



Cofinanciado por el Programa  
"Horizonte 2020" de la Unión Europea

## DESIGN OPTION PAPER

A case of transformation: Foundation for Agricultural  
Innovation (FIA) and its process of strategic updating





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## Design Option Paper "A case of transformation: the Foundation for Agricultural Innovation (FIA) and its process of strategic updating"

Project "Improvement of support capacities for Small and Medium-Sized Enterprises (SMEs) in the Agriculture and Agri-food sector"  
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## Executive summary

The Foundation for Agricultural Innovation (FIA) is an agency governed by private law, and dependent on the Chilean Ministry of Agriculture. FIA has traditionally been focused on fostering a culture of innovation. Since the creation of its actual legal framework in 1996, its role has been to promote the transformation of agriculture and the rural economy through financing instruments, networks, training, and the generation and dissemination of information.

Within the framework of Horizon 2020 of the European Commission in 2018, FIA signed a collaboration project with the Institute of Economic Development of the Principality of Asturias (IDEPA) and the Center for the Development of the Loire Valley (Dev'Up). This project consists of establishing collaboration and best practices regarding how the different actors of the National Innovation System coordinate around improving the processes and capacities of agri-food innovation and impacting this sector's competitiveness. The relevance of the above lies that in 2017, the Budget Office (DIPRES) of the Ministry of Finance "technically objected" the design FIA's instruments. The latter meant a budget reduction for the entire institution by 2019.

This document illustrates how both the collaboration with peer organizations (IDEPA and Dev'UP) and the result of the fiscal authority evaluation led to rethinking the institution, which implied a general review of how FIA - and its support instruments - are part of the public institutions in science, technology, and innovation. Finally, the main lessons learned from this institutional change process are described, summarized as:

1. The focus on the user has to be internalized in all dimensions
2. A public institution dedicated to innovation must address ambitious challenges.
3. Exit the "comfort zone".
4. Form diverse work teams with critical capacity.





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## 1. Introduction

Chile possesses significant comparative advantages in the agriculture sector, but it largely does not innovate in this sector. The Chilean State does not have an explicit agriculture innovation strategy for the medium- or long-term either. This not only affects a potential missed opportunity but also compromises future performance and Chile's comparative advantages. In other words, having comparative advantages in agriculture today does not ensure the same in the coming decades. For this, it is necessary to develop a virtuous cycle that allows the productive chain of the sector to be on the technological frontier, providing products with low environmental impact, and linking its own characteristics that allow for increased value addition.

This document shows the diagnosis and lessons from which the Foundation for Agricultural Innovation (FIA) seeks to redirect its institutional work, modernizing its regulatory framework and its public instruments. The final objective of this change is not only to ensure that agriculture in Chile remains one of its main economic activities, but also to strengthen the technological capacity of the economy, decrease its environmental impact, and contribute to the local productive chain.

The main experience to be shared - and that which is intended to be reflected in this document - is the importance of a public institution leaving its "comfort zone" to improve user experience and strengthen its public role. FIA is a small institution in budgetary terms and in comparison to other public institutions, both in the world of agriculture and in the innovation ecosystem. However, with a clear diagnosis, and ambitious and long-term strategic initiatives, it can provide additionality in innovation policy, help to add value to firms in the sector, and contribute to the development of the country.

### 1.1. The Foundation for Agricultural Innovation (FIA)

FIA is an agency governed by private law, dependent on the Ministry of Agriculture of Chile. Its actual legal framework was created in 1996, within the context of the negotiations for the entry of Chile into the Southern Common Market (Mercosur). In legal terms, FIA is governed as a continuation body of the Fundación Fondo de Investigación Agropecuaria, created in 1981, as a version of the agricultural sector of the science, technology and innovation policy of that time, with emphasis on promoting the transformation of agriculture and the rural economy. Thus, the emphasis was placed on complementing the self-financing of research and the executing institutions, with public participation limited to competitions and tenders in specific projects.



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FIA is considered one of the 12 institutions or services associated with the Ministry of Agriculture<sup>1</sup>, and one of the 4 Public Technological Institutes (ITPs) of this Ministry, along with the Institute of Agricultural Research (INIA), the Chilean Forest Institute (INFOR), and the Natural Resources Information Center (CIREN). However, unlike these institutes, FIA's main job is not to directly carry out research, innovation, diffusion and transfer, training, or generation of public goods and information, but rather to *finance* some of these activities. Despite the fact that FIA has a unique role, as it is the only agency in the Ministry that provides relevant resources to other institutions and can create instruments, it has not been used strategically or as a way of coordinating or articulating efforts of the Ministry or the forestry-agricultural-food area.

In this context, FIA possesses four types of public instruments (or support services):

- Financing for agricultural innovation projects. Corresponds to support funds for the implementation of innovation initiatives in the national forestry sector and the associated agri-food chain. It has different modalities, such as subsidies for innovation projects, seed capital, tours, consultancies, events, and studies.
- Networks for innovation. Opportunities to link up with different actors in the entrepreneurship and innovation ecosystem of the agri-food sector and the associated agri-food chain. FIA makes available to people who want to innovate a range of face-to-face occasions, alliances with institutions and actors linked to innovation, and access to a network of contacts with a territorial perspective.
- Training for innovation. Training opportunities for innovation, aimed at schoolchildren, youth, and adults. This area aims to develop knowledge, skills, and attitudes around innovation and entrepreneurship in children, youth, and adults related to the forestry and agricultural sector and the associated agri-food chain in the country.
- Generation and diffusion of information. Diffusion of information resources -generated by FIA and other institutions- to support decision-making related to innovation processes in the food and agriculture sector. Among these resources, the Digital Library, the National Project Base, the FIA Initiative Base, and the Observatory for Agrarian Innovation stand out.

## 1.2. A brief review of the journey towards institutional change

FIA has traditionally been focused on fostering a culture of innovation. This was its institutional mission until the beginning of 2020, and -even when it is not part of its main guidelines- the work of FIA focuses on diversifying the country's export matrix. In order to

<sup>1</sup> The other ones are INIA, CIREN, INFOR, INDAP, SAG, ODEPA, ACHIPIA, CONAF, CNR, FUCOA, DGIR y AGROSEGUROS. See the Ministry's webpage: [minagri.gob.cl](http://minagri.gob.cl)



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fulfill these objectives, throughout the years, FIA has expanded its instrument offerings, the themes it finances, and the beneficiaries of these instruments. As it is also a small institution compared to other public institutions, the impact of its policies was not sufficiently relevant enough to affect the metrics by which success was measured (e.g., innovation rate).

In this context, in 2018 FIA signed the collaboration project with the Institute of Economic Development of the Principality of Asturias (IDEPA) and the Center for the Development of the Loire Valley (Dev'Up), within the framework of the European Commission's Horizon 2020. This project consists of establishing collaboration and best practices regarding how the different actors of the National Innovation System are articulated around improving the processes and capacities of agri-food innovation, and in turn impacting the competitiveness of this sector.

In parallel, in 2017 the Budget Office (DIPRES) of the Ministry of Finance "technically objected" to FIA's program design. This implied a budget reduction for the entire institution by 2019.

This document illustrates how both the collaboration with peer organizations (IDEPA and Dev'UP) and the result of the evaluation of the fiscal authority led to rethinking the institution. This involved a general review of how FIA –and its supporting instruments- are framed in the public institutions in science, technology, and innovation. Thus, this work presents a brief summary of the diagnoses, design, and proposals for change made in this process of institutional transformation. Section 2 describes the general framework for both agriculture and science, technology, and innovation in Chile, and how FIA positions itself in it. Section 3 provides a brief analysis of the institution's instruments, incorporating a critical analysis of how the instruments interact in the innovation process of firms. Section 4 summarizes the institutional redesign process itself, based on previous diagnoses, institutional milestones, and influential internal and external elements; In addition, it details what the ongoing institutional change is about: how FIA seeks to position itself and what it offers to firms and the innovative process. Finally, section 5 details lessons learned that might be relevant to review in further institutional transformation experiences.





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## 2. The role of FIA within the National Innovation System (NIS) in Chile

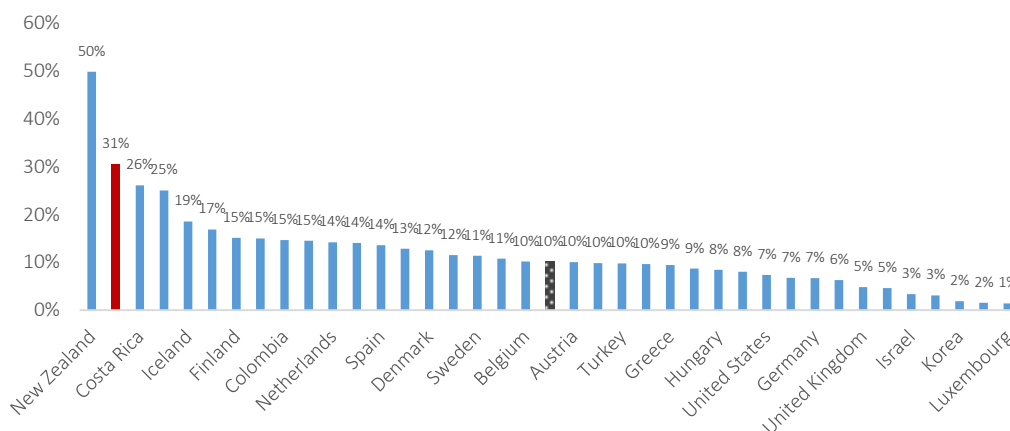
### 2.1. Innovation in Chile and its agri-food sector

The agri-food sector is one of the main economic activities in Chile, and the Foundation for Agricultural Innovation is a public agency with unique characteristics that allows it to contribute to the development of the sector and the economy by promoting innovation. As will be discussed in this document, it has been necessary to review how FIA has fulfilled this public role through various approaches in recent years.

Agriculture is the second most relevant activity in Chile in terms of exports, after mining. Furthermore, Chile is the OECD's second-largest exporter in agriculture, second only to New Zealand, and three times above the median (see Figure 01). This sheds light on why it is relevant to have a sectoral institution that drives innovation, capable of adjusting its instruments to the specific needs of agriculture. Exports are a measure of comparative advantages. Thus, Chile has comparative advantages in intensive activities in natural resources, such as mining and agriculture. For the latter case, it is relevant to note the employment generated as the value addition of the sector.

