2018

Situating Community Resilience within the Political Landscape: An Investigation of Rural Livelihoods and Agency in Chile's Bíobío and Araucanía Regions

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SITUATING COMMUNITY RESILIENCE WITHIN THE POLITICAL LANDSCAPE: AN INVESTIGATION OF RURAL LIVELIHOODS AND AGENCY IN CHILE'S BÍOBÍO AND ARAUCANÍA REGIONS

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Master of Environmental Studies (MES), Department of Geography and Environmental Studies, Wilfrid Laurier University, 2018

THESIS

Submitted to the Laurier Faculty of Graduate and Postdoctoral Studies

in partial fulfilment of the requirements for

Master of Environmental Studies in Geography

Wilfrid Laurier University

Abstract

Since the establishment of Pinochet's dictatorship and its neoliberal experiment in 1973, Chile has experienced unprecedented growth in an increasingly resource-extractive economy, often through the expropriation and exploitation of the traditional territories of peasant farmers and the Indigenous Mapuche people. Through a lens of resilience, this study explores how the political and economic landscape of the country shapes rural livelihoods in six communities across two regions, as well as its implications for resilience at the community level. At the same time, it seeks to uncover how rural peoples actively respond to these threats and foster resilience within their households and communities, with a particular focus on efforts to preserve traditional food practices and related struggles for autonomy over local resources and food systems. In looking at how producers strategically form alliances and engage in networks that often extend beyond their traditional local spaces, this thesis concludes that resilience strategies are more effective when they do not remain within community boundaries but are instead trans-scalar in nature. It argues that these network strategies are instrumental for producers in the defence of their territories and their sovereignty over rural food systems as well as in the collective assertion of their own ideals of development and food production in both national and global political spheres.

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List of Acronyms

ANAMURI	Asociación Nacional de Mujeres Rurales e Indígenas / National Association of Rural and Indigenous Women
CLOC	Coordinadora Latinoamericana de Organizaciones del Campo / Latin American Coordination of Rural Organizations
CONADI	Comisión Nacional de Desarrollo Indígena / National Corporation for Indigenous Development
CORFO	Corporación de Fomento de la Producción / Production Development Corporation
INDAP	Instituto Nacional de Desarrollo Agropecuario / National Institute for Agricultural Development
MINSAL	Ministerio de Salud / Ministry of Health
PRODESAL	Programa de Desarrollo Local / Local Development Program
SERCOTEC	Servicio de Cooperación Técnica / Technical Cooperation Service
SERNATUR	Servicio Nacional de Turismo / National Tourism Service

Acknowledgements

I would like to take this opportunity to thank several individuals who have not only shaped this thesis but who have also profoundly shaped me both as a researcher and as a person.

Firstly, I would like to give special thanks to my incredible supervisor Dr. Alex Latta, who both encouraged and challenged me, while always keeping me grounded. This thesis would not have been possible without your guidance and unwavering support, and I truly could not have hoped for a better supervisor. Also, to the rest of my committee members: Dr. Alison Blay-Palmer, Dr. Steffanie Scott, and Dr. Sanjay Nepal, for your perceptive and valuable comments and insights.

To the team at the University of Concepción in Chile – especially Eduardo Letelier and Dr. Beatriz Cid Aguayo, for welcoming me into your school and your remarkable project, and for taking the time to connect me with your network. To Cristóbal Rojas Alday, thank you for your constant support – for being my guide and my friend, and for always being available for my relentless questioning both in the field and throughout the writing process. A warm thank you also to my friend Marcos, for providing me with a comfortable place to stay in Chile, and for our much-needed pizza nights.

An enormous and special thank you to all of those who participated in the study, who welcomed me into their places of work, their communities and their homes with warmth, openness, and delicious food. I am incredibly grateful to you all for sharing your experiences and your wisdom with me, and for showing me the true value of a meal. *Muchas gracias* / *Chaltu mai*.

Lastly, to my colleagues and friends at Laurier as well as my family and friends back home, for providing me with love and moral support through my most frustrated nights and tired mornings – you are my foundation.

This thesis would not have been possible without each and every one of these individuals, and it is to all of them that I dedicate this thesis.

1.0 Introduction: Research Directions and Background

1.1 Researching Resilience in Chile's Nahuelbuta Territory

In south-central Chile, rural peasant and Indigenous communities have been exposed to myriad threats to their livelihoods, environments, and cultures, as well as to the social fabric of their communities. Since the establishment of Augusto Pinochet's military dictatorship (1973-1990) in particular, the country has followed a neoliberal trajectory of development centred on export-oriented production and resource extraction, often resulting in the expropriation and conversion of the traditional territories of peasant farmers and the Indigenous Mapuche peoples to industrial agriculture and agro-forestry. In the south-central region in particular, agricultural policy and programming has sought to homogenize rural landscapes and re-orient rural food production towards the mainstream market, while extensive plantations of non-native species have diminished native forests, restricted local access to important resources and contributed to a growing problem of water scarcity. Together, these top-down impacts have threatened the continuation of traditional productive practices that are the pillars of the livelihoods and communities in the region.

This thesis is based on a study carried out in Nahuelbuta, a mountain range territory spanning the western portions of the Bíobío and Araucanía regions of south-central Chile (see Figure 1 for map of Chile; Figure 3 for map of Nahuelbuta). Research involved in-depth interviews and observations with peasant and Indigenous producers in six rural communities in the territory. Building on socio-ecological resilience frameworks and through a political ecology lens, it addresses the need for a 'politicized' concept of resilience, investigating the effects of the country's political and economic landscape on resilience in rural households and communities. While one aim of the thesis is to explore political and economic sources of vulnerability, it is primarily an analysis of rural agency within this context, and I principally seek to understand how actors respond to external threats and build the resilience of their communities. Throughout the analysis, emphasis will be

placed on food system resilience, due to the centrality of food production in the communities involved and also because the resilience strategies adopted by rural households in this region are predominantly centred on the preservation of traditional productive practices related to subsistence agricultural and gathering activities. The latter part of the analysis also takes up larger-scale strategies adopted by individuals, households and communities, primarily in defence of their food sovereignty – defined as the right to safe and sustainable food production within their territory, as well as the right to control and define their own food systems.

Research objectives

The main objectives of the thesis research – both theoretical and applied – are as follows:

1) To explore and expand upon theories of socio-ecological resilience, using a political ecology approach in order to address key debates in this field;
2) To examine political and economic influences on community vulnerability and resilience in the Bíobío and Araucanía regions through the investigation of local perspectives and experiences of adversity and economic development;
3) To identify the resilience strategies of rural peasant and Indigenous food producers, and to evaluate their effectiveness in addressing livelihood challenges and building socio-ecological resilience within the broader political and economic context; and
4) To illustrate producers' agency within Chile's political sphere and to support their efforts to cultivate culturally meaningful development strategies as well as to exert their rights to resource governance and food sovereignty within their traditional territories, providing both practical insights for producers as well as theoretical insights in the field of political ecology.[1]

[1] Practical insights were provided in the form of an additional research output: a report (in Spanish) that was distributed throughout the Nodo project network. This report provided information about the project and its objectives, its realization of these objectives, as well as the implications that these outcomes have for the participants involved. Initially, its main purpose was to appeal to external agencies such as CORFO in order to encourage future investment and support in any potential follow-up projects and, more generally, in the development of cultural and communitarian tourism in the region. However, I also hope that in reading this report, participants were able to consider their efforts to strengthen and advance their tourism activities in a different light, and that it provided a source of reflection for them as they continue to make external connections and to pursue culinary/communitarian tourism as an economic, cultural, social and environmental strategy.

Figure 1. Map of Chile. Bíobío and Araucanía regions displayed in inset map (Source: Vmapas, 2009)

1.2 Research Context

1.2.1 The dictatorship and its political and economic legacy

Augusto Pinochet's military dictatorship of 1973-1990 initiated a neoliberal experiment in Chile that was characterized by high levels of foreign investment and a transition from an import-substitution to export-oriented economic model. More specifically, this experiment involved the deregulation of the market and the opening of the country's borders to foreign investment and export, fostered by multi-lateral institutions (e.g. the World Bank) as well as bi-lateral and multi-lateral free trade agreements (Aylwin, 2008; Barrett et al., 2005; Carruthers, 2001; Kowalczyk, 2013). These changes, combined with the country's relatively low environmental and labour standards, have made Chile extremely attractive to foreign investment (Aylwin, 2008). As a result of this shift, Chile has become a model for neoliberal economic policy and free trade in Latin America, distinguished by its relative stability and rapid economic growth compared to other countries – and in fact has one of the highest GDP per capita scores in the continent (Figure 2) (Aylwin, 2008; Carruthers, 2001; Clark, 2011). Overall, this model of economic growth has been heavily dependent on resource-extractive industries, resulting in the expansion of Chile's mining sector in the north and its agricultural, forestry and energy sectors in the south – often through the expropriation of land from peasants and the Indigenous Mapuche peoples, as well as the radical transformation of their traditional territories (Aylwin, 2008; Bengoa, 2013; Clark, 2011; Kowalczyk, 2013; Manuschevich, 2016; Miranda, 2013; Richards, 2010).

Despite the return of democracy in 1990, the country to this day has continued this trajectory of growth, and has remained fundamentally tied to the dictatorship both institutionally and ideologically. Its current constitution is an amended version of the 1980 constitution enacted by the Pinochet dictatorship, and many policies and systems installed by the regime remain in place today (Frens-String, 2013; Schild, 2007).

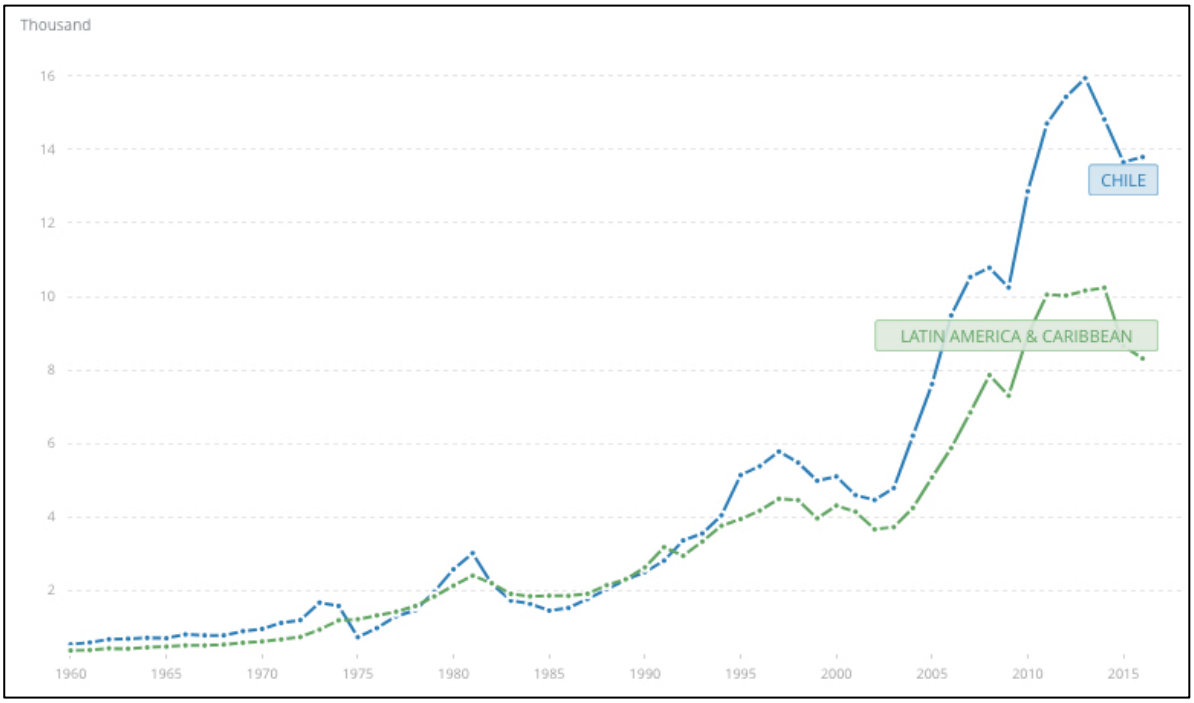

Figure 2. GDP per capita (current US$): Chile vs. Latin America/Caribbean, 1960-2017 (Source: World Bank, 2017)

The neoliberalization of agriculture

Before the coup of 1973, Chile underwent a process of agrarian reform, which brought an end to an era of *haciendas* (large agricultural estates laboured by peasants) that had previously lasted for several centuries (Bengoa, 2013). The first Agrarian Reform Law was implemented in 1967 and included the redistribution of state-owned land to peasant farmers as well as the sanction of peasant unionization, giving legal status to farmers' cooperatives and unions and encouraging their formation across the country. This led to a strong peasant movement that pushed for a second major reform, which was then carried out by the Salvador Allende administration (1970-1973) and involved the redistribution of large private farms and *haciendas* to peasant farmers (Bengoa, 2013; Klubock, 2011). After the 1973 military coup, part of Pinochet's neoliberal reforms included what was essentially a reversal of this redistribution, with the enactment of a counter-reform beginning in 1974. The counter-reform re-expropriated lands from small producers – returning some to previous

owners and auctioning off others – and disbanded the cooperatives that had been legalized by the 1967 reform. The remainder of agricultural lands were divided and distributed into parcels for peasant farmers, often too small in size for them to subsist. Additionally, these small producers were abruptly transformed into individual "entrepreneurs" in the eyes of the state, expected to compete in the mainstream market or to sell their land if they were unable. Many of them did the latter, moving to urban centres in search of work or becoming part of a growing rural labour force (Aylwin, 2008; Bengoa, 2013; Cid Aguayo, 2014; Clark, 2011; Du Monceau, 2008).

Even after the return of democracy in 1990, this neoliberal agricultural development model continued with arguably even more fervour, resulting in the increased concentration of agricultural land, as well as the specialization, homogenization and intensification of rural production in order to meet the demands of international markets (Altieri & Toledo, 2011; Bengoa, 2013; Torres, Azócar, Rojas, Montecinos, & Paredes, 2015). As of 1990, peasant farmers were labelled as 'viable' or 'non-viable' by the state (largely depending on their access to land and water); the former became the recipients of state aid aimed at maximizing productive capacity, while the latter became the target for interventions based on poverty alleviation through integration into the urban economy (Barrett, Ditzel, Jelvez, & Read, 2005; Bebbington, 1999; Gwynne, 1999). Many of the 'viable' small producers additionally became inserted into large, export-oriented chains of production through contract farming, having very little control over the means of production and being obligated to use the high-cost inputs (e.g. seeds, fertilizers) sold to them as part of production contracts with agribusiness. This has also made them vulnerable to income and market fluctuations, resulting in high levels of debt, dependency and poverty in rural areas (Altieri & Toledo, 2011; Bengoa, 2013; Challies & Murray, 2011; Cid Aguayo & Latta, 2015). These farmers therefore carry all of the risk associated with both environmental changes and market fluctuations – what Torres et al. (2015) identify as "double exposure".

Forestry development in south-central Chile

The Pinochet regime's shift to an export-oriented economy was heavily reliant on an increased dependence on natural resource use and extraction, with much of the added value generated by these activities flowing to multinational corporations outside the country (Bebbington, 1999; Cid Aguayo & Latta, 2015; Du Monceau, 2008; Gwynne, 1999; Manuschevich, 2016; Soto Soto, Mancilla Ivaca, & Valenzuela Sepúlveda, 2014). The forestry industry served as a major pillar of the regime's economic model, with forestry exports (primarily lumber and pulp) increasing by more than a thousand-fold over the four decades following the 1973 coup – making forestry Chile's second-largest export sector after copper mining (Du Monceau, 2008; Kowalczyk, 2013; Manuschevich, 2016; Rodriguez & Carruthers, 2008). This increased focus on forestry development can be largely explained by the new low costs in land availability (due to the agrarian counter-reform) and labour (due to the new flexibility of the labour market and the suppression of unions), as well as by the cool and rainy climate provided by southern regions, ideal for the fast growth of exotic species (Cid Aguayo, 2015). In order to enable the development of the industry, the regime sold Indigenous and peasant lands to logging companies and subsidized approximately 75% of the cost of the plantations through its 1974 Forest Development Law (Decree Law 701) (Bengoa, 2013; Du Monceau, 2008; Kowalczyk, 2013; Miranda, 2013; Rodriguez & Carruthers, 2008; Wolodarsky-Franke & Díaz Herrera, 2011). As a result, from 1973-2012 the surface area of forestry plantations in Chile grew from approximately 330,000 ha to 2.3 million ha – now comprising roughly one-eighth of the country's total forested area (Manuschevich, 2016).

Decree Law 701 promoted the development of the forestry sector from the Bíobío Region to the Los Lagos Region, as this zone has a wet climate that is ideal for the establishment of plantations (Bengoa, 2013; Cid Aguayo, 2015). This expansion has been particularly drastic in the southern Bíobío Region, which accounts for approximately 38% of the country's forestry plantations and 76%

of national forestry exports (Cid Aguayo, 2015; CORMA, 2012; Wolodarsky-Franke & Díaz Herrera, 2011). The plantations are dominated by two foreign tree species: pine (*Pinus radiata*, a California native) and eucalyptus (*Eucalyptus globulus* or *Eucalyptus nitens*, Australian natives), with pine accounting for 67.4% of the region's plantations and eucalyptus accounting for 31.5% (Bengoa, 2013; CORMA, 2012; Torres et al., 2015). Both pine and eucalyptus grow more rapidly than native species, but also use significantly greater volumes of water and nutrients. As a result, these trees have leached surrounding soils and created an ongoing drought problem that is particularly critical in Bíobío, where they have caused a reduction of approximately 10% in average water flows (Carruthers & Rodriguez, 2009; Cid Aguayo, 2015; Kowalczyk, 2013; Miranda, 2013; Torres et al., 2015). It is estimated that overall, the Nahuelbuta range has lost approximately 70% of its native forests, and that plantations now cover roughly 45% of its total surface area (Rutas Culinarias Nahuelbuta, 2017; Wolodarsky-Franke & Díaz Herrera, 2011).

