

The effectiveness of *Transforma Alimentos*

**A case study of public-private partnerships in the Chilean food
sector**

Master Thesis Latin American Studies

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Abstract

To increase the competitiveness of the Chilean food sector, the programme *Transforma Alimentos* (Transforma Food) was launched by the Chilean Production Development Corporation in 2015. The collaborative approach of this programme can be considered an example of a public-private partnership (PPP). PPPs in the food sector have not often been discussed in the academic literature and this paper thereby aims at expanding the PPP literature by examining *Transforma Alimentos*. The evaluation of *Transforma Alimentos* is developed following the framework by Fernández-Arias, Sabel, Stein & Trejos (2016b).

Following the analysis of seven elements of successful PPPs, various improvements can be identified that can be implemented to improve the effectiveness of both *Transforma Alimentos* specifically and future PPPs in general. Furthermore, the research identifies further PPP literature gaps that can be studied in future PPP researches.

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List of abbreviations and organisations

ACHIPIA	Chilean Agency for Food Safety (<i>Agencia Chilena para la Inocuidad Alimentaria</i>)
BCN	Library of the National Congress of Chile (<i>Biblioteca del Congreso Nacional de Chile</i>)
CeTA	Technological Center for Food Innovation (<i>Centro Tecnológico para la Innovación Alimentaria</i>)
CIA	Central Intelligence Agency
CNAO	National Commission on Organic Agriculture (<i>Comisión Nacional de Agricultura Orgánica</i>)
CONICYT	National Commission for Scientific and Technological Research (<i>Comisión Nacional de Investigación Científica y Tecnológica</i>)
CORFO	Production Development Corporation (<i>Corporación de Fomento de la Producción de Chile</i>)
FIA	Foundation for Agricultural Innovation (<i>Fundación para la Innovación Agraria</i>)
FIE	Strategic Investment Fund (<i>Fondo de Inversión Estratégica</i>)
Fondef	Fund for the Promotion of Scientific and Technological Development (<i>Fondo de Fomento al Desarrollo Científico y Tecnológico</i>)
I+D	Research and Development (<i>Investigación + Desarrollo</i>)
IFAN	Functional Ingredients and Natural Additives (<i>Ingredientes Funcionales y Aditivos Naturales</i>)
INFYDE	The name of the Spanish consultancy firm which won the tender and was appointed to assist in the development of the <i>Transforma Alimentos</i> roadmap
INIA	Institute for Agriculture and Livestock Investigation (<i>Instituto de Investigaciones Agropecuarias</i>)
INTA	Institute for Nutrition and Food Technology of the University of Chile (<i>Instituto de Nutrición y Tecnología de los Alimentos</i>)
InvestChile	Chilean Investment Promotion Agency
MIM	Interactive Mirador Museum (<i>Museo Interactive Mirador</i>)

OCDE/ OECD	Organisation for Economic Cooperation and Development (<i>Organización para la Cooperación y Desarrollo Económico</i>)
ODEPA	Office of Agricultural Studies and Policies (<i>Oficina de Estudios y Políticas Agrarias</i>)
PCI	Product Complexity Index
PFI	Private finance initiative
PPP	Public-private partnership
SAG	Agricultural and Livestock Service (<i>Servicio Agrícola y Ganadero</i>)
UN	United Nations

Introduction

In its 2015 Economic Survey on Chile, the Organisation for Economic Cooperation and Development (OECD) concluded that Chile needed to pursue reforms in order to increase its productivity and to stimulate innovation (OECD, 2015). The *Chile Transforma* (Transform Chile) programme, launched by the Chilean Production Development Corporation (*Corporación de Fomento de la Producción de Chile*, CORFO) of the Ministry of Economic Affairs in 2015, can be considered an example of these proposed reforms. The programme's aim is namely to improve the competitiveness of the Chilean economy by strengthening human capital, productivity and innovation. In order to achieve this goal, eight priority industries were selected. To stimulate the competitiveness of these industries, eight strategic programmes were designed, each focused at one of the eight priority industries (CORFO, n.d.a.).

One of these eight programmes is *Transforma Alimentos* (Transform Food), designed and implemented in cooperation with the Ministry of Agriculture. The aim of *Transforma Alimentos* is to stimulate the competitiveness of the Chilean food sector by offering a platform for cooperation between public, private and academic actors. Consequently, the programme was designed collaboratively. A tender process was held to select a consultancy firm supporting the *Transforma Alimentos* management team in the design process. This tender was awarded to INFYDE, a consultancy firm from Spain. Workshops were organised to gain insights from a hundred actors from the public, private and academic sector involved with food production in Chile. Three specific goals were formulated as a result of these workshops. The first goal is to increase the value of Chilean food exports. Secondly, the programme strives to diversify the Chilean food supply of export products. Lastly, the goal is to sophisticate the export supply by increasing the average product complexity index (PCI) in the food sector from -0.61 to -0.5. The PCI is an index measuring the knowledge level required to produce a product (Transforma Alimentos, 2016; Transforma Alimentos, n.d.c.; OECD, 2018).

To achieve the three aforementioned goals, a roadmap for a period of ten years has been designed. The roadmap describes twenty initiatives necessary to breach the gaps between the current output of the food sector and the desired output. Examples of the initiatives are the establishment of a technological centre for food innovation or a programme for the promotion of the Chilean food sector abroad. *Transforma Alimentos* does not offer funding for the development of the initiatives itself. Instead, it cooperates with CORFO and other agencies of

the Ministry of Agriculture, such as the Foundation for Agricultural Innovation (*Fundación para la Innovación Agraria*, FIA) and the Office of Agricultural Studies and Policies (*Oficina de Estudios y Políticas Agrarias*, ODEPA) to select, unite and promote projects that contribute to realising the twenty initiatives. So far, 155 projects have been selected, accounting for US\$100 million of both public and private funding. To coordinate the organisation of the projects, an executive committee with representatives from the different agencies has been established. Moreover, to assist the *Transforma Alimentos* team, a consultative directorate has been established with members from different organisations, companies and institutions, thereby representing the public, private and academic sector (Transforma, 2016; Transforma Alimentos, n.d.a.; Transforma, n.d.b.).

The collaborative approach of the *Transforma Alimentos* programme can be considered an example of a public-private partnership (PPP). Public-private partnerships are, as the name already indicates, characterised by a collaboration between public and private actors. Therewith, public-private partnerships facilitate the conjunction of ideas, opinions, and experiences of a large variety of participants. Consequently, problems are analysed from multiple perspectives and solutions combine the interests of various parties. Public-private partnerships can for example be found in the provision of health and infrastructure, the development of energy and environmental policies, and in the promotion of sustainable development. PPPs focusing on the promotion of development in the food sector, however, have been employed less (See for example Ferroni & Castle, 2011; Roehrich, Lewis, & George, 2014; Fernández-Arias, Sabel, Stein & Trejos, 2016b; Brogaard & Petersen, 2018; Hodge, Greve & Biygautane, 2018). This research therefore aims at discussing this literature gap by examining the effectiveness of the Chilean *Transforma Alimentos* programme from a public-private partnership perspective. The research question is consequently constituted as follows:

From a public-private partnership perspective, to what extent has Transforma Alimentos been an effective strategy to promote development in the Chilean food sector so far?

