# Instruments shaping policy design

## Sectoral Funds and Argentina Innovadora 2020

Ana Pereyra, Solange Martinez Demarco

Ministry of Science, Technology and Productive Innovation, Argentina

## 1 Context

Argentina's Ministry of Science, Technology and Productive Innovation (MINCYT) was created in December 2007. This produced transformations at the organizational, functional, and human resources levels, and affected the instruments for policy implementation. Among these instruments, two mechanisms stand out : the National Plan for Science, Technology, and Innovation (Argentina Innovadora 2020), which reflects the main policies and strategies in force since 2012 ; and the Sectoral Funds (SF), a financing instrument for public–private partnerships (PPP) beginning in 2011.

This study reviewed the interplay between these two policy instruments by utilizing the public policy instruments (PSPI) approach and the conceptual framework of national systems of innovation (NSI). There is often a gap between policy formulation and implementation. The classic argument holds that the gap is a result of two different processes characterized and governed by different logics, actors, and rules of the game. However, in this case, the coherence and consistency between policies and instruments is based on the mutual influence exerted on each other over the period 2007–2015.

## 2 Empirical Approach and Main Findings

This study adopted an exploratory, descriptive case-study strategy, and a qualitative methodology to analyse the creation, production, and evolution of the SF and Argentina Innovadora 2020. It was exploratory for two reasons : the lack of previous studies ; and the short timeframe since the implementation of both instruments. The questions guiding this study were : what are the sectoral funds and what is the National Plan

for STI ; how have both policy instruments developed ; why have they developed this way ; and how has the NSI affected their implementation (and to what extent) ?

This research analyzed primary and secondary qualitative data sources and triangulated the evidence to validate the main findings. In addition, three in-depth and semi-structured interviews were carried out with present and former authorities of the MINCYT and the Argentinean Sectoral Fund (FONARSEC) of the National Agency for Scientific and Technological Promotion (ANPCYT). They provided access to non-written information, tacit knowledge, values, attitudes, and ideologies. The PSPI and NIS approaches were employed to analyse the instruments in terms of their construction, embedded values, objectives, impacts, framing of the STI, and their interplay and effects on STI policy. The objective was to focus on how the SF and the National Plan for STI were developed and how they have affected each other.

The public policy instruments (PSPI) approach understands instruments as a set of coordinated rules that structure the behaviour of the actors. As such, they may reduce uncertainty, determine opportunities and constraints, reward certain actions and actors, and provide a stable frame of the issue. Instruments produce their own effects — they tend to both resist outside pressures and stimulate policy changes. This approach brings politics back into the study of public policy and proposes to complement classical analysis of policy implementation by concentrating on the instruments. Therefore, it was employed to study the development of both instruments, examining each of them independently and also addressing their interactions, which is a novel way to study STI policy. The National System of Innovation (NSI) framework embodies two main ideas : economic actors are rationally bounded agents that (inter)act in an uncertain atmosphere due to the lack of complete information ; and institutions such as R&D organizations and infrastructure, educational, financial, and legislative systems are extremely important as framework conditions for spurring innovation and, ultimately, economic growth and national competitiveness.

**Values, Objectives, and the National Innovation System** - The government's commitment to achieving sustainable development and social inclusion based on the contributions of STI was demonstrated by transforming the Secretary of Science, Technology, and Innovation into a Ministry. The mission of MINCYT is to guide national STI by formulating policies and plans that addressed the main social and sectoral problems to be solved and the requisite technological capabilities. The goal of the Ministry is to help generate a new production model guided by the knowledge society while improving the competitiveness of the Argentine economy. The selection of the new Minister was in line with these purposes. Lino Barañao was a well-known researcher with extensive experience in connecting the scientific and business sectors. To confirm his political commitment to enhancing innovation in selected productive areas and responding to social priorities, the Minister set as his objective to rebalance public funding from a more neutral to a more selective policy approach.

Since 1998, the NSI approach has been the conceptual background for a set of policy measures to develop the Argentine STI sector. It provided the justification for government intervention based on the assumption that knowledge, science, and technology are the tools to foster innovation and competitiveness. This approach stresses that

solid institutions, better coordination, and consultation with stakeholders are necessary to achieve either a critical mass or dynamic comparative advantages. This was the thinking that guided the design of the Sectoral Funds.