The expansion of the forestry industry was at first thought to bring jobs and prosperity to the region as a whole, but has in general proven to be an inadequate source of work for rural peoples, resulting in high levels of migration into urban areas (Manuschevich, 2016). In fact, a study by Andersson, Lawrence, Zavaleta and Guariguata (2016) showed a significant relationship between the presence of the industry and higher poverty rates across the country between 2001-2011, with municipal poverty rates strongly positively correlated with the surface area of the plantations within their jurisdictions.

The privatization of water and hydroelectric development

In 1981, Pinochet's regime also enacted the Water Code, which created a deregulated water market by granting exclusive rights to water sources (separate from land rights) that could then be sold, rented or traded with few state restrictions. It was argued that this new free market system

would naturally lead to the efficient allocation of water usage and that as a result, water would ultimately "arrive at its most valued use" (Borzutzky & Madden, 2013, p. 255). However, far from being a neutral system, the private market for water has resulted in an uneven distribution of rights, favouring mining companies in the north and large-scale irrigators and hydroelectric companies in the south (Budds, 2004; Larrain, 2012; Prieto & Bauer, 2012; Torres et al., 2015). The initial allocation of rights was free, and while it required the technical expertise to document rates of flow, it did not demand justification for volume of water used or methods of efficient use. As a result, many of these water rights were essentially gifted to large hydropower and mining companies (Prieto & Bauer, 2012). Importantly, the Code also differentiates between 'consumptive' and 'non-consumptive' rights, with the latter granted to users who return water to its course after use. Consequently, hydroelectric companies are not considered to infringe on the rights of downstream users such as peasant farmers, even though hydroelectric development may have significant impacts on the quality and seasonal availability of water downstream (Larrain, 2012; Prieto & Bauer, 2012).

It is unsurprising, then, that only a small number of hydroelectric and mining companies are in possession of the greatest number of water rights in the country – in fact, only three hydroelectric companies own approximately 90% of non-consumptive rights. As of 2004, ENDESA (the largest hydro company operating in Chile) owned 80.4% of non-consumptive rights and as of 2012, 55% of *all* water rights (Budds, 2004; Larrain, 2012; Prieto & Bauer, 2012). Furthermore, since the enactment of the Water Code, many owners did not participate in the new market and instead speculated or hoarded their rights, meaning that many of these rights are unused by these companies yet the water sources that they pertain to remain off-limits for small producers. Despite multiple attempts to reform the Code in order to implement fees, expirations or reviews for unused rights, strong opposition from the mining and hydroelectric sectors has severely limited the implementation of these changes (Borzutzky & Madden, 2013; Budds, 2004).

1.2.2 The Mapuche and rural-based movements

The Mapuche are the largest indigenous group in Chile, with a population of approximately 1.5 million. They comprise roughly 82% of Chile's Indigenous population, and almost 10% of the country's total population (de la Maza, 2014). They are made up of a central group in addition to four distinct "territorial identities" inhabiting south-central Chile and south-west Argentina – which are all united by their common language, *Mapudungun*. The Mapuche resisted Spanish conquest, enjoying formal recognition from the Spanish Crown as an independent people with territorial autonomy south of the Bíobío River. However, during a conflict known as the "Pacification of Araucanía" (1881-1883), the Chilean state defeated the Mapuche nation as part of its territorial consolidation following independence from Spain. The surviving Mapuche were forced onto small reserves or *reducciones*, which made up only 6.4% of their previous territory (Du Monceau, 2008; Kowalczyk, 2013; Miranda, 2013; Richards, 2010). This expropriation and injustice instigated the beginnings of the Mapuche movement in southern Chile in the early 1900s (Klubock, 2011).

Throughout the past century, Mapuche movements have often been strongly allied with peasant and leftist movements in the country, particularly during uprisings against large estates in the 1920s and 1930s as well as in struggles for agrarian reform in the 1960s and early 1970s (Bengoa, 2013; Du Monceau, 2008; Klubock, 2011). After being suppressed by the dictatorship, there began to be a return of these rural-based movements across the country by the end of the 1990s, in direct response to the mainstream agri-food system as well as to proposed development projects (Carruthers & Rodriguez, 2009; Cid Aguayo & Latta, 2015; Haughney, 2007). While these struggles over the past century have often been a "common political and historical project" for both peasants and the Mapuche (Klubock, 2011, p.127), the goals of these two groups have not always been aligned, and this has at times resulted in the marginalization of the Mapuche within these movements (Richards, 2013). Furthermore, Mapuche communities have often been disproportionately affected by the

development of the forestry industry as well as by several major hydroelectric projects implemented in their communities since the 1980s (in the Bíobío Region in particular), which have flooded their land and displaced their communities (Aylwin, 2008; Haughney, 2012; Johnston & Garcia-Downing, 2004; Susskind, Kausel, Aylwin, & Fierman, 2014). This cumulative loss of their traditional lands has resulted in a high level of migration to urban areas, an overall decline in their native language and extremely high poverty rates in Mapuche communities (Aylwin, 2008; Clark, 2011; Flotts de los Hoyos & Antunez Diaz, 2012).

The dispossession and destruction of Mapuche territory continues to this day, facilitated by a lack of free, prior and informed consent as well as by inadequate and non-participatory environmental impact assessment processes. Mapuche protests against these projects have been met with police brutality and harsh criminalization, facilitated by an anti-terrorism law that remains from the dictatorship and legitimized by a discriminatory mainstream media discourse (Aylwin, 2008; Haughney, 2012; Johnston & Garcia-Downing, 2004; Latta, 2007; Richards, 2010; Schlosberg & Carruthers, 2010; Susskind et al., 2014). As there is still no constitutional recognition of the Mapuche or their rights as a people, Mapuche communities across the country continue to struggle for their rights to land and resources as well as for autonomy within their traditional territories (Aylwin, 2008; Haughney, 2012; Kowalczyk, 2013; Manuschevich, 2016). It is therefore important to not only consider the Mapuche people as peasants but to also appreciate their unique struggle with the state as well as their distinct political goals – particularly, for self-determination and recognition as a nation (Du Monceau, 2008; Richards, 2013).

1.2.3 The Nahuelbuta territory and the Nodo tourism project

The research study took place in Nahuelbuta, a sub-region spanning the western portion of the Bíobío and Araucanía regions (Figure 3). Nahuelbuta is a mountain range territory that lies between

the Pacific Ocean and the Andes, with a unique climate that is home to dense native forests and a wide diversity of endemic flora and fauna. However, as previously discussed, its landscape has been drastically transformed in recent years due to the expansion of the forestry industry, which has left its native forests highly fragmented (Rutas Culinarias Nahuelbuta, 2017; Wolodarsky-Franke & Díaz Herrera, 2011).

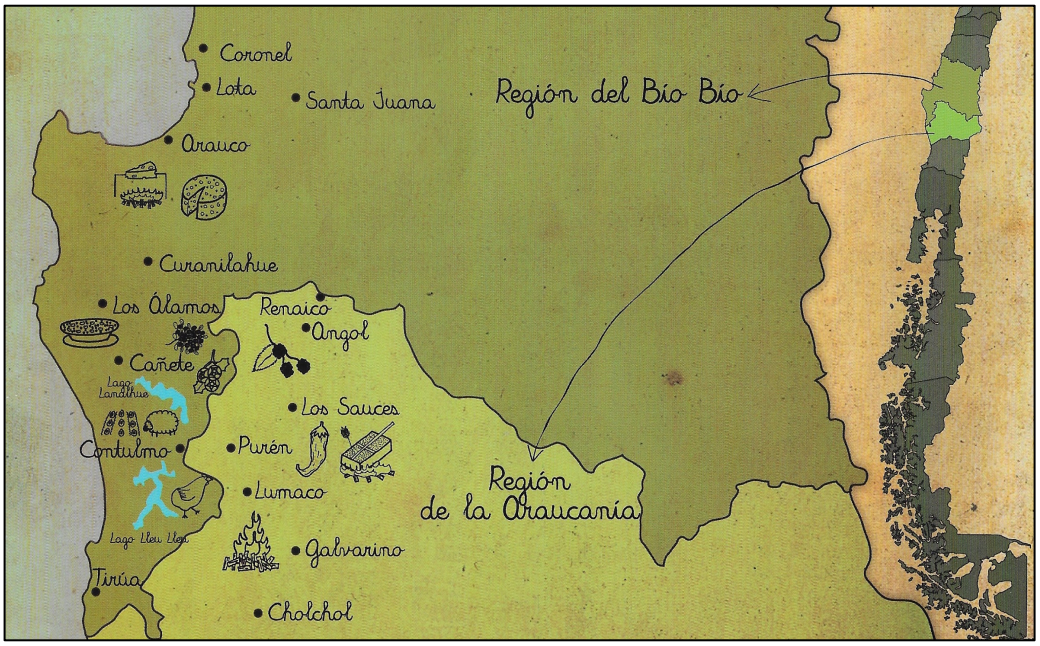

Figure 3. Map of Nahuelbuta (Source: Rutas Culinarias Nahuelbuta, 2017)

The study focused on the outcomes of the *Nahuelbuta Communitarian Culinary Tourism Node* (herein referred to solely as the 'Nodo' project), an initiative that responded to current threats to the environments and communities of the territory, as well as to the rich cultural and natural assets present in this sub-region. The Nodo project was a regional initiative that ran from 2015 to 2016, and was coordinated by the University of Concepción (located in the Bíobío region) in collaboration with various communities throughout the Nahuelbuta territory. Several municipalities, government agencies, travel agencies and non-profit organizations were also key partners. The project's main purpose was to support peasant and Mapuche producers in the development of their small-scale tourism ventures, which are based on the preservation and revitalization of their cultural heritage

through the sharing of their gastronomic traditions (these aspects will be discussed in greater detail in Chapter 3). To accomplish this, the project linked 31 tourism entrepreneurs into a common network, and created six touristic routes or 'nodes' in the following six communes or localities that were visited during the research study (Table 1):

Table 1. Outline of the six central culinary routes created by the Nodo project

Municipality/ies or Commune/s	**Province**	**Region**	**Culinary Route**
Angol	Malleco	Araucanía	Based on the harvesting of the *avellana* (Chilean hazelnut) in Vegas Blancas, a community located on the outskirts of Nahuelbuta National Park.
Purén / Contulmo	Malleco	Araucanía	Highlighting the production of Chile's endemic white strawberry in the regions surrounding the two municipalities.
Contulmo	Arauco	Bíobío	Centred on the traditional Mapuche gastronomy of the Elicura Valley.
Llico	Arauco	Bíobío	Based on the collection of seafood products in the coastal town.
Arauco	Arauco	Bíobío	Demonstrating the production of raw milk cheese in the Gulf of Arauco wetland.
Los Álamos	Arauco	Bíobío	Focused on the harvest of nalca (Chilean rhubarb) surrounding the municipality.

Note: Adapted from the Nodo project website (Rutas Culinarias Nahuelbuta, 2017)

1.3 Theoretical Frameworks: A Politicized and Multi-Scalar Approach to Resilience

1.3.1 Community resilience (CR) theory

The concept of resilience originated in the fields of psychology and ecology approximately 40 years ago, defined by early theorists (e.g. Holling, 1973) as the ability of a system to handle change or disturbance while still maintaining its 'identity' – more specifically, the structure, function and

feedbacks of and among variables (Anderies, Folke, Walker, & Ostrom, 2013; Berkes & Ross, 2013; Cumming et al., 2005; Folke, 2006; Walker & Salt, 2012). The concept of resilience was traditionally used to describe ecosystem dynamics, but has since evolved to encompass broader socio-ecological systems. When applied to a community in particular, resilience has been defined as the capacity to cope with and recover from stresses and disturbances, maintaining community cohesion and function in the face of adversity (Cheshire, Esparcia, & Shucksmith, 2015; Hegney et al., 2008; Magis, 2010; Street, 2008; Yamamoto & Yamamoto, 2013). Berkes and Ross (2013) similarly describe that resilient communities are those that have shared purpose among members, and that are able to unite in order to achieve shared goals. Across the CR literature, studies have largely agreed upon certain key indicators of resilience, understood as fundamental traits, resources and capabilities that communities must access or develop and subsequently employ in order to build their resilience (Table 2). What is key here is how the development and use of these resources and capacities enables communities to deal with change and uncertainty, and how the importance of these traits is context-dependent, as will be explored further in Section 1.5 (Bebbington, 1999; Kulig, Edge, Joyce, & Deer, 2008; Magis, 2010; Ungar, 2003; Wilson, 2012).

Typically, community resilience has been seen as the ability of a community to 'bounce back' from negative experiences, or to withstand change or disturbance while still maintaining the same function and/or relationships between its variables. In this sense, resilience has often been described as the ability for a community to return to some 'pre-disaster' equilibrium or stable state (Cumming et al., 2005; Folke, 2006; Hegney et al., 2008; Johnson, Henry, & Thompson, 2014; Street, 2008). However, several CR theorists have recently challenged this notion, arguing that resilience is not only the capacity to persist or continue community function in the face of difficulty, but can also be the ability to *gain* strength through struggle, or to reach new community equilibriums rather than simply return to previous ones. They define this aspect of resilience as 'bouncing forward' rather

Table 2. Common key indicators of community resilience

Indicator	Description	Examples in the literature
Adaptive capacity	The ability to respond effectively to adversity; flexibility in adaptation response and mechanisms for learning	Berkes & Ross, 2013; Carpenter et al., 2001; Folke et al., 2002; Folke et al., 2005; Magis, 2010; Perz et al., 2012; Quinlan et al., 2016; Scott, 2013
Social capital	Robust social networks, norms and relationships, built on trust and encouraging community cohesion and collective action	Barrett et al., 2005; Bebbington, 1999; Cheshire et al., 2015; Magis, 2010; Street, 2008
Other 'capitals'	Most notably: financial capital, natural capital (access to and ability to use natural resources), human capital (knowledge and ability) and cultural capital (knowledge of the world, and a shared sense of purpose and identity), all of which can have synergistic effects	Barrett et al., 2005; Bebbington, 1999; Flotts de los Hoyos & Antunez Diaz, 2012; Magis, 2010; Vergara & Barton, 2013; Wilson, 2012; Yamamoto & Yamamoto, 2013
Self-organizing capacity	Organizational capabilities through an adequate number of traditional, supportive institutions and participatory/ democratic governance structures	Anderies et al., 2013; Carpenter et al., 2001; Flotts de los Hoyos & Antunez Diaz, 2012; Street, 2008; Yamamoto & Yamamoto, 2013
Presence of external connections	The number/strength of connections to external agents that assist in building these capacities, particularly necessary for communities low in resources	Barrett et al., 2005; Biersack, 2006; Folke et al., 2005; Janssen & Anderies, 2013; Magis, 2010; Yamamoto & Yamamoto, 2013
Diversification	Varied livelihoods and community economies that provide diverse sources of income and minimize vulnerability to disturbance – particularly market shocks	Carpenter et al., 2001; Johnson et al., 2014; Marschke & Berkes, 2006; Perz et al., 2012
Leadership	The presence of community leaders who access, develop and engage resources, and who also form connections with external actors and networks	Barrett et al., 2005; Berkes & Ross, 2013; Hegney et al., 2008; Magis, 2010; Moore & Westley, 2011
Learning	Ability to learn from past experience in order to inform planning	Berkes & Ross, 2013; Carpenter et al., 2001; Ruiz-Ballesteros, 2011; Street, 2008; Yamamoto & Yamamoto, 2013
Optimism	Collective and individual outlook, sense of purpose and optimism about the future; motivation for action	Johnson et al., 2014; Street, 2008

than ‘back’ in that it entails more profound system changes and in some cases can involve complete system transformation (Brown, 2014; Cheshire et al., 2015; Kulig et al., 2008; Scott, 2013). This means that resilience is not in itself an outcome or ‘desired state’, but rather an ongoing process of building the resources and capabilities required to not only endure but to also thrive in the face of disturbances and difficulties (Berkes & Ross, 2013; Brown, 2014; Kulig et al., 2008; Wilson, 2012).

1.3.2 ‘Politicizing’ CR theory: A political ecology lens

Importantly, community resilience concepts go beyond traditional notions of ecological resilience in that they recognize the powerful role that human agency plays in a system’s – more specifically, a community’s – response to change (Berkes & Ross, 2013; Cheshire et al., 2015; Davidson, 2010; Dwiartama & Rosin, 2014; Kulig et al., 2008). However, in focusing on rural agency, many CR studies have arguably placed the onus of building resilience on rural communities alone, overlooking broader political forces, structural inequalities and power dynamics, and neglecting to acknowledge their importance in influencing resilience at the local level. Furthermore, while there has been much analysis on community response to episodic natural catastrophes, there has arguably been much less research on how communities respond to more gradual, less perceptible political, social and economic changes (Cheshire et al., 2015; Wilson, 2012; Yamamoto & Yamamoto, 2013). While seeking to identify modes of empowerment that allow communities to respond and adapt to hardship, these approaches simultaneously absolve the state and other external actors of responsibility for shaping rural resilience and vulnerability (Anderies et al., 2013; Berkes & Ross, 2013; Brown, 2014; Cheshire et al., 2015; Cote & Nightingale, 2012; Lindroth & Sinevaara-Niskanen, 2013; MacKinnon & Derickson, 2013; Wilson, 2012).