To answer this research question, the research is structured as follows. The first section identifies the theoretical debate regarding public-private partnerships in general and in the food sector specifically. Furthermore, this section describes the literature on PPP effectiveness evaluation methods. *Transforma Alimentos* has namely entered its third year of implementation. Given that the programme is a ten-year programme, it is too soon to evaluate the output of the

programme. However, it remains highly important to evaluate the effectiveness of the design and the organisation of *Transforma Alimentos*, as it enables the identification of lessons for future programmes in the food sector. Furthermore, a systematic evaluation of *Transforma Alimentos* as a driver for development may lead to recommendations that can be immediately implemented and smoothen the achievement of the aforementioned goals set by the programme. To evaluate the effectiveness of *Transforma Alimentos* so far, the framework employed by Fernández-Arias et al. (2016b) is chosen as the methodological framework as this paper. Consequently, the first section explains the selection of this framework as the methodological framework for the analysis of *Transforma Alimentos*. The second section of this paper employs the Fernández-Arias et al. (2016b) evaluation framework to identify to what extent the seven elements for successful PPPs have been installed in *Transforma Alimentos*. To offer recommendations for further research, the second section also discusses lessons that can be identified outside the Fernández-Arias et al. framework. Subsequently, the conclusion seeks to contribute to the PPP debate by examining to what extent *Transforma Alimentos* has been an effective method for promoting the development of the Chilean food sector.

To thoroughly examine *Transforma Alimentos* from a PPP perspective, the research aims at analysing a variety of sources. Firstly, the academic literature on public-private partnerships is used to identify the theoretical debate regarding these partnerships. Secondly, work of other scholars on the *Transforma Alimentos* programme and government documents are used to evaluate the design and the effectiveness of the programme. Lastly, semi-structured interviews are held with officials involved in the *Transforma Alimentos* programme to further examine the design and the implementation of the programme. The data selection for this paper is further explained in the first section of this paper.

2. The theoretical underpinnings of PPPs

Public-private partnerships have been an often-discussed topic in the academic literature and consequently, there are many explanations of the core concepts. Therefore, it is necessary to clearly explain and define these concepts, before evaluating *Transforma Alimentos* from a PPP perspective. Consequently, the following section firstly identifies the theoretical debate regarding PPPs and provides a literature review. Furthermore, it is explained how *Transforma Alimentos* relates to the theory of public-private partnerships and why PPP is chosen as the theoretical framework for this study. Secondly, the theoretical framework as used by Fernández-Arias et al. (2016b) is explained, which consequently serves as the methodological basis of this paper.

2.1. What is a public-private partnership?

Cooperation between the public and the private sector is not a new phenomenon. The Roman empire sought private financing for building roads, the Dutch for draining of canals, and the United States for constructing its railroads. The term public-private partnership is believed to be first used to describe urban development in the United States in the 1960s. The use of the term PPP largely spread after the UK launched the “Private Finance Initiative (PFI)” designed to enable public infrastructure projects by attracting private financing. The argument supporting the PFI was that the private sector would be offered new investment opportunities and the public sector would gain by enabling new infrastructure projects (Bovaird, 2010; Hodge et al. 2018).

As the use of the term PPP became widespread, the academic literature on PPPs increased as well. Firstly, the literature mostly focused on public-private cooperation in the provision of infrastructure projects, as initiated with the UK’s PFI. As the use of PPPs expanded from solely infrastructure projects to public-private cooperation in for example the provision of housing and education, energy and environmental policies, and sustainable, productive and agricultural development, academic literature expanded as well. Besides a diversity of topics, PPPs are increasingly established between a large number of actors, not only on the national level, but also on the bilateral, global, regional or local level. Consequently, the academic debate on the topic of PPP is extensive (Ferroni & Castle, 2011; Roehrich et al., 2014; Brogaard & Petersen, 2018; Hodge et al., 2018).

As the term PPP is employed to describe a large number of public-private cooperation projects in a variety of policy areas and between a large number of actors, researchers in various fields have sought to describe, analyse and evaluate the concept. PPP research can therefore for example be found in the field of accountancy, finance, public management, public administration, economics, sociology and political science (Roehrich et al., 2014; Hodge et al., 2018). Consequently, many definitions are given to describe the concept. These definitions range from contract to agreement and from mutual understanding to specific the provision of public goods. Three exemplary definitions of PPPs are given to illustrate the diversity of the PPP literature. Firstly, Engel, Fischer and Galetovic (2013) specifically focus on PPP in infrastructure programmes and therefore argue that “the main characteristic of a PPP, compared with the traditional approach, is that it bundles investment and service provision in a single long-term contract. For the duration of the contract, which typically lasts several decades, the concessionaire manages and controls the assets, usually in exchange for user fees, which are its compensation for the investment and other costs.” (Engel et al, 2013, 1). Contrary to the contract approach, Bovaird (2004) focuses on PPPs not based on legal contracts, but on “mutual commitment.” Consequently, he defines PPPs as “working arrangements based on a mutual commitment (over and above that implied in any contract) between a public sector organization with any organization outside of the public sector” (Bovaird, 2004, 200). Forrer, Kee, Newcomer and Boyer (2010) combine these two definitions and describe PPPs as “on-going agreements between government and private sector organizations in which the private organization participates in the decision-making and production of a public good or service that has traditionally been provided by the public sector and in which the private sector shares the risk of that production” (Forrer et al., 2010, 476). In this paper, the definition by Hodge and Greve (2007) is used. They define PPPs as “cooperative institutional arrangements between public and private sector actors” (Hodge & Greve, 2007, 545). This definition is chosen while it both clearly defines the concept and similarly captures the broadness of the literature regarding public-private partnerships.

Considering the rich amount of literature on PPPs, Bjärstig and Sandström (2017) conclude in their literature review that PPPs take a wide range of forms and have different purposes, varying from serving a regulatory function, a tool for solving problems, a development strategy to an institutional arrangement for financial cooperation (Bjärstig and Sandström, 2017, 59). To bundle the different definitions and forms of PPPs, Brinkerhoff and Brinkerhoff (2011) propose a purpose-based approach to defining PPPs and identify five different purposes a PPP can be

employed for. Firstly, policy PPPs focus on designing, monitoring and coordinating public policies. Secondly, service delivery PPPs seek to include non-public actors in the provision of public services. Thirdly, infrastructure PPPs are employed to finance, execute and maintain infrastructure projects. Fourthly, capacity building PPPs strive to assist in the development of skills, capacities and systems to enable the target group to maintain itself. Lastly, economic development PPPs promote collaboration between the different sectors to promote economic growth and economic development.

2.2. Why choose a public-private partnership?

As explained earlier, the term PPP is used to define a large number of collaborations between the private and the public sector. Despite the broad range of partnerships that can be identified, some common arguments are given to support the choice of PPPs as an organisational form. First and foremost, PPPs are chosen to optimally employ scarce resources. Just like every individual, public and private actors have limited resources available for a large number of objectives. Consequently, priorities need to be made. Choosing to collaborate within a PPP allows for a sharing of resources to achieve common objectives. These resources do not only include money and materials, but also apply to for example the sharing of expertise, experiences, knowledge, information and contacts. Resource sharing thereby enables a more efficient service delivery, since partnerships allow for an optimal use of comparative advantages (Bovaird, 2004; Brinkerhoff, 2007; Brinkerhoff & Brinkerhoff, 2011; Bjärstig & Sandström, 2017).

