were promoted by the budget directorate. Despite some challenges in applying this method, the agency is open to testing new methodologies and learning how to apply them successfully.

Autonomy and Influence

The policy challenge

Innovation agencies tend to play a major role in the implementation of innovation policies. However, whether they also have a role in influencing the design, formulation, and planning of their own programs and/or national or local innovation strategies is highly variable. This normally occurs when the agency has influence to advise on the development of a strategy or budget. Within the RELAI network, several agencies have a role in the formulation of national R&I strategies and long-term political objectives, although this is not their primary role (Figure 1.10).

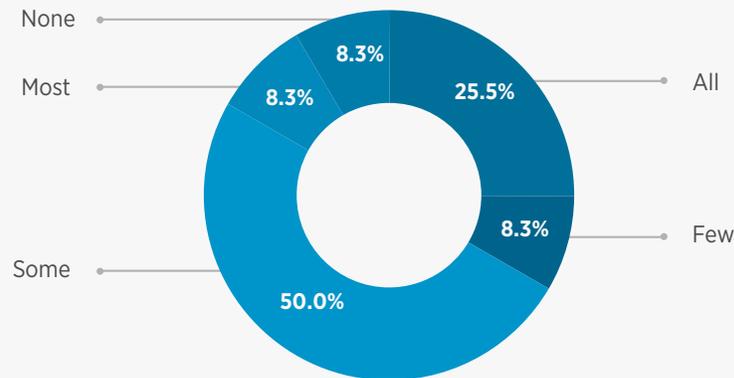
FIGURE 1.10 BALANCE OF AGENCY'S R&I RESPONSIBILITIES



An innovation agency's influence and autonomy is closely connected to its opportunities to develop successful programs, as the agency's priority-setting influence and the involvement of external actors can provide a more effective and long-term use of resources. Many countries suffer from a proliferation of government entities that add little value and exacerbate policy fragmentation. An innovation agency is justified especially if it has some policy autonomy and the ability to think outside the box (Cirera et al., 2020).

An absence of autonomy usually results from a lack of diversity in the decision-making processes around the design and formulation of plans, strategies, and policies, especially within the agency's board of directors (Figure 1.11). Some programs are developed by urgent needs or with short-term bureaucratic demands in mind, hampering the ability of the agency to develop long-term policies more aligned with the policy objectives.

FIGURE 1.11 TO WHAT EXTENT ARE THE AGENCY'S HIGH-LEVEL STRATEGIC PRIORITIES DETERMINED BY ITS FUNDER(S)?



Innovation agency boards tend to include ministers or high-level policymakers from different government units. Normally these include the Ministry of Economy, the Ministry of Science and Technology, and even the Ministry of Education and others. Agencies can strongly influence the final decisions made by their board, especially if they have formal procedures in place to facilitate this. However, in other cases the board decides and doesn't always involve or consult the agency, leaving it in the position of implementer but not adviser.

This can be a missed opportunity to benefit from the strong experience, feedback, and suggestions based on practical experience coming from the agencies, which can limit the efficacy and alignment of the programs and plans proposed. It happens especially when the agency has to follow very bureaucratic processes that limit the opportunities for quick responses that entrepreneurs demand.

An agency that lacks autonomy will act as a rule follower, with its priorities, policies, and programs being fully determined by the government units. If an innovation agency doesn't have the autonomy to decide how to best allocate resources, it could lead to major incongruity between policy statements and actual budgets across innovation instruments used. In such cases, the agency doesn't have the leverage to influence and propose more effective plans that would successfully lead to reaching the policy goals.

“Our technical departments only execute the programs that have been previously approved. The board decides what to approve; our role is to provide information and data about the different activities. But ultimately, more strategic decisions come from the top.”

Consejo Nacional de Ciencia y Tecnología, CONACYT (Paraguay)

It has been observed that in several countries the actual expenditures allocated do not correspond to the stated priorities of innovation policy. For example, even in countries where diversification of the economy was the main objective of innovation policy, most of the allocated budget did not really support diversification (Cirera et al., 2020).

The level of autonomy also plays a role in the type of instruments an agency uses more regularly—be that more direct or indirect, financial or non-financial, vertical or horizontal, supply-side or demand-side (see Box 1). Currently among the RELAI network, 62 percent of the agencies provide mostly direct support, 69 percent provide mostly financial support, 54 percent use measures aimed mostly at the supply side, and 52 percent apply a more horizontal approach. There is no consensus about the best combination of instruments, but different firms will benefit from different instruments, and their use should align with the goals of the agency as well.

BOX 1 TYPES OF SUPPORT PROVIDED BY INNOVATION AGENCIES

Direct support involves a direct influence from the agency on firm-level innovation activity (such as by choosing which projects to support in a competitive grant scheme)

Indirect support is provided to any innovation activity eligible under the rules of the program (such as R&D tax incentives and loan guarantees), without the agency being involved in the choice of which project to support

Financial support involves a transfer of money or financing to beneficiaries

Non-financial support involves advisory and other non-monetary support services that may be provided to beneficiaries

Vertical programs involve measures intended to induce innovation among firms operating in a particular sector (such as textiles, manufacturing, tourism, etc.)

Horizontal programs involve measures aimed at inducing innovation in firms, regardless of the sector in which they operate (non-sector specific funds, general digitalization programs, etc.)

Supply-side measures aim to create incentives among firms by reducing the costs and risks of innovation (technology extension services, R&D, support for education and training, etc.)

Demand-side measures aim to increase demand for innovations by improving conditions for their uptake (such as public procurement, and information and advocacy measures)

Addressing the challenge

Changing the levels of autonomy and influence of an agency is not always easy or achievable. Some dynamics are rooted in regulatory statutes that would require a long process to be changed. However, a number of agencies in LAC have shaped their role to gain autonomy in different ways. In some cases this implies a change in the regulations to ensure a stronger role and participation in the decision-making process, for example by becoming a more autonomous agency and changing the agency's institutional structure, as happens to agencies that are public-private partnerships.

There can also be opportunities for agencies to influence the decision-making process in more informal ways that are, in principle, equally successful. Examples of this that can be observed across RELAI include agencies that play an advisory role to the board, by providing suggestions and presenting initiatives during the budgetary process for the board to approve. Similarly, influence can come from working directly with the main ministry responsible for formulating the innovation plans.