Responding to these shortcomings, theorists point out that state and economic power structures significantly influence local access to resources and opportunities as well as the rights and

capabilities of rural individuals, either impacting their ability to respond to adversity, or causing adversity themselves (Bebbington, 1999; Davidson, 2010; Hatt, 2013; MacKinnon & Derickson, 2013; Schlosberg & Carruthers, 2010). Along this line of thought, this thesis adopts a political ecology approach in that it seeks to address the need for a 'politicized' concept of resilience, simultaneously investigating both rural resilience responses and efforts as well as how Chile's underlying political and economic structures influence the extent and impact of this agency (Berkes & Ross, 2013; Biersack, 2006; Rangan & Kull, 2009; Schlosberg & Carruthers, 2010).

'Politicized' food system resilience

Within the community resilience literature, there is a large body of research focused on food system resilience, as many theorists have recognized the value of using resilience frameworks and thinking to assess and inform the management of food systems worldwide (Dwiartama & Rosin, 2014; Eakin & Wehbe, 2009; Hodbod & Eakin, 2015; Quinlan, Berbes-Blazquez, Haider, & Peterson, 2016; Tendall et al., 2015). Tendall et al. (2015) define food system resilience as: "the capacity over time of a food system and its units at multiple levels, to provide sufficient, appropriate and accessible food to all, in the face of various and even unforeseen disturbances." (p.19) Importantly, their conceptualization of food systems does not only involve ecological factors but incorporates all dimensions, recognizing economic, social and political aspects – or the "multi-functionality" of food systems (Hodbod & Eakin, 2015; Tendall et al., 2015). They hence also acknowledge that studies of food system resilience must also be 'politicized', calling attention to the top-down causes of vulnerabilities and resilience challenges seen in subsistence-based communities today – particularly in the developing world – which are the root causes of hunger and food insecurity (Holt Giménez & Shattuck, 2011; Tendall et al., 2015; Wilson, 2012). As a result, this field of knowledge seeks to inform the management of complex, multi-faceted food systems in

response to and preparation for disturbances that threaten food security, for the purpose of building more sustainable and equitable food systems (Hodbod & Eakin, 2015; Tendall et al., 2015).

Notably, the difference between 'bouncing-back' and 'bouncing-forward' for communities has also been highlighted within this literature. While local initiatives for community empowerment or resilience seek to achieve food security *within* the global corporate food regime, some theorists argue for the need for communities to go beyond this and to directly confront the regime itself (Holt Giménez & Shattuck, 2011; Sage, 2014). In the case of grassroots food sovereignty movements, for example, communities around the world have fought for the re-distribution of resources (i.e. land, water and seeds) and for the right to define and control their own food systems (Holt Giménez & Shattuck, 2011; Patel, 2009). This form of resilience-building importantly involves efforts seeking to dismantle the current agri-food regime and for a total redistribution of wealth and power, striving for structural transformation and for a 'regime shift' – paving the way for alternative food regimes to emerge (Hodbod & Eakin, 2015; Holt Giménez & Shattuck, 2011; Sage, 2014).

1.3.3 Conceptual shift I: From a community-level to individual-level analysis

While the objective of 'politicizing' community resilience was well formed before field research was carried out, the scope of the thesis changed significantly upon the initiation of data collection, moving from a community-centred towards an individual- or household-centred analytical approach. One of the main reasons for this shift was that only approximately 1-5 members of each of the six communities were interviewed, as just a handful of community members were a part of the communitarian tourism project through which participants were sampled (see Methods section, below). As a result, there was not a significant enough sample size to provide a sufficient amount of data to make more general findings about each community in question. Additionally, the majority of the data collected was through one-on-one interviews and observations made in the household

sphere, resulting in data pertaining to individual producers and their personal experiences of adversity and resilience rather than information representative of their respective communities. More importantly, however, this analysis adopts an individual-centred approach because of the importance of individual agency in the enhancement of community resilience, which became increasingly apparent throughout the research process. As will be considered throughout the thesis, communities are not monolithic entities but heterogeneous ones, comprised of individuals with different motivations, capacities and goals, who therefore contribute to community resilience in different ways and to varying degrees (Eakin & Wehbe, 2009; Leslie & McCabe, 2013; Wilson, 2012).

1.3.4 Conceptual shift II: A networked approach to resilience

With individual agency at the centre of analysis, it then became apparent that the resilience strategies adopted by rural individuals and households cannot be viewed solely at the community level, as these actors belong to various groups and networks that often extend beyond the boundaries of their geographic communities but that nevertheless have implications for the resilience of these communities. As a result, while still taking into account actions at the community level, a network- rather than community-based approach would incorporate the different types of formal and informal alliances and networks that participants engage in both within and outside of their communities in order to achieve their goals. In Chapter 3 in particular, this thesis attempts to investigate the multi-scalar strategies of rural individuals, exploring how they translate into the building of resilience within individuals' communities and also how they can contribute more broadly to the resilience of all peasant and Indigenous communities in the territory.

These concepts are supported by various theorists in the field of political ecology, who argue that studies must move beyond notions of scales as static, isolated spatial 'containers' – for example, in viewing the local as distinct from the national or global. Rather, they contend that scales must be

understood as overlapping and relational, inextricable from each other and shaped by their interactions (Biersack, 2006; Born & Purcell, 2006; Bulkeley, 2005; Cid Aguayo, 2008; Rangan & Kull, 2009; Tsing, 2005). 'Politicized' CR analyses such as this one must therefore examine how processes at different levels co-influence and co-produce one another, focusing on these interactions rather than viewing 'community' as an isolated space where rural actors have absolute control (Amin, 2004). Several food system resilience theorists have similarly stated the need for studies to examine the cross-scale dynamics functioning at and between all levels of food systems (Hodbod & Eakin, 2015; Quinlan et al., 2016; Tendall et al., 2015). As a result, this thesis accounts for both the underlying political factors that shape resilience in rural communities, as well as the ways in which rural actors in turn influence processes at higher scales. To do this, it will investigate how these individuals exert agency within overlapping economic and political networks, moving across spaces and scales to form alliances and connections with actors outside of their communities for the purpose of building resilience (Bebbington, 1999; Challies & Murray, 2011; Dwiartama & Rosin, 2014; Moore & Westley, 2011; Rangan & Kull, 2009).

1.4 Research Questions

Building upon these conceptual frameworks, the research was guided by three main research questions, with the first providing a basis for the second and third:

1) What is the nature of the relationships between rural food producers and external actors (specifically the state, and corporations active in the region), and what challenges do producers face as a result of these interactions?
2) How do rural producers build the resilience of their communities in the face of these challenges?
3) In what ways do these producers move beyond the confines of their households and communities in order to confront the political and economic foundations of rural vulnerability?

1.5 Methodology

In order to answer these research questions, I visited six communities across the Nahuelbuta territory. Over a period of approximately two months (July–August 2016), 24 participants in total were interviewed formally, and various others were involved in the study through discussion and observation. Of those interviewed, 17 were 'community' participants (referenced throughout the thesis as 'CP' and numbered), ten being peasants and seven being of Mapuche origin.[2,3] The remaining seven formal interviews conducted were with 'expert' participants (designated by 'EP' and also numbered), all having some relationship with and/or knowledge of the communities in question. Two of these were research collaborators and academics at the University of Concepción. Two other EPs were from regional and national government tourism agencies, respectively, and three were members of prominent NGOs involved in tourism in Chile and/or political movements centred on food sovereignty. The 'CP' and 'EP' designations have been used in reference to participants throughout the thesis in order to maintain their anonymity.

1.5.1 Sampling process

Out of the 17 CPs involved, 15 of these were sampled through the Nodo tourism project. In turn, seven of those were agricultural producers, labeled as 'entrepreneurs', while the other eight were tourism 'managers' of their respective communities' culinary routes, according to the project's designations (Appendix A). Through these principal contacts, I became connected to two other formal participants and also engaged in informal discussions with numerous others during my visits to the communities. The two EPs who acted as research collaborators from the University were

[2] See Appendix A for summary of CP information.

[3] It is important to note that the majority of CPs (13 out of 17) were female (see Appendix A). Indeed, in the case of both the Nodo tourism project as well as the seed networks that will be explored in Chapter 3, women play a central role in these efforts – largely due to their predominance in household food production as well as in alternative agricultural and economic activities in rural Chile (Cid Aguayo & Latta, 2015; Clark, 2011). However, while the gender dimension of these strategies is referred to throughout, it will not be studied in great detail, for a lack of space required to properly explore these themes and also so as to not distract from the main arguments of the thesis.

spearheading the Nodo project at the time, and both assisted in the selection of participating communities and CPs as well as in the recruitment of the remaining five EPs.

1.5.2 Research methods

Throughout the research period, data was collected primarily through formal semi-structured interviews with both CPs and EPs. The majority of CPs were visited and interviewed in their homes, and I stayed with one participant from each of the six communities for a period of 1-3 days on average. The data gathered from formal interviews was supplemented with information gleaned through general observations and informal discussions, often through go-along tours of participants' households and communities during visits. I also had the opportunity to attend and participate in meetings and events held by the Nodo project, as well as in workshops and public forums surrounding relevant topics and issues that were held in several of the communities involved.

Formal interviews were audio recorded with the consent of each participant,[4] and these audio files were directly transcribed before being translated into English. Consent was also requested for direct quotations, which have been translated into English throughout the thesis unless otherwise noted.[5] The data gathered from all other observations and discussions was recorded solely through hand-written field notes and at times photos taken with participant consent (Appendix B). After all interview and field notes were fully transcribed and translated (when applicable), I then took notes within each piece of data, summarizing important findings and manually assigning thematic codes to these summaries, building and revising the coding framework as I went along. As a result, findings are based on the most common and salient themes that emerged from the transcriptions and field notes.

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[4] See Appendix B for general participant consent form.

[5] See Appendix C for original quotations in Spanish (all quotations translated from Spanish have been numbered).

Interview themes

Although common indicators of community resilience have been identified across the literature (see Table 2), some theorists have demonstrated that their importance is context-dependent and can vary quite significantly between communities. Furthermore, many also challenge CR studies that have attempted to quantify resilience using these indicators, on the basis that their understanding of resilience is too narrow and that this approach may prevent more profound understandings of complex system dynamics. As a result, they contend that resilience measures should not be too concretely defined prior to research, but that they should be defined by individuals and communities themselves – based on their own priorities and needs – rather than pre-determined and imposed (Carpenter et al., 2001; Cumming et al., 2005; Davidson, 2010; Kulig et al., 2008; MacKinnon & Derickson, 2013; Quinlan et al., 2016; Ungar, 2003). In accordance with these cautions, I refrained from using or explaining the term 'resilience' to participants during interviews, instead attempting to not only understand *how* resilience is enabled or constrained within these six communities but to also determine *what* resilience means to each individual within their unique community context. As a result, findings are based on the economic, environmental, social and cultural resilience dimensions that emerged as most prominent during discussions with participants.

Originally, my intention was to use *bienestar* (English: "well-being") as a surrogate of resilience, following an example set by Marschke and Berkes in their 2006 study. In the majority of interviews with CPs, participants were therefore asked directly what they believed to be crucial to both their individual and collective well-being. Furthermore, many of the participants introduced concepts such as *buen vivir* ("living well") and sustainability during interviews, from which some connections to resilience can be drawn. However, none of these concepts can be directly interchanged with resilience. For example, sustainability – a topic that was especially salient during discussions of environmental themes – has been defined as the capacity of a system to maintain long-

term function, whereas resilience denotes the capacity of a system to maintain long-term function *despite disturbances* (Tendall et al., 2015). While several theorists contend that building resilience can also increase system sustainability, and vice-versa (as will be explored in Section 2.2), resilience is distinct from sustainability in that it involves planning for and responding to change or disturbance, and is centred on reducing vulnerability to these shocks (Eakin & Wehbe, 2009; Magis, 2010; Quinlan et al., 2016; Ruiz-Ballesteros, 2011; Tendall et al., 2015). Consequently, these related yet distinguishable concepts (sustainability; well-being) were relevant to the resilience analysis insofar as they were discussed in relation to change.

While I did not create or employ any existing set of resilience indicators, my interview guide was based on six general topics, grounded largely in the theoretical frameworks developed beforehand:

1. Productive activities, and any perceptions of change at the household or community levels;
2. Environmental aspects of food systems (i.e. resources), and any perceived environmental changes;
3. Community aspects (i.e. community-level activities, community cohesion), and any perceived changes in this regard;
4. Involvement in tourism, and if/how it pertains to any perceived changes previously discussed;
5. Relationship with the state/state agencies; and
6. Political activities, and reasons for engaging in political activity, if relevant.[6]

Within these central topics emerged various focal points related to important changes or disturbances raised by participants. These focal points then informed the remainder of each interview, as topics were not only discussed in and of themselves but were then also discussed in relation to the most significant changes and stresses that were observed by the participant in question. In sum, the interview process was centred on understanding participants' own perceptions and experiences of

[6] See Appendix D for detailed interview guide(s).

change and adversity, and building on this, also sought to understand their activities and behaviours in relation to these changes.

1.5.3 Researcher positionality: Challenges and potential limitations

I came to this research from a deep interest in investigating Indigenous rights and experiences in the Global South, and for better understanding these themes in Latin America in particular. While I have some previous research experience in the continent, this was my first visit to Chile. As a result, it is important to point out that my lack of firsthand experience in the research context before the study makes me an outsider. This limitation was somewhat mitigated during a preliminary visit to the tourism routes in Nahuelbuta in May of 2016 as part of a Wilfrid Laurier University field course, as this allowed me to become more familiarized with the territory and to also begin to build relationships with individuals who would potentially be invited later on to participate in the study.

It is also important to acknowledge the potential impact of my presence on the views shared by the participants, particularly during discussions of sensitive political and economic issues. I recognize that my position as a Canadian student from a middle-class background may have influenced or restricted the information shared with me, or similarly affected my interpretation of the data collected. Furthermore, as a non-Mapuche/non-peasant individual, or *winka* ("outsider" or "foreigner" in Mapudungun), the extent of my understanding of the Mapuche culture and of both the Mapuche and peasant experiences is inevitably limited.

Despite such possible influences or limitations resulting from my subject position, participants generally seemed eager to share their experiences and perspectives. The fact that I was associated with the organizers of the Nodo project was the most important trust-building factor in this regard. Furthermore, it is important to note that due to their involvement in tourism, participating individuals were largely those accustomed to welcoming foreigners into their communities and their homes. I

also generally felt that my position as a young woman gave me a certain advantage during discussions with participants – especially with female participants, who comprised the vast majority. I felt that it was perhaps easier for me to build rapport with them, as I could be perceived as less threatening.

Language barrier

The greatest challenge encountered throughout the research process was the language barrier present during the majority of interviews and discussions, as I was an intermediate Spanish speaker at the time. This may have resulted in some information being misinterpreted. To address this, I received help from a Chilean research assistant (a student collaborator on the Nodo project), who accompanied me to several of the communities and provided direct translations during many of the interviews and discussions carried out. Furthermore, after the conclusion of the research period, the audio recordings were directly transcribed by two undergraduate assistants fluent in Spanish, enabling me to ensure the validity of the data collected.

1.6 Thesis Outline

Following the introduction, this thesis is divided into two central chapters. The first chapter (Chapter Two) serves as an examination of the complex relationships between rural producers and state agencies as well as external economic actors, with a focus on the top-down impacts of state agricultural policy and funding programs, as well as the forestry industry in the region. Overall, it views the state as a hegemonic actor in itself and also as a foundational force, creating the context in which economic actors – such as forestry companies – exist and behave. The focus of the chapter will be on the strategies adopted by rural producers at the household and community levels for the purpose of mitigating economic, environmental, social and cultural risks and vulnerabilities, while

also assessing the limitations of these small-scale strategies for the development of resilience within the existing mainstream political and economic system.

The second chapter (Chapter Three) will explore how these producers seek to overcome the limitations of their household- and community-based strategies, moving beyond the boundaries of their communities and across scales in order to enlist the help of external actors and resources for the building of resilience. Firstly, the chapter will consider their involvement in the Nodo tourism project, examining how they have used the project and its associated network to sustain their culinary heritage as well as to shape their own development pathways independent from and alternative to the mainstream economy. It will then explore their employment of more traditional network strategies – specifically, inter-community economic and political networks based on local values and institutions, which enable them to collectively defend their products and territories. Finally, the chapter concludes with an analysis of the multi-scalar political alliances and networks between rural producers as well as with external organizations, often providing the capacity and legitimacy that they need to project their voices into the political sphere and to thus confront the underlying political causes of vulnerability in their communities.