Besides resource-sharing, PPPs are also supported because they enable risk sharing. There are two reasons why risk-sharing is beneficial. Firstly, the risk sharing that PPPs offer can stimulate the creation of a potential win-win situation. In the case of a collection action problem, for example, both the private sector and the public sector could be better off when a solution for the problem is reached. However, neither of the parties will try to solve the problem individually, as that would mean a loss for one party and a gain for another party. PPPs can help to overcome this deadlock by dividing the risk of a certain action and thereby stimulating a collective solution to a problem. The second advantage of risk sharing is that it can work as an incentive mechanism. If the risks of a certain project are optimally divided between the parties involved, each party will strive to minimize those risks. Once again, if all risks are to be borne by solely one party, the risk of operation might be too high and the action might not

be taken (Ross, & De Bettignies, 2004; Brinkerhoff & Brinkerhoff, 2011; Roehrich et al., 2014; Osei-Kyei & Chan, 2015).

When public and private actors optimally share their resources and risks in a PPP, further advantages can be obtained. Firstly, economies of scale can arise. In the original case of infrastructural PPPs for example, governments often do not execute as many infrastructural projects as a construction company. According to economic theory, operating on a large scale allows business to produce more efficiently, thereby lowering the unit costs of production. In this example, a construction company is therefore able to execute infrastructural projects with lower costs than the government. Partnering with a private party therefore enables governments to benefit fully from the so-called scale effects which private parties have already obtained (Bovaird, 2004; Ross, & De Bettignies, 2004; Brinkerhoff & Brinkerhoff, 2011; Bjärstig & Sandström, 2017).

Besides economies of scale, PPPs can also create mutual learning effects. Contrary to the outsourcing of a task or service, PPPs imply a cooperation between the public and the private sector. When collaborating in a PPP and sharing resources, both parties are able to look behind the scenes of the other party and to observe each other's *modus operandi*. This may enable both parties to gain valuable experiences, which can later be applied to their own operations. Government parties are for example often said to operate less efficiently than the private sector. By cooperating with the private sector in a PPP, public officials can learn how to offer government services more productively (Bovaird, 2004; Ross & De Bettignies, 2004; Roehrich et al., 2014; Fernández-Arias, Sabel, Stein & Trejos, 2017).

The last argument in favour of PPPs is the legitimacy argument. From a public sector perspective, PPPs may namely help to increase the sustainability of a certain policy. PPPs can be a means to open the decision-making process to non-public actors and to involve private sector parties into the policymaking process. Consequently, participation in the policy-process increases, by which more views and opinions can be considered, and integrated solutions can be found. An inclusive decision-making process consequently increases the support for and the legitimacy of the policy. This may help to decrease the influence of the policy cycle and may help to preserve a policy for a longer period of time (Bovaird, 2004; Fernández-Arias et al., 2017)

2.3. The downsides of public-private partnerships

Besides the aforementioned arguments supporting PPPs, various authors have also raised cautionary concerns in the case of private-public sector cooperation. Firstly, PPPs may help in improving the sustainability of public policies, but the downside of the inclusion of private partners in policy-making and policy implementation is the accountability issue. Participation in the policy-process is of course limited, and participants therefore have to be chosen, which may lead to questions of democratic processes and legitimacy of the participants eventually chosen. Furthermore, in PPPs, decision-making can be dispersed, and tasks might be performed by a variety of parties. Consequently, it can become unclear who has done what, when and how in a PPP, which may lead to accountability issues later on. Wälti, Kubler, and Papadopoulos (2004) examine the different accountability and legitimacy issues of 'looser' forms of governance, such as PPPs, and conclude that it does not necessarily question representative governance, if certain issues are discussed beforehand and taken into account when designing a PPP. Consequently, it is important to take the issue of accountability and legitimacy into account when designing PPPs (Wälti et al., 2004; Bovaird, 2004; Brinkerhoff, 2007).

A second concern associated with PPPs is the different motivations of private and public parties and the asymmetrical information between these parties. Given the difference in interest between public sector and private sector parties, critics argue that PPPs may lead to lower wages and inferior quality of service when certain public sector tasks are outsourced to the private sector. Furthermore, PPPs might lead to free riding, whereby firms that did not participate in a PPP and therefore did not share the costs associated with the PPP, do profit from the eventual net gains for the whole sector which a PPP creates. Moreover, especially in a cooperation between a government party and a company, a company often possesses more information relevant to the decision making than the government, for example about prices, sales and revenues, than the government. This causes a principal-agent problem, whereby the principal, in this case the government, cannot be sure that the agent, in this case the company, is acting in the government's interest. The agent may hide certain information from the principal, thereby causing decision-making based on incomplete information. This information asymmetry may consequently lead to capture, whereby policy measures are chosen which favour the interests of the private sector but lead to a net loss to society. When designing PPPs, both parties need to be aware of the differences in information and motivations between the parties involved. Nevertheless, even if these differences are taken into account, PPPs imply a certain trust

between the parties involved (Ross & De Bettignies, 2004; Roehrich et al., 2014; Fernández-Arias et al., 2017).

The last disadvantage of PPPs discussed in this paper is the different organisational cultures within a PPP. Every organisation has its own organisational culture. Consequently, when public and private actors seek to cooperate in a PPP, issues such as communication and coordination might be largely different, which might impede a swift cooperation between different public and private parties. It might therefore take some time before the aforementioned benefits can be fully profited from. To smoothen cooperation and to stimulate trust building between different organisations, signing a contract can offer a solution. It takes time and resources, however, to design a contract with which all parties involved can agree. Consequently, transaction costs, in this case the costs associated with designing a PPP, might be higher than the benefits of cooperation. Subsequently, it is important to take these issues into account when choosing whether to cooperate in a PPP or not (Ross & De Bettignies, 2004; Fernández-Arias et al., 2017).

Despite the aforementioned criticisms, PPPs are still an often-employed form of organisation (see for example Fernández-Arias et al., 2016a; Brogaard & Petersen, 2018; Hodge et al., 2018). That is why it remains highly relevant to examine the effectiveness of PPPs on a large number of topics, to offer further insights into which elements increase or decrease a PPP's effectiveness. Consequently, studying *Transforma Alimentos* from a PPP perspective enables gaining further insights into PPPs in the food sector.

2.4. How does *Transforma Alimentos* fit into the PPP literature?

As explained earlier, the academic literature on the topic of PPPs is extensive and encompasses a large number of academic disciplines. The richness of the PPP debate is exactly why this framework is chosen as the theoretical basis of this paper. *Transforma Alimentos* namely is a strategic programme that is relatively difficult to label and to define for two reasons. Firstly, when following the earlier mentioned definition of Hodge and Greve (2007), who describe PPPs as “cooperative institutional arrangements between public and private sector actors”, three PPP elements can be identified in *Transforma Alimentos* (Hodge & Greve, 2007, 545). The first element is the collaborative design process. When designing the programme and developing the roadmap, workshops were organised to gain as much input from the different actors involved as possible. Representatives from the public, private and academic sector participated

in these workshops. Furthermore, the *Transforma Alimentos* team, consisting of public officials, was assisted by a Spanish consultancy firm in transforming the outcome of the workshops into the actual roadmap. Secondly, in the implementation of the programme, a consultative directorate has been established which consists of representatives from these three sectors. Lastly, in 2016, 155 projects had been united and supported by *Transforma Alimentos*. Many of these projects are chosen because they stimulate cooperation between the public and the private sector. Given this threefold public-private cooperation within *Transforma Alimentos*, the rich and broad field of PPP literature forms a perfect framework to study its multifaceted character. The definition of Hodge and Greve (2007) for example clearly applies to the three PPP elements in *Transforma Alimentos*. Furthermore, following the earlier explained purpose-based framework of Brinkerhoff and Brinkerhoff (2011), *Transforma Alimentos* can be categorised as a combination of policy and economic development PPP. *Transforma Alimentos* can be considered a policy PPP, because public-private cooperation has been sought to design and to monitor the implementation of the roadmap. As the purpose of *Transforma Alimentos* is to stimulate the development of the food sector in Chile, it can be considered an economic development PPP, because it stimulates cooperation within the food sector to stimulate the economic development of the sector (Transforma Alimentos, n.d.a., Transforma Alimentos, n.d.b., Transforma Alimentos, n.d.c.).