Another strategy is to increase the diversity of the agency's board by including non-governmental actors such as representatives of the private sector or academia like in Argentina and Chile. These board members would help provide a more comprehensive picture of the needs and gaps in the innovation ecosystem and can help the agency access more diverse sources of funding. Accordingly, multiple sources of financial support (institutional safeguards) can be consistent with higher levels of autonomy.

Having a role in policy formulation, helping to develop strategic national priorities and engaging with academia and the private sector, provides the agency with more freedom to set and manage its own priorities within its programs and activities. However, the opportunities for adopting these strategies depend on several factors that relate to the institutional, bureaucratic, and political context of the agency.

Some agencies that start informally advising and engaging with other non-governmental actors have managed to introduce it as a general rule, making it less likely that changes in government would undermine their autonomy. However, for others these gains in autonomy will highly depend on the minister leading the board. If the role of the agency in policy formulation is not set by regulation, a new minister may not be so inclined to listen to the agency's suggestions.

CASE STUDY: CÓRDOBA (ARGENTINA)

Agencia Córdoba Innovar y Emprender, based in the Argentinian region of Córdoba, is a young agency: it was created in 2016 and started operating formally in 2017. Nevertheless, it has an innovative structure that is not that common among innovation agencies in Latin America: a public-private partnership.

This public-private model presents strong advantages when it comes to the level of engagement between the agency and the private sector, which is chiefly reflected in the governance structure of its board. This close relationship strengthens the agency's reputation and credibility with respect to firms and private sector associations more generally. Even if the agency currently depends on the Ministry of Science and Technology, it has maintained its autonomy, especially with respect to the execution of programs.

The agency's autonomy mostly comes from the involvement of the private sector. Currently, its model is based on government funding and the private sector having control and decision-making power. The president of the agency is normally a businessperson and there are two businesspeople and an entrepreneur on the board, in addition to representatives of universities and public sector bodies.

Within the agency's private domain, it has private company management structures. The agency uses a goal-oriented management model and agile methodologies that help it to advance its priorities. It plays a leading role in the decision-making process of the board, as they work with the president on their vision for the agency and the ecosystem of Córdoba.

As part of the agency's decision-making process, it collects advice and information from private counterparts and presents to the board what direction the agency should take to achieve consensus of both the public and the private actors. But it is up to the agency to decide what is presented to the board to approve. However, the agency's hybrid composition can also have some disadvantages, particularly in terms of limits on the agency's ability to secure long-term unrestricted funding, which would normally come from the government budget and which would allow its leadership to enjoy predictability in planning. In this way the agency still has opportunities for improvement, such as increasing private sector funding to gain a more long-term vision (and to increase its institutional and financial safeguards).

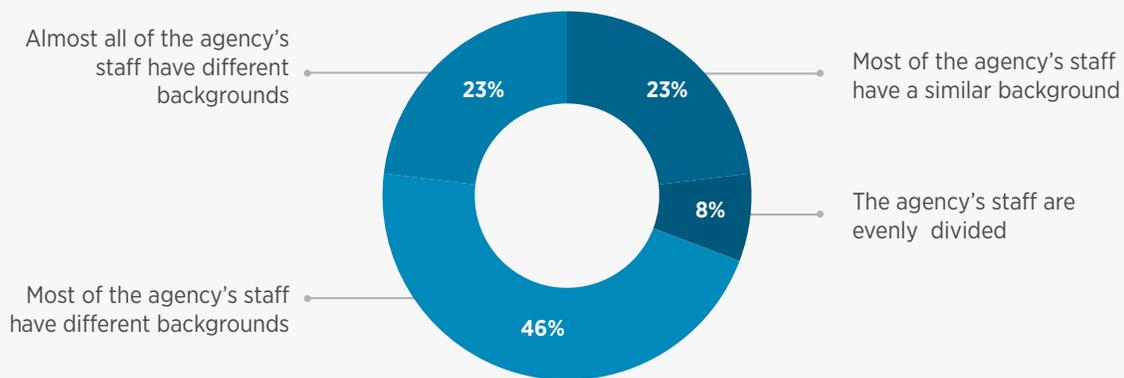
Skills and Talent

The policy challenge

Advancing innovation policy is a challenging goal. These policies operate in a highly complex space and rely on changing behavior by a variety of actors in the innovation system, many of which have different incentives and varied needs for public input. This means that innovation agencies require a very specific set of skills and qualifications that differ from other public sector employees. Staff may frequently need to be updated as new trends and methodologies emerge.

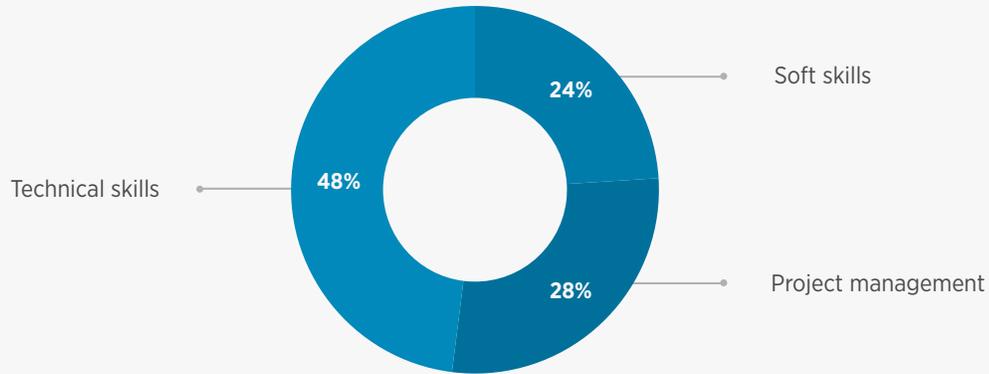
Among RELAI agencies, most staff have university degrees. The most common types of professional background and experience come from national government (seen in 91 percent of agencies), research centers/academia (75 percent), business management (75 percent), high technology sectors (66 percent), and local government (58 percent). Agencies have an equal balance between technical and administrative staff, and for 69 percent of agencies most of their staff have mostly different professional experiences (Figure 1.12).