Beyond this, Chile does not have an explicit sectoral strategy regarding how the National Innovation System connects to agricultural activity. As will be discussed later, there are relevant sectoral initiatives in Chile, but decoupled from a long-term strategy. In comparison, New Zealand, the largest exporter in agriculture of the OECD member countries (as a percentage of GDP), has a specific mission "to be the world's most sustainable provider of high-value food and primary products" (MPI, 2015).

**Figure 01.** Agri-food exports as percentage of the GDP, for OECD countries, 2018.



Source: Atlas of Economic Complexity.

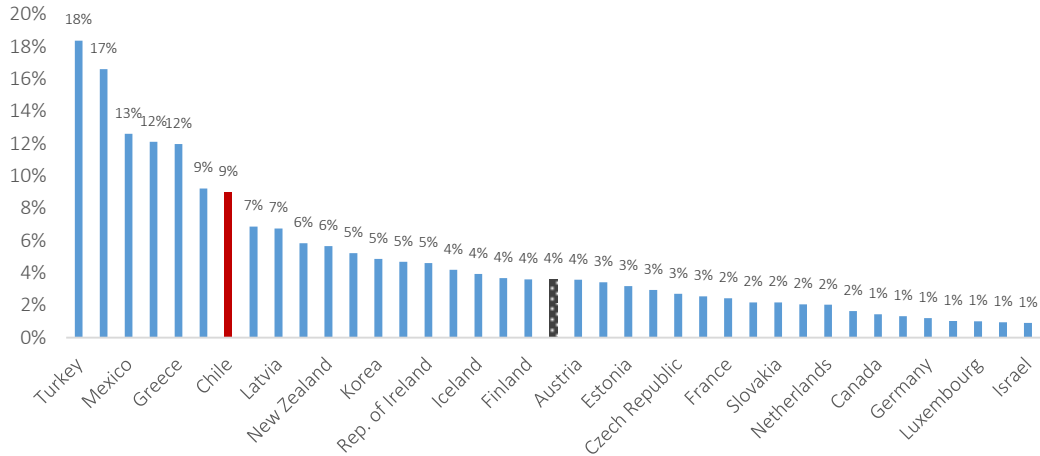




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In terms of employment, agriculture represents 9% of the country's workforce, more than double the OECD average (see Figure 02). As for the regional distribution of employment in agriculture in Chile, five regions exceed 15% of workers in agriculture compared to the regional total: O'Higgins, Maule, Araucanía, Los Ríos, and Los Lagos<sup>2</sup>.

Figure 02. Workers in agriculture as percentage of total workers, by country, 2019.



Source: World Bank base on ILO.

Even though agriculture in Chile is a relevant export activity -in addition to generating high participation in total employment-, it seems that in terms of value addition there is room for improvement. Figure 03 describes the added value<sup>3</sup> of the agriculture, forestry and fishing sectors as a percentage of GDP, where for the Chilean case, these sectors contribute around 3.6%. This is about double the median for OECD countries, but 83% less than the agricultural sector in New Zealand.

<sup>2</sup> National Statistics Institute of Chile, 2018.

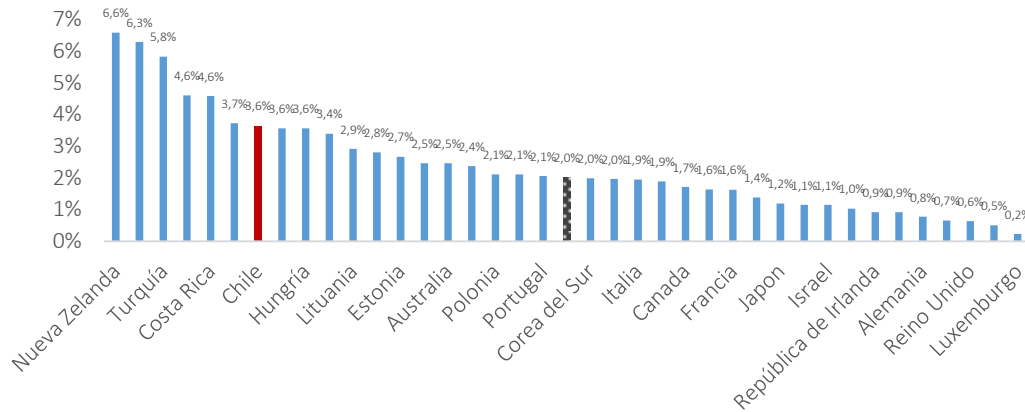
<sup>3</sup> "Value added reflects the value generated by producing goods and services, and is measured as the value of output minus the value of intermediate consumption. Value added also represents the income available for the contributions of labor and capital to the production process. Value added by activity shows the value added created by the various industries (such as agriculture, industry, utilities, and other service activities). The indicator presents value added for an activity, as a percentage of total value added. All OECD countries compile their data according to the 2008 System of National Accounts (SNA)."

Source: OECD



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**Figure 03.** Added value in agriculture, forestry and fishing, as percentage of total GDP, 2018.



Source: World Bank.

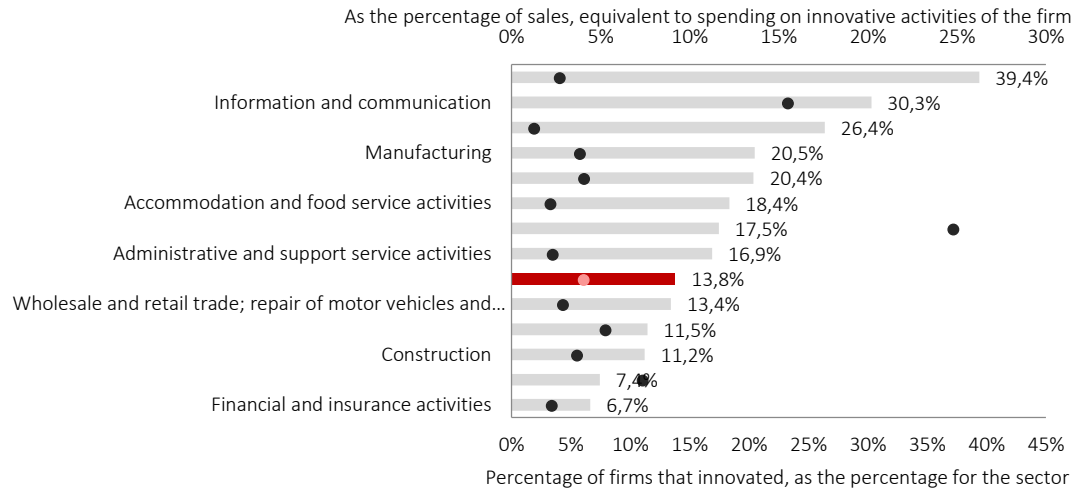
Despite agriculture’s relevance to the economy and the comparative advantages of agriculture in the Chilean economy, the innovation rate in this sector is one of the lowest among the different economic activities<sup>4</sup>. As can be seen in Figure 04, the innovation rate in the agriculture, livestock, forestry and fishing sectors is 13.8%, being the fifth lowest in the country and below the national average of 14.1%. Likewise, the innovative effort of these sectors is low compared to the rest of the country: spending on activities associated with the innovation process is 4%, while the average between the sectors is 6%. It is also important to highlight that the mining sector (exploitation of mines and quarries) - the main exporter in the country and also associated with natural resources - was the third most innovative sector in Chile between 2017-18, with an innovation rate of 26.4%.

<sup>4</sup> An issue to consider when analyzing FIA-related sectors is that for the Oslo Manual, both agriculture and forestry are considered as “complementary economic activities for national data collection”. This is because the international comparison is not fully tested for these sectors, and in many cases firm records are not entirely complete. The latter occurs mainly in the agricultural sector. The main implication of the above is that neither innovation in agriculture, livestock, nor forestry is internationally comparable.



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**Figure 04.** Innovation rate and percentage of spending on innovative activities, by sector (2017-2018).



Source: Ministry of Science, Technology, Knowledge and Innovation, based on the XI National Innovation Survey.

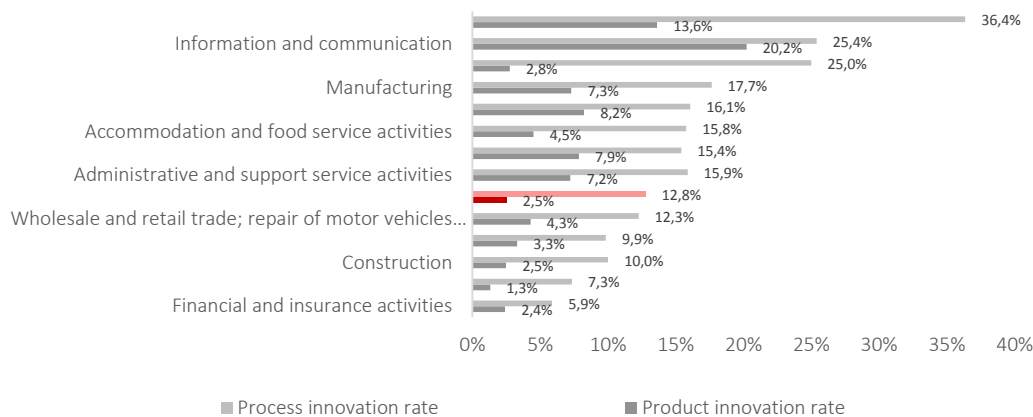
Process innovation is the most predominant type of innovation, both in the country and in the sectors related to FIA. As shown in Figure 05, the process innovation rate is 12.8% in agriculture, livestock, forestry and fishing (compared to 12.6% at the country level), and the product innovation rate is 2.5% (compared to 4.6% of the national product innovation rate).

Although process innovation is higher than product innovation in all economic activities, this occurs in an even higher proportion within resource-intensive activities, such as agriculture or mining. This confirms that technological change within resource-intensive firms occurs mostly in the process itself and aims to reduce the production costs and/or improve the quality. The latter has policy implications for FIA: it is not only relevant to allocate resources to the innovation of agricultural firms but also to support the supply chain (which often does not belong to the forest and agricultural sectors). Hence, since process innovation is a key driver of technological change in agriculture, it is relevant to provide financial support for firms within the agri-food sector and supply chain.



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Figure 05. Type of innovation, by sector (2017-2018).



Source: Ministry of Science, Technology, Knowledge and Innovation, based on the XI National Innovation Survey.