2.0 State Policy and Rural Agency: Individual-, Household- and Community-Level Strategies for Resilience

Since the military dictatorship of 1973-1990 and the neoliberal development trajectory that it instigated, peasant and Indigenous communities throughout Chile have become more vulnerable to various threats to the resilience of their communities and food systems. In the Nahuelbuta mountain range territory, food producers and the resources that they rely on have most notably been negatively impacted by the effects of state policy and programming on their food production, as well as by the establishment of large-scale forestry plantations that have greatly contributed to the worsening problem of drought in the region. These top-down impacts have eroded rural food sovereignty, causing environmental problems and limiting local access to resources that have been historically important for their livelihoods, while simultaneously creating new dependencies and vulnerabilities for producers as their food systems are increasingly driven towards market-oriented production (Bengoa, 2013; Cid Aguayo, 2014; Cid Aguayo & Latta, 2015; Clark, 2011; CNCA, 2014; Vergara & Barton, 2013).[7] The agency of rural individuals cannot be overlooked, however, and the peasant and Indigenous food producers in Nahuelbuta often attempt to mitigate these vulnerabilities (whether by reinforcing behaviours they have always carried out, or by acting in new ways as a direct response to the changing pressures they face). Nevertheless, as this chapter seeks to demonstrate, their efforts at the individual, household, and even community level are often too modest in scale and impact to address the underlying political causes of the vulnerabilities they experience and to significantly advance the resilience of their livelihoods and communities.

The first section of this chapter offers an exploration of the Chilean government's policies towards small and medium-scale agriculture, and the complex relationship small producers have with state programs that are meant to improve agricultural productivity. The second section will examine

[7] These effects, described across the academic literature as occurring in the Bíobío and Araucanía regions, are therefore also symptomatic of the Nahuelbuta sub-region.

the activities and impacts of the forestry industry in Nahuelbuta, combined with the effects of the state's water privatization laws. We will see here that there are various ways in which producers attempt to safeguard their productive practices, livelihoods and territories within the context of water scarcity and diminishing access to land and water. Both of these sections also seek to demonstrate the inherent trade-offs and limitations associated with individual resilience behaviours within the current political and economic climate of the country. Ultimately, their adoption in rural communities is not widespread, reducing the scale of their positive impacts on community resilience. The last part of the chapter will take this analysis one step further, examining how communities seek to overcome the limitations of individual resilience behaviours by coming together to build resilience through self-organization and community-wide action. If these collective strategies show more promise, they are nevertheless constrained by their inability to reach the political sphere in order to change the underlying policies that have put existing ways of life at risk. Overall, this chapter shows that these individual- and community-level resilience strategies demonstrate rural agency exerted *within the confines of its existing context*, and are thus often insufficient in terms of effectively challenging the political and economic basis for vulnerability and generating meaningful resilience benefits.

2.1 State Agricultural Policy and Programming: Individual Strategies for Resilience

The relationship between rural food producers and the state is complex and often contradictory, as state agencies simultaneously act as a source of economic assistance and legitimacy for producers as well as a regulatory and standardizing influence on rural food practices and systems. Aside from generating dependencies on state resources, this assistance is typically accompanied by conditions that push recipients towards conventional market production – often at the expense of exacerbating environmental or cultural vulnerabilities and threatening local food sovereignty. In response to this, many rural producers try to take advantage of state support while still maintaining autonomy over

their food systems, rejecting or more subtly navigating imposed state regulations in order to maintain their traditional productive practices – to find a 'space of truce' between the mainstream economy and their own ideals of development (Blaser, 2004). As will be discussed, however, these resilience strategies often come at a cost for producers, as they often must carry out these activities clandestinely in order to avoid penalization by the state. Indeed, various resilience theorists argue that building resilience in one area can create vulnerabilities in others, and that this makes the task of developing system resilience largely a matter of managing different vulnerabilities (Carpenter et al., 2001; Hodbod & Eakin, 2015; Janssen & Anderies, 2013; Leslie & McCabe, 2013; Wilson, 2013). Likewise, rural food producers in Nahuelbuta who choose to continue their traditional productive practices covertly – whether by rejecting state stipulations or engaging in informal or even prohibited economic activity – demonstrate the limitations of these strategies. Given the dominant agri-food system and related state efforts to regulate and standardize rural food production, individual producers must deal with these inevitable trade-offs and therefore have a limited capacity to effectively build the resilience of their livelihoods and communities.

2.1.1 State support and regulation: INDAP

Perhaps the greatest amount of interaction between the state and rural agricultural producers can be seen in the provision of financing and programming through the National Institute for Agricultural Development (INDAP). INDAP is the development arm of the Ministry of Agriculture, created in 1962 for the purpose of providing support to small farmers in order to boost market-oriented productivity (Challies & Murray, 2011; Clark, 2011; INDAP, 2016). Via projects such as its Local Development Program (PRODESAL) and through partnerships with municipalities and private actors, INDAP provides financial and/or technical assistance to approximately 170,000 small farmers across the country (Bengoa, 2013; INDAP, 2016).

The vast majority of research participants have received financial support from INDAP, either in the form of loans or in smaller credits through PRODESAL. Participants use these funds for various purposes, such as the purchase of equipment, infrastructure, raw materials, and other provisions for growing crops or raising livestock. The agency also provides one-on-one technical assistance to supplement these funds and to assist producers in maximizing their productivity, as well as courses and workshops that offer technical training for several productive activities (Challies & Murray, 2011). Furthermore, the financial and technical assistance provided by INDAP not only supports producers' existing agricultural activities, but also offers opportunities for them to explore new ones. For example, one woman that I visited near Llico recently began beekeeping, as a new INDAP program provided the equipment and technical training that would enable her to do so, despite her lack of previous experience. Finally, INDAP provides an important connection to the market for many participants, through invitations to sell their products in artisan street fairs that are financed by the agency. These fairs can be very important for small producers, as they are a chance for them to sell their products directly to a greater number of consumers and to reach markets beyond their geographic communities, sometimes as far away as Concepción or Santiago (Challies & Murray, 2011; Clark, 2011; INDAP, 2016). Indeed, various participants expressed that it is more lucrative for them to sell their products during fairs than through everyday means, and that they therefore frequently participate in fairs held throughout Nahuelbuta that are organized by the municipalities and often sponsored by PRODESAL. These events typically also celebrate and promote local products and traditions, such as the annual White Strawberry Festival of Contulmo or various peasant fairs held yearly across the region.

While the financial, technical and market support provided by INDAP and its programs in some ways sustains traditional methods of food production (as through certain fairs and training opportunities), at its core the efforts of the agency are geared towards diverting rural agriculture from

subsistence to market-oriented production. This goal is met primarily through its PRODESAL program, which provides financial support to small producers that is accompanied by compulsory technological 'packages' aimed at maximizing agricultural productivity. These packages are comprised of non-native or transgenic seeds and chemical inputs that are standardized across the country and that regularly change with current trends, which can be highly destabilizing for producers. Furthermore, these inputs as well as the technical knowledge provided by the agency are largely imposed upon producers, giving them very little control over their food production (Cid Aguayo & Latta, 2015; Clark, 2011; Soto Soto et al., 2014). This is indeed the most common criticism of the agency expressed by research participants, as many argue that the terms of their contracts with the agency are too limiting for them, allowing them little to no decision-making space regarding which crops to grow as well as what inputs and methods to apply. While the crop varieties provided by PRODESAL produce larger yields overall, many producers argue that these yields are generally of poorer quality compared to native varieties. Furthermore, because these are crops that they are not accustomed to growing, they are forced to rely on the agency's technical assistance rather than on their own traditional agricultural knowledge in order to meet the demands of the market (Challies & Murray, 2011).

Participant CP15 expressed her frustration that INDAP crops are replacing native ones in her community, and that PRODESAL culinary workshops tend to teach the preparation of dishes using these foreign or transgenic crops rather than native ones:

> They did not teach me how to prepare the native potato. They did not teach us how to prepare the quinoa. We were taught to prepare something else… For many years the people maintained the native potato… [then] came the PRODESAL people and they said: 'this potato brings diseases to the crops. Throw it out.' And so the seed of the territory was displaced. People were losing their cultural identity and their food heritage identity through that…. because people from INDAP tell

> them that 'this potato is contaminated' or that 'this quinoa, we did not give it to you – where did you get it?' [1]

Consequently, she claims that many people in her community do not know how to use local products and that many Mapuche culinary traditions are being lost as a result.

In response to the limitations of these programs, many producers outwardly reject the stipulations attached to their INDAP contracts. For example, participant CP9 receives INDAP funding but does not use the pesticides given to her, as she would rather manually manage her plants and deal with the losses associated with pests than sacrifice the health of her food in order to maximize her yield. She explained:

> PRODESAL, they told me to 'put this thing, to kill this bug. Put this on.' And I do not. No, I want natural, no more. There are plants that die on me, but no way…. everyone says 'no, you have to earn so much money'... but I see that what I am eating is healthy, I produce it, and if I can sell it I know what I am selling…. I try to keep it always organic, no chemicals. [2]

Similarly, participant CP8 grows potatoes and receives chemical fertilizers as part of her INDAP package, but has reduced her usage of them because she claims that they make her crop less flavourful. However, in neglecting to meet the terms of their contracts, these producers are risking future funding, as their non-compliance may affect the amount of credit that they are eligible to receive (Clark, 2011). Therefore, out of a need to maximize productivity and to secure future funding, many small growers – especially poorer ones – continue to use the packages despite their negative ramifications.

Between growers who employ INDAP packages and others who reject them entirely are various producers who navigate the risks of losing this financial support, accepting state funding and engaging in market-oriented production without entirely compromising the use of their traditional products and the maintenance of their customary agricultural practices. More specifically, some

INDAP users have chosen to diversify their crop varieties, growing both traditional as well as INDAP species. For example, a wine producer whom I visited in Chile's Central Valley discussed how she is obligated to grow foreign grape varieties as a condition for her acceptance of INDAP support, even though they do not grow particularly well in the local climate. To navigate this, she chooses to grow both the foreign and the native 'country grape' variety (as the latter has longer roots and is better suited to the water-scarce conditions of the region), in order to be eligible for state support while simultaneously mitigating the risk of foreign grape failure. Similarly, participant CP8 is given newer potato varieties from INDAP to grow, as they produce a greater yield, but she feels these varieties are of lesser quality than native species. Therefore, she and her family choose to grow both the newer varieties as well as the varieties that they have traditionally grown, using the majority of the former for commercial sale and the latter for household consumption.

These examples show that despite INDAP's efforts to direct rural food producers towards the use of foreign crop species and external inputs, many producers in Nahuelbuta attempt to 'steer' public provisioning to support their own traditional products and forms of production instead (Cheshire et al., 2015). Likewise, a study by Clark (2011) found that the majority of INDAP funds granted to rural producers in the country are used for household consumption rather than commercial production, despite the agency's expectations for total financial commitment to market-oriented production – an expectation that greatly conflicts with the heterogeneity of rural livelihoods and the traditional economic rationality of rural peoples. However, maintaining autonomy over the use of these funds and over food production in general may not be an option for poorer producers unable to risk their receipt of state support in the future; as a result, only those that have the economic capacity or are willing to take that risk ultimately decide to do so. All in all, as long as INDAP governs the funds on which many agricultural producers heavily rely, the agency similarly controls the extent to which individual producers can build the resilience of their livelihood strategies.

2.1.2 State support and regulation: Formalization

In addition to the financial and technical assistance that producers receive through INDAP, the majority of participants have also received support from a variety of other agencies in order to facilitate the formalization of their respective economic ventures. Most of the participants involved in the study have long-standing businesses centred on the production and sale of their traditional food items (such as marmalades), and many have also more recently begun to prepare and serve food to customers and/or tourists in their homes or *rukas* (Mapuche communal homes). To carry out these activities formally they must obtain their Initiation of Activities permit, which is authorization by the state to carry out economic or commercial operations, as well as their Sanitary Resolution through the Ministry of Health (MINSAL) in order to prepare and serve food (ChileAtiende, n.d.). Many of the producers interviewed have previously obtained the former and are therefore legally able to sell their products, but the majority have not yet obtained the Sanitary Resolution required to serve food (in part because for many, their businesses have only recently expanded to include this aspect). These producers have been attempting to obtain this authorization primarily through equipment acquisitions and infrastructure improvements that would enable them to adhere to sanitary regulations (e.g. the installation of ceramic tiles and walls or the construction of separate bathrooms for clients) enforced by MINSAL's municipal arms. In order to make these necessary changes, participants have largely relied on financial assistance from CORFO (Chile's Economic Development Agency) and SERCOTEC (Technical Cooperation Service), state agencies that focus on supporting entrepreneurs and small businesses.

At the same time, even with several agencies offering financial assistance for the formalization process, some argue that funding applications have become more complex in recent years and typically must be completed online, which limits access for poorer households. Furthermore, CORFO normally only partially finances these projects, and these funds are deemed by many participants to

be insufficient considering the costs of the items and renovations as well as the time and effort required to obtain Sanitary Resolution. For example, participant CP5 requires Sanitary Resolution for a processing room in her home in order to prepare her seafood for formal sale. The required changes and additions are too costly for her, however, and are taking years for her to implement – during which she is unable to sell her products openly and must rely on selling door-to-door and to close friends and family instead:

> If you do not have a permit you cannot do anything. That's the problem. I have to wait one more year to be able to have my Sanitary [Resolution], to have everything done in order to process the seafood… then they give the permission, not before. So that's why I cannot do anything yet…. You have to bring it home; if you go out and sell it to the public there are problems with the Sanitary [authority]. [3]

This financial burden therefore deters many producers from formalizing their businesses, and has resulted in a high level of informal economic activity in rural communities. However, informal production and sale comes with its own obstacles, as it limits channels for commercialization, and also prevents them from promoting their businesses openly, as participant CP8 described:

> The sanitary resolution… they demand so many things that in the end it is better to work like this, not taking it… but [that] also has a disadvantage because we cannot offer through the Internet, or, for example, to public institutions… [4]

In this way, the state serves as a source of legitimacy for rural economic activity, but this comes at a high cost for producers and therefore significantly restricts their ability to continue their economic practices openly. As a result, producers must either conform to state requirements and shoulder the costs, or choose to evade the formalization process and continue their productive practices informally, risking penalization and losing out economically due to the need to sell their products clandestinely.

2.1.3 Case study: State regulation of raw milk cheese in the Gulf of Arauco

As seen so far, provisioning and programming through state agencies is highly valuable in financially supporting and legitimizing rural production, yet this support is also restrictive in many ways, forcing producers to manage vulnerabilities and to choose between either economic stability or continuing their traditional productive practices. An example of this can be seen in the Gulf of Arauco in the Biobío region, where state food policy has prohibited the production and sale of unpasteurized artisanal cheese, an economically and culturally important product for households in the territory. This case study is a strong example of how rural producers must circumvent state policy and regulation in order to be able to continue their practice, and how these strategies are unavoidably accompanied by economic costs and the potential risk of penalization. As a result, producers who continue to sustain this traditional practice must do so covertly, within the confines of a food policy framework that works to undermine it.

The Gulf of Arauco is home to over 500 families who rely on the production of artisanal cheese (cheese made from unpasteurized or "raw" milk), a practice that has become a strong familial tradition as well as the principal source of income for many families over the past century, adopted as a means of adding economic value to milk production (Figure 4) (Rojas Alday, 2017; Rutas Culinarias Nahuelbuta, 2017; Slow Food, n.d.).

Figure 4. The production of raw milk cheese in Arauco

However, over the years, changing sanitary laws enforced by the Ministry of Health (MINSAL) have aimed to regulate and standardize rural cheese production, threatening the continuation of the raw milk cheese product. Most recently, a sanitary code enacted in 1978 ordered the mandatory pasteurization of milk, largely due to the increased health risks associated with the transport of milk from rural to urban areas for industrial cheese production. This law resulted in the complete prohibition of the production and sale of raw milk cheese (MINSAL, 2007; Rojas Alday, 2017; Slow Food, n.d.). The health authorities began to monitor production in rural dairies as well as the sale of cheese in marketplaces, and have continued to seize and dispose of raw milk cheese when it is found. Participant CP4 explained that while there is currently no fine for producing the cheese, confiscation is still a difficult punishment for small producers as it means a loss of their daily source of income, especially in winter months when they have few other income options. According to another cheesemaker spoken to in the Gulf, the fear of this penalty has encouraged many producers in the territory to leave the traditional practice, either switching to pasteurized cheese production or abandoning cheesemaking altogether.

Navigating state regulation: Individual resilience response

With the passing of state pasteurization laws came the implementation of funding and training programs through PRODESAL, whose objectives are to assist rural producers in shifting to pasteurized cheese production. Producers are able to apply for financial assistance in securing new equipment or infrastructure improvements for the production of pasteurized cheese, which likewise comes in packages that include pasteurization workshops. Participants CP3 and CP4, for example, have previously applied for and received economic assistance from PRODESAL for infrastructure improvements for their dairies as well as for pasteurization equipment, and have also participated in workshops where they learned how to pasteurize. While this provisioning is intended to encourage a

switch to pasteurization, many producers take advantage of this support while still continuing to produce raw milk cheese despite the risks that they face with the sanitary authority. CP3 and CP4 argue that the reason that many cheesemakers in their territory do not switch to pasteurization is because it is a more complicated, expensive and time-consuming process compared to their traditional practice. Firstly, according to them, it requires constant temperature monitoring as well as costly materials and inputs that must be replenished regularly. Additionally, pasteurized cheese requires 8 days for maturation before it can be sold, whereas raw milk cheese can be sold the day after it is produced. Both CP3 and CP4 – as well as various other individuals engaged informally during the research study – also explained that pasteurized cheese is smaller in size and much less palatable, as the process breaks down the enzymes that give the raw cheese its distinctive flavour. They reported that due to its superior quality and flavour there has always been a much higher market demand in the region for raw milk cheese, and that it is therefore a more economically viable product for them. Furthermore, it appears that the health risks asserted by MINSAL in relation to raw milk cheese may be unfounded, exaggerated, or much more likely to be found at the industrial rather than household level of production (Rojas Alday, 2017). Indeed, all cheesemakers interviewed claimed that they had never seen any proof of or encountered any person who became sick from the product in their territory, arguing that any illness contracted is more likely to result from unhygienic or 'dirty' cheese production rather than from a neglect to pasteurize. Given these factors, it seems that many cheese producers in the Gulf receive PRODESAL financing for pasteurized cheese production without adopting the practice, as it conflicts greatly with their customary productive behaviour and economic rationality.