FIGURE 1.12 PROFESSIONAL BACKGROUNDS OF AGENCY STAFF



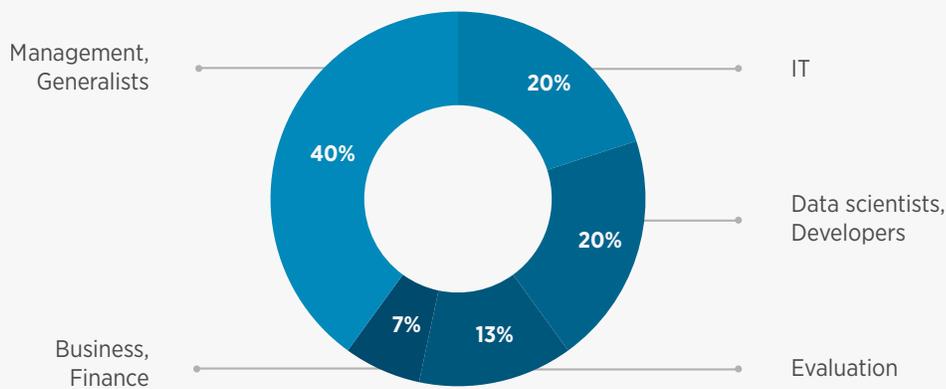
It is not always easy for an innovation agency to acquire this talent. The research revealed a shortage of capacity to meet the technical demands arising from new trends and opportunities, which can affect an agency's ability to stay competitive and provide useful services. This is common among some RELAI agencies; 50 percent have difficulties finding new workers, especially those with technological skills, programming, or project evaluation skills (Figure 1.13).

FIGURE 1.13 MAIN SKILLS OR QUALIFICATIONS THAT AGENCIES REQUIRE



Within this, the skills with the greatest shortage are generalist management skills, as well as skills relating to data science and evaluation that are increasingly in demand (Figure 1.14).

FIGURE 1.14 SKILLS THAT ARE DIFFICULT TO RECRUIT FOR



Given the complexity of the support provided, it is very challenging to discover how effective management is in some agencies. As the World Bank observed with respect to Latin America:

Appropriate management of human resources and accounting of administrative costs per intervention is another challenge. In general, incentives for staff are not aligned with the performance of the policy instruments they manage. Furthermore, the resources of an agency are pooled across many policy instruments with varying relations to each other and distributed in temporary patterns that respond to short-term bureaucratic priorities. Thus, the true administrative costs of each instrument are unknown, making it almost impossible to improve management efficiency. (Cirera and Maloney, 2017)

In this context, an agency's ability to train, hire, and retain talent is highly relevant, as this can enable it to provide better and more updated services to clients. However, some agencies are tied by legal constraints, limited resources, and a reduced supply of candidates that make it difficult to do this effectively, limiting their opportunities to provide effective support. For instance, those agencies who can only hire public sector staff due to bureaucratic burdens have more limited opportunities to gain new talent. Among RELAI agencies, 44 percent experience some sort of challenge, as they admit it is openly difficult to appoint new individuals from outside of the public sector.

“We cannot hire people who come from the private sector because we are governed by public law as it is a fully owned state agency. However, there are some skills that could be hired from the trust fund.”

Promotora Costarricense de Innovación e Investigación (Costa Rica)

Problems in acquiring talent are matched by problems in retaining talent. Due to restrictive government rules, some agencies cannot compete with private sector wages, and they end up training their staff only to see them leave for better-paid positions in the private sector.

Training staff is something most of the RELAI agencies do as well. Only 15 percent of the agencies in the network do not offer training or development opportunities to their employees. However, not all training is equally useful, and the source and content of the training program matters as well.

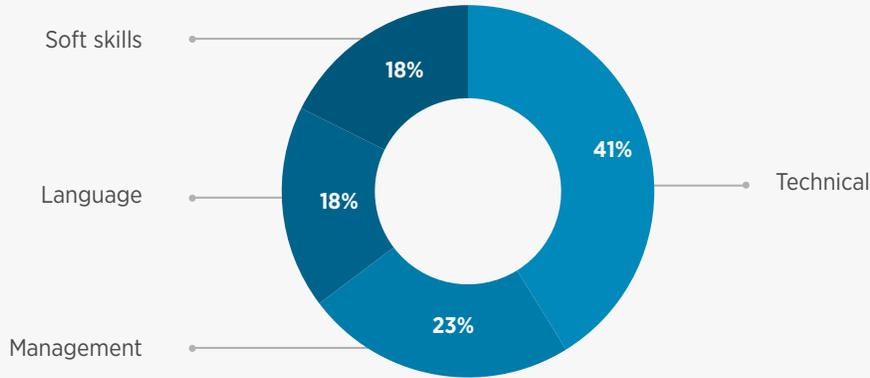
Addressing the challenge

Institutions need to perform a realistic assessment of their human resources before designing instruments that could require skills that they do not have. The required capabilities can be acquired either within the organization or in the orbit of the organization through partnerships, consultancies, and alliances. This decision will rest on the type of capabilities that need to be acquired.

In order to clarify short- and long-term needs, agencies should conduct a skills audit to assess current strengths and gaps in the agency's workforce. This is still a very rare practice among RELAI agencies, as only one agency—iNNpulsa in Colombia—has performed an assessment of this kind.

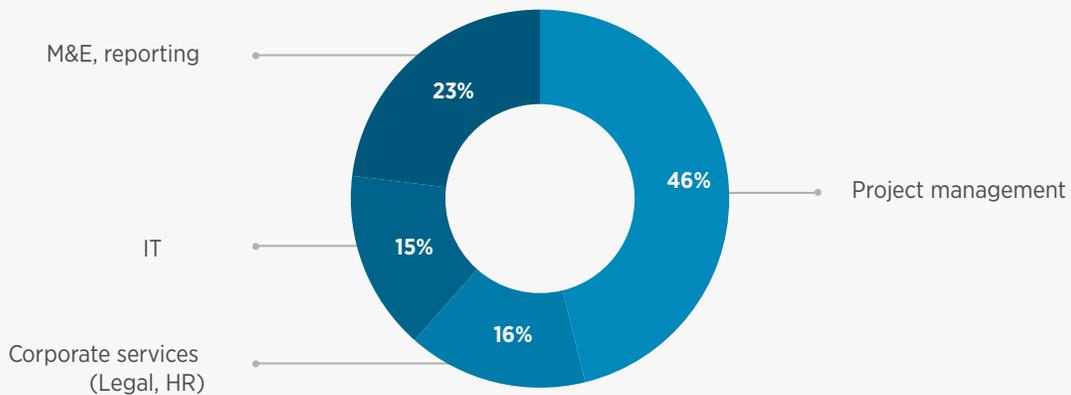
Capabilities can be developed internally, either by accumulating knowledge through continuous learning and the experience obtained through the implementation of policy programs, or by training staff in the disciplines that have been identified as strategic. Investment in the training or development of staff is crucial to ensure that an agency's skills are up to date (Figure 1.15).