As for the main obstacles to innovation<sup>5</sup>, in the sectors related to FIA (agriculture, forestry and food) they are mainly due to a lack of financing, knowledge, and demand (see Table 01). Analysis of obstacles to innovation can shed light on where the most important focus for FIA instruments should be. Thus, it is observed that there are greater barriers to innovation in the agricultural sector than there are in the rest of the sectors in financing, knowledge, cooperation, and the regulatory framework.

Table 01. Obstacles to innovation, by sector, for potentially innovative firms<sup>6</sup>

Sector	Financial	Demand	Knowledge	Market	Cooperation	Regulation
Agricultural	79,2%	55,4%	62,4%	48,7%	45,1%	23,4%
Forestry	78,8%	54,1%	58,7%	47,3%	40,1%	21,4%
Food	71,4%	44,0%	48,9%	43,4%	35,5%	20,1%
Other	77,9%	52,9%	54,9%	52,2%	42,0%	21,6%

Source: LIP based on the VII, IX, and X National Innovation Survey and Zahler et al. (2018)

Due to all of the above, it may be relevant to analyze the institutional change of FIA and how the instruments that foster innovation can increase the sectoral added value and use the comparative advantage of the agro-food sector.

<sup>5</sup> For this analysis, the aggregated data from the innovation surveys between 2011 and 2016 are used.

<sup>6</sup> Potentially innovative firms are those that declare having innovative results, being invested in innovative activities, or having identified at least one obstacle to their own innovation. A firm that does not have any of the above is not considered potentially innovative, and therefore does not enter into this analysis (Zahler, Goya, and Caamano; 2018).



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## 2.2. Main actors and recent reforms of public institutions in Science, Technology and Innovation.

This section presents a brief review of the main institutions that interact in promoting STI and highlights the institutional reform that occurred recently. The latter presents an opportunity for how FIA can interact and shape its role in the future. The main institutions in Science, Technology and Innovation (STI) in Chile have two specialized agencies as their main actors (CORFO and ANID).

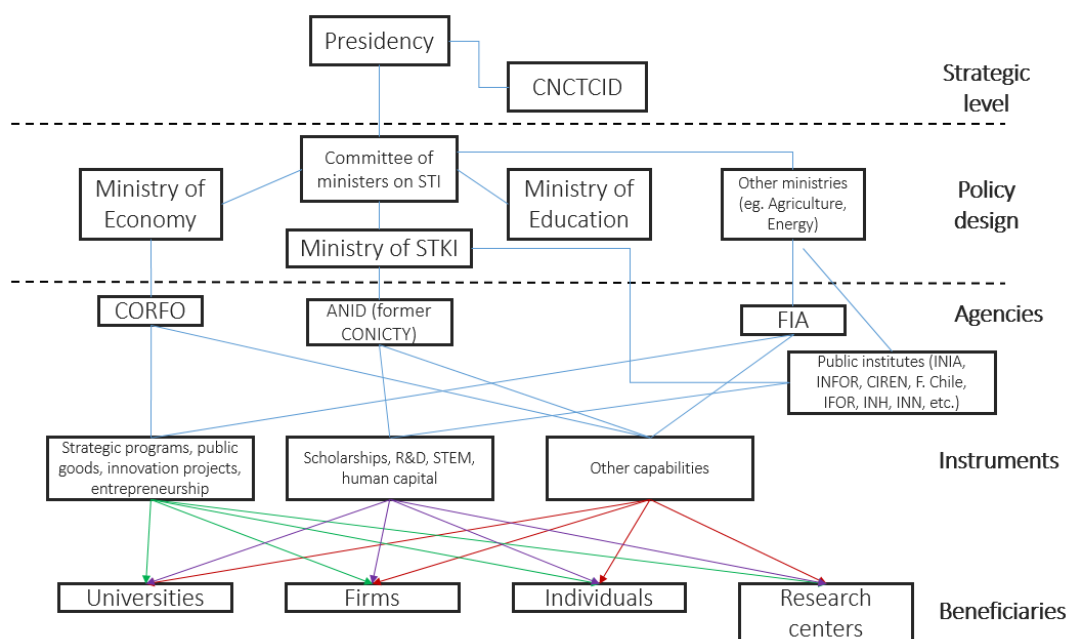
Traditionally, STI policies have been designed and executed mainly by two agencies: the Development Agency (CORFO) under the Ministry of Economy, Development and Tourism, and the National Agency for Research and Development (ANID, formerly Conicyt), dependent on the newly created Ministry of Science, Technology, Knowledge and Innovation (previously, under the Ministry of Education). The public framework also includes institutions at a strategic level, such as the National Council for Science, Technology, Knowledge and Innovation for Development (formerly CNID); sectoral ministries in charge of policy design (for example, the Ministry of Agriculture that guides FIA's policy); and other executing and beneficiary agencies.

Currently, the Ministry of Science, Technology, Knowledge and Innovation has a central role in articulating STI policies (see Figure 06). This Ministry - and the whole new institutional framework – was inaugurated in 2019, and created the opportunity to reorder the current policies and provide institutional support for eventual budget increases. As will be discussed later, this institutional rearrangement presents an opportunity for FIA, not only to modernize its offering of public instruments but also to be able to connect them with the rest of the STI institutions.





Figure 06. Chilean public institutions on science, technology and innovation, 2020.



Source: LIP, adapted from Balbontín et al (2018)

### 2.3. FIA in the NIS

FIA has not had a preponderant role in the National Innovation System. The following paragraphs will explain how it is an institution isolated from the rest of the actors and how it does not have a relevant role in budgetary terms. However, FIA does have unique characteristics as it is a sector institution dedicated to innovation. It also has a more flexible regulatory framework compared to those of other agencies, which contributes to having a diverse range of instruments. In turn, this analysis determines how well known FIA is; contextualizes its institutional framework and supply of instruments; and compares its budget to other public STI institutions.

First, FIA is a little-known institution, even for firms that innovate in the agricultural sector. According to the third version of the Longitudinal Survey of Firms (2013) – the only year this information has been captured – only 18% of the sector knows about FIA, and firms that innovate in this sector do not exhibit a significant degree of knowledge of the institution's functions either (see Figure 07)<sup>7</sup>. This can be explained in part due to FIA not having explicit guidelines on how to carry out mass communication campaigns on the supply of public instruments.

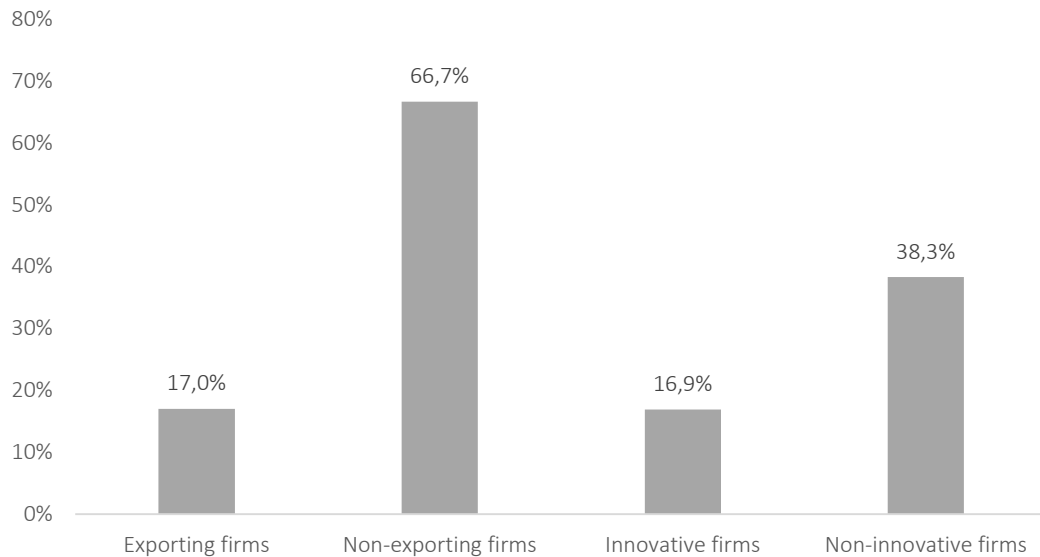
<sup>7</sup> FIA does have a greater degree of recognition in the export sector.



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Along with this, during a study carried out by the Public Innovation Laboratory of the Pontificia Universidad Católica in 2019, 90 interviews were carried out with actors from public institutions, beneficiary firms, universities, and research institutes. There was broad agreement among these actors that FIA has been isolated from the rest of public institutions that offer instruments to promote innovation and the generation of knowledge.

**Figure 07.** Knowledge of FIA, by type of firm within agricultural sector



Source: LIP based on ELE-3.

Second, within Chilean public institutions, FIA is the only sectoral agency that implements innovation policies. In this context, it is an institution that also provides a comprehensive range of instruments to its beneficiaries, which is aligned with the needs to overcome the innovation obstacles described above (see Table 02).



**Table 02.** Public institutions on science, technology and innovation, by type of programs and instrument<sup>8</sup>.

Agency	R&D&i	Capabilities	Knowledge creation	Networks	Regulation	Foresight
FIA	xxx	xx	xx	xx	x	xx
CORFO	xxx	xx	xx	xx		
ANID (ex Conicyt)	xxx	xxx	x	x		
INIA	xxx	x	x			
ODEPA			xxx			xx
INDAP		xxx	xx	x		
SENCE		xxx				
SERCOTEC		xx	x	x		
ProChile		x	x	x		
FOSIS		xx				
CONADI		xx	x	x		

Source: LIP, adapted from Ibarra (2018)<sup>9</sup>.

Third, FIA is a small institution in the context of the Chilean innovation system. FIA has a limited budget compared to other institutions of the National System of Science, Technology and Innovation. Its budget represents less than 2% of STI's public budget (see Figure 08), and its relative weight has been decreasing over time. In fact, in real terms the institution's budget has decreased in the last 10 years (see Figure 09). This reinforces the need for FIA to seek alliances with other public institutions in the future, both to reallocate more resources to the agri-food sector and to address sector challenges comprehensively.

<sup>8</sup> Note: XXX high relevance for the program's objectives, XX medium relevance, and X low relevance.