The second reason for the difficulty in defining *Transforma Alimentos* is the different issues the programme combines. Consequently, many organisations in a variety of sectors are concerned with the issues *Transforma Alimentos* strives to work on. PPP literature therewith provides an applicable theoretic framework for this paper, as PPPs are not limited to one policy area and are discussed by a great diversity of academic disciplines. Various authors have discussed topics related to the themes *Transforma Alimentos* is concerned with. Ferroni and Castle (2011) for example discuss how PPPs have been developed in Africa to stimulate sustainable agricultural development. They state that PPPs in agricultural research and development can help the academic sector to develop potential new market products and can consequently assist the private sector into commercializing these research outputs. Bjärstig and Sandström (2017) analyse how PPPs have been designed in the context of sustainable rural development in Sweden and conclude that there are some challenges threatening the optimal organisation of PPPs in the rural context. Both Stadtler (2016) and Brogaard and Petersen (2017) discuss PPPs that stimulate economic development, but they hereby specifically focus on low-income countries. Lastly, Fernández-Arias et al. (2016a) and Fernández-Arias et al.

(2017) focus both in their book and in their working paper on productive development policies in Latin American countries, including Chile. No paper has been found, however, which examines PPPs for development of the food sector specifically. Therewith, the rich PPP literature offers a sufficient theoretical basis to study *Transforma Alimentos*, but also offers new areas for analysis. Consequently, studying a programme like *Transforma Alimentos*, which combines elements of the papers just discussed, but also offers new insights in the functioning of PPPs, is highly relevant in the academic debate regarding PPPs. This paper therefore seeks to expand the PPP literature debate by examining *Transforma Alimentos*.

2.5. How are public-private partnerships evaluated?

The threefold public-private cooperation within *Transforma Alimentos* and the combination of issues tackled by the programme justifies the choice for the PPP framework as the theoretical framework. When operationalising this framework, however, the broadness and the interdisciplinary aspect of *Transforma* create difficulties for establishing a methodological framework. As explained earlier, there is a broad literature on PPPs. Many authors have discussed the concept of PPPs and have provided extensive literature reviews. Nevertheless, the evaluation of PPPs has been a less discussed topic in the literature. Brinkerhoff (2007) attempts to offer a first template for an evaluation format, thereby focusing on the contributions of the PPP to governance effectiveness and legitimacy, and to managing competing interests. The paper however remains explorative and does not offer a testable framework. Furthermore, Osei-Kyei and Chan (2015) provide an analysis of a large number of PPPs and consequently develop critical success factors for the implementation of PPPs, for example risk allocation and political support. Their analysis however focuses on PPPs for infrastructural project specifically. Both De Pinho Campos, Norman, and Jadad (2011) and Wong et al. (2015) seek to evaluate PPPs to develop a framework for future research, but they solely focus on PPPs in the health sector.

The fragmentation of evaluation methods has also been observed by Roehrich et al. (2014). They conclude from their systematic literature review that no cumulative development of methodology can be observed in PPP literature and that “a relatively high number of papers does not mention or clarify their research methodology” (Roehrich et al., 2014, 113). As a consequence of the limited literature on evaluation methods, no one all-encompassing evaluation framework has been found to serve as the methodological framework for the analysis of *Transforma Alimentos*. This paper therefore largely follows the book *Two to tango* by

Fernández, Sabel, Stein and Trejos (2016a) for the evaluation of *Transforma Alimentos* so far. This evaluation framework is described more extensively in the next subsection.

2.6. Methodological framework

As explained before, the research spectrum regarding PPPs is widespread and there are limited methodological framework applicable that can be applied to the evaluation of *Transforma Alimentos*. Consequently, the research constructed in the Inter-American Development Bank's study *Two to tango* forms the basis for the analysis of *Transforma Alimentos* (Fernández-Arias et al, 2016a and Fernández-Arias et al., 2017). This research studies 25 different examples of public-private collaborations in productive development policies in Latin America, including five Chilean case studies. Thereby, seven factors for the success of a PPP are theorised. Given that *Transforma Alimentos* seeks to stimulate the development of the food sector in Chile, the study by Fernández-Arias et al. is chosen as the chosen case studies show a lot of similarities with the private-public cooperation of *Transforma Alimentos*. Nevertheless, as the study of Fernández-Arias et al. mostly studies the Latin-American context and focuses not solely on one policy issue, a study on *Transforma Alimentos* is still highly relevant because of the specific focus on the food sector and on the Chilean context.

The study hypothesises seven design elements for public-private cooperation that are considered to increase the likelihood of success of these partnerships. These seven elements form the basis of the analysis of *Transforma Alimentos*. The first element identified by the authors is to *abstain from riskier policies*. As discussed in the literature review, well designed PPPs can create a more efficient service delivery. In the case of PPPs in productive development policies, the riskier the policy, the less the likelihood of success of such a policy. Riskier policies hereby are used to refer to for example market interventions by the government. These policies might disturb production gains for the private sector and therewith reduce the incentives for the efficient delivery of products and services. The second element is *burden sharing*. A fair allocation of the share of the costs of a PPP ensures participation and motivation of all the partners involved and limits free riding. The third element of successful PPPs is *cross examination*. As discussed earlier, there often is an asymmetric information between a public and a private party. Including multiple experts in a PPP, for example by including academia, increases the chance that all the relevant information is shared, and that capture is limited. Fourthly, it is believed to be beneficial to include the element of *conditionality* in a PPP. Conditionality, for example by making the continuation of a policy performance based,

incentivises actual delivery from the parties involved. The fifth element of successful PPPs is *evaluation*. Evaluation of productive development policies is necessary since always choosing the right policy is impossible. Evaluation of policies therefore ensures that unsuccessful policies are not prolonged and that successful policies are expanded. To ensure honest evaluations, the evaluation methods should be described in a policy beforehand and should be executed by an external party. The sixth element of successful PPPs is *checks & balances*. As explained earlier, PPPs involve a risk of capture. Internal checks and balances can help to reduce the risk of capture. Too many checks and balances, however, can impede the efficiency of a PPP and limits its successfulness. Therefore, it is important to find the right balance between checks and balances and effectiveness. The last element discussed by the authors is *transparency and accountability*. The more transparent a PPP is, the more the other elements previously discussed can be supported. Accountability complements transparency by ensuring that the steps taken in a PPP can be evaluated clearly. However, transparency sometimes limits flexibility which is sometimes needed for swift and effective PPPs. Therefore, a right balance between flexibility and transparency needs to be sought.