**Constructing the Structural Funds** - Structural Funds are a common instrument adopted in many Latin American countries to promote innovation. They have a thematic or sectoral focus and involve public and private actors who adopt ad-hoc consortia to implement high-tech projects. Argentina adopted the SF approach used elsewhere in Latin America, but with three important differences. The financial resources involved were based on World Bank and InterAmerican Development Bank loans instead of on the National Treasury ; they funded only experimental development, high-technology innovation, and pilot plants and demonstrative projects ; and all funding was allocated through the MINCYT-ANPCYT. This new policy instrument sought to generate new technologies and technological applications in the productive and social sectors. The approach was original in terms of its management because it was the first to be administered jointly by the government body formulating the policies (MINCYT) and the agency in charge of implementing the policies (ANPCYT-FONARSEC). The ministry was responsible for the political negotiation process that culminated with the technical specifications (theme, objectives, and expected outcomes and impacts) of the projects. In turn, ANPCYT through FONARSEC, generated the calls for projects, evaluated the proposals, and monitored and assessed their financial execution.

The complexity and novelty of the implementation of this instrument explain the time it took to produce the first calls for projects for the High-Technology Sectoral Funds (HTSF). Only in 2011 was the ANPCYT able to organize the first competitive processes. However, the bargaining process began as early as 2007-2008 because for both, the Argentine government and the banks, investing in the Sectoral Funds was considered a high-risk activity. This apprehension was a product of the amount of money devoted to each project (USD 5–10 million), the lack of previous examples of successful PPP to assess risk and reward, and the absence of evidence demonstrating that the selected technologies and sectors could impact on productivity and competitiveness of the country.

**Dynamics between the National Plan for STI and SF** - The asynchronous deployment of the National Plan for STI and the SF illustrates the capacity of SF to influence politics and to design policies. The SF has contributed to many of the distinctive features of the National Plan for STI — focus, public–private cooperation, civil society consultation — as well as to the management devices used to produce the policies present in that plan.

The PSPI approach enabled us to understand that as institutions, these instruments provide an understanding of how to develop the Argentine STI sector while reducing uncertainty and providing incentives for new actors. Furthermore, as these instruments have structured the behaviour of the actors, they have presented new demands that resulted in the implementation of new policies and policy instruments.

## 3 Main messages for policy and practice

The approach adopted in this study facilitated our understanding of a series of important issues. The adoption of a foreign and highly selective STI instrument was adapted to the local context, needs, and resources. It took about 3 years from the first conversation between the officials of the ministry and the banks to negotiate, agree upon the implementation procedures, and implement the first call for proposals. The bargaining processes expanded beyond the boundaries of the traditional STI actors and included representatives from other state institutions. The implementation of the SF required a high level of technical and political articulation and coordination between actors. The operation of this type of public–private partnership instrument has created new management tools and institutions (Sectorial Technology Councils and FONARSEC). These organizational innovations fulfilled the need for functional specialization to ensure its successful implementation. This institutional learning led to the acquisition of new skills and the use of a high-level expertise to identify priorities and issues worthy of consideration by these funds.

The ministry adopted a participatory model of policymaking to generate consensus. This bottom-up process of policy and strategy formulation was deliberately implemented to promote partnerships between the private sector and traditional STI actors. Although the consultative methodology adopted for setting the policy agenda may appear to be at odds with the narrow focus of the financing instrument, the result was positive. The opening up of the process of formulating the National Plan and the SF programming phase identified opportunities for collaboration and coordination that enhanced the performance of the SF and to the development of a highly articulated NSI.

It is important to highlight the effects of public–private cooperation. The core idea of the SF was to promote knowledge and technology co-production in line with the consolidation of the NSI. The SF gave voice to a dormant actor in the STI sector — the private sector, which was empowered through its interaction with the S&T actors to formulate and design policies and projects. Once part of the policy formulation process, the private sector influenced the direction of important STI policies. Moreover, the staff of the Ministry, the ANPCYT, and the banks adapted their behaviour. When faced with unprecedented challenges, these actors demonstrated flexibility and openness to negotiate and coordinate their heterogeneous interests, logic, and operational objectives.

## Related Resources

Del Bello, Juan Carlos. 2014. Argentina : experiencias de transformación de la institucionalidad pública de apoyo a la innovación y al desarrollo tecnológico. In *Nuevas instituciones para la innovacion : practicas y experiencias en América Latina*, pages 35–83. Rivas, Gonzalo and Rovira, Sebastián (Eds). Santiago de Chile : Naciones Unidas.

MINCYT (Ministry of Science, Technology and Productive Innovation). *Argentina Innovadora 2020. Plan Nacional de Ciencia, Tecnología e Innovación. Lineamientos Estratégicos 2012–2015*. Buenos Aires : MINCYT.

MINCYT. 2013. *Argentina Innovadora 2020. Plan Nacional de Ciencia, Tecnología e Innovación. Síntesis ejecutiva*. Buenos Aires : MINCYT.