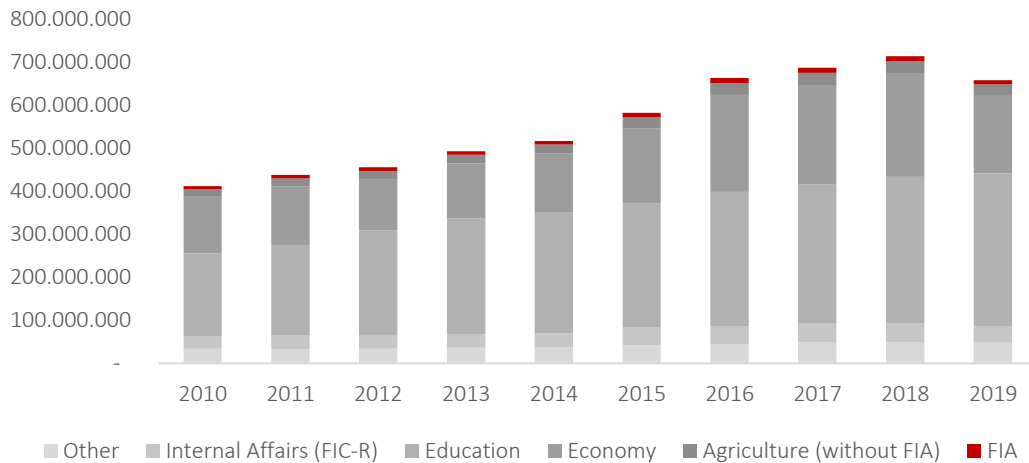
<sup>9</sup> Ibarra's table is modified in two ways. First, the importance of the themes was changed. Second, some institutions were removed from the original table, and others that we consider relevant were added (for example, ODEPA).





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**Figure 08.** Public Budget on science, technology and innovation (in thousands of Chilean pesos at 2019).



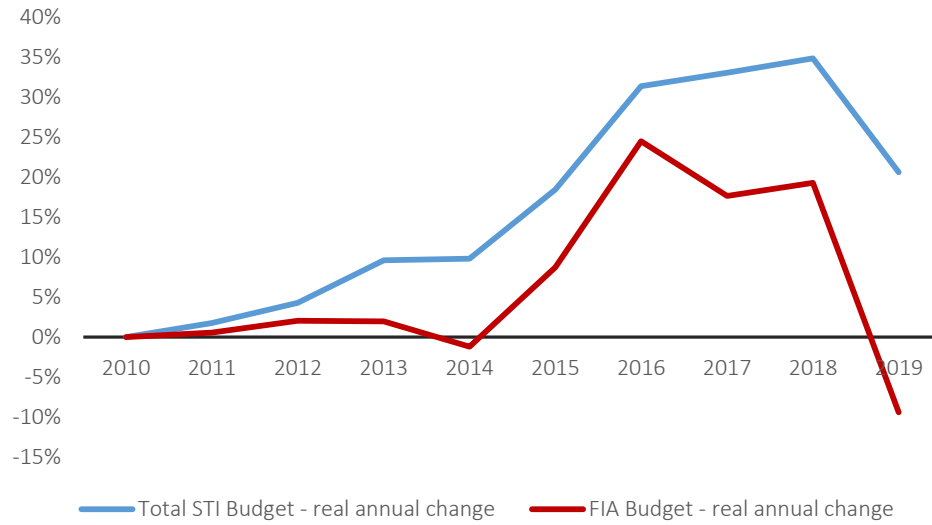
Source: adapted from Balbontin et al (2018)

In 2017 the Budget Office evaluated FIA as "technically objected" and reduced its budget for 2019. Figure 09 shows the impact that had on the institution in budgetary terms. In practice, the budget for the year 2019 was 24% lower than the previous year, and 9.4% lower than the year 2010 (in real currency).



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**Figure 09.** Change in the public Budget on science, technology and innovation, total and FIA, compared to 2010.



Source: adapted from Balbontin et al (2018)



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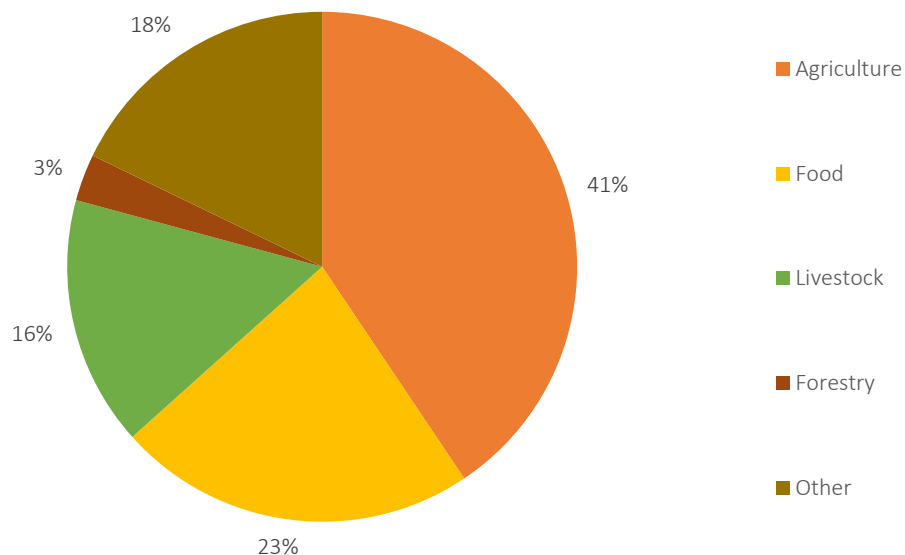
### 3. Performance of FIA's innovation instruments (descriptive analysis)

Using FIA's database of initiatives, different dimensions of the institution's portfolio of projects were analyzed. This analysis allows one to observe a wide dispersion in the type of beneficiary, in the sectors that are users of the institution, and in the type of themes that FIA seeks to address. Part of the strategic redesign that FIA plans to carry out in the years after 2019 are related to specifying key actors and themes in order to direct the innovation processes towards solving larger-scale problems.

#### 3.1. FIA's transfers are concentrated in the agri-food sector.

Figure 10 exhibits that 41% of the projects between 2014 and 2018 went to the agricultural sector, and 23% to food. Likewise, the livestock sector represented 16% and the forestry sector 3%. Finally, the Other category considers: i) other processed products, which represented 13% of the total; ii) the aquaculture, freshwater, forest products, and tourism sector with 1% of the total or less; iii) and the "general" category, which covered 2% of all projects.

Figure 10. FIA's spending by sector (2014-2018).



Source: LIP based on FIA's database of initiatives

#### 3.2. Firms receive a third of FIA's transfers.

Innovative processes traditionally occur within firms, since they are the main source of technological change. Firms are also the institutions that put the results of innovations into



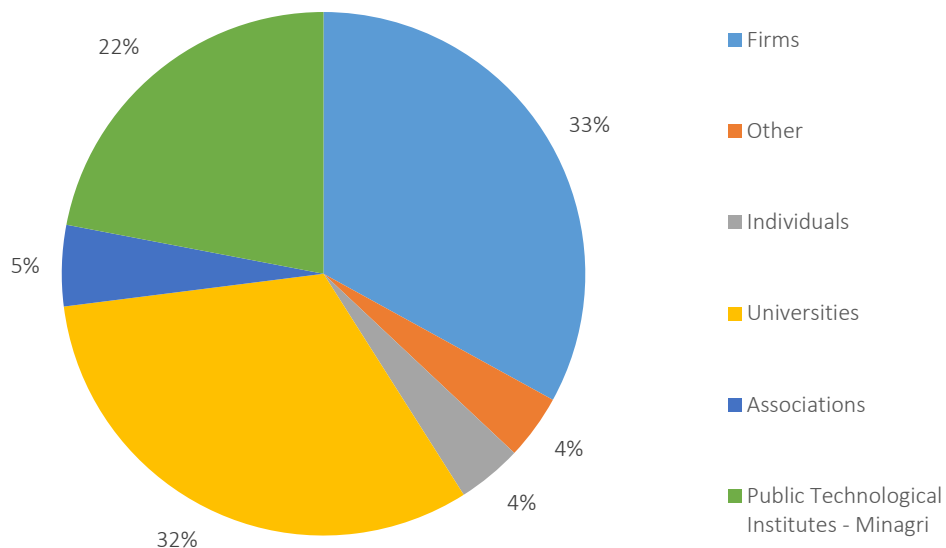
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practice (either within their processes or through commercialization) and are a relevant part of the knowledge dissemination process.

However, more than 50% of FIA's transfers are allocated to institutions dedicated to research (see Figure 11). 32% of the funds go to universities, and 22% of the resources are allocated to finance the Public Technological Institutes of the Ministry of Agriculture (INIA, CIREN, INFOR), whose main task is the generation of research and information.

The above is related to FIA's former institutional mission and the context in which the institution operated in the late 1990s and 2000s. Going forward, the analysis of FIA's beneficiaries helped to inform its new institutional mission, which now highlights firms as the center of the innovation process.

**Figure 11.** FIA's spending by type of beneficiary (2014-2018).



Source: LIP based on FIA's database of initiatives

### 3.3. FIA funds a wide variety of themes, but global and local challenges are explicit in only 12% of FIA initiatives.

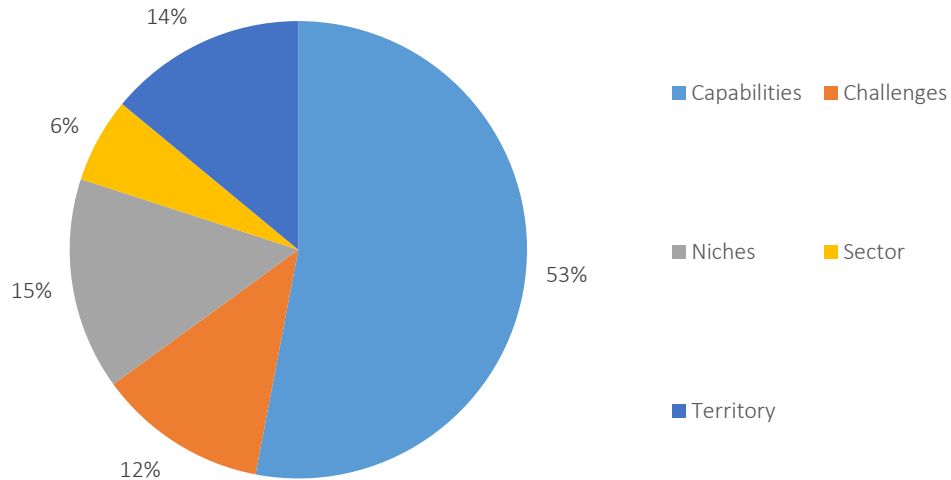
There is a wide variety of themes within the projects funded by FIA. This is reflected in both the themes' general categories and concentration. Figure 12 shows that 53% of the topics of the initiatives carried out by FIA are related to capabilities, 15% to niche, 14% to territory, 12% to challenges, and 6% are sectoral. This Figure is a guide to understanding what types of themes FIA has supported, and how these themes can direct innovation to solve global and local challenges.