2.7. Data collection

The remainder of this paper presents an evaluation of *Transforma Alimentos* so far, thereby assessing the programme on the seven elements of success as discussed by Fernández-Arias et al. and outlined above. The empirical data for this analysis has been collected through a comprehensive study of the work of other authors, and eight in-depth semi-structured interviews. The interviewees were found by contacting members of the different organisational bodies of *Transforma Alimentos*, as listed on the its website (Transforma Alimentos, n.d.a.). Furthermore, interviewees were asked for possible other interviewee suggestions. In order to gain perspectives on *Transforma Alimentos* from actors from each of the three sectors involved in the programme, a balance was sought between actors from academia, the public sector and the private sector. In the end, seven of the actors interviewed are directly involved in one of the organisational bodies of *Transforma Alimentos*. The eighth actor is an independent consultant in the field of agriculture, who was involved as such in the design process of the programme. Three of the interviewees are currently employed in the public sector, three in the private sector and two in the academic sector.

Semi-structured interviews were chosen to follow the literature framework as discussed before, but to also leave room for additional questions to identify literature gaps that can be tackled

with further PPP research. Therefore, the analysis presents an evaluation of the seven elements outlined before, and an additional part on other lessons that can be drawn from the experience of *Transforma Alimentos*. The following questions formed the basis of each interview and were asked to the different interviewees.

1. Could you describe your role in the design of *Transforma Alimentos*?
2. Could you give your opinion on the design of *Transforma Alimentos*?
3. Could you describe your role in the implementation of *Transforma Alimentos* until today?
4. Could you give your opinion on the implementation of *Transforma Alimentos*?
5. What is your opinion on the organisational structure of the programme?
6. What could be improved in the design of a strategic programme like *Transforma Alimentos*, if a new programme were to be designed in the future?

The interviews lasted between twenty minutes and over an hour and all interviews were recorded. To enable all interviewees to speak freely and easily, the interviews were held in the interviewees' mother tongue, Spanish. The transcription of these interviews can be found in the appendix to this paper and can be obtained by request. To stay as close to the original interview as possible, the interviews are transcribed in Spanish as well.

3. The effectiveness of *Transforma Alimentos*

After outlining the theoretical and methodological framework, the next section examines the effectiveness of *Transforma Alimentos* from a public-private partnership perspective. Thereby, the framework by Fernández-Arias et al. (2016b) is followed, meaning that the effectiveness of *Transforma Alimentos* is tested on seven different elements. These elements are discussed separately. To offer further insights into the PPP literature and to offer new topics for analysis, the last part of this section discusses additional lessons that can be drawn from examining *Transforma Alimentos*.

3.1. Abstain from riskier policies

Following the hypotheses set by Fernández-Arias et al. (2016b), the riskier the policy, the less the likelihood of success of such a policy. Riskier policies hereby are used to refer to policy which redistribute market shares. As discussed earlier, *Transforma Alimentos* seeks to achieve the established goals by uniting and promoting projects that aim at contributing to the breaching of gaps that were identified in the *Transforma Alimentos* design process. Thereby, *Transforma Alimentos* does not offer finance projects itself, but it instead cooperates with agencies such as FIA and CORFO to determine which requirements to add to a tender process and to choose the projects which are in the end supported. So far, 155 projects have been supported by *Transforma Alimentos*. The total budget for these projects accounts for US\$110 million, out of which 37% has been financed by private parties. Consequently, roughly US\$70 million has been financed by the public parties (Transforma Alimentos, n.d.b., Transforma Alimentos, 2016)

Following the definition given by Fernández-Arias et al. (2016b) of riskier policies, the projects that *Transforma Alimentos* supports can be considered a welfare distributing policy, given that US\$70 million of public money is redistributed via the programme and provided as subsidies to the chosen initiatives. This sum of money, however, is divided over a large number of projects instead of several small projects, thereby largely reducing the risks associated with each project. Furthermore, multiple public organisations are involved in the process of designing the tender processes and allocating the funding. Consequently, an extra check has been built into the system, further limiting the risks of the programme. So even though the projects supported by *Transforma Alimentos* can be considered as a risky policy, various checks have been set up to limit the risks of the programme. The interview data have not given any

indication that the projects supported by *Transforma Alimentos* are subject to capture. The risk sharing mechanisms discussed could therefore offer a possible explanation for this observation (Transforma Alimentos, 2016; Interviews, appendix).

3.2. Burden sharing

The second hypothesis of the Fernández-Arias et al. (2016b) research is that a fair allocation of the costs of a PPP functions as an incentive to ensure participation and motivation of all the partners involved. Furthermore, it enables the parties involved to limit free riding. The costs for the first two PPP elements of *Transforma*, the design of the roadmap and the consultative directorate, were not shared. Participation in these two parts of *Transforma Alimentos* is on a voluntary basis. The last PPP element of *Transforma Alimentos* is the projects that are supported by *Transforma Alimentos*. As explained earlier, *Transforma Alimentos* supports more than 150 projects. 37% of the funding from these projects stems from private funding. Besides limiting the risks of a projects, the private funding consequently also ensures a commitment to the project by the private parties involved, as these parties run a financial risk when the project fails. A third element has been included in the project management to further incentivise the parties involved and to further share the burden of a project. Many project requirements namely include that parties apply for a project as a cooperation, which increases the number of parties involved and consequently, the share of the project each party has to contribute to (Transforma Alimentos, n.d.b.; Transforma Alimentos, 2016; Interview with Graciela Urrutia, appendix).

Unfortunately, it cannot be concluded from the interview data whether the burden sharing in *Transforma Alimentos* sufficiently functions as an incentive for participation from all the actors involved in the three PPP elements of *Transforma Alimentos*. The OECD and United Nations (UN) (2018) report does offer some insights in the incentive mechanisms of *Transforma Alimentos*. It namely signals a lack of mechanisms that can ensure a long-term commitment of the private parties involved, and that can incentivise the different stakeholders of the programme to actually take action. Following the conclusions from this report, extra burden sharing within *Transforma Alimentos* could therefore be considered as a mechanism to further motivate private parties in *Transforma Alimentos* (OECD & UN, 2018).

3.3. Cross examination

The third element discussed by Fernández-Arias et al. (2016b) is cross examination. As discussed in the literature review, there often is asymmetric information between a public and

a private party in a PPP. Consequently, including multiple experts in a PPP, for example by including academia, increases the chance that all the relevant information is shared, and that capture is limited. As discussed earlier, the public-private cooperation in *Transforma Alimentos* is threefold. In all three PPP ‘stages’ of *Transforma Alimentos*, the design of the roadmap, the consultative directorate and the projects, both the private and the academic sector are involved. According to all interviewees currently employed in the private and academic sector, *Transforma Alimentos* has therewith successfully contributed to promoting dialogue and cooperation within the food sector. The OECD and UN (2018) report on product transformation in Chile confirms this interview finding and concludes that through the *Transforma* programmes, CORFO has facilitated smooth cooperation between a multitude of actors in the food sector (Interviews with Veronica Cornejo, Paulina Caro, Isabel Quiroz, Jaime Crispi and Juan Jose Albarrán, appendix; OECD & UN, 2018).

Besides cross examination between the three sectors, *Transforma Alimentos* also promotes cross examination between different public actors. Different agencies within the Ministry of Agriculture, such as ODEPA and FIA are involved with the functioning of the programme. Furthermore, CORFO, an agency of the Ministry of Economic Affairs, is also highly involved in the programme. Consequently, it can be concluded that the decisions taken by *Transforma Alimentos* are scrutinised by a large variety of actors with different interests, which can be considered to limit the risks of capture (Interview with Adolfo Ochagavía, appendix; *Transforma Alimentos*, n.d.a.).