Cheesemakers who do not switch to pasteurization are thus unable to fully formalize their raw milk cheese businesses or to promote or sell their products openly. In order to continue to economically benefit from its production, they are obligated to sell their cheese in secret, and have in

fact formed underground networks that extend throughout the territory in order to do so. These networks are comprised of trusted resellers or 'caseros' who buy cheeses directly from producers in their homes, and who in turn have their own networks of known individuals who purchase the product for consumption or resale. When asked about the prevalence of this behaviour in the Gulf, participant CP3 explained: "Everybody sells to resellers…. Everyone has their casero. Their contact." [5] Additionally, some producers sell their cheese in street markets to known individuals, from (literally) under the table where they are outwardly selling pasteurized cheese – using mainstream market places to support their own traditional products (Gutiérrez Escobar, 2011; Rojas Alday, 2017; Wilson, 2012). It appears that in the Gulf today the use of resellers is more common, as this form of sale does not only preserve the practice but also saves time for cheese producers, allowing them to focus on production without needing to travel outside of their communities – or even their homes – in order to sell their cheeses.

These covert forms of economic activity have enabled artisanal cheesemakers in Arauco to find a 'space of truce' within the mainstream economy, being able to benefit from state funding while rejecting or minimizing its regulatory influence in order to maintain their productive practice (Blaser, 2004; Tsing, 2005; White & Williams, 2014). However, while these strategies have positive implications for resilience in terms of the preservation of their traditional form of production, they are nevertheless restricted by the state's prohibition of raw milk cheese, which forces them into the fringes of the economy and costs them financially. As one cheesemaker argued, because resellers are controlling the volume and price of the cheese, producers are losing out on potential profit as it passes through multiple hands rather than directly to the consumer. As a result, as with the evasion of INDAP stipulations and the formalization process, this case study suggests that although these covert strategies allow producers to maintain their autonomy over household economic decision-making and production, they nevertheless are accompanied by inevitable costs.

2.2 Forestry and Water: Individual Strategies for Resilience

As discussed in the first chapter, peasant and Indigenous producers in Nahuelbuta and their food systems have also been greatly impacted by the activities of a large-scale forestry industry that has been heavily subsidized and encouraged by the state since the 1970s. This has not only resulted in the removal of native forest and the exclusion of rural communities from lands within their traditional territories, but has also created an on-going problem of water scarcity in the region – a problem exacerbated by water privatization laws enacted during the dictatorship that to this day severely limit small producers' access to important water sources. Peasant and Indigenous producers strive to mitigate the vulnerabilities that these effects generate, adopting strategies at the household level in order to maintain access to water as well as to protect and sustain their livelihoods, territories and the traditional productive practices that are linked to their cultural heritage. Nevertheless, while their strategies help them to mitigate some of these impacts and maintain their food practices, we will see that these efforts ultimately amount to little more than coping mechanisms rather than meaningful contributions to the development of broader community resilience.

2.2.1 Forestry impacts: Water scarcity and food systems

The development of the forestry industry throughout Chile's south-central region has been characterized by extensive plantations of pine and eucalyptus, two non-native species that use significant volumes of water and nutrients (Cid Aguayo, 2015; Haughney, 2007; Torres et al., 2015; Wolodarsky-Franke & Díaz Herrera, 2011). The eucalyptus trees have been especially damaging to the local environment, with multiple participants claiming that each tree can draw up to 200 litres of water from the ground per day, impacting groundwater availability within a 3 km radius.

Producers across Nahuelbuta reported conditions of water scarcity in their respective communities. For example, in the Elicura Valley, individuals have noticed abnormally low summer water levels in the main river running through their community. As participant CP9 stated:

> There is much change here in Elicura. That river was full of water, Elicura River. There was plenty of water, the winters before, it rained a lot… the river passed by, not now. The lake went out to the road - everything was flooded, every year… that does not happen [now]. [6]

Beyond water scarcity, the industry has also contributed greatly to the pollution of water bodies through its intensive application of fertilizers and pesticides on its plantations. This has resulted in high levels of agrochemical runoff into nearby river channels and water bodies (facilitated by the weakening of native soils by foreign trees), impacting peasant and Mapuche communities throughout the region (Cid Aguayo, 2015; Du Monceau, 2008; Lanalhue Sustentable, 2011; Miranda, 2013).

Several producers described how the presence of plantations has affected the growth of their crops, the sustenance of their livestock and overall, the continuation of their traditional productive practices. One example of these impacts can be seen in Purén, where CP2 (a grower of the Chilean white strawberry, *Fragaria chiloensis*), has seen a decline in the volume of her yield – as well as in the size and aroma of her strawberries – since the plantations were introduced alongside her community. In the Gulf of Arauco, cheese producers have similarly noted a decline in water levels in the rivers that feed into the wetland and keep the soils irrigated for their cows to graze (Rojas Alday, 2017). Participants from both communities argued that if these trends continue, their primary productive practices could become even more threatened, as the white strawberry is highly sensitive to water scarcity and as the quality and flavour of the raw milk cheese relies heavily on the abundance and cleanliness of the water in the Arauco wetland.

The replacement of native forest with plantations of foreign species has also meant a loss of native non-timber forest products (NTFPs) that have formed the basis of peasant and Mapuche diets

in Nahuelbuta for centuries (CNCA, 2014; Wolodarsky-Franke & Díaz Herrera, 2011).[8] For example, participant CP7 described the changes that she has perceived in the diversity, abundance, quality and flavour of NTFPs as a result of the plantations:

> We had maqui [berry] all year…. and at night, eating avellana [hazelnut]. That was the life we had before. But now it is difficult because those hills, full of forestry…. now it is difficult to find what little there is…. I remember that we went to the murtilla [berry] and found different flavours of murtilla… and it turns out that now when you go there are the pines… and I find the flavour of the pine in the murtilla. [7]

Participant CP6, a producer of artisanal marmalades, has similarly perceived a decline in the abundance of her main product, the nalca (*Gunnera tinctoria*, or Chilean rhubarb), as it has a very high water content and only thrives where there are native trees and sufficient flows of water to allow for germination (CNCA, 2014). Furthermore, she explained that native forest also provides the nalca with physical protection, as its diverse foliage layers decrease damage to understory plants (e.g. nalca) by capturing rainfall and releasing it gradually, which also minimizes soil erosion and runoff (Du Monceau, 2008; Wolodarsky-Franke and Díaz Herrera, 2011). As a result, the loss of native forest has meant both a direct removal of NTFPs as well as a clear-cutting of the environments in which they are able to thrive.

2.2.2 Individual resilience strategies

Securing household water access

Worsening the effects of forestry plantations on water access and availability in Nahuelbuta is the continuing exclusion of rural peoples from the use of essential water sources since the enactment of the Water Code and its free market system for water rights in 1981 (see 1.2.1). As a result of the

[8] See Appendix E for a more detailed table of observed NTFP changes across the region.

privatization and monopolization of water bodies and channels across the country, individuals in rural areas often do not own the rights to use the water in their territory, and are left with few options for securing the resource (Budds, 2004; Larrain, 2012). Participant CP8 described how during particularly dry years this situation has resulted in many individuals in her community relying on water brought in by trucks. Besides the problem of attaining surface water rights, she also argued that she is unable to dig a well on her property to access the groundwater because someone else owns those subsoil rights, which are often too expensive for small farmers to purchase (Budds, 2004).

In response to this, many producers must take advantage of the water rights owned by family members as well as neighbours who are willing to share their water sources. However, many others are forced to continue to use local water sources for consumption as well as to sustain their agricultural practices, despite the fact that they do not own the rights to them. Participant CP1 expressed that while this has not caused problems for people in her community thus far, she is afraid that in the future, private property laws for water rights will be more strictly enforced as the problem of scarcity in the region worsens. Furthermore, in the case of hydroelectric projects in particular, development projects implemented in the future (such as the proposed project in Elicura that will be discussed in Chapter Three) can result in both drastically reduced water flows downstream as well as greater difficulties for small producers in accessing the water sources in their communities. Participant CP1 described the situation as follows:

> The waters are all owned by companies, by people from other places. So they [may] come one day and say, 'look, you cannot take more water because you have no written right to water.' That could happen in the future because, like they say, in the future we will be lacking a lot of water. And that would be a big problem for the people in the countryside, because there are very few people who have water rights. [8]

It is therefore important to emphasize here that while these methods of maintaining water use are currently effective in upholding their practices, they are nevertheless subject to future changes in the enforcement of rights as well as changes to water access and availability, accomplishing little as strategies for securing long-term water use.

Livelihood diversification

Perhaps the most salient method employed by rural individuals to cope with uncertainty is the diversification of their productive activities and income sources. As has been argued extensively across resilience studies, the presence of a greater variety of income sources can be critical in minimizing vulnerability to stressors, such as declines in the availability of certain resources (Carpenter et al., 2001; Johnson et al., 2014; Marschke & Berkes, 2006). Diversifying can therefore mitigate economic risks and enhance household food security, resulting in more resilient local food systems (Challies & Murray, 2011; Tendall et al., 2015).

An example of this can be seen in Angol, where CP1 complements her collection of the avellana (*Gevuina avellana*, also known as the Chilean hazelnut) with the harvesting of other fruits such as maqui, murtilla, and blackberries, allowing her to supplement her income from avellana products with the sale of different types of jams. Her family also grows a variety of crops and sells them to local restaurants, with agriculture constituting a significant portion of their household income. Similarly, participant CP6 is primarily known for her marmalades made from nalca, but also grows and collects a variety of other products with which she innovates, creating unique jams of different flavours. The cheese producers in Arauco likewise engage in supplementary economic activities, growing crops in the summer, raising livestock for sale and also growing and collecting different fruits for the production of jams and liquors that can augment their income from cheese. Another example of this type of diversification strategy is employed by CP9, an artisanal weaver who

additionally sells surpluses of products from her family orchard and who also has a cabin to receive tourists. She explained that the incomes she generates from these three activities fluctuate each season, allowing her to mitigate the risks of any one of them declining or failing at any given time:

> Those three things, in parallel… at some points the cabin gave me more money, so I paid for the crafts… at one time the garden when I can work it, also gives me more… while one goes up the other down, and the other stays. [9]

In a similar vein, many of the producers interviewed base their productive efforts on seasonal changes, such as participant CP8, whose family's field alternates between growing potatoes and wheat depending on the time of year. Participant CP1 similarly collects avellanas and piñones (the seed of the native *Araucaria araucana* tree) from March until May, focusing on the collection of rosehip from April onwards. Furthermore, all of the participants interviewed who harvest wild products also preserve surplus product for off-seasons. This enables them to maintain access to food for sale or for consumption during times of expected or even unexpected decline, an important aspect of household food system resilience (Tendall et al., 2015).

Despite the positive ramifications that these strategies have on the resilience of participants' livelihoods, it is important to note how diversification may not always be a choice for producers, but at times can be a reaction to stress or disturbance (Eakin & Wehbe, 2009; Johnson et al., 2014; Marschke & Berkes, 2006; Wilson, 2013). This is particularly the case for producers who have typically relied on the harvest of products that they no longer have access to. For example, participant CP14 has collected seafood products since childhood, and this has formed the basis of her livelihood ever since; yet because of a significant decline in the abundance and quality of local seafood products, combined with the high cost of purchasing concessions to collect and fish for products, she has essentially been forced to diversify and has shifted her economic focus to serving food and receiving tourists instead. She described these changes as follows:

> I used to go to collect shellfish… in a short while I filled up all those sacks that you saw us using. In a short while we filled it. For example, snails are not like that now… they were like that, everything big, everything different. They were huge…. compared to the ones you saw. There was a lot of everything. But if you go there is practically nothing left. [10]

On the other hand, these effects can also limit the livelihood options available to producers, as the decline in or loss of access to certain resources may impact their current sources of income at the same time as they are impacting potential other sources. In participant CP14's case, before her engagement with tourism, she would supplement her income from seafood with the collection of berries and other NTFPs. However, the activities of the forestry industry surrounding her town removed these products as diversification options for her:

> Here the forestry [industry] contaminates the water, the fields, the wild fruits… because I was a collector of wild fruits, I liked to make jams of mulberry, strawberry, and maqui… many things that no longer exist here on the hills. [11]

Similarly, participant CP1 explained: "one now has to project to tourism for the things that the land does not give… the field is small. The forest is very little." [12] As a result, top-down effects on rural environments and food systems may simultaneously impact both traditional and prospective practices, leaving fewer and fewer options for diversification. In seeking (potentially less profitable) alternative economic avenues without directly confronting the factors threatening their access to these options, producers are therefore only able to mitigate the effects of imposed vulnerabilities rather than effectively contribute to broader system resilience at the community level.

Stewardship and sustainability

With respect to the environmental facets of community resilience, participants have adopted both traditional and more modern methods of sustainable food growing and harvesting at the

household level, acting as stewards of their immediate environments. As discussed in the Methodology section (see 1.5.2), sustainability behaviours and strategies are not only a means of protecting local resources but can also alleviate vulnerabilities present in their food systems, and thus contribute to resilience building (Eakin & Wehbe, 2009; Quinlan et al., 2016; Tendall et al., 2015).

Firstly, while diversification is an important mechanism for building economic resilience, many producers also consciously diversify their productive activities out of environmental concern, doing so to prevent the overexploitation of certain products or resources. For example, CP6 intentionally collects a variety of products not only for a diversity of flavours for her jams but also so as to not over-harvest the nalca, her "star" product. She is also careful in her harvesting methods, cutting the stalks of the nalca without damaging its trunk and rendering it unproductive for future seasons. She also actively attempts to preserve certain products at risk of disappearance in her commune:

> I hope they do not disappear, as the white maqui [berry] disappeared…. I can show it [the maqui] today because I am making some small plants to give to people who have plots, beds, so that it can be cultivated again. [13]

Many other producers have also adopted organic agricultural practices, with the majority of participants interviewed using little to no chemical pesticides or fertilizers, but rather choosing to maximize their yields through the use of natural fertilizers (e.g. animal waste) instead. In Purén, the few farmers that produce white strawberries do so without tractors or chemical fertilizers, and rotate their crops within their fields in order to prevent soil degradation (Slow Food, n.d.). Participant CP2, for example, rotates her white strawberries in synchronization with their growth: during a season, she will harvest one section, plant another, and have a third patch in the middle of its three-year growing cycle (Figure 5). Moreover, she grows native trees and plants in the areas surrounding her fields because she is aware that her strawberries thrive when surrounded by a diversity of native vegetation (perhaps due to better soil quality or, as she argues, to the attraction of pollinators).

Figure 5. Rotation of Chilean white strawberries (*Fragaria chiloensis*)
(Note the newly planted plot at forefront of image)

Like participant CP2, many other producers also actively encourage native biodiversity on their properties, not only for their own food security but also to promote the survival and continuation of these resources for future generations. Participant CP9, for example, grows a variety of native plants and berries in her garden that have become difficult for her to find in Elicura, for household consumption and also for economic and medicinal purposes. CP8 described how these activities are inherently linked to the Mapuche culture:

> We are not only Mapuches, we are protectors.… [we] take that [native species] to our home, plant that in the yard, to try to continue to protect it… my daughter, there are things she has not seen, does not know, and my grandchildren. If you do not try to keep those things close to your home, to plant them… you will not know them either. [14]

For the Mapuche, environmental stewardship is a way of life, and they are taught from an early age of their responsibility to care for their territory. The word 'Mapuche' in fact means 'people of the land' in their native language of Mapudungun, which itself translates to 'language of the land' (Flotts de los Hoyos & Antunez Diaz, 2012). For this reason, many Mapuche producers engage in environmentally conscious behaviours, such as the planting of native flora in their home gardens, or

the consumption and use solely of what is in season – what participant CP16 described as 'eating what the earth gives you, *when* it gives it to you' [Emphasis added].[9]

These strategies for environmental protection therefore enable producers to contribute to the preservation of native products and local ecosystems and can thus have positive implications for the resilience of their household food systems as well as their surrounding environments. However, several participants described that in terms of these practices and behaviours, they deem themselves a minority within their respective communities. Participant CP6, for example, argued that most other nalca collectors in her community have overexploited the product and also physically harvest the plant in an unsustainable manner, cutting the entire plant and destroying it at the root. Several other participants similarly expressed their frustration at the tendency for others in their communities to seek short-term profit over environmental protection. For example, they argued that many neighbours use agro-chemicals that have spillover effects on the soils in their own plots. When asked about the prevalence of sustainable forms of agriculture in her community, participant CP9 replied:

> No, not all, we are some. We try to have others do it, but they do not always want to. That's why I grow grass in the greenhouse… many use a chemical that kills grass. They use it one time and it does not grow any more, the grass. When I get large ants, I can eliminate them, without putting chemicals. [But] there are people who do not… we are few who work organic. [15]

As a result, while many of the participants interviewed actively care for the ecosystems surrounding them, the positive environmental impacts of these actions are greatly restricted within communities where they are not commonly adopted. While desire and motivation are likely contributing factors in the implementation of environmental stewardship practices, the lack of adoption among fellow community members as described by these participants is likely also due to a widespread reliance on state support for standardized and non-organic agriculture, as well as

[9] No original quotation in Spanish (recorded in field notes during informal discussion with participant).

economic pressures to overexploit resources and to maximize yields. Furthermore, these economic pressures may not only impact the motivation for environmental care but may also influence the amount of time available to individuals to implement these strategies (Utting, 2015). As has been argued by several theorists, the capacity to care for one's environment is heavily shaped by the constraints and opportunities available within the broader political and economic context (Carpenter et al., 2001; Eakin & Wehbe, 2009; Hodbod & Eakin, 2015; Leslie & McCabe, 2013; Wilson, 2013). As a result, it appears that organic and sustainable forms of production are adopted unevenly within communities in Nahuelbuta, which is likely to severely limit their positive impacts on community-level resilience (Anderies et al., 2013; Scott, 2013).