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Figure 12. FIA's projects by theme<sup>10</sup>



Source: LIP based on FIA's database of initiatives

However, there is no common pattern of association among the issues that FIA funds. Figure 13 shows the links between initiatives<sup>11</sup>. The dispersion of the themes, and the lack of a common pattern of trends between themes and/or categories can be observed. Despite this, the most recurrent connections among them are the relationships among "technological extension and diffusion", "production practices", "commercialization and marketing", and "small agriculture".

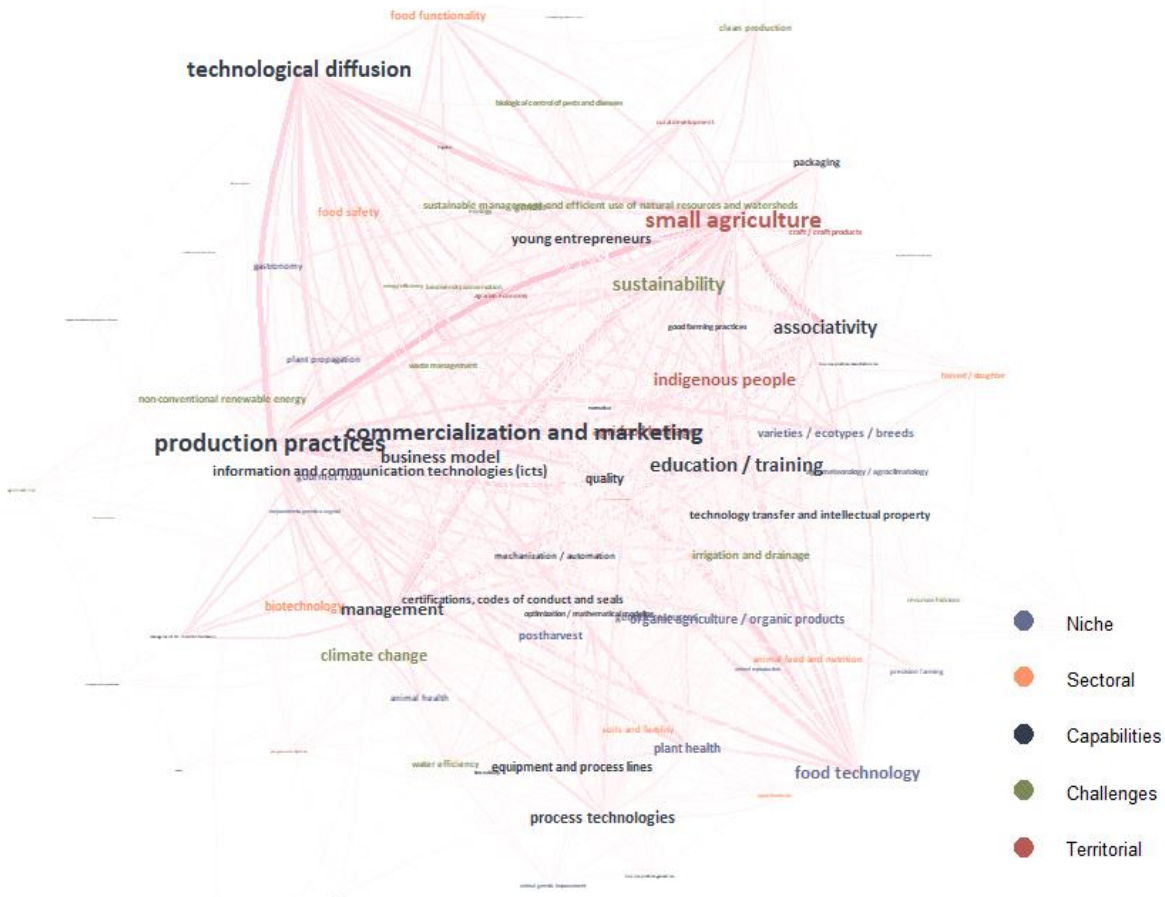
<sup>10</sup> The 81 themes around which FIA develops projects are grouped and summarized in five different categories: Capabilities (themes that seek to improve user performance and can usually be cross-cutting to more than one sector), Challenges (themes that point to greater objectives, commonly associated with Sustainable Development Challenges), Niche (themes that are specific to a subset of a sector), Sector (themes associated with a specific sector), and Territory (themes focused on social groups or territorial development).

<sup>11</sup> 87% of the initiatives financed by FIA between 2013 and the first quarter of 2019 reported covering at least two different themes. Two themes are linked together if they are present in at least the same initiative.



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Figure 13. Themes of FIA's projects.



Source: LIP based on FIA's database of initiatives

Identifying the heterogeneity of FIA's project portfolio turned out to be a highly useful analysis for instrument improvement. It helped to visualize FIA as an institution capable of reaching different areas of the innovation process and the productive structure of the agri-food sector. Likewise, it generates the opportunity for a larger impact: by scaling-up and complementing the instruments that help overcome obstacles to innovation in the agri-food sector and by contributing to addressing strategic challenges for the country, offering innovative transformations.

This diagnosis has been fundamental in determining that FIA's institutional strategy should have specific themes in order to reduce the gaps in innovation and overcome failures of different types (market, institutional and systemic). It also highlighted the relevance of narrowing the target of the innovation policy towards considering the firm as the center of the innovation process



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#### 4. Institutional redesign process

##### 4.1. Window of opportunity

FIA's institutional redesign process was conditioned both by endogenous and exogenous factors. The exogenous (or external) components include the change in the government's administration, the creation of the Ministry of Science, Technology, Knowledge, and Innovation (MINCTCI) and the reform of the STI's public system, and other paradigmatic shifts (such as the tendency to develop mission-oriented policies). On the other hand, the inherent components of FIA (internal or endogenous factors) that led to the strategic change were the programmatic evaluation that FIA received from the fiscal authority and the composition of the institution's public personnel.

The aforementioned factors were the driving force behind the strategic review. The combination of these factors created a window of opportunity to establish the basis and implementation of institutional change. Among the milestones of these changes was the Horizon 2020 project, which played a central role.

##### 4.1.1. External factors

The Chilean National Innovation System is characterized by the continuity and evolution of its policies and institutions since 1990, even though the design of most of its instruments was uncoordinated (CNID, 2019; Balbontín et al., 2018). The origin and conceptual framework that founded FIA is not an exception. As previously mentioned, the creation of the institution involved two main milestones: the creation of the Fund for Agricultural Innovation in 1981, and the consequent attached institutional framework to administer said fund; and when, in the context of Chile's entry into Mercosur, FIA was institutionalized as an autonomous body under the Ministry of Agriculture in 1996.

The creation of the new Ministry of Science, Technology, Knowledge, and Innovation implied the largest reform in 50 years of the STI's institutional framework. For the first time, the institution responsible for carrying out the National Strategy for Science, Technology, Knowledge, and Innovation is recognized by law; the main agency for scientific programs and knowledge (Conicyt, renamed the National Agency for Research and Development, ANID) has been re-established; and the main STI policy executing ministries have been rebalanced, given the creation of the Ministry of Science, Technology, Knowledge and Innovation.

Due to this change, there were several implications for FIA, although the most notorious may be intangible: for the first time (by law) an arrangement of STI public institutions was established, and there has been an enhancement of the importance of these policies within the public debate. Perhaps more importantly, this implies the consolidation of an "invisible



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community" of officials and professionals related to STI policies, which facilitates inter-institutional collaboration at the middle management level. Along with this, in practice there is also the centralization of the evaluation and analysis of STI policies in the newly created Ministry; and the creation of the Committee of Technological Institutes and Public Research, of which FIA can be part, where there is an instance to articulate (and attract) other institutions to complement public instruments in the forestry and agricultural sector and in the associated agri-food chain.

Beyond the change in public institutional framework in STI, other factors can also be mentioned that contributed to accelerating the transformation process. For example, the swing in government coalitions, for the second time in the decade, illustrated the need to strengthen the process of designing programs and instruments, so as not to expose the cycles of innovation projects to political cycles. On the other hand, the central valley of Chile observed an unprecedented drought during the 2010s, which promoted a broader public forum regarding the debate on an efficient and responsible use of water. Finally, the fall in the global price of commodities compared to the second half of the 2000s has spurred the discussion on the productive development model in Chile, and how to promote knowledge-intensive industries based on the national comparative advantages.

#### 4.1.2. Internal factors

As previously described, in 2017 the Budget Office "technically objected" FIA's programmatic design in the context of an ex-ante evaluation. It should be noted that from 2008 (when the ex-ante evaluation was launched) until 2017, the Budget Department evaluated ex-ante new and reformulated programs. In 2017, the category "design review" was added to increase the coverage of public programs to be evaluated. It is in this context that new parameters are required from FIA, which has presented deficit results.

The ex-ante design evaluation consists of four pillars. Each of these pillars received unfavorable reviews from the tax authority (see Table 03). Thus, it was necessary to consider a readjustment at all stages of the life cycle of public policy. During the same year, 2017, the strategic planning process was promoted, as described in the following subsection.





**Table 03.** Ex ante evaluation for FIA, by DIPRES (technically objected).

Pillar	Evaluation
Diagnosing the problem	The program identifies the main problem that it seeks to solve, but it does not carry out an exhaustive or specific identification of the causes of this problem in our country, nor does it present data that shows these causes. The program adequately explains the reasons that merit public action in solving this problem.
Beneficiaries	The program does not identify or adequately quantify its potential population, this is the one that effectively presents the problem. The program does not present pertinent targeting criteria and objectives that are consistent with the definition of the target population, nor that allow verifying that the beneficiary population actually presents the identified problem.
Objectives and monitoring	The purpose of the program does not correspond to the solution of the main problem posed in the diagnosis. Furthermore, the stated purpose of the program is not potentially measurable. The program formulates an indicator that does not allow measuring the purpose, properly identifying an outcome variable.
Strategy and components	The intervention strategy that will allow achieving the program objectives is not adequately identified. The program through its components does not address the identified causes of the problem.