FIGURE 1.15 WHAT KIND OF TRAINING OR DEVELOPMENT DOES THE AGENCY OFFER?



The organization can also acquire these capabilities externally, by hiring (and maintaining) new talent skilled in the strategic area sought by management (Figure 1.16). Additional strategies include hiring consultants or developing an affiliated network of contracted experts with knowledge in the areas identified, such as in Uruguay. This is not possible for all agencies, as lack of resources and legal flexibility doesn't allow them to hire and retain talent. But trying to find alternatives such as university partnerships could be an effective way for talent to help deliver programs while learning, as well as avoiding relying too heavily on consultancies.

FIGURE 1.16 ACTIVITIES PERFORMED BY EXTERNAL CONSULTANTS



To retain talent when wages cannot compete with the private sector, it is useful to try to focus on other types of benefits that public sector employees can gain by staying in the innovation agency, such as more stability, training, participation in international events, or more flexible working arrangements.

CASE STUDY: URUGUAY

The National Research and Innovation Agency (Agencia Nacional de Investigación e Innovación, ANII) in Uruguay is a very dynamic and agile innovation agency. One of the motors of ANII is competitiveness, which also affects the way it hires, trains, and retains talent. For the innovation agency, competitiveness is not only a monetary issue but is also linked to providing flexibility and new skills to workers.

ANII is governed by private law; therefore, it does not only rely on the public sector to hire new staff but can quickly bring in workers from the private sector. The secret of ANII's success is its training programs: staff at ANII constantly learn and discover new trends and skills to be at the cutting edge of innovation. The agency has diverse teams with different backgrounds, such as economists, chemical engineers, and thematic experts who speak directly with the industries, and it trains these teams to build more expertise.

For example, until recently the econometricians on the team had considerable statistical knowledge but had never run impact evaluations, so ANII provided them with the necessary training to gain those skills. The agency tries to consider who can learn more about different topics and provides opportunities to train individuals in a very specific set of skills, depending on their professional profile. Sometimes ANII hires more generalist profiles as well, but the agency makes sure that they end up becoming experts and specialists. It also has an internship program, which trains potential future workers that end up staying at ANII.

The HR team builds training programs every year on the topics that the agency finds more relevant and pressing in connection to innovation policy, such as the circular economy. In an agency with 70 workers, it is not possible to have experts on all areas of science and technology. When needed, ANII relies on agreements with universities and international experts, so it doesn't usually sign contracts with consultancies.

Networks and Reach

The policy challenge

The regionalization and internationalization of an agency's activities are important factors in the ability to adapt its services to the different needs of the country's regions and reach a global market. Within RELAI, nearly 70 percent of agencies only have one office; just a few have offices in multiple locations.

The internationalization of an agency's activities is crucial to enhance its opportunities and learn to adapt its services to the needs of a global market, improving the agency's reputation and credibility and the agency's financial stability. However, not all agencies have the same opportunities to improve their networking and learn from other innovation agencies across the world. Among the RELAI network, 67 percent of the agencies engage in international activities and collaborations, ranging from peer exchange and tech transfer, networking and matchmaking, R&D, and education.

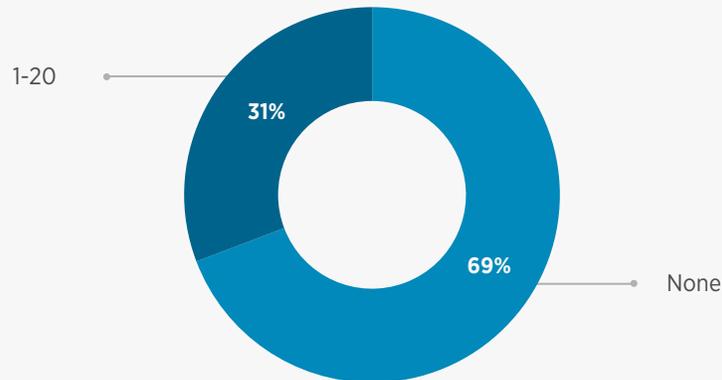
“We have been working with other international cooperation agencies in different modalities, such as with Israel and South Korea in technical assistance and knowledge transfer. In these cases, there is no transfer of economic resources, but now we are considering a project with them that involves financial resources.”

Programa Nacional de Desarrollo Tecnológico e Innovación, ProInnovate (Peru)

Some agencies have the resources and mandate to participate actively in international projects, and opening offices in different countries has helped some agencies such as iNNpulsA to thrive. Other agencies don't have the support and resources to actively engage in international activities, which ultimately limits the opportunities to learn and expand their network and reach (Figure 1.17).

However, before an agency engages actively in internationalization activities, it is crucial that it develops a regionalization process to reach other parts of the country. Historically, innovation has happened mostly in big cities and agencies have disproportionately focused on capitals and economic hubs, neglecting more deprived areas in which innovation, even if more challenging, could be a long-term driver of change.

FIGURE 1.17 APART FROM HEADQUARTERS, HOW MANY LOCAL (WITHIN COUNTRY OFFICES DOES THE AGENCY HAVE (IF ANY)?



Transforming subsistence entrepreneurs from under-represented areas and providing them with access to management tools, resources, and digital technologies to become more innovative could help them grow and become more productive.

This is relevant not only for big countries but also for smaller ones as well. For instance, countries like Costa Rica have focused most of their innovation support on the San José metropolitan area, potentially increasing the economic gap between the capital and the rest of the country, which is something that the new agency (Promotora Costarricense de Innovación e Investigación) is aiming to solve.

Addressing the challenge

Reaching other parts of the country and engaging with other countries can help an agency gain a more prominent role in innovation support. However, not all agencies have the same opportunities to improve their networking and learn from other innovation agencies. For some agencies, lack of resources and mandate would not only limit their international reach but also the possibilities for engaging with other regions of their own country.