2.3 Bridging to Community Resilience: Community-Level Strategies

Moving beyond the resilience strategies employed by individuals, theorists generally agree on the importance of intra-community connections and the building of social and institutional capital within communities in order to foster resilience at the community level (e.g. Barrett et al., 2005; Bebbington, 1999; Flotts de los Hoyos & Antunez Diaz, 2012; Magis, 2010). While the individual and household resilience strategies discussed so far appear to be limited in scope, opportunities exist to scale up by linking between such efforts. Indeed, many producers in Nahuelbuta seek to achieve higher-level impacts through the strengthening of networks and institutions within their communities, giving those individuals with the motivation and capacity to build resilience a means of coming together to do so. However, while these community-level strategies enable individuals to generate greater resilience impacts, they too are ultimately restricted in scope, since they are seldom able to address (on their own) the underlying political causes of the disturbances and vulnerabilities that threaten traditional rural livelihoods.

2.3.1 Social and institutional capital in Nahuelbuta

Across the community resilience literature, social capital is commonly agreed upon as a key characteristic of a resilient community. It has been broadly defined as the social norms, relationships and networks built on cooperation and trust that foster community collaboration for the realization of common goals (Barrett et al., 2005; Bebbington, 1999; Cheshire et al., 2015; Dinh & Pearson, 2015; Hegney et al., 2008; Magis, 2010). Rural peoples in communities across Nahuelbuta similarly deem peer connection and collaboration for the achievement of common goals to be essential to their well-being, and to the well-being of their communities. At a smaller scale, receiving help from family members – particularly in the collection, promotion and sale of products – appears to be extremely important for the success of producers' small businesses, with many considering their businesses 'familial' as opposed to individually run. These familial connections can also be important for the continuation of their traditional practices, as there is a high level of knowledge-transfer from producers to their children, and some of their children have expressed an interest in continuing their families' productive activities (e.g. CP10, daughter of CP1).

Beyond the household level, connections with extended family members, neighbours and friends within their communities can also be very important for many producers. This can be in terms of more formal economic relationships, such as supply chains between community members or the sale of one's products throughout their community. For example, participant CP5 – whose livelihood is based on the sale of the seafood products that she collects, but who has not yet obtained her Sanitary Resolution – relies heavily on the sale of her products through networks of friends and family members, connections that are crucial for her given the risks associated with selling her products in public without a permit. These connections and forms of support might be more informal or altruistic, however, as several producers receive help from other community members with the harvesting or collecting of their products, often without any economic benefit on the part of their

neighbour (e.g. CP2, whose neighbour helps her with her strawberry harvests). Aside from these economic benefits, strong social networks can also be valuable for the continuation of productive practice at the community level, with traditional knowledge and methods often passed between community members. For example, an informal discussion with a cheesemaker in Arauco revealed that he did not learn to make cheese from a parent or grandparent but in fact was taught the practice by participant CP3's mother when he first moved into the community.

In a similar vein, many of the Nahuelbuta communities demonstrate strong social capital and community cohesion through the presence and strength of community-level organizations, or what theorists term 'institutional capital'. Another key aspect of a resilient community, institutional capital is characterized by the number and strength of supportive, participatory and democratic groups and organizational arrangements within a community, which enable its members to coordinate in order to achieve common goals (Anderies et al., 2013; Carpenter et al., 2001; Flotts de los Hoyos & Antunez Diaz, 2012; Hegney et al., 2008; Yamamoto & Yamamoto, 2013). This type of capital is highly visible in the six communities that were involved in the study, as the majority of research participants are part of multiple local organizations for a variety of purposes and goals. For example, many are part of associations with other producers and harvesters (of the same products that they work with), which encourage mutual support and knowledge sharing between producers and also promote the continuation of these practices. These groups can also generate positive environmental impacts, as is the case with participant CP6, who belongs to a group of nalca collectors and who teaches them as well as other collectors in her community about sustainable harvesting techniques. Larger communities also typically have neighbourhood councils and/or locally-run Mapuche organizations, which enable individuals to come together to realize collective goals and community-wide projects (e.g. a solar panel project implemented by the Mapuche organization of Arauco). A strong example of this type of local institution can also be found in the Elicura Valley, where the Rayen Wekeche

Cultural Centre serves as the heart of the valley's Mapuche community, acting as a space for cultural events and activities as well as for meetings to discuss and collectively address current issues affecting their community and territory (Lanalhue Sustentable, 2011).

2.3.2 The limitations of community-level resilience strategies

The examples discussed above demonstrate how strong social and institutional capital can contribute to the development of economic, cultural and environmental resilience at the community level, enabling producers to compensate for many of the limitations of their household strategies and to come together to achieve higher-level goals. However, these impacts can at times be undermined by a lack of collaboration and community participation, as several individuals discussed. Indeed, participants from three different communities explained that – as was the case with regards to environmental stewardship behaviours – they are also a minority in terms of participation in community-level groups and activities. For example, participant CP12 discussed the general lack of interest in his community outside of his immediate family:

> Years ago, we organized the peasant fairs... but very few people in the community participated. In the end it was always my family, we as a family start it. So it costs a lot. It costs a lot to make people understand that it is not for my sake, not for personal benefit… [16]

Some participants argued that the main reason for this lack of interest is that the majority of other individuals in their communities are highly individualistic and uninterested in participation without clear short-term benefits. This is arguably in part an effect of the neoliberal ideals that have been instilled in the country since the dictatorship – an effect that will be discussed further in Chapter Three – but can perhaps also be due to a lack of time available for community participation, particularly for poorer individuals with greater time constraints (Clark, 2011; Manuschevich, 2016; Schild, 2007; Utting, 2015).

Community-level resilience strategies also fall short in terms of the scale of their impacts, particularly when these communities are more isolated (geographically or in other respects) and thus disconnected from critical resources and connections. Some resilience theorists similarly distinguish between "bonding" and "bridging" social capital, the former constituting social ties between community members, and the latter being links that go beyond community boundaries, of particular importance for communities that are more isolated and/or low in resources. These theorists argue that both types of social capital are crucial, in that communities must have strong networks and institutions in themselves, but that these should not be exclusive but rather connected to other actors and resources outside of their boundaries (Barrett et al., 2005; Bebbington, 1999; Magis, 2010; O'Brien, Phillips, & Patsiorkovsky, 2005). As will be discussed in greater detail throughout the third chapter, community organizations such as the Rayen Wekeche Cultural Centre in Elicura may be strong institutions in and of themselves (with high levels of participation and activity), but often do not have the resources or the capacity to address on their own the threats to the resilience of their communities.

2.3.3 The case of Llico: The limits of community resilience assets

A different facet of these limitations can be seen in Llico, a locality that has demonstrated strong social and institutional capital and unity in achieving collective goals, but whose resilience traits have been greatly undermined by political factors. Llico is a small town located on the country's coastline in the Biobío region, which was struck by a massive tsunami in February 2010. In response to the disaster, the community banded together, using the presence of existing community leaders, social networks and community-level institutions, such as their neighbourhood council, in order to rapidly evacuate the town as well as to self-organize and sustain the community in the aftermath (Imilan, Fuster, & Vergara, 2015; Marín et al., 2010). As participant CP14 described:

> There were many families who had lost their homes completely and had no food…. we began to gather and we began to organize and form a camp that was one of the largest camps that was here in Llico. We organized it through the neighbourhood council as the days passed and we saw that the military did not arrive, that there was no help. [17]

However, despite the strong presence of these resilience indicators, these strengths have been consistently undermined by the state since the disaster, as state support has been minimal and has primarily exacerbated rather than reduced the vulnerabilities precipitated by the tsunami. Firstly, reconstruction efforts by the state were delayed by four years, and new homes and emergency shelters built for community members were often constructed improperly and built on much smaller plots than those of their previous homes, making it difficult for them to maintain the agricultural and livestock activities that they carried out before the disaster. Furthermore, since the tsunami's devastating impact on fishing livelihoods, there has been little to no state support in terms of recovering the town's economy (Imilan et al., 2015; Marín et al., 2010). Participant CP5 described how in losing her fishing boat as well as her house to the tsunami, she lost her entire livelihood and is struggling to regain it still, seven years after the disaster. Aside from a significant decline in the abundance of fish and other seafood due to the disaster itself, she explained how she and other members of her community have faced severe economic hardship ever since:

> There is no work and most women do the same [as me], to be able to live from day to day. There is little seafood. And one has to see ways of how you can do and opt for other things…. because here the system is bad. There is no municipal support here. There is no work…. after the earthquake, this commune was already beginning to be left to the margins. [18]

In addition to growing economic vulnerabilities, state efforts to address the environmental impacts of the tsunami were minimal, and have in fact likely exacerbated rather than reduced the vulnerabilities precipitated by the disaster. In line with its unrelenting encouragement of the

cultivation of non-native species across the south-central region, the state implemented a mitigation forest on the town's coastline that was comprised solely of pine and eucalyptus trees. While the forest line may serve as a physical barrier for future tsunamis, it is likely that it will simultaneously have a negative impact on local water levels and food systems (Flotts de los Hoyos & Antunez Diaz, 2012; Imilan et al., 2015; Marín et al., 2010).

Overall, the tsunami in itself triggered myriad economic and environmental vulnerabilities for producers in the community of Llico, yet the actions on the part of the state demonstrated how the political environment of the country can serve to exacerbate these vulnerabilities, and perhaps even create new ones, regardless of the resilience strategies employed at the community level. All in all, cases such as Llico reveal the limits of community-level strengths within policy frameworks that frequently undermine them.

2.4 Concluding Remarks

In conclusion, the strategies adopted by rural individuals at the household and community levels demonstrate both the positive outcomes as well as the limitations of rural agency on the development of community resilience. In response to the state's regulation of rural food production and local access to water sources, as well as to the environmental threats caused by forestry development, peasant and Indigenous producers across the Nahuelbuta territory attempt to mitigate the economic, environmental, cultural and social vulnerabilities precipitated by these influences. Most significantly, these individuals strive to uphold autonomy over their food systems, navigating state regulation in order to maintain their productive practices as well as their access to important resources. To scale-up these impacts, many producers involved in the study collaborate with one another within their communities, achieving broader resilience goals through the building of intra-community networks and institutions.

As stated by Wilson (2013), however, "communities can rarely choose to operate outside of the national policy environment, and all communities within a nation state are affected (whether they want it or not) by government policy" (p. 301). We have seen throughout this chapter the constraints on resilience strategies adopted by individuals and even communities as a result of underlying political and economic frameworks, which give rise to inevitable trade-offs and restrictions that limit the widespread adoption of these strategies as well as the scale of their impacts. These findings suggest that in order to truly and effectively build resilience, small producers, households and community-level organizations must further build their "bridging" social capital, implementing strategies that are larger in scale and that transcend community boundaries in order to directly challenge the political frameworks that undermine the resilience of their livelihoods and communities.

3.0 Exerting Agency across Spaces and Scales: Trans-Scalar Strategies and their Implications for Community Resilience

The historical and existing relationships between rural producers in the Nahuelbuta region and the state (and other external actors) are filled with tensions and complexities, but have ultimately resulted in myriad negative socioeconomic and environmental consequences for them as well as for their communities and surrounding ecosystems. As shown throughout the previous chapter, many of these producers attempt to mitigate economic, environmental, social and cultural vulnerabilities at the household and community levels, but these strategies often fall short, having minimal impacts on community resilience due to their inability to address the political and economic frameworks and pressures that are key sources of those vulnerabilities. In response to this shortcoming, many small producers in the region have found ways of actively moving beyond the boundaries of their communities, engaging with actors and networks across spaces and scales to increase the impact of their agency. These individuals use such connections to access important resources and supports that help them forge their own development pathways. Moreover, the networks that they engage in often provide further connections to larger-scale organizations and movements that offer valuable opportunities for producers to have their voices heard in the political sphere and to collectively fight for policy changes that would address some of the chief underlying threats that they face.

A key example of this type of networked agency exerted by small producers is the Nodo culinary tourism project (refer to 1.2.3). The first portion of this chapter will be an analysis of the project – in which the majority of participants were involved – and will explore how they have used this network to develop grassroots cultural tourism initiatives in line with their own ideals and priorities for development. These principles are based on cooperative and communitarian values, both for production and more broadly for living with the land and with one another – values that have historically formed the basis for traditional economic behaviour across peasant and Indigenous

communities in Nahuelbuta. The second part of this chapter will explore how these traditional forms of economy have been reasserted in trans-community networks of resistance to the tenets of mainstream capitalism, and how these networks and traditional values have been recently revitalized for the defence of local autonomy over resources and food systems. The third part of this chapter will take this analysis one step further, examining how these trans-community networks have 'scaled up' to the political sphere through the use of critical connections and alliances, unlocking pathways for rural peoples to directly confront the fundamental economic and political factors that shape rural vulnerabilities and undermine community resilience. Figure 6 provides a visual summary of the trans-scalar relationships that will be explored throughout this chapter.

3.1 The Nodo Tourism Project: A Networked Resilience Strategy

As demonstrated throughout Chapter Two, rural producers often face certain inherent risks in forming connections with external actors – for example, in their multifaceted relationships with the various state agencies that simultaneously support and constrain them. However, while some theorists argue that affiliations with external actors or organizations are often likely to have negative ramifications for community resilience, many others assert that being better connected and forming more 'bridges' outside of the community sphere is invaluable in building resilience, especially for more isolated rural groups (Challies & Murray, 2011; O'Brien et al., 2005; Perz et al., 2012). These scholars argue that, when chosen strategically, these cross-scale connections can allow individuals or communities to secure and maintain access to resources and opportunities that may not otherwise be available to them. The *strategic* formation of these connections is key in avoiding potential dependencies on external support, as individuals can choose to form alliances with actors that foster rather than undermine local autonomy over development (Barrett et al., 2005; Bebbington, 1999; Berkes & Davidson-Hunt, 2009; Folke et al., 2005; Janssen & Anderies, 2013; Wilson, 2012).

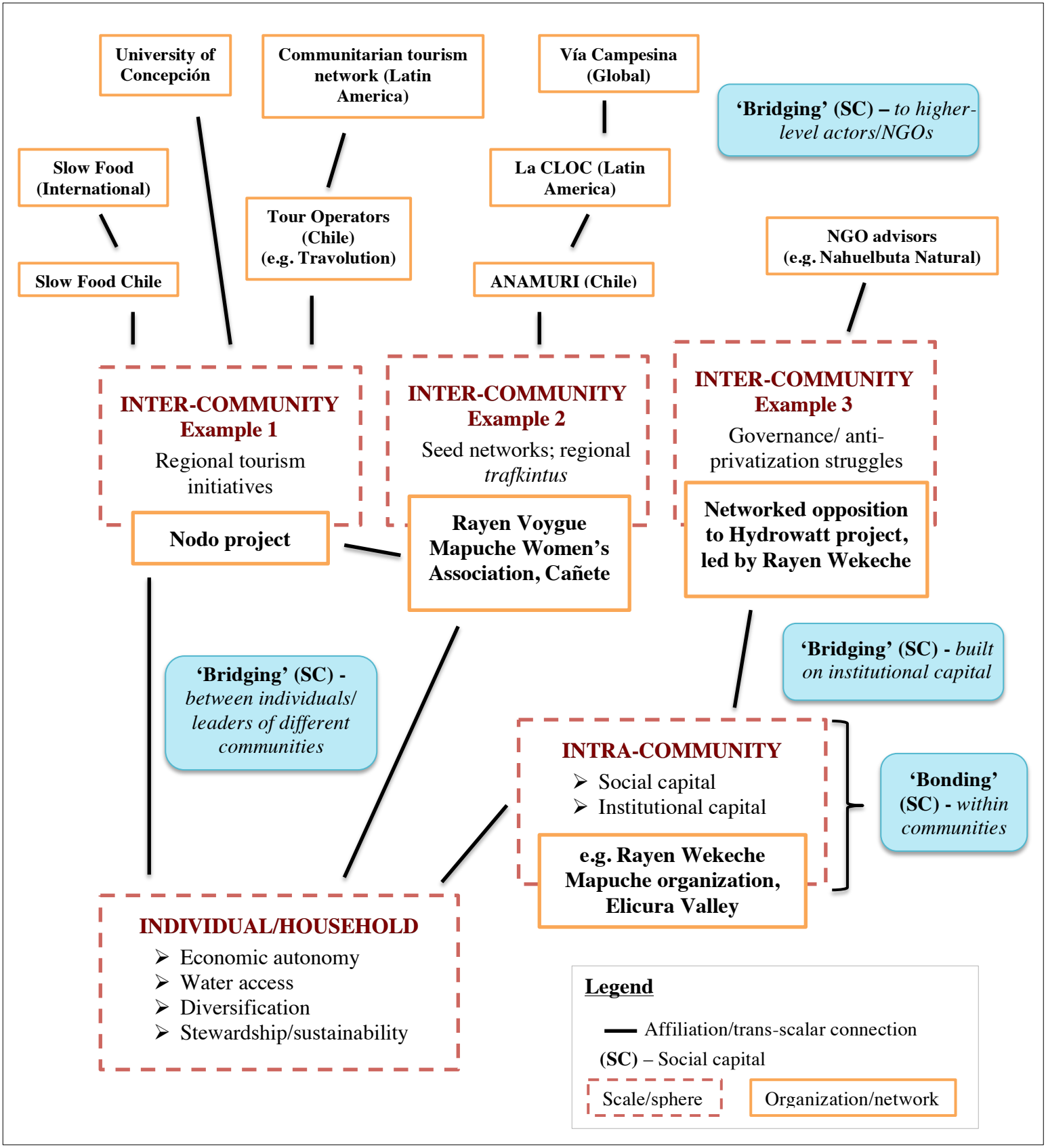

Figure 6. Summary map of resilience strategies and trans-scalar connections in Nahuelbuta and beyond

The Nahuelbuta regional tourism or 'Nodo' project serves as an example of this type of connection for producers, as it sought to assist them in the development of their small-scale culinary tourism endeavours without compromising their control over these ventures (refer back to Section 1.2.3 for project background). Producers used this opportunity to connect to resources and other actors throughout the project's affiliated network in order to achieve their own economic, cultural, social and political goals. Furthermore, the project and its network were a means for them to actively defend their cultural and food heritage through an alternative and grassroots form of tourism, as well as to enlist the help of other actors in order to exert agency across scales and to address fundamental threats to the resilience of their communities (Dwiartama & Rosin, 2014; Moore & Westley, 2011).