3.4. Conditionality

The fourth element discussed in the methodological framework is conditionality. By making certain benefits of a policy conditional upon good performance of the partners involved in a PPP, conditionality can stimulate actual service delivery from the parties involved. As explained before, PPP in *Transforma Alimentos* is considered threefold and consequently, the conditionality is examined in each of the three PPP elements of *Transforma Alimentos*. The first element is the design phase of the programme. Hereby, a hundred actors from the three sectors met in different workshops in order to identify the gaps between the objectives and the current situation, and to help to design the roadmap. The participation in this process was on a voluntary basis. Furthermore, many participants of the workshops only participated in the designing phase of the programme and do not play a role in the further implementation of the programme. Consequently, participation in the workshops was not made conditional upon

certain performance requirements and it can be concluded that the conditionality element was absent in the first PPP element of *Transforma Alimentos* (Transforma Alimentos, n.d.b.; Interview Francisco Rossier and Graciela Urrutia, appendix).

The second PPP element of *Transforma Alimentos* is the consultative directorate, which is formed by actors of all three sectors. Participation in this body is, once again, on a voluntary basis and actors are not paid for being a member of the consultative body. Consequently, participation in the body has not been conditional upon certain performance prerequisites (Interviews Veronica Cornejo, Paulina Caro and Jaime Crispi, appendix). The last PPP element of *Transforma Alimentos* are the initiatives that it promotes and the projects that it supports and unites. Unfortunately, *Transforma Alimentos* does not offer an extensive list of all the projects it has supported, and only provides project examples on its website and its brochure. Consequently, it is not possible to fully examine the conditionality and performance-based elements of the projects supported by *Transforma Alimentos*. As with the second element of the Fernández-Arias et al. (2016b) framework, burden sharing, the OECD and UN (2018) report does offer some insights in the conditionality mechanisms of *Transforma Alimentos*. It namely signals a lack of mechanisms that incentivise long term private party participation. Including more conditionality elements could therefore be a second mechanism to further stimulate private party participation (OECD & UN, 2018).

3.5. Evaluation

The fifth element of successful PPPs as discussed by Fernández-Arias et al. (2016b) is evaluation. Evaluation is necessary since always choosing the right policy is impossible. Evaluation of policies therefore ensures that unsuccessful policies are not prolonged and that successful policies are expanded. To ensure honest evaluations, the evaluation methods should be described in a policy beforehand and should be executed by an external party. As *Transforma Alimentos* consists of different elements, the evaluation methods should be examined per element. The first phase of *Transforma Alimentos* was the design phase, whereby workshops were organised. The design phase of *Transforma Alimentos* finished with the development of the roadmap. Both the interview data and a document search on the *Transforma Alimentos* website have not provided a comprehensive evaluation document of the design process of *Transforma Alimentos* (Interview data, appendix; Transforma Alimentos, n.d.c.)

The other elements of *Transforma Alimentos*, the projects, the consultative directorate and the overall strategic programme, are still in the implementation phase and have therefore not been examined yet. Nevertheless, following Fernández-Arias et al. (2016b), the evaluation methods should be described in the policy beforehand to ensure honest evaluation afterwards. Both the website and the information document of *Transforma Alimentos* describing the outcomes of the design phase and the implementation of the roadmap define clear and measurable goals to be obtained by *Transforma Alimentos*, such as the diversification of the Chilean food export, which enables an objective evaluation of the programme when it is finished (Transforma Alimentos, n.d.c.; Transforma Alimentos, 2016). As explained earlier, *Transforma Alimentos* unites and promotes a large number of projects, but an extensive list of these projects has not been found on the *Transforma Alimentos* website, which limits the possibility to study the *Transforma Alimentos* projects in detail. Both the information document and the website do however clearly explain 20 initiatives *Transforma Alimentos* supports and what the goal of each initiative is (Transforma Alimentos, n.d.b.; Transforma Alimentos, 2016). Despite the clear explanation of the objectives of the overall programme and the initiatives, periodic reviews and interim results are not described. Given that the programme is designed for a period of ten years, periodic review mechanisms help to determine which initiatives contribute to achieving the objectives, and which initiatives do not. This is also concluded by the OECD (2018) in its economic survey on Chile, in which the *Transforma* programmes are also discussed. The survey states that evaluations are not systemic and often do not quantify the economic effects of public funding. Including *ex-post* indicators in the policy would help to improve the evaluations (OECD, 2018).

3.6. Checks and balances

One of the possible downsides of PPPs is capture. Internal checks and balances can help to reduce the risk of capture. Too many checks and balances, however, can impede the efficiency of a PPP and limits its successfulness. Therefore, it is important to find the right balance between checks and balances and effectiveness. When discussing internal checks and balances within the Chilean policy context, it is important to take the Chilean political history into account, as discussed by Benavente, Bravo, Goya and Zahler (2016). Chilean politics moved from interventionist between 1940 and 1973 to military dictatorship between 1973 and 1990. As a consequence, many public institutions had a minimal connection to the private sector, as the Pinochet era can be characterised by a fear of return to the interventionist state model. Consequently, public-private cooperation is a fairly new phenomenon in Chilean politics, and distrust between government and private parties can still be noted. Five out of eight

interviewees also mention this distrust between the public and private sector, and therefore consider the mere fact that *Transforma Alimentos* is bringing these parties together as a great achievement of the programme (Fernández-Arias et al, 2016b; Interviews with Francisco Rossier, Graciela Urrutia, Adolfo Ochagavía, Jaime Crispi and Juan José Albarrán, appendix). In light of the aforementioned, the first observation that can be made from examining internal checks and balances is that *Transforma* has enabled a smoother interaction between the different actors within the Ministry of Agriculture itself. In a 2013 World Bank study on the possibilities for a long-term strategy for agricultural cooperation, the conclusion is made that the public agencies concerned with innovation in agriculture are unable to cooperate and to contribute to a shared vision. To govern *Transforma Alimentos*, an executive committee has been established with representatives from different institutions concerned with the reaching the objectives of the *Transforma Alimentos* roadmap, such as FIA and ODEPA. This committee meets once a month and has enabled an easier cooperation between different public actors (World Bank, 2013; Interviews with Francisco Rossier, Adolfo Ochagavía and Jaime Crispi, appendix).

One big concern regarding the internal checks and balances is the change of government and the consequent delay for the implementation of *Transforma Alimentos*. *Transforma Alimentos* was designed and budgeted for during the government of Michelle Bachelet (2014-2018). In 2018, Bachelet was succeeded by Sebastian Piñera, leading to a change in government and many government officials. The new Minister of Agriculture, Antonio Walker, consequently had to determine whether or not to continue the *Transforma Alimentos* programme, which led to a confirmation for continuation of the programme in September 2018. All interviewees mention this change of government, and many of them consider the change of government causing unnecessary delay in the implementation of the programme (Interviews, appendix). Considering the internal checks and balances in the Chilean policy context, it can consequently be concluded that Chile does not have a culture of cooperation between the different sectors, so therefore, bringing the different parties in the food sector together has been considered an achievement of *Transforma Alimentos*. Nevertheless, the volatility with which a programme like *Transforma Alimentos* can possibly be ended by a new administration does not contribute to diminishing the distrust of the private sector towards the public sector and impedes the effectiveness of the programme.

3.7. Transparency and accountability

The last element of successful PPPs as discussed by Fernández-Arias et al. (2016b) is transparency and accountability. Transparency hereby functions as a sort of multiplier. The more transparent a PPP, the more the other elements previously discussed can be supported and the more successful a PPP becomes. Accountability complements transparency by ensuring that the steps taken in a PPP can be evaluated clearly. However, transparency sometimes limits flexibility which is sometimes needed for swift and effective PPPs. Therefore, a right balance between flexibility and transparency needs to be sought for effective PPPs.