To solve these challenges when it comes to regionalization, networks and reach can be expanded by developing institutionalized systems to support local governments; coordinating with them and opening new offices in different cities can help shape the country’s innovation ecosystem. But resources, space, and a mandate to expand would give room to the agency to increase its network.

When it comes to internationalization, it is important to recognize that all types of international engagement activities are useful, but in order to learn and increase the reach there should be mechanisms in place to capture those experiences and include strategy work to plan, design, and develop international programs effectively. For some agencies that have little international experience, it could be challenging to adapt to international requests, timings, and mandates. In some cases such as in Panama, due to legal limitations they cannot accept large funding programs. But

expanding the knowledge on international projects is essential to ensure that the agency is able to provide more innovative services.

Spaces such as the RELAI network provide a valuable opportunity to engage directly with other Latin American agencies. It would be useful as well to learn from other continents and countries, such as the TAFTIE network in Europe. However, context is significant, and it is not always possible to use the same instruments, so it is not recommended to simply copy and paste innovation policies. Sometimes different government capabilities can lead to importing policy designs and practices that may look good on paper but are not appropriate to the local context and do not achieve the desired results.

CASE STUDY: **COLOMBIA**

iNNpulsA in Colombia is one of the few Latin American agencies with a strong international presence. It is the only agency within the RELAI network that has an office outside of its borders, located in Israel. This experience has allowed the agency to learn and exchange significant experiences with Israeli institutions, not only by iNNpulsA workers visiting their facilities but also through inviting Israeli representatives to Colombia.

The agency has worked together with the Israeli innovation agency on common challenges, such as smart cities. In this case the challenge was targeted to Colombian businesses to find solutions for the Israeli ecosystem, and then to adapt those solutions to apply them to Colombia as well. iNNpulsA has also run exchange programs with the UK to reinforce incubator and accelerator programs with British research centers.

For iNNpulsA, the key objective for international collaboration is not just to visit other countries and run a mission, but to gain specific knowledge to run programs that would benefit both countries. The agency has also gained significant international experience by leading the RELAI presidency in 2021, and it used the COVID-19 pandemic as an opportunity to increase its reach using virtual tools and online resources.

iNNpulsA has also recently increased its regionalization process in order to reach other areas of the country and make sure that dynamic entrepreneurship is promoted outside of Bogotá. For instance, the program Sombrillas iNNpulsA has developed entrepreneurship camps across 24 out of the 32 regional departments in Colombia.

The new Entrepreneurship Law is letting iNNpulsA help support regions and sign agreements with local governments to promote local entrepreneurship. It has also launched common challenges with the regions to connect small local businesses with more prominent companies and improve their supply chains, which has helped reactivate the economy in deprived areas of the country after the pandemic.

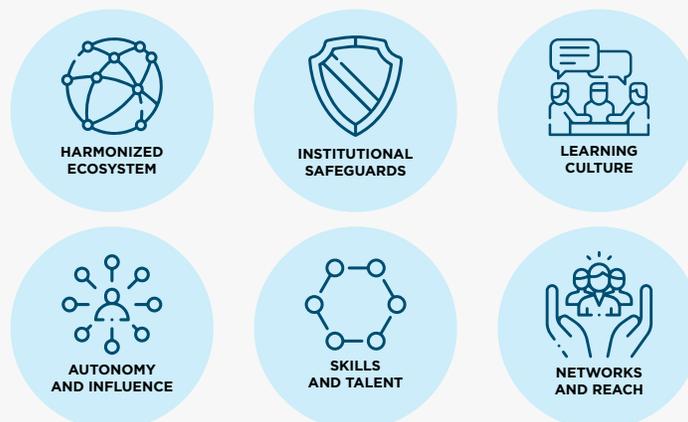
2 Looking to the Future

Analysis of the survey and interview data, along with insights from the wider literature, provide a snapshot of the current practices and priorities of agencies in the RELAI network. Looking beyond the here and now, the future holds many uncertainties and different possible ways forward. What this journey looks like will vary between agencies, depending on the context they operate within and their own specific objectives and capabilities. However, it is possible and desirable to think collectively about the future roles of innovation agencies and how they can set a clear strategy and sense of direction while also maintaining the agility to pivot and adapt in response to novel challenges and opportunities.

Looking at how other agencies organize themselves, in the LAC region and internationally, can also serve as inspiration and give practical guidance for action. This section offers some observations on how innovation agencies can make sense of the research insights and apply them to their own situation. It ends with some specific ideas and recommendations for both RELAI agencies and the RELAI network as a whole to consider to take this work forward.

An Emerging Agency Framework and Typology

The six factors observed to play a key role in shaping the way that innovation agencies in the RELAI network operate can be used as a framework to help identify future priorities. They can also be combined to form a general typology of the mode that agencies may find themselves operating in. Below, each factor is considered in turn, including questions and statements to help agencies make a quick diagnosis of their position and identify areas where they are already advanced as well as those where there is a need for further improvement. Some ideas to consider to support development in each area are offered, illustrated by international examples. The aim is not to create a one-size-fits-all approach, but rather to encourage agencies to design their own agenda for action.





HARMONIZED ECOSYSTEM

National innovation systems tend to be either quite **distributed** (responsibility for designing and delivering innovation policy is shared by many different actors) or **consolidated** (fewer actors dominate and less collaboration is required). There are strengths and drawbacks associated with each model. Some distributed systems have close cohesion amongst innovation actors and a useful diversity of perspectives and approaches, while others suffer from competition or a lack of coordination. Some consolidated systems are well placed to be a hub for innovators and entrepreneurs, but may lack dynamism or agility as there is little competition and there are fewer incentives to collaborate with others. In either type of system, it is important for innovation agencies to have a common understanding of the kind of outcomes that innovation policies are trying to achieve and a clear sense of their own role in contributing to these outcomes.

WHICH OF THE FOLLOWING STATEMENTS BEST DESCRIBES YOUR AGENCY'S CURRENT POSITION?

1

There is a clear and shared understanding of innovation strategy at the national level, and the agency's role in delivering it is well-defined. There is regular and effective coordination between the agency and other actors in the innovation ecosystem.

2

There is a distinction between support for STI and firm-level capabilities that sometimes leads to overlap or gaps within the provision of innovation support. The agency may be informally collaborating with some other actors in the innovation ecosystem.

3

There are competing definitions of innovation and priorities at the national level. There is little coordination across the innovation ecosystem and the agency may be in competition with or duplicating the work of other bodies.