3.1.1 Economic benefits: Financial, technical and market-based support

A major component of the support services offered by the Nodo project was economically oriented, helping participants to overcome the financial difficulties associated with engaging in tourism and to increase the long-term commercial viability of their tourism ventures. Firstly, the project team assisted several individuals with applications for government funds through CORFO, SERCOTEC, and CONADI for the purchase of equipment and infrastructure that would enhance their tourism initiatives and, for some, that would assist in acquiring formalization status for serving food in their homes. This benefitted several participants who lack a computer or Internet access and who therefore cannot submit applications on their own, as well as for several others who discussed the increasing complexity of the applications themselves. The project also occasionally recruited expert consultants, such as architects, who assisted with the technical aspects of the applications, such as the design of blueprints for the infrastructure changes required.

The second major area of economic assistance offered by the project was the provision of technical training opportunities through several workshops aimed at building human capital within

the tourism routes – for example, through training on the financial aspects of tourism management. One ongoing program was a "Travelling School of Community Tourism Management", which involved day trips to several of the routes, allowing participants to prepare for receiving tourists and to also learn from each other's initiatives. The school also formally certified the managers of the nodes so that they could economically benefit from the routes, and also supported them in their pursuit of tourism management opportunities outside of the project. All in all, through this financial and technical assistance, the Nodo project sought to address the problem of informality in rural tourism by encouraging the development of the physical business spaces themselves as well as the capacity of both entrepreneurs and managers to carry out formal touristic activities.

The Nodo project's third means of supporting participants was to connect them to the tourism market in order to ensure the long-term success of their businesses, of particularly importance for those in communities more geographically isolated or technically disconnected (i.e. limited or no Internet access) from the market (UNWTO, 2004). For the duration of the project, the Nodo acted as a temporary tour operator, promoting the routes and in several cases bringing in groups of tourists to visit them for 'Famtours' (short for 'Familiarization Tours'). Within the span of the research period, Nodo project participants were receiving on average 10-15 tourists per visit for approximately 1-2 visits per month through Famtours. Rather than acting as a link to the mainstream tourism market, the project instead connected participants to a 'special interest' market, characterized by tourists who seek to avoid mass tourism in favour of more intimate and authentic experiences of the cultures and histories of the places that they visit (Briedenhann & Wickens, 2004; Sampaio, Henriquez, Coriolano, & Alves, 2015). Many of the participants expressed their desire to attract this type of tourist to their route, as they are looking to share their traditions with visitors genuinely interested in learning about them, who value and respect the communities and environments that they visit. Participant CP11 described the mentality of this type of tourist as follows:

> I am not only valuing a scenic view, I am valuing a cultural heritage…. I am also valuing the culture of a native people, valuing their way of life because it is linked to nature…. I am not just 'watching the stage'. It is more integral. [19]

This alternative market is therefore an opportunity for participants to filter visitors coming into their communities, exerting control over who has access to their environmental and especially their cultural assets. This type of market connection is also a way for them to engage in a form of tourism that is small in scale, minimizing its potential negative impacts and also preventing it from interfering with or overwhelming their other (and for most of the participants, primary) household economic activities. As argued by participant EP2: "tourism has to be a *complement* to the heterogeneity of peasant economies" [Original quotation]. Ruiz-Ballesteros (2011) makes a similar statement in reference to a comparable tourism initiative investigated in Ecuador:

> Its complementary nature makes it part of the greater logic that encompasses all other activities in which members of the community might participate. *Turismo comunitario*, at a community and individual level, has lengthened rather than shortened the list of subsistence activities. (p. 661)

Accordingly, many participants were content with the number of tourists that they received during the Famtours. They expressed their desire for tourism to be supplementary to and harmonious with their other household activities, and to therefore only receive a small and manageable number of visitors in their homes. Participant CP16, for example, stated: "Not with so many people…. it is not the idea of having tourists every day. I do not want that, I want to have some free time…" [20]. Similarly, CP7 explained:

> They talk about mass quantity… they talk about quantities and [they] hope they bring a lot of tourists and that does not go with us.... Mine is not to have every day full of that here, no, because it would contaminate. [21]

In order to ensure that producers remained connected to this alternative tourism market after the conclusion of the project, representatives from various special interest tourism operators working in Chile participated in the Famtours, and the project successfully linked four of the routes to two of these operators. Today, these companies continue to promote these routes and to connect participants to the 'responsible' tourists that they seek to attract.

3.1.2 Cultural benefits: Cultural tourism as resilience strategy

While the Nodo's economic support has been extremely valuable for producers interested in initiating or strengthening their small tourism enterprises, the main objective of the project was to create a network of communitarian tourism routes that would support peasant and Indigenous communities in the preservation and revitalization of their heritage through culinary tourism. These producers have undertaken small-scale culinary tourism as a development strategy alternative to the possibilities offered by the mainstream economy, and often in conflict with the goals of the state agencies that they rely on for financial support (de la Maza, 2016). This network strategy has allowed them to benefit from this state funding without compromising their cultural values and goals, as it is an opportunity for them to build the resilience of their cultures and communities rather than sacrifice it at the expense of adopting tourism as an economic avenue.

State support of cultural tourism and conflicting ideals of development

Chile's tourism sector currently contributes approximately 3% of its GDP, and is ranked seventh in relation to the country's other major exports (de la Maza, 2016; InvestChile, 2016; SERNATUR, 2014). It has been a rapidly growing economic sector in recent years, aided by the country's open economy as well as its higher levels of tourism infrastructure and security relative to other Latin American countries (de la Maza, 2016; SERNATUR, 2014). While both domestic and international

tourism have grown exponentially over the past decade, domestic tourism is consistently higher in terms of number of tourists and revenue, with domestic tourists reaching almost 6 million (compared to 4.5 million international tourists) and spending $5.1 billion US (compared to $2.9 billion from internationals) in 2016 (InvestChile, 2016).

While state efforts to promote Chile as a tourism destination in the global market have traditionally focused on nature tourism, there began to be more attention given to cultural or ethnic tourism in the country as of the late 1990s (de la Maza, 2016). As participant EP7 described:

> If you see how Chile promoted itself internationally for the last 30 years, it was promoted like a country without humans, like it was just landscapes here: 'come here to Chile, where there are no humans! Just mountains and desert, be alone here in our country where no one lives.' And now they are finally starting to realize that there is a value in our people too. [Original quotation]

A significant amount of evidence has indeed demonstrated the effectiveness of cultural tourism as a tool for rural communities who want to tap into the economic value of the cultural and natural 'capital' present in their territories. As discussed, there are a growing number of special interest tourists around the world, seeking more authentic experiences centred on intangible forms of heritage such as traditional knowledge and gastronomy (Briedenhann & Wickens, 2004; OECD, 2009; UNWTO, 2004). The Chilean state has similarly recognized the value of this type of tourism for rural communities (particularly Indigenous ones), and as a result there has been an increasing amount of state programming in this area, particularly through national and regional tourism agencies (de la Maza, 2016). Regarding funding agencies (e.g. CORFO, SERCOTEC), these have directly supported rural tourism ventures, and CORFO in fact provided the funding for the first year of the Nodo project as part of its efforts to foster the competitiveness of small tourism businesses (CORFO, n.d.).

However, while state support for this form of tourism has seen an overall increase in recent years, many agencies and state representatives nevertheless view cultural tourism as first and

foremost an opportunity for rural economic growth and poverty alleviation for communities in lagging regions in particular (de la Maza, 2016). For example, CORFO's involvement in the Nodo project and in cultural tourism in general has been focused on fostering entrepreneurship and human capital in relation to tourism. For this reason, CORFO did not continue to fund the Nodo project into its second year, as its measure of the success of the first year of the project was based on reaching economic rather than cultural or social goals. As argued by participant EP1, CORFO anticipated rapid and significant income results for participants within only the first year of the project, a feat that would have likely required individuals to adopt tourism as their primary economic activity and to accept a potentially excessive number of tourists that season. Like INDAP (see 2.1.1), the agency therefore seeks total dedication to market production – in this case, tourism – even when this conflicts with the goals, priorities and economic rationality of rural households (Clark, 2011).

Cultural resilience through tourism

Though reliant on CORFO funding for its initiation, the Nodo project nevertheless acted as an important intermediary between participants and state funding agencies. As there remains a large gap between the development ideals of the state and those of small producers, it is important for producers to form alliances with organizations and groups such as the Nodo, that can help them navigate their relationship with the state and that can provide support while still supporting local autonomy over tourism (Berkes & Davidson-Hunt, 2009; Coronado, 2014). In creating its six touristic routes, the project sought for each route to eventually be self-managed by fostering the capacities of the tourism managers (as discussed in Section 3.1.1), and as will be explored, by encouraging the members of each route to take control of how their cultures and the identity of their communities are represented to tourists.

As previously mentioned, culinary heritage is the focus of each route, and participants strive to demonstrate their respective community's unique identity principally through the sharing of its gastronomic traditions. They offer meals and product tastings to visitors, often accompanied by discussions about the products, the culinary possibilities that they offer as well as the productive traditions of the territory. Some of the routes also include an 'experiential' aspect, where the visitor is given a guided tour and is able to watch or participate in the productive processes themselves. As stated by several participants, these demonstrations and discussions have the potential to add new value to local resources that are currently threatened, through a new appreciation of their traditional culinary uses. For the Arauco cheesemakers especially, this form of tourism offers a unique opportunity for them to sell their product openly (directly to tourists) and to also demonstrate the cleanliness of their production methods, which can aid them in legitimizing their raw milk cheese product. Furthermore, several individuals explained that tourism is a way for them to preserve the traditional knowledge of the countryside. For example, in relation to the production of cheese, the tourism manager for the Arauco route (participant CP12) stated:

> My mother, this year she is 75 years old, and those artisan hands, those stories, are being lost… we do not want that, that history, that story to be lost. That we do not have a way of telling other generations the story of the cheese. That is why we want to see the way this route… [can] show more than the product, [can] show the history as well. [22]

The project's tourism managers play a critical role in this process. They serve as the faces and narrators of their respective routes, guiding visitors through their communities and facilitating communication between them and the entrepreneurs in the project. As described by the managers interviewed, their role involves empowering producers to share their stories, activities and traditions. More broadly, the managers are the ones who weave together these diverse elements into a coherent representation of the identity of their territory.

In the face of a growing problem of depeasantization in Nahuelbuta – with many young people losing interest in rural agricultural activities and migrating to urban areas – this recovery and revaluation of traditional rural practices can serve to demonstrate to new generations the continued viability of the countryside as a source of income, encouraging them to stay or return. Multiple project participants mentioned this potential, for example in this statement made by CP16: "I have to give value to local products, the products of the season; it helps motivate people in the territories to stay in the territories." [23] Participant CP11 similarly asserted:

> So that the strawberry producers feel themselves owners of a heritage or part of a cultural heritage that must be protected. Yes, this is the reason of the route - it is not so much the commercial, but to expose the value, a biological and food heritage so that it is not lost. The more people you meet, the more people that see…. the producers that there are, are going to stay. The children will see with interest that it works and serves to generate resources and they will not abandon it… [24]

Moreover, the presence of cultural tourism routes and ventures can in itself be an incentive for young people to return to the countryside (Steiner & Atterton, 2015). The majority of the Nodo's route managers are in fact young people who have left their communities to attend university, but who also express an interest in returning permanently and earning a living in the countryside with their families. For them, cultural tourism and opportunities such as the Nodo project allow them to reconnect with and support the traditions of their territories, while simultaneously being able to profit and to bring in new ideas and innovations.

Cultural resilience: Mapuche culinary tourism

It is necessary here to distinguish the Mapuche producers involved in the project, for whom building resilience through cultural and culinary tourism means much more than the continuation of local products and productive practices. For them, as well as for many Indigenous entrepreneurs

worldwide, their ventures are deeply intertwined with their principles, values and systems of knowledge and meaning, which are in turn profoundly linked with the territory itself (Blaser, 2004; Peredo, Anderson, Galbraith, Honig, & Dana, 2004). As a result, the experiences offered to tourists by Mapuche participants are based around intercultural exchange, where meals and knowledge are shared – typically in a ruka (a traditional Mapuche home) – in an effort to protect, recover and revalue the Mapuche culture. These meals are accompanied by conversations about both tangible aspects of their culture, such as their rukas and traditional gastronomy, as well as intangible aspects such as language, knowledge and cosmovision (de la Maza, 2016). Participant CP8 described the importance of sharing their culture in maintaining it:

> It is to be able to show.... that we can show people, explain to people, who we are, how we lived before.... there are so many things that are being lost, and if we do not convey, if we do not talk to them…. how will they know? I am very happy with this group, the Nahuelbuta Route. I am very happy to be able to demonstrate and talk and remember.... we keep our traditions still. [25]

Many Mapuche individuals reported that being able to share their culture has also strengthened feelings of cultural pride and has had a positive impact on their self-esteem as a people. Three participants in fact explained that the Mapuche have historically been ashamed to offer their traditional dishes to people visiting their homes, but that through culinary tourism they have a novel opportunity to recognize a renewed value in their food heritage, and as a result feel more pride in sharing their traditions and their culture.

A common theme encountered throughout the literature on rural tourism is its potential harmful effect on local cultures. Some theorists contend that when opened up to the tourism market, cultures are commodified and inevitably altered in some way, often in an attempt to meet visitors' expectations (Comaroff & Comaroff, 2009; Coronado, 2014; King & Stewart, 1996; Urry, 1995). In terms of resilience, this means that tourism as an economic resilience-building strategy can come at a

cost for cultural integrity and preservation (Comaroff & Comaroff, 2009). However, while various participants did convey some hesitations about the potential cultural costs associated with tourism, they also expressed that they felt a sense of control and ownership over their respective initiatives as well as the overall representation of their culture to tourists. As participant CP16 stated: "I am not afraid, because I know how far I can open the culture." [26] More specifically, throughout the duration of the project, they were able to choose the aspects of their culture and practices that they wished to incorporate, and to protect the values and practices that they do not want shared with outsiders. Many of the project's workshops were indeed centred on discussions between community members about how to best represent their cultures, and where the limits of tourist participation should be imposed. As is consistent with arguments made by several resilience theorists (e.g. Berkes & Davidson-Hunt, 2009; Coronado, 2014; Wilson, 2012), the capacity that individuals and communities have in managing and maintaining autonomy over their enterprises and assets is greatly dependent on the organizations and networks that they are allied with. In this case, the Nodo project provided them with direct benefits while simultaneously allowing them to implement cultural tourism on their own terms.

3.1.3 Broader social and political benefits

Implications for community resilience: Nodo network

Beyond the economic and cultural benefits felt by the participants of the Nodo project, producers also benefitted from becoming part of the project's social network, connecting to others within their own as well as other communities. The Nodo team sought to foster social capital at the territorial level, recognizing the potential that knowledge sharing and peer collaboration has for strengthening rural tourism (O'Brien et al., 2005; Zhao, Ritchie, & Echtner, 2011). Numerous participants indicated that they felt supported by this network and were encouraged by their

connections to other individuals with similar goals. The new relationships formed between participants also created opportunities for inter-cultural exchange between Mapuche and non-Mapuche participants, as well as for the exchange of knowledge and experiences related to tourism. These connections were of particular importance to those less-advanced in their tourism business who could be mentored by those with more established businesses and more experience in tourism overall.