Source: DIPRES (2018)

## 4.2. Main milestones in the process of institutional change

### 4.2.1. Vision 2030 – World Bank (2011)

In 2011, the World Bank published Vision 2030: Towards a Vision for Agricultural Innovation in Chile in 2030, which presented a diagnosis of how Chile could boost the growth of its agricultural productivity in a rapidly changing global environment. This document was developed with consideration to the context of the increase in commodity prices, and the increasing demand from emerging economies (mainly China and India); the onset effects of climate change and its impact on productivity in industry; and the pressures generated by the increasing use of biofuels in industry.

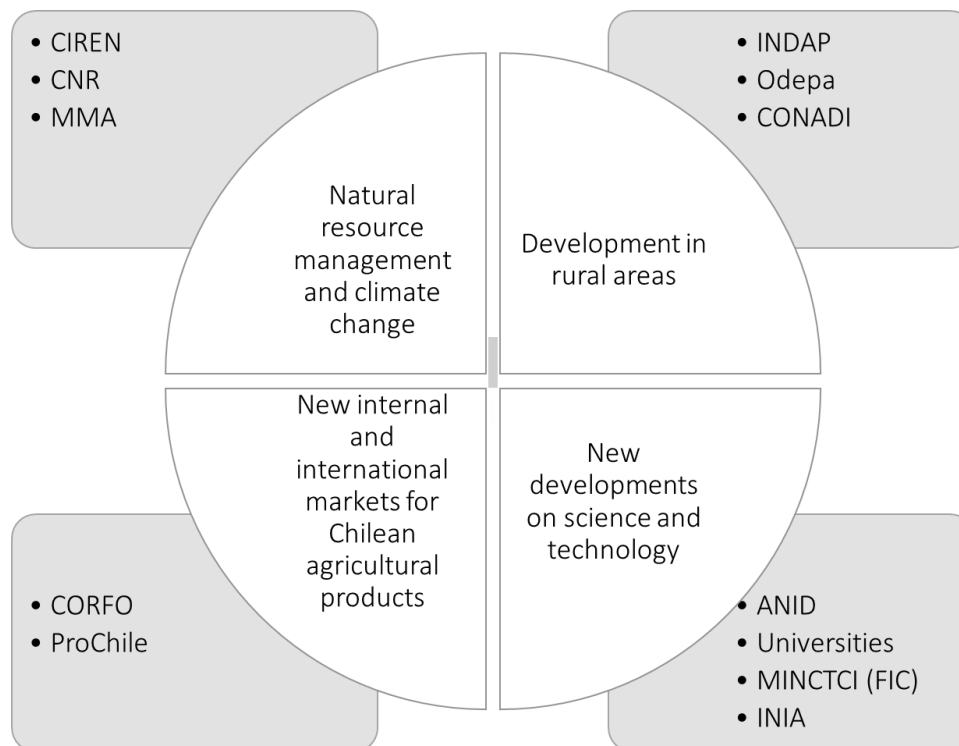
Four drivers of technological change in agri-food sector were identified: i) trends in natural resource management and specifically the consequences of climate change; ii) the development of national and international markets for Chilean agricultural products; iii) development in rural areas; and iv) developments in the field of science and technology.

In the context of FIA's institutional transformation experience, this document served as an input to contextualize how other institutions of the Chilean National Innovation System directly affect issues that lead to technological change (see Figure 14).



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**Figure 14.** Drivers of technological challenges and agriculture, and Chilean public institutions related to the themes.



Source: LIP based on World Bank (2011)

#### 4.2.2. CollSupport SMEs Project – Horizon 2020

In 2018 FIA signed an agreement (CollSupport) with the Executive Agency for Small and Medium-sized Enterprises (SMEs)<sup>12</sup> of the European Commission to develop a collaboration project with IDEPA (Asturias) and Dev'Up (Loire). IDEPA is the Agency for Economic Development of the Principality of Asturias, in Spain, and carries out awareness-raising and revitalizing activities, information, advice, training, promotion, and financing for the territorial development of Asturias. Likewise, Dev'Up is a homologous institution for the Loire region in France, which carries out territorial development activities, information and studies, connection with international entities, and promotion.

This project focuses on establishing a collaboration network at the international level to improve public programs and instruments that support SMEs in the agri-food sector. Framed within the Smart Specialization initiative of the European Commission, this project

<sup>12</sup> H2020-INNOSUP-2016-2017 "Improvement of support capacities for Small and Medium Sized Enterprises (SMEs) in the Agriculture and Agri-food sector".





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seeks to identify, through the collaboration and joint involvement of SNI actors, best practices to contribute to innovation and improvement in sectoral competitiveness. Accordingly, this collaboration has specific objectives:

- Encourage and promote transnational collaboration.
- Development of tools and specific projects for the sector.
- Establishment of a mutual learning work methodology between innovation agencies.
- Dissemination of best practice cases focused on the rural sector and SMEs.
- In the long run, social awareness of innovation opportunities.

Thus, the development of this project involved in field visits, with the objective to learn how regional development agencies incorporated the users from design process of the instrument. As previously mentioned, FIA offers subsidy instruments and complementary support to innovation, related to the development of innovative capacities through tours, grants, and consultancies. Studying the guidelines and the impact of IDEPA and Dev'Up policies served as a reference to understand the user's journey in the innovation process; and that public institutions must offer instruments flexible enough to meet the heterogeneous needs of users.

#### 4.2.3. Diagnosis and start of the modernization process of FIA (2018)<sup>13</sup>

In the context of enhancing institutional modernization processes, promoted by the Ministry of Agriculture, during the last four months of 2018, FIA undertook a strategic planning process that incorporated the vision from the macro-zones, the different FIA units, and various users. This exercise confirmed that there are several different practices carried out by the other agencies that the FIA can incorporate or from which it can learn to improve its own operating processes.

An exhaustive review of the institution was necessary, including how the institution is framed in the process of reform of the National Innovation System - given the creation of the Ministry of Science, Technology, Knowledge and Innovation - as well as a review of the institutional objectives and how the instruments respond to the new challenges of the industry. Taking the technically contested evaluation as a reference, we reviewed how FIA is meeting users' needs, how it interacts with them, and how the institutional mission responds to these challenges.

Internally, work with macro-zonal officials revealed the need to generate differentiated work strategies for each region, with special concern for extreme regions. On the other hand, a deep review of the tasks of the units revealed the need for a redesign to correspond with FIA's institutional mission.

<sup>13</sup> Memoria institucional de FIA, año 2018.





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FIA provides added value in the service it provides to users (e.g. providing feedback during the development of the innovation project), which was considered a difference compared to other public institutions within the NIS. Finally, the users considered barriers regarding the application forms for the instruments, since SMEs and cooperatives compete on equal terms with large research centers and universities, where the capacities to formulate projects are different. Users also pointed out that FIA's information is difficult to access, in addition to the need to generate networks with the ecosystem and among themselves.

#### 4.2.4. Consultancy of the Public Innovation Laboratory – LIP (2019-2020)

In 2019 the Foundation for Agrarian Innovation continued its process of institutional modernization with an exhaustive review of its strategy, lines of action, and instruments. In this context, the Public Innovation Laboratory of the Pontifical Catholic University of Chile (LIP) was commissioned with the consultancy "*Redesign strategy, lines of action and instruments of the FIA*". The objective of this consultancy was to redefine the strategic role of the Foundation for Agrarian Innovation in the Chilean innovation system and to redesign its lines of action and instruments to achieve its institutional purpose.

The work was based on a service design model developed by LIP itself, which allowed an iterative process to explore new ideas and points of view, converging based on the diversity of proposals, and constantly testing and piloting ideas. This allowed combined desk work, interviews, focus groups, and co-creation workshops to develop and evolve proposals. For example, Table 04 shows the actors interviewed to identify FIA's problems, both in how it approaches users, what it seeks to solve, how it interacts with other public actors, and how they envision the institution's future.

**Table 04.** Interviews, by type of stakeholder and region.

	Arica y Parinacota	Coquimbo	Valparaíso	Maule	Aysén	Santiago	Total
Key stakeholders	1		1	1		16	19
Small firms	2	2	2	2	2		10
Medium firms	2	2	2	2	2		10
Large firms	1	1	2	1	1		6
Potential beneficiaries (firms)	5	2	2	2	2		13
Researchers	1	1	1	1	1		5
Regional government personnel	4	1	1	1	1		8
FIA personnel	1	1	1	1	1	14	19
<b>Total</b>	<b>17</b>	<b>10</b>	<b>12</b>	<b>11</b>	<b>10</b>	<b>30</b>	<b>90</b>

Source: LIP (2019).



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#### 4.3. Transformation of FIA

All of the above acted as a gateway for FIA to consider itself as an institution that explicitly addresses big challenges, requiring a complex and sophisticated set of actions.

- The previous work of both the World Bank, a project with Horizon 2020 of the European Union, and the analysis of 2018 showed that the magnitude of the challenges in agriculture require a sector agency specialized in innovation. Thus, modernization must address ambitious yet concrete objectives.
- The analysis of innovation in agriculture showed that FIA should focus on solving obstacles to innovation in the agri-food sector. Thus, the innovation process occurs mainly within the firm, and for an innovation to be successful it requires a combination of resources and capabilities.
- FIA's analysis within the National Innovation System observed that the environment of public institutions is changing, and FIA - despite being considered a small institution -, has a wide range of instruments that allows it to be a bridge between two disconnected systems: the public sphere of science, technology, and innovation, and the agri-food sector.
- The analysis of instruments showed that there is a large dispersion of users, themes, and sectors, which corresponds with how FIA faced the policy of diversification of the agricultural production matrix in previous decades.
- The interviews, workshops, and focus groups allowed us to delve into the areas of improvement for FIA, both in its guidelines, institutional relations, instrument design, and better focus on solving the problems of its beneficiaries.

Through review and analysis, a new vision, mission, strategic challenges, cross-cutting goals, and instrumental design for the institution were proposed. It is important to highlight that the figure of "cross-cutting goals" is incorporated into the institutional action framework to reflect the preconditions that all institutional work must meet, while "strategic challenges" are specific long-term objectives which FIA seeks to influence through innovation.