IDEAS TO CONSIDER:

- **Establish a national innovation body** that brings together ministers, innovation agency leaders, and representatives of academia and the business sector to debate and align national innovation definitions and priorities. For example, between 2015 and 2021 the Swedish government ran a National Innovation Council that was chaired by the then prime minister. Its aim was to coordinate and develop innovation-based solutions to major societal challenges (Edquist, 2019).
- **Convene a formal or informal working group** with individuals representing key actors and institutions in the innovation ecosystem, with a remit to regularly discuss roles and responsibilities in delivering innovation support, spot gaps or opportunities for collaboration, and avoid duplication of effort.



INSTITUTIONAL SAFEGUARDS

Some innovation agencies are very **institutionally close** to their funders, while others are institutionally **distant collaborators**, having cultivated a space for more independent funding and governance. This has a bearing on the agency’s ability to develop and implement long-term programs, as well as the degree to which the agency is affected by political changes. The quality of the safeguards for institutionally close agencies are highly dependent on the quality of their relationships with their main funding ministry or ministries. Institutionally distant collaborators are less dependent on these relationships, but this does not necessarily guarantee greater levels of stability as other factors come into play, such as market factors for those with alternative streams of income. This requires agencies to reflect on how they manage their partnerships with funders and to identify opportunities to build resilience and safeguards into their own structures and programs.

WHICH OF THE FOLLOWING STATEMENTS BEST DESCRIBES YOUR AGENCY’S CURRENT POSITION?

1

The agency manages multiyear budgets, programs, and projects. The agency may have multiple sources of funding. Changes in government do not usually require significant changes within the agency.

2

The agency may have a mix of short-term (i.e., one year or less) and longer-term projects and programs. Changes in government sometimes have an impact on how the agency operates, in terms of strategic priorities or personnel.

3

The agency’s structure and field of action is subject to regular change as a result of political, economic, and other shifts. Budgets and programs rarely extend beyond a single year. The agency is unlikely to have independent funding.

IDEAS TO CONSIDER:

- **Explore alternative ways of generating funding** to complement budget allocations received from the government, such as making equity investments in innovative companies. For example, Enterprise Ireland, which is responsible for supporting the growth and internationalization of Irish enterprises, is able to invest directly in high-potential start-ups. It manages a large portfolio of investments, coordinating with Irish venture capital funds and business angels (Enterprise Ireland, 2022).
- **Initiate collaborative projects** with other actors within the national innovation system, or with international partners like the IDB or peer innovation agencies in order to finance multiyear programs and projects.



LEARNING CULTURE

In increasingly turbulent and uncertain environments, learning is vital to an agency’s sustainability and its ability to deliver effective support for its clients. Some innovation agencies have become **continuous learners**, embedding clear processes to support the evaluation of programs and/or to manage their own organizational development and evolution. Other agencies are more **sporadic learners**, lacking the resources and skills required to do this in a structured way. The creation of a learning culture depends on the behaviors, beliefs, and mind-sets at all levels of the organization, as well as the tools and technical abilities that an agency possesses. Both openness and the capability to experiment are required.

WHICH OF THE FOLLOWING STATEMENTS BEST DESCRIBES YOUR AGENCY’S CURRENT POSITION?

1

The agency has a culture of experimentation and well-developed systems and tools to both monitor and evaluate its programs. It generates evidence that is regularly used to inform the design, implementation, and scaling of its programs.

2

The agency has a monitoring and evaluation strategy in place, but it may not be regularly used for all programs. There may be openness to building a culture of experimentation, but further skills and capabilities are required to embed this.

3

The agency may collect monitoring data on some or all of its programs but does not regularly evaluate its programs; when it does, evaluation is mostly based on testimonial data and indicative evidence. Agency lacks the internal skills and resources required to experiment.

IDEAS TO CONSIDER:

- **Establish or develop rigorous methods of data collection and analysis**, as well as systematic processes to use the results of evaluations. Collect better administrative data, give space and resources to pilot different implementation mechanisms, and develop strategies to make the results from the evaluation public and accountable, including plans and timelines to meet the agreed objectives and make the appropriate transformations in policy design.
- **Train staff in impact evaluation methodologies** to help embed learning and experimentation at all levels of the agency. This could be done as an internal or cross-agency training program; the latter would help build peer support networks. For example, the IGL is currently running a program for EURADA, the network of European regional development and innovation agencies, training its members in the use of experimental evaluation methods (Tolosa, 2022).



AUTONOMY AND INFLUENCE

Innovation agencies are very often characterized as implementation bodies, designed to run programs that support government priorities with respect to innovation and entrepreneurship. However, there are differences between them in terms of how much independence and leverage they have within the wider innovation ecosystem. Some agencies are **influencers** and play a formal or informal role in advising the government or other actors on the development and design of policies. They are likely to also have considerable freedom to determine their own internal strategy. Other agencies are **rule followers**, with little freedom to shape the innovation system or policy priorities. Innovation agencies can be successful operating in either of these ways, but they are likely to be more resilient if they have a higher degree of autonomy.

WHICH OF THE FOLLOWING STATEMENTS BEST DESCRIBES YOUR AGENCY'S CURRENT POSITION?

1

The agency has considerable freedom to set and manage its own priorities within its programs and activities. The agency advises the government on policy formulation and design. Business and/or academia also have a relevant voice in the agency's decision-making processes.

2

The agency has some freedom to set its own priorities, and it may be consulted by the government with respect to the formulation or design of policies, but the agency is more focused on implementation. External actors might have a relationship with the agency but may not be actively involved in decision making.

3

The agency's priorities and activities are largely determined by the government. The agency is unlikely to play an active role in policy formulation or advising the government, and there is no or little formal involvement of external actors in its decision-making processes.

IDEAS TO CONSIDER:

- **Recruit independent advisers** (such as academics or private sector representatives) to join the board or to take part in strategic activities in order to diversify the perspectives involved in setting the agency's future direction. For example, the board of Innovate UK (the UK's innovation funding agency) is composed mainly of representatives from the business sector, including individuals with investment, management, or start-up expertise (UKRI, 2022).
- **Seek opportunities to be involved in decision-making processes** that relate to innovation support, such as government budget-setting or innovation strategy development activities.