Moreover, upon the conclusion of the project, this support network grew even larger in scale, as one of the special interest tourism operators that became connected to the Nodo project, Travolution, additionally acts as a link to a network of community-based tourism initiatives that extends across Latin America. Through its development of an online platform as well as its organization of large-scale communitarian tourism conferences, Travolution connects communities with similar aspirations into a common, continent-wide network in which they can share their knowledge and experiences.

Implications for community resilience: Communitarian values

In order to further broaden the scope of its positive impacts, the project aimed to promote a 'communitarian' form of tourism among the routes that would extend its benefits to the communities of participants. This type of tourism does not necessarily mean that ventures are community-*owned* but rather that their focus is on collective rather than individual gain, and that all members of the community have the opportunity to participate and benefit in some way (Sampaio et al., 2015; UNWTO, 2004). As described by numerous participants, the essence of communitarian tourism is that everyone involved contributes what they can for the well-being of their community, that community members share common goals and that the idea of working together and advancing together remains central:

> For me, communitarian tourism is a collective drive for something that we have to show and recognize and in that the community is involved, not just one person.... its basis is not competition. (Participant EP6) [27]
>
> I believe that with community tourism.... you can achieve great things, we can get to be all united as a route or as a province, we can show many things. But we have to be united. To place the idea to strengthen the province above anything. (Participant CP12) [28]

To ensure that the tourism ventures involved in the project were communitarian in nature, the team sought to include only those individuals who shared the project's desire to see community-wide benefits and who were well connected to their respective communities – as evidenced, for example, by their participation in local organizations. This is primarily because participants better connected to their communities (whether informally or in terms of formal economic relationships) represent a higher likelihood of positive spillover effects (OECD, 2009; Steiner & Atterton, 2015; UNWTO, 2004). This can be quite direct, as for participant CP14, who purchases food products directly from friends and also employs or receives help from other community members in cooking for tourists. There can also be more indirect spillover effects, as in the case of participant CP16, who connects tourists with others in his community who can economically benefit. For example, he often sends tourists who are interested in learning about weaving to learn from and/or stay with participant CP9, even though she is not involved in the Nodo project. He illustrated:

> We work with more people – people who are artisans, people who make bread, people who have orchards, someone who can be a guide.... so it is a form of community tourism where many people come in indirectly, because when the tourist arrives he wants to go to the store, bakery; everything is moved by the business of the productive activity. [29]

Beyond these general economic benefits, the project's tourism managers also worked to grow their respective routes through the recruitment of others in their communities who are similarly

interested in the project's cultural and communitarian values and goals. In this way, managers were key in the creation, maintenance and strengthening of each route, while also serving as vital links between fellow community members and the project – acting to facilitate these cross-scale interactions while also amplifying the scale of their benefits within the six communities.

Implications for broader resilience strategies: Political tourism

The primary objective of the Nodo project was to create a territory-wide network of communitarian culinary tourism initiatives, which would support rural peasant and Indigenous entrepreneurs in the preservation and revaluation of their cultures through tourism. Nevertheless, in addition to this cultural benefit, this network strategy can also have significant positive implications for broader political goals. More specifically, tourism offers an opportunity for producers to communicate to tourists the greatest threats to the resilience of their cultures and environments, allowing them to raise awareness about these issues at a larger scale.

There has been some research on the topic of "political tourism", characterized by tourists who are interested in learning about the historical and political contexts of the places that they visit, including those who travel for political purposes such as activism (Babb, 2010; Frenzel, 2012; Moynagh, 2008). Comparably, several of the producers in the Nodo project try to incorporate discussions about cultural and environmental issues present in the territory during dialogues with visitors, such as the growing problem of water scarcity. This is particularly salient among the Mapuche entrepreneurs, as their ventures are closely linked to their culture and therefore to their ancestral territory and its resources (Blaser, 2004; Peredo et al., 2004). In promoting the value of the natural heritage of the territory and raising awareness about the issues facing their communities, participants hope to create alliances with outsiders who might take part in their struggles – potentially forming trans-scalar "networks of resistance and solidarity" (Frenzel, 2012, p. 2; Moynagh, 2008).

The building of these relationships can have the added benefit of legitimizing the Mapuche peoples' claim to the territory and to self-determination more broadly (Coronado, 2014). This strategy is especially important within a political climate such as Chile's, where there are many stereotypes against the Mapuche – for example, the discourse surrounding their conflicts with the forestry industry, commonly termed the 'Mapuche conflict' (de la Maza, 2014). EP7 described this possible benefit of Mapuche cultural and political tourism, referring to the importance of educating non-Indigenous people about the Mapuche and their struggle:

> It's fear of what you don't know, what you don't understand. As you fear it, you deny it or reject it, and then you get to violence. But if you know it, you value it, you understand it, then you are able to embrace it… and to create more constructive ways of relations. [Original quotation]

In this way, political tourism offers a new possibility for an increased knowledge and understanding of the Mapuche culture, fostering intercultural dialogue that can potentially increase cross-cultural understanding in the country (de la Maza, 2014; Moynagh, 2008).

3.2 Community and Solidarity in Diverse Traditional Networks

With their connection to the Nodo tourism project and its associated network, rural peasant and Mapuche producers in these six communities have amplified their individual agency in relation to the economic, cultural and social resilience of their respective communities and their peoples as a whole. While the Nodo project and its alternative form of tourism represent a relatively modern resilience approach, it is important to situate this specific instance of network building within historical trans-scalar resilience strategies present in the territory through which the broader social, cultural and even political outcomes of the tourism project can be better understood. The communitarian approach taken by the project both arises from and in turn seeks to strengthen existing local arrangements and strategies of resistance to the spread of capitalist economic logic and its erosion of traditional local

livelihoods. These traditional forms of resistance are focused on "social" or "solidaristic" economic relations and a reassertion of local knowledge and cooperative productive practices. Their recent resurgence in Nahuelbuta is explored in the following section, as well as the implications that these territorial networks have for the defence of local resource governance and food sovereignty.

3.2.1 Social and solidarity economy (SSE)

The concept of the Social and Solidarity Economy (or SSE) was first introduced in the late 1980s to mid-1990s, emerging as an umbrella term for the diversity of economic processes and systems that lie outside of capitalism and capitalist logic (Miller, 2006b; Utting, 2015). Theorists describe SSE not as a specific economic model in itself, but as a "terrain of economic heterogeneity" – a theoretical inclusion of the countless manifestations of economy beyond the mainstream (Cid Aguayo, 2014, p. 67; Gibson-Graham, 2008; Miller, 2006b; White & Williams, 2014). While this concept incorporates a wide diversity of economic possibilities, these are all unified by one key aspect – namely, by their rejection of the values of self-interest and the maximization of profit and individual gain inherent in capitalism (Miller, 2006b). Rather, these diverse economies represent myriad opportunities for alternative pathways of development, distinct from the dominant economy and therefore less reliant on mainstream markets or on the support of the state.

Central to these economies are collective forms of production, consumption and exchange that are rooted in traditional values of interdependence, equitable distribution and reciprocity, as well as local democracy (see Figure 7 for a visual map of central SSE elements). Against the capitalist imperative of individualistic competition, they seek to strengthen social ties and prioritize the well-being of all community members. Movements for SSE are also characterized by cooperative production practices (informal or formal) such as collective land ownership, community resource management or sharecropping, as well as by informal markets and exchanges based on mutual support, with financial accumulation being of little to no importance (Clark, 2011; Gutiérrez Escobar,

2011; Kuokannen, 2011; Miller, 2006b; Polanyi, 1944; Walsh-Dilley, 2013; Utting, 2015). Hand-in-hand with the cooperative ideals of rural economies are also environmental objectives, with sustainability being another key principle (Graham & Healy, 2008; Kuokannen, 2011; Polanyi, 1944; Utting, 2015). This is in large part due to the close relationship that rural peasant and Indigenous communities have with the land, as subsistence remains the primary economic activity for many of them. However, Kuokannen (2011) argues that while traditional economies are subsistence-based they are not 'primitive' or out-dated, but are still capable of sustaining communities today, offering realistic alternatives to capitalism. Furthermore, it is important to add that while at times perceived as 'marginal', these activities are highly prevalent, in fact accounting for more produced value and time worked than those in the capitalist sector (Cid Aguayo & Latta, 2015; Gibson-Graham, 2008).

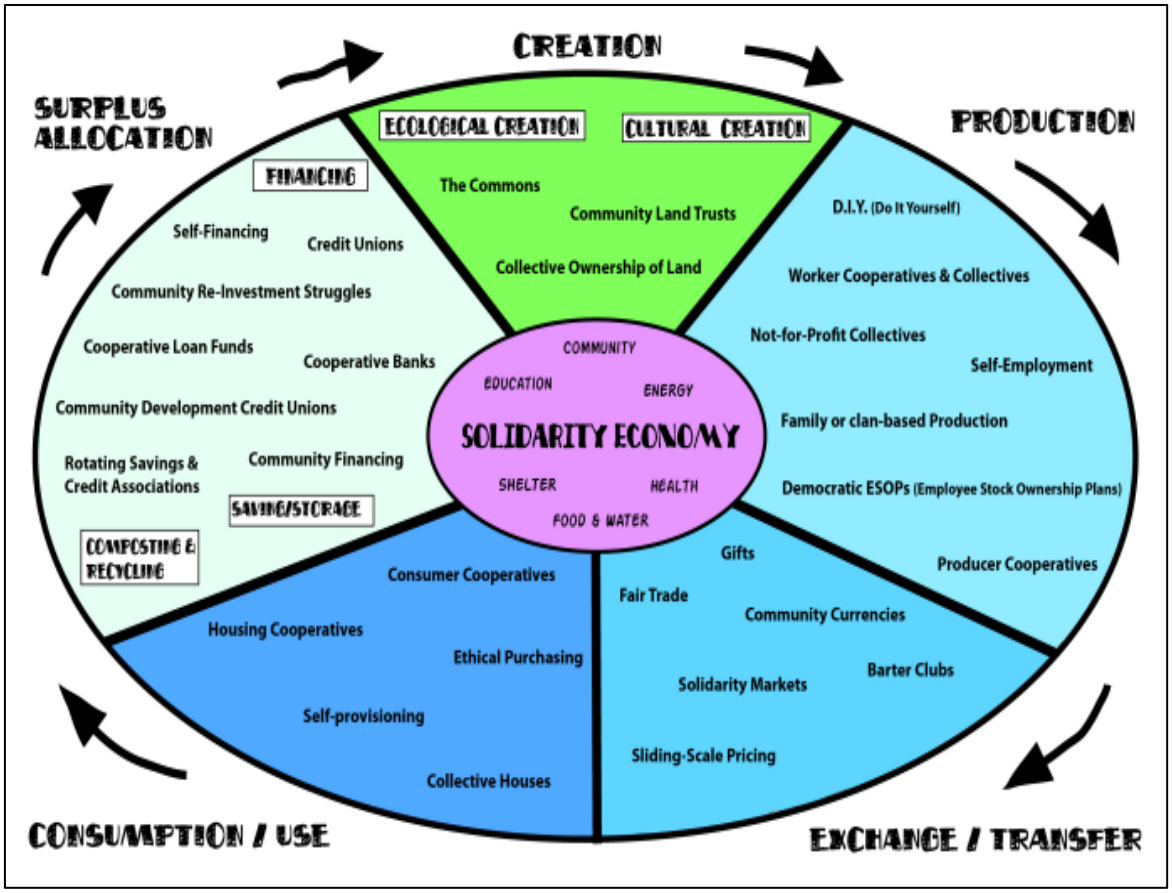

Figure 7. Map of the central spheres of the solidarity economy (Source: Miller, 2010)

The traditional economies of south-central Chile that are based on these collective ideals have been significantly weakened by the country's neoliberal trajectory over the past forty years. As touched upon in the introduction, policies implemented during the dictatorship aimed for the large-scale conversion of rural lands from subsistence to market-oriented production, and ultimately sought to transform the peasant farmer into the 'entrepreneur'. This process involved the parcelization of agricultural lands as well as the dissolution of farming cooperatives and other forms of common land ownership and production (Bengoa, 2013; Cid Aguayo, 2014; Clark, 2011; Soto Soto et al., 2014). It also instilled ideals of individualism within the minds of rural producers, as CP11 explained:

> The communitarian concept existed – but it disappeared because of the dictatorship. Before people lived a lot in community. There was a concept of cooperativism…. that concept of working in community. So the Chilean mentality changed, and became individualistic…. But before that, Chile was not like that, it was very cooperative, the people helped each other, and the countryside before the coup went to something called '*mink'a*' – which was when I had a field, I asked my neighbours for help and they came to help me for free, and after I was going to help him for free. And we all had a good harvest and lived well. [30]

As this participant describes, the country's ongoing neoliberal project significantly diminished the cooperative forms of production and community food systems that have historically sustained rural peasant and Indigenous communities – such as *mink'a*, which is an Andean tradition of collective work that ensures the survival and well-being of all community members (Clark, 2011; Gutiérrez Escobar, 2011). Similarly, participant EP5 specified: "In Chile, there is a peasant system that was decimated in the dictatorship, that is, the peasant organizations… it destroyed them. It has been difficult to rebuild that system." [31]

Despite these changes, however, participants have described contemporary efforts to rebuild this system, and the communities involved in the study are indicative of a contemporary resurgence of

these practices and values in response to present threats. In a similar vein, some theorists argue that these everyday economic practices are 'anarchistic', providing rural peoples with an opportunity to reject capitalist values and pursue development outside of the mainstream economy (Gibson-Graham, 2006; Walsh-Dilley, 2013; White & Williams, 2014).

3.2.2 Social and solidarity economy: Seed exchange networks

Perhaps the most salient example of the resurgence of the values and practices of traditional economies in Nahuelbuta is the renewed use of seed exchange networks within and between communities in recent years. While exchanges have traditionally been used for supporting subsistence production and ensuring that the needs of all community members are met, recently these activities have grown larger in scale in response to current threats. Reinforced by networks that extend throughout the territory, they enable producers to actively defend their ancestral products, activities and knowledge as well as their control over local food products and systems (Cid Aguayo, 2014; Soto Soto et al., 2014).

For Indigenous producers, this type of exchange is called *trafkintu*, a Mapuche ritual of exchanging native food products, seeds and other goods between community members. This practice seldom involves money but is rather based on what each individual has and needs at that moment (Ammerman, 2006; Cid Aguayo, 2014; Cid Aguayo & Latta, 2015; Kuokannen, 2011; Soto Soto et al., 2014). EP6 illustrated these alternative forms of economic activity as follows:

> When I speak of solidarity economy, I am talking about the market, the local market – with a different form… appreciating what others can bring and what we can bring to others…. Because the exchange, the logic is of another form, it is for necessity. It does not involve price but rather a need for something…. the need that the people or the community has for that product. [32]

Similarly, CP9 described how she often engages in *trafkintu* with family members, trading surplus products from her household that her relatives need, and vice versa. A vital part of the traditional exchange custom is also the exchange of knowledge and agricultural expertise between producers, a form of disseminating and preserving this local wisdom (Abizaid, Coomes, & Perrault-Archambault, 2016; Soto Soto et al., 2014).

While *trafkintu* has historically been an everyday economic practice for the Mapuche, it has been revitalized and repurposed in recent years in response to threats to local native products and food sovereignty, such as the restrictions imposed on producers by the agri-food chain as well as the replacement of native seeds with transgenic ones (Cid Aguayo, 2014; Soto Soto et al., 2014). Today, both Indigenous and peasant producers engage in the practice, saving and exchanging native seeds in order to prevent their loss and to maintain the diversity of the territory's native crops. Notably, the exchange also involves discussions around these current issues affecting their communities (Abizaid et al., 2016; Cid Aguayo, 2014; Cid Aguayo & Latta, 2015; Soto Soto et al., 2014). Furthermore, many producers take part in organized *trafkintu* events and marketplaces throughout the territory, which serve as more formal opportunities for a larger number of producers from different communities to come together to exchange their products and to have these discussions. These are often organized by local groups of female seed savers (or "curadoras", literally translated into "curators"), who aim to build networks of producers who save and exchange seeds (Cid Aguayo & Latta, 2015; Soto Soto et al., 2014). Several research participants have connections with these groups or are formal members, being curadoras themselves. For example, I visited participant CP8 in her headquarters of Rayen Voygue, an organization of Mapuche women based in Cañete, where she discussed their seed saving and exchanging activities:

> We also rescued all of the native potatoes I had before… doing *trafkintu* of things that existed before, the flaxseed for example, that is no longer seen…. now the fact of being in organizations, we have rescued so many things – the quinoa [too], because the quinoa was gone. [33]

Overall, these curadoras are invaluable in forming 'bridges' between communities and in building seed exchange networks that have consequently expanded throughout south-central Chile. These networks have enabled producers to conserve their native seeds and their ancestral knowledge, and according to multiple participants, have been effective in bringing individuals and communities together to collectively defend their food sovereignty. These connections are therefore invaluable in connecting the initiatives and resilience strategies present in different communities, potentially strengthening their impact on resilience at a territorial level as well as broader food system transformation (Barrett et al., 2005; Blay-Palmer, Sonnino, & Custot, 2016; Cid Aguayo & Latta, 2015; Gutiérrez Escobar, 2011; O'Brien et al., 2005; Soto Soto et al., 2014).

3.2.3 Social and solidarity economy: Governance

As defined by various SSE theorists, solidarity as an inherent value of traditional economies not only refers to collective forms of production, consumption and exchange but also