##### 4.3.1. FIA's new vision

The change in FIA's vision from 2020 is reflected in Figure 15. It is important to note that articulation elements are incorporated into the innovation process. This broadens the spectrum of influence of the institution, allowing more stable links to be generated with

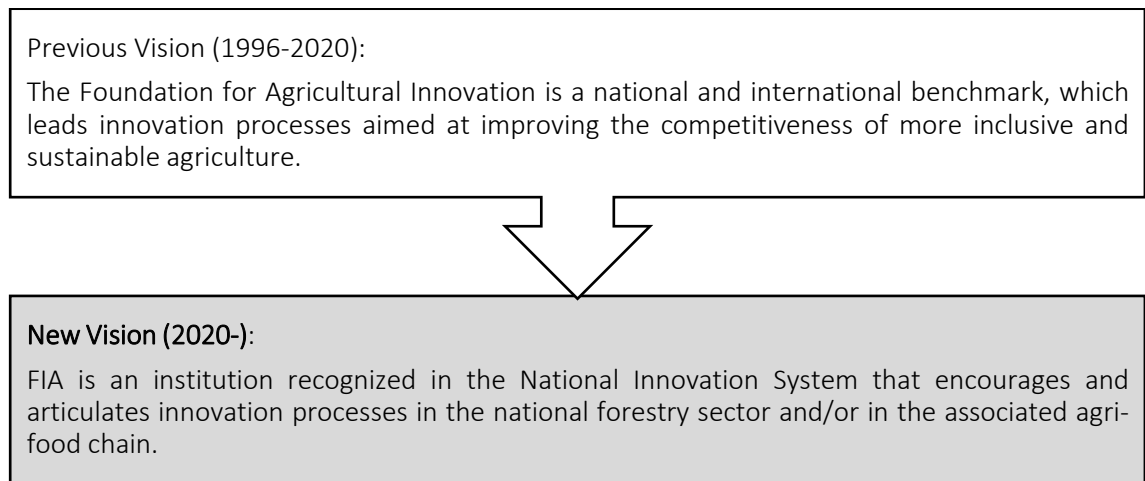




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other public institutions that influence the innovation process of the forestry and agricultural sector and the national agri-food chain.

Figure 15. FIA's new vision<sup>14</sup>



<sup>14</sup> Memoria FIA, 2017.



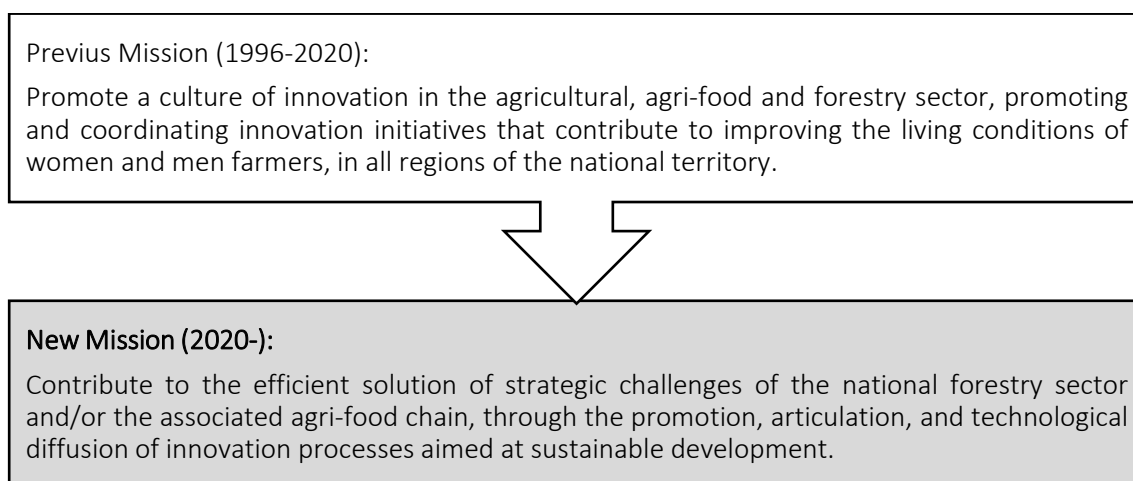


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#### 4.3.2. FIA's new mission.

Similarly, Figure 16 shows the change in FIA's mission. As can be seen, FIA previously explicitly sought to foster a culture of innovation, while now it is limited to promotion, coordination, and dissemination activities. Likewise, there is a change in the sectoral focus: before FIA aimed to influence the agricultural, agri-food and forestry sector, while its new mission targets the forestry and agricultural sector and/or the associated agri-food chain.

**Figure 15.** FIA's new mission



#### 4.3.3. Cross-cutting goals.

A common denominator concerning all the milestones that FIA set in the modernization process, was that users and the institutional focus needed to be reviewed. Based on the evaluation of DIPRES, the field experience of peer institutions in Europe (IDEPA and Dev'Up), and the gathering of information from both the 2018 internal review process and the LIP consultancy, three cross-cutting goals were established, which will narrow FIA's field of action.

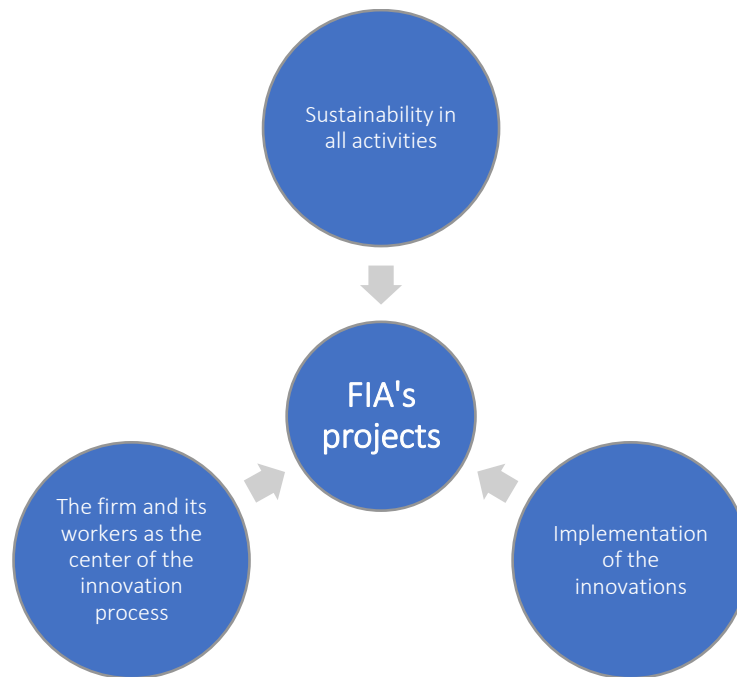
Thus, the cross-cutting goals described in Figure 17 aim to be a precondition for all the instruments and collaborations in which FIA operates, both for public and private goods. Therefore, the new public sphere of the institution must: i) be sustainable in all activities; ii) consider the firm and its workers as the center of the innovation process; and iii) fund projects that tend to the development and effective implementation of the innovations.





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Figure 16. Cross-cutting goals.



#### 4.3.4. FIA's strategic challenges

Also, three strategic challenges will define the actions of the institution. These come from various sources: i) the World Bank's Vision 2030 document and the analysis of how public institutions respond to sectoral challenges; ii) the diagnosis regarding the lack of focus and disarticulation of the projects financed by FIA; and iii) as a result of the process of interviews and co-creation workshops carried out by LIP.

The three selected strategic challenges are:

- **Water Efficiency and Adaptation to Climate Change.** Its objective is to support innovations that contribute to water efficiency, as well as to the mitigation of and / or adaptation to climate change of the Chilean forestry sector and / or the associated agri-food chain.
- **Development of innovative markets.** Its objective is to contribute to the development and implementation of innovations that create or expand highly differentiated markets, which use distinctive attributes of the national forestry sector and / or the associated agri-food chain and increase the added value of production.





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- **Innovative processes.** Its objective is to support innovations that lead to improvements in high-impact production processes for the Chilean forestry and agricultural sector and / or the associated agri-food chain.

Therefore, the projects that FIA supports must be focused on at least some of the challenges outlined. Table 05 details each line of action that covers the respective strategic challenge. Thus, FIA's challenge-oriented instrument should target the aforementioned cross-cutting goals, could finance both private and public goods, and cover different stages of the innovation process, as long as the implementation/commercialization of the innovation is always considered.

**Table 05.** Strategic challenges and lines of action.

Strategic challenge	Line of action
Water Efficiency and Adaptation to Climate Change	Water Resources Management
	Pest and Disease Management
	Sustainable Productive Management for adaptation to climate change
	Productive Diversification
	Productive management for climate change mitigation
Development of innovative markets	New products for final consumption
	New and improved ingredient sources
	New processing technologies
Innovative processes	New supplies
	Intensive production system
	Increased quality

Thus, the first step to deciding if a project that applies for FIA's resources is potentially admissible is determining whether it meets the three cross-cutting goals, and whether it can be classified within at least one of the strategic challenges.

#### 4.3.5. Change in FIA's financial instrument

All of the above has repercussions on a new approach for how FIA interacts with its beneficiaries: potentially innovative firms in the forestry and agricultural sector and/or in the associated agri-food chain. Concerning the new way of approaching public instruments, it is worth highlighting a series of considerations along with the transversal axes and the strategic challenges described above:

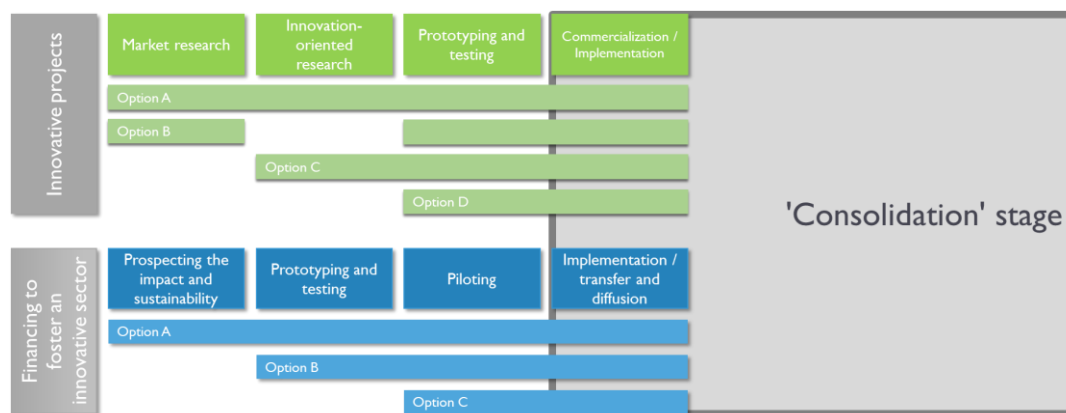
- The financing instrument requires specifying whether it aims to finance private goods (innovation projects executed by firms) or public goods (generation of non-appropriable goods or services, by any actor in the National Innovation System).