When examining transparency and accountability in *Transforma Alimentos*, two factors stand out. Firstly, and as already discussed in the parts on burden sharing, conditionality and evaluation, certain information on *Transforma Alimentos* could not be found on its website. The website for example does not include a list of the actors that participated in the workshops organised to design the roadmap. The website furthermore does not offer an evaluation of the designing process. A last example given here is that the website does not contain a list of the projects that *Transforma Alimentos* has listed as being part of *Transforma Alimentos*. In this case, only the number of projects is given. Searching the CORFO website using the search term *Transforma Alimentos* does not offer more information on the topics listed above. Given that the design process of *Transforma Alimentos* has already been ended and many projects have already been chosen and started, the flexibility argument does not justify the lack of information on these topics on the *Transforma Alimentos* website. The transparency of the *Transforma Alimentos* website could therefore be considered a recommendation for improvement (Corfo, n.d.b.; Transforma Alimentos, n.d.c.).

The second factor that stands out from the interviews is there is a lot of unclarity regarding *Transforma Alimentos*, both internally and externally. Four of the eight interviewees mention that they experience that many actors in the food sector are aware of the existence of the programme, but do not know what the programme actually specifically entails (Interviews with Veronica Cornejo, Paulina Caro, Isabel Quiroz and Juan José Albarrán, appendix). Furthermore, three interviewees, all member of the consultative directorate of *Transforma Alimentos*, indicate that the last meeting of *Transforma Alimentos* took place before the change of government and that they had not had a meeting to discuss the progress of the programme since. As these members can be considered ‘business cards’ for the programme, it is highly recommendable to not organise the consultative directorate’s meetings on an infrequent basis.

Consequently, more extensive and more frequent information provision could promote the programme better and increase the knowledge of the programme, both internally and externally (Interviews with Veronica Cornejo, Paulina Caro and Juan José Albarrán, appendix).

3.8. Other lessons

As discussed earlier, the interview data were collected by having semi-structured interviews. This interview method was chosen to leave room for additional questions to identify literature gaps that can be tackled with further PPP research. Various interviewees have given comments and suggestions from which both positive and negative lessons for future PPPs in the food sector can be drawn and which are discussed in the following subsection.

First and foremost, interviewees praise *Transforma Alimentos* as it has managed to unite actors from the public, private and academic sector to jointly identify gaps for development and possible solutions to breach these gaps. Furthermore, *Transforma Alimentos* is positively evaluated because it has not only managed to bring together parties from different sectors, it has also enabled cooperation between the different parties within one product group. The clearest example given was the case of the fruit sector, where *Transforma Alimentos* has managed to unite the producers of processed fruits and fresh fruits, which used to be more separate entities (Interviews, appendix). The views of the interviewees are shared by the earlier mentioned report of the OECD and the UN (2018), which concludes that the cooperation between the public, private and academic sectors have led to an effective identification of the steps to be taken to breach the gaps, especially with regard to educational needs.

The second positive aspect mentioned by four of the eight interviewees is the capability of the management team, and especially its director. The research by Benavente et al. (2016) on five case studies of PPP in Chile concludes that “empowered and motivated” leaderships is very important for the successful functioning of a PPP in Chile (Benavente et al., 2016, 215). Furthermore, the person in charge of a PPP should have respect from all the parties in a PPP and should have technical knowledge of the sector the PPP is aimed at. According to the interview data, the leadership in *Transforma Alimentos* can be considered highly capable. Four of the eight interviewees namely specifically state that they believe the management team of *Transforma Alimentos* is very qualified. Furthermore, they praise the director of the programme for her knowledge of the sector, her vision and her cooperation with others. Following the conclusions of Benavente et al. (2016), the capable management of *Transforma Alimentos* can

therefore be considered a positive aspect of the programme (Interviews with Paulina Caro, Isabel Quiroz, Adolfo Ochagavía and Juan José Albarrán, appendix).

Besides these aforementioned positive aspects of *Transforma Alimentos*, the interviews also indicated possible improvements for the programme. The first suggestion made by the interviewees is the budget of the programme. *Transforma Alimentos* strives to achieve many objectives in the food sector, but according to three of the eight interviewees, the programme's budget is insufficient for the high ambitions of the programme (Interviews with Paulina Caro, Isabel Quiroz and Juan José Albarrán, appendix). This view is shared by the OECD and UN (2018) report, which compares the budget for the *Transforma* programmes with the strategic programme of Italy's Emilia Romagna region. For the first three years of the *Transforma* programmes, Chile budgeted US\$160 million, while the Emilia Romagna region's budget for strategic programmes accounted US\$700 million for the period 2014-2020. Consequently, the report recommends to align the budget of the *Transforma* programmes with the objectives that it strives to achieve. Given the relatively low budget for the programme, one interviewee advises *Transforma Alimentos* to be more targeted and less broad. The food sector namely is a very broad sector with many possible actors to cooperate with and many possible gaps to breach. However, that is impossible considering the budget and consequently, choices need to be made (Interview with Paulina Caro, appendix).

A second point of improvement mentioned by the interviewees is the involvement of the Spanish consultancy in the design process. As explained before, in order to guide the design process, a tender was opened. Following the tender, the Spanish consultancy INFYDE was chosen to guide the process. Two interviewees indicate that involving an external consultancy firm ensures that an independent outsider objectively observes the process and adds to the transparency of the programme. Nevertheless, in the case of *Transforma Alimentos*, a foreign consultancy was not considered preferable, because this firm was unaware of the organisational and cultural background of the food sector in Chile. Consequently, the interviewees believe that the design process would have been smoother if a national party was chosen for the observer role (Interview with Francisco Rossier and Isabel Quiroz, appendix).

Thirdly, many interviewees mention the geographical dispersion in Chile. Chile has a coast line of more than 6000 kilometres and is divided into sixteen regions (Central Intelligence Agency (CORFO), n.d.; Biblioteca del Congreso Nacional de Chile (BCN), n.d.). Nevertheless, three

interviewees argue that *Transforma Alimentos* is largely focused on Santiago and the Metropolitan region and should include the other regions more in the implementation of the programme. This view is shared by the OECD and UN (2018) report, which argues that there is a need to increase the influence of the regions in the planning, implementation and monitoring of the *Transforma* projects. A third recommendation is therefore to broaden the focus of *Transforma Alimentos* to include the regions more. This advice, however, should be weighed carefully against the earlier discussed budget constraints (Interviews with Graciela Urrutia, Paulina Caro and Veronica Cornejo, appendix).

The last point of improvement is in line with the earlier discussed internal checks and balances. One of the conclusions from the study by Benavente et al. (2016) on PPPs in Chile is that it is very important to have institutions that enable learning from the implementations of policies and the incorporation of these lessons in new policies. As explained earlier, the implementation of *Transforma Alimentos* suffered from a significant delay because of the change of government. The change of government is illustrative for the learning ability of Chilean institutions. The change of government namely also led to a change in a large number of public servants within the Ministry of Agriculture. These changes not only cause a delay in the implementation of a programme like *Transforma Alimentos*, it also results in a loss of internal institutional memory. One of the interviewees for example clearly indicates that a lot of studies on innovation in the food sector had already been conducted before the start of *Transforma Alimentos*. However, the *Transforma Alimentos* team only discovered these studies when the design of the roadmap had already been finished, thereby not taking into account these earlier studies. A possible solution for situations like these, in which institutions unintentionally execute the same task multiple times, is to install mechanisms within public institutions which ensure an institutional memory (Interview with Francisco Rossier, appendix).

4. Conclusion

The aim of this research was to contribute to the literature on public-private partnerships by examining the effectiveness of a PPP in the food sector. Therefore, the Chilean *Transforma Alimentos* programme was studied from a public-private partnership perspective. Thereby, the research question was to what extent *Transforma Alimentos*, from a PPP perspective, has been an effective strategy to promote development in the Chilean food sector so far. To answer this research question, the first section of this paper outlined the literature debate regarding PPPs. Furthermore, different evaluation methods in the literature were discussed, and eventually, the framework by Fernández-Arias et al. (2016b) was introduced and explained as the methodological framework of this paper. The second section employed this framework to test the effectiveness of *Transforma Alimentos* on seven different elements of success. Furthermore, the section ended with other lessons drawn from *Transforma Alimentos*. For the analysis, both reports from organisations such as the World Bank and the OECD and data from eight semi-structured interviews with actors involved in *Transforma Alimentos* were analysed. The conclusions that can be drawn from this paper can be divided into policy recommendations and recommendations for future research, which can be found below.

4.1. Implications for policymakers

This paper focused specifically on a PPP in the Chilean food sector, namely *Transforma Alimentos*. Therefore, drawing general conclusions for future PPPs in the food sector is impeded. Nevertheless, the research on *Transforma Alimentos* does not only offer recommendations for *Transforma Alimentos*, it also offers some insights in the design elements that should be carefully considered when developing a PPP.

The results from this paper support the observation of Fernández-Arias et al. (2016b) that PPPs can involve a certain risk factor, as PPPs can be used to redistribute market shares. The research in this paper has not led to any indications that *Transforma Alimentos* has been subject to capture. Following the framework by Fernández-Arias et al. (2016b), two possible explanations for this observation can be identified. Firstly, the risk of *Transforma Alimentos*, the subsidisation of projects, has been limited by internal checks and balances and by dividing the subsidies over a large number of projects. Secondly, *Transforma Alimentos* involves cross examination in all of the three PPP elements, thereby further limiting the risk of capture. Consequently, the first policy recommendation that can be drawn from this research is that

internal checks and balances and cross examination are possible tools that can be considered for limiting the risk of a PPP.

The second conclusion that can be drawn from this research is that the argument that burden sharing and conditionality incentivise the participants of a PPP cannot be rejected. Both elements are included in *Transforma Alimentos*, nevertheless a lack of methods to support motivation can still be observed within *Transforma Alimentos*. Therefore, the second policy recommendation is to consider both burden sharing and conditionality as possible methods to incentivise participants of a PPP, but to also examine other possible methods to ensure that all participants in a PPP sufficiently cooperate.

The third factor that can be identified after studying *Transforma Alimentos* is that evaluation and transparency are important tools to improve the effectiveness of a PPP. *Transforma Alimentos* is not periodically reviewed. Furthermore, many of its operations cannot be found on the website, which further limits evaluation from external parties. These two factors combined hamper the examination of positive and negative outcomes of the projects supported by *Transforma Alimentos*, and therewith limit the continuation and expansion of successful policies and the termination of unsuccessful policies. Consequently, the third policy recommendation is to critically discuss both the evaluation and the transparency of a PPP in the development phase of the PPP.

The last conclusion that can be drawn from *Transforma Alimentos* specifically is that scarce resources lead to a discussion of policy choices. *Transforma Alimentos* is considered to have a limited budget for its objectives. Nevertheless, the food sector is considered a broad sector in which many issues could possibly be tackled, leading to a discussion on what to include and exclude in the programme. The budgetary discussion within *Transforma Alimentos* leads to the general recommendation to clearly align a PPPs budget with its objectives, before starting a public-private cooperation.

4.2. Recommendations for future research

PPP literature encompasses PPPs in large variety of fields and can consequently be studied from a large number of academic disciplines. This paper focused largely on the examination of the effectiveness of PPPs in the food sector, thereby expanding the work by Fernández-Arias et al. (2016b) on PPPs for productive development by specifically focusing on development in one

sector. Thereby, this study offers new insights in the effectiveness of PPPs in a specific sector, in this case the food sector. Furthermore, this research specifically focused on the Chilean context. Following these two specific focus points of this research, the first recommendation is to elaborate on this research by studying PPPs in the food sector from different angles. Research could for example focus on the efficiency or the cost-effectiveness of a PPP in the food sector, or it could compare the use of PPPs in the food sector in different countries. Expanding the research on PPPs in the food sector could thereby contribute to a better understanding of the functioning of PPPs in the food sector.

The second recommendation is to not only expand the research on PPPs in the food sector, but to also study the applicability of PPPs in various national contexts more. As discussed earlier, the analysis included a part on observations outside the Fernández-Arias et al. (2016b) framework to examine possible suggestions for future research. Most of the other lessons that can be drawn from the research on *Transforma Alimentos* are highly specific to the Chilean context. Recommendations for example include focusing on the regional dispersion in Chile, or the institutional learning in Chile. These examples clearly indicate that a PPP is not a ‘one size fits all’ policy framework, and that research should be dedicated to investigating both PPPs in Chile and the applicability of PPPs in different national contexts.

The third recommendation is to combine the research on sector and country specific PPPs with a broad study of PPP literature. As explained before, PPP research is a broad field of research. The broadness of the PPP literature justified the choice of PPP as the theoretical framework of this paper. Nevertheless, the study was also impeded by the broadness of the PPP literature, as an all-encompassing evaluation method of PPPs could not be found. It is therefore advised to develop a systematic literature review of PPP literature and to seek to analyse the similarities and the differences within the literature. Such a literature review could contribute to the development of an overarching evaluation method for PPPs, which could form the basis for future evaluations of PPPs in a large number of fields.

Both broad PPP research and research on sector and nationally specific PPPs are necessary to gain more understanding of the causal mechanisms between a PPP’s design and its outcome. Little research has been found discussing the causality of PPPs, thereby limiting the evaluation of *Transforma Alimentos* and the general recommendations that can be drawn from this paper. Therefore, it is recommended to expand the PPP literature by focusing more on causality. This

could for example be done by employing more quantitative research methods in the evaluation of PPPs, as the literature review has shown that there are few researches quantitatively discussing PPPs.

The last recommendation for future research is to conduct an extensive evaluation on *Transforma Alimentos* once the programme has ended. Even though *Transforma Alimentos* is currently in the implementation phase, studying *Transforma Alimentos* was considered relevant since studying the effectiveness of the design and organisation of the programme enables the identification of lessons for future programmes in the food sector. Furthermore, an evaluation of *Transforma Alimentos* until now could lead to recommendations that can be immediately implemented. Nevertheless, a study on the effectiveness of the programme in achieving its goals once the programme has ended is recommended to offer further insights in the functioning of the programme, thereby further contributing to the research on PPPs in the food sector.

4.3. Final concluding remarks

The aim of this research was to study the effectiveness of *Transforma Alimentos*, thereby expanding the literature of PPPs in the food sector. The research has led to multiple recommendations for the implementation of *Transforma Alimentos* specifically and for future PPPs in general. Nevertheless, this research has also identified relevant future research topics that can contribute to a better understanding of PPPs in general and PPPs in the food sector specifically. To fully understand PPPs, both in the food sector and in general, it is therefore necessary to develop further research into the topic, thereby following the recommendations for future research given in this paper.

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