SKILLS AND TALENT

With regularly changing demands for what agencies need to deliver in terms of transformative innovation agendas, acquiring the right mix of skills and talent is increasingly important. Some agencies invest heavily in acquiring talent, recognizing that market competitiveness requires them to offer benefits that will attract staff who might otherwise choose to work in the private sector. However, many innovation agencies still experience skill gaps in particular areas, which they may try to address through **internal training and development** or through the use of **external consultants**. Knowing what skills and capabilities are needed to be able to serve clients effectively—and where they can be found—is a key strategic challenge for most agencies.

WHICH OF THE FOLLOWING STATEMENTS BEST DESCRIBES YOUR AGENCY'S CURRENT POSITION?

1

The agency has access to the skills and talent it needs to provide effective services to its clients (through hiring or taking on external consultants). There is investment in training and development as well as identifying and filling future skills needs.

2

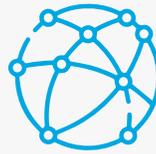
The agency generally has the skills it needs to deliver its existing programs, although there may be gaps in specific new areas. There is some investment in training and development for staff, but it is mostly internal.

3

There are skills gaps within the agency that cannot easily be filled, and it is challenging to recruit for key roles that are needed. There is little investment in the training or development of staff.

IDEAS TO CONSIDER:

- **Conduct a skills audit** to assess current strengths and gaps in the agency's workforce and to identify capabilities that will be needed to respond to future opportunities and challenges.
- **Explore opportunities for skills exchange programs or collaborative projects** with other RELAI agencies (or with peer agencies in other regions) to enable learning from best practice and to pool skills and resources. For example, Tekes, the former Finnish funding agency, used to run regular staff exchange programs with counterparts from Vinnova, the Swedish innovation agency (Glennie and Bound, 2016).



NETWORKS AND REACH

Innovation agencies are well placed to play a connecting and coordinating role within their innovation systems, given that they tend to sit at the intersection of government, business, and research communities. Some agencies are **active connectors**, cultivating a strong presence across their own country and internationally, in order to identify knowledge transfer, scaling, and investment opportunities for innovative companies. Other agencies are more **insular** and lack a strong web of connections at the national or international level, which can have an impact on their ability to influence and shape the wider ecosystem or spot opportunities for partnership.

WHICH OF THE FOLLOWING STATEMENTS BEST DESCRIBES YOUR AGENCY'S CURRENT POSITION?

1

The agency plays a coordinating role across the country and can reach most geographical areas. It has a strong set of relationships with other regional and international bodies, which may include formal partnerships, funding, and projects.

2

The agency may collaborate with other bodies at the regional or local level but it has some difficulties reaching some geographical areas. It may have some formal or informal connections and relationships with international partners.

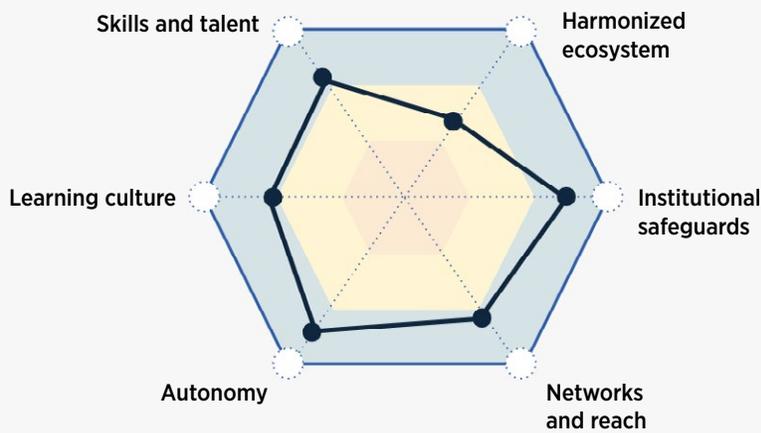
3

The agency has few formal or informal partnerships with other actors in its own national ecosystem or more widely. It experiences challenges in reaching several areas of the country and doesn't regularly connect with international actors.

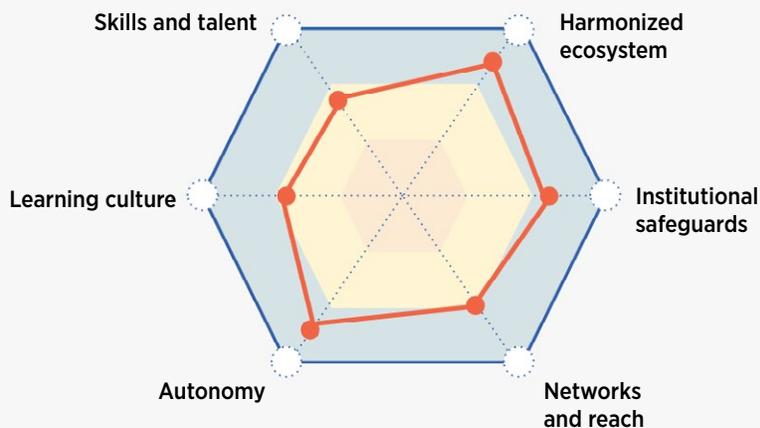
IDEAS TO CONSIDER:

- **Participate in international projects** and explore the feasibility of opening offices or joining hubs in different countries as a means of building partnerships and actively learning from the approach to innovation support taken elsewhere. For example, the National Research Council of Canada participates in the Eureka initiative—an international network that provides funding and assistance for SMEs, large companies, research centers, universities, and other innovators to collaborate on industrial research and development projects (NRC, 2022).
- **Conduct a stakeholder mapping exercise** to identify key actors that the agency needs to have strong relationships with in order to deliver impactful services to clients, and to spot gaps in the network. This could suggest the need to establish offices in different parts of the country, for example, or to build partnerships with research or industry partners.

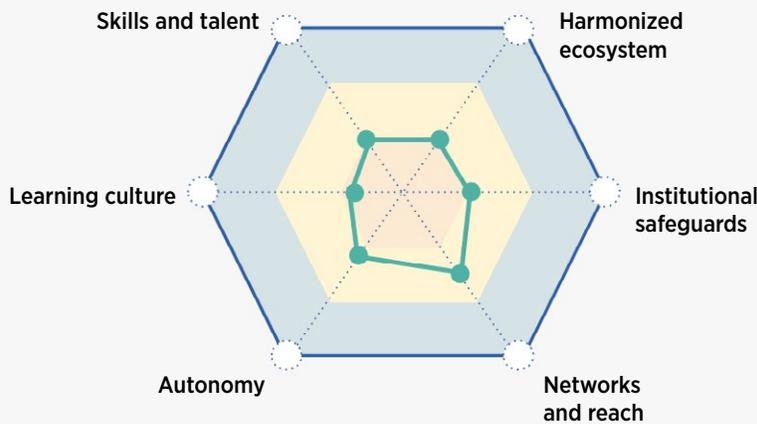
Where agencies position themselves in relation to each factor provides insight into how they are operating overall. An agency answering “1” to most of the questions above could be seen as operating in a **transformative mode**: capable of pursuing its mission effectively and actively focused on strengthening its capabilities. An agency assigning itself mostly “2s” could be considered as operating in an **established mode**: generally, in possession of the capabilities required to be successful, but with room for development in some areas. An agency judging itself to have lots of “3s” could be viewed as operating in an **unstable mode**: lacking essential elements of control over its strategic direction and impact.



In **transformative** mode, there may be some divergence within the system on definitions of innovation, but the agency generally has the resources, influence, and skills it needs to pursue its mission effectively. It is likely to have a well-developed culture of learning and strong collaborative networks.



In **established** mode, there is likely to be a strong degree of alignment within the system on the definition of innovation and the role of the agency in supporting it. The agency will be actively developing its skills and culture of learning, although it may experience gaps and challenges in these areas.



In **unstable** mode, there is likely to be a lot of volatility in the innovation ecosystem, and the agency's role may be subject to frequent changes due to political shifts. It is unlikely to have a strong culture of learning or evidence use, and it has limited connections to other actors in its own ecosystem or internationally

An agency's mode depends a great deal on the context it inhabits. Political, economic, and social dynamics can support or constrain its room for maneuver. Nevertheless, in each of the areas described above, there are opportunities for agencies to build their capabilities and proactively develop the role they play in supporting innovation and entrepreneurship.

Recommendations for Innovation Agencies in LAC

In the discussion of each of the six factors above, we have included practical ideas to explore further along with examples from innovation agencies worldwide to inspire reflection on what might be possible and desirable in an LAC context.

For individual innovation agencies, here are some of the other ways this research can be used:

■ Deep dive into the survey data

The survey conducted for this study is a rich source of information about the approach being taken by agencies across the RELAI network. Although there are variations between agencies in terms of their size, mandate, and range of activities, there are also many similarities. The survey data can help pinpoint which agencies are closely aligned with each other in terms of the objectives being pursued and the instruments and tools that are being used. From this, innovation agencies can find the most relevant peers to connect with and learn from, rather than looking at organizations that might not be such useful comparators.

■ Use the factors and the typology as diagnostic tools

The six factors and the agency typology explored in this report can be used by agencies for diagnostic purposes. Case studies have been included in the report to point to examples of interesting practice that can be learned from, but agencies will ultimately have to chart their own path that reflects the specific dynamics of their own system. In particular, the six factors can be used as prompts for discussion at all levels of the agency to facilitate self-assessment of existing strengths and areas where development efforts should be focused.

■ Engage in dialogue with external funders and partners

This research can be used as an opening for dialogue with an agency's funding partners and other key stakeholders in the innovation system. Assessments of where the agency needs to strengthen its capabilities can be conducted jointly with these actors, as a means of building broader support for reform and identifying opportunities for collaboration. For instance, if a diagnostic process reveals that there are conflicting definitions of innovation policy or contrasting views about what the role of the innovation agency should be, this could be the prompt for a more coordinated effort to explore and resolve these differences.

Recommendations for the RELAI Network

As the RELAI network matures and grows, there are many opportunities for it to serve as an effective platform for exchange and learning and to support the development of its member agencies. This research has highlighted some practical ideas and an agenda for action, summarized below:

■ Develop collective knowledge management systems and processes

The RELAI network should consider how it gathers data about its members and manages this information. A survey like the one developed for this characterization research could be regularly repeated and analyzed to identify trends in the organization, activities, and priorities of innovation agencies across the network. Collecting and sharing relevant information about the programs and interventions run by agencies across the network could also accelerate learning across the RELAI network. For this, real-time data collection and mapping tools could be useful.²

■ Facilitate structured peer learning between agencies

One of the most valuable things that the RELAI network can do is create a space for relationships and trust to be built between its members. Regular gatherings, held both online and offline, can be a forum for agencies to talk openly about the challenges they have in common and strategies for addressing them, and to share and learn from the approach taken by others in the network. Peer

2. The European EURITO project is one example of an approach that could be replicated or adapted; see <http://www.eurito.eu/>.

learning is most effective when it has some structure. RELAI could consider establishing working groups to bring together representatives of different member agencies to jointly look at the questions and focus areas raised in this research, as well as other questions of mutual interest.

■ **Provide training and technical support for member agencies**

This research has surfaced a number of topics where RELAI agencies would value more training and support. For example, many agencies expressed a desire to improve their ability to conduct rigorous impact evaluations as a means of better understanding the effect of their interventions and ensuring that policies and programs are informed by good evidence. RELAI is well placed to develop and deliver training that is tailored to the needs and context of innovation agencies in the LAC region. This would have the added benefit of strengthening relationships and creating opportunities for learning between agencies.

■ **Deepen engagement with international innovation agencies and networks**

Conversations with RELAI agencies throughout this research revealed a real appetite for learning from each other's experiences, as well as from peer agencies around the world. In parallel with this characterization study, a similar project has been conducted with the TAFTIE network, mapping the current and emerging roles of its members. A separate report has been published that compares and contrasts RELAI and TAFTIE agencies, drawing out areas that are promising for future collaboration and learning. Engagement between RELAI and TAFTIE has been fairly ad hoc to date, but it could be developed to include regular annual dialogues on policy and practice, or even joint projects in areas of mutual interest.

Concluding Remarks

This research has revealed a number of key trends, opportunities, and challenges facing innovation agencies across Latin America and the Caribbean. While there are many differences between these agencies, there are perhaps also more similarities than have previously been recognized. The RELAI network offers a space to explore these similarities and divergences, and it has the potential to create connections across the region and internationally that will enable frank discussion about the difficulties involved in stimulating innovation that will both create sources of national competitiveness and address complex societal challenges. In an era of transformative and mission-driven innovation, this space for learning is more vital than ever.

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