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- Also, the project to be financed has to be adapted to the needs and the life stage of the project, understanding that both the innovation projects of private goods, as well as the public goods that enable innovation are heterogeneous in various dimensions. For example, there is no common pattern regarding technological intensity, scale, whether it is scientifically based or not, or whether it is a radical or incremental innovation. This is especially important in the final stages of the project, particularly around the implementation and commercialization of the innovation. In the review process of the instruments by LIP, the lack of support instruments for this phase was underscored, not only those from FIA, but from all the public instruments.
- To ensure the successful closure of the projects, a support tool is also created in the implementation phase of the innovation, called "consolidation" of the project. At this stage, efforts will be made to adapt public support according to the specific needs of the beneficiary and the project in particular: financing, creation and / or strengthening of the capacities necessary to market (e.g. establish contacts with the distribution chain or advice to manage the business plan). FIA will provide support at two different levels, according to the project: connection with other FIA instruments (such as consultancies or events), or connection with other actors of the National Innovation System (such as business incubators).
- However, it is understood that the user's "journey" to develop innovation projects (or an innovation enabler in the case of public goods) is not uniform. From Figure 17 it can be seen that there are 7 different ways to finance a project: according to the type of asset to be financed, and according to the activities and the phase in which the innovative project is.

Figure 17. Type of Project and stages that FIA will finance.



- As one of the defined transversal axes is the firm and the workers as the center of innovation, obstacles to innovation are used as a reference to define the scope of each

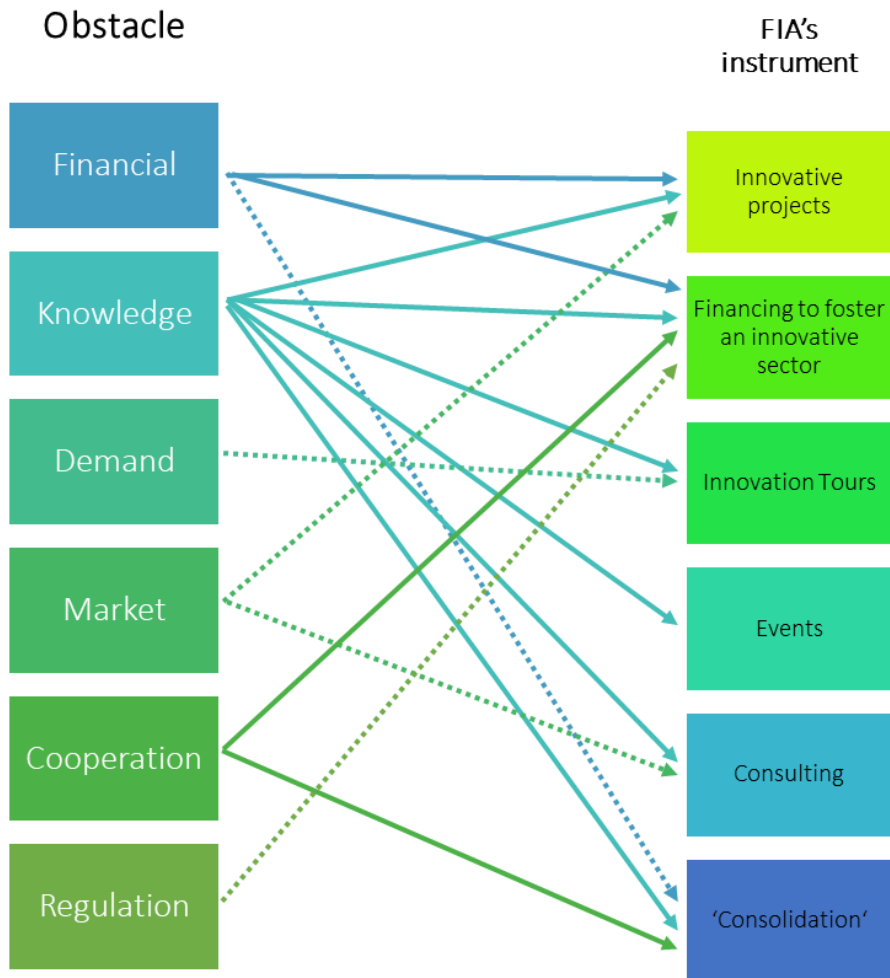


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public instrument. Thus, the limitations to innovation in the forestry and agricultural sector and the associated agri-food chain seek to be remedied - directly or indirectly - through the instrumental offer.

Figure 18 shows how FIA's instruments have the potential to contribute to overcoming the obstacles to innovation. For example, in the face of financial obstacles that affect the innovation process, FIA offers the two instruments mentioned in Figure 17, but the consolidation phase - through connection with other third parties - can also contribute to lowering the barrier to innovation.

Figure 18. Obstacles to innovation, and FIA's support.



Note: scattered line represents an indirect support from FIA.



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## 5. Final comments and lessons learned

Although there have been exogenous factors that have affected FIA, such as the creation of the Ministry of Science, Technology, Knowledge and Innovation (and all the restructuring of the public framework that this entails), there have also been a series of milestones that were decisive in promoting institutional change. Among them, the impetus given by the agreement signed in the context of Horizon 2020 stands out, along with the unfavorable result in the ex-ante evaluation carried out by the Budget Office. Understanding the importance of capturing the lessons of the process, and that each institution and public policy has its particularities, what remains will detail what was relevant in the process of institutional change.

1. **The focus on the user has to be internalized in all dimensions.** In this modernization process, FIA learned more about who its beneficiaries are. This is not only reflected in the cross-cutting goals (having the firms and its workers as the center of the innovation process) but also in acknowledging their critiques of FIA.

Critical evaluations were considered in the redesign of the instruments. For example, the interviews provided a new perspective on how insufficient support from other public institutions in the commercialization and implementation phase results in not applying for public funds; or how a lack of definition ex-ante the scope of the appropriateness of the project can generate false expectations. During the modernization process it was discovered that firms competed with other institutions with more capabilities, experience, and human resources dedicated to applying to public funds. Due to this, it was also relevant to offer two different financial instruments (private and public goods).

There is the need for a proper hand-off of the projects supported by FIA, so the firm can fully benefit from the innovation. This approach should be incorporated into the design of the project, reflected in the application forms. To accomplish the continuation of a project after its closure, FIA –as a small institution with a limited budget- should facilitate partnerships between the beneficiary and third parties (such as other development agencies, private funds, etc.), closing the gap between the innovator and its potential market. From the beneficiary's perspective, this allows them to receive comprehensive aid, considering the different obstacles to innovation that they may have. From a public view, the success of a project has two benefits: the innovation itself (e.g. productivity, growth, technology upgrading); and the contribution to an established strategic challenge.

2. **A public institution dedicated to innovation must address ambitious challenges.** From its foundation, FIA has been an institution that aims to target challenges greater than what its budget and public instruments can cover. In the beginning –even before its formal establishment-, it focused on financing research and development projects, forming a community and critical mass of researchers that has been valuable to the agri-food sector. Later, it focused on promoting the productive diversification of the agricultural sector,



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contributing to the export of new products and to the consolidation of Chile as a relevant exporter in agriculture, within the global context of rising prices of raw materials. After more than 20 years since its foundation, starting in 2017, a new process began to reexamine the institutional task and set new objectives, ambitious but achievable. This gave way to the three strategic challenges presented in the previous section: adaptation to climate change and water efficiency; development of innovative markets; and innovation in processes.

3. **Exit the "comfort zone"**. Over the years, had been no institutional update to FIA, at least proportional to the changes shown by the industry, the NIS, and new global challenges (such as the climate emergency). New administrations made marginal changes to what FIA offered to its beneficiaries, but without rethinking the institution as a whole. In one way or another, this reflects being in a "comfort zone".

Previous changes within FIA, particularly the growing diversification of beneficiaries and themes, allowed FIA to increase its instruments. Although arguably necessary at that time, these changes contributed to the institution's lack of focus, which resulted in the unfavorable evaluation by DIPRES.

4. **Form diverse teams with critical capacity**. An essential aspect of embarking on a successful transformation project - especially in a public institution - is to surround yourself with a professional team capable of thinking critically. To rethink the vision and mission of an institution from within requires the (often uncomfortable) task of questioning: Why was the institution initially created? What are contributions of this institution? Could other institutions do this work more efficiently?

This not only ensures a robust process of change but also reinforces the institution's own ability to justify its existence. FIA postponed this internal debate for years until an external institution - the Budget Office - forced these questions. During the last years, FIA has sought to take charge of this, recognizing the opportunity to go further and adapt to the complexity of the new challenges in the sector.



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## References

1. Balbontin, R.; Roeschmann, J.A. & Zahler, A. (2018). Ciencia, tecnología e innovación en Chile: un análisis presupuestario. Serie de Estudios de las Finanzas Públicas.
2. CNID (2019). Ciencia, tecnología, conocimiento e innovación para Chile. Consejo Nacional de Ciencia, Tecnología, Conocimiento e Innovación para el Desarrollo.
3. FIA (2018). Memoria año 2017. Fundación para la Innovación Agraria.
4. FIA (2019). Memoria año 2018. Fundación para la Innovación Agraria.
5. Ibarra, C. (2018). Asesoría a la participación de FIA en el convenio para intercambio de experiencias de fomento a la MIPYME H2020-INNOSUP-2016-2017
6. LIP (2019). Consultoría "Rediseño estrategia, líneas de acción e instrumentos de FIA". Laboratorio de Innovación Pública, Pontificia Universidad Católica de Chile.
7. MPI (2015), Science Strategy, Ministry for Primary Industries – Rautaki Putaiao, New Zealand.
8. OECD (2005). Manual de Oslo. Guía para la recolección e interpretación de datos sobre innovación. Tercera Edición.
9. OECD (2018). Manual de Oslo. Guía para la recolección e interpretación de datos sobre innovación. Cuarta Edición
10. World Bank (2011). Towards a vision for agricultural innovation in Chile in 2030. Washington D.C.: World Bank Group.
11. Zahler, A.; Goya, D. and Caamaño, M. (2018). The Role of Obstacles to Innovation on Innovative Activities: An Empirical Analysis. IDB Working Paper Series, N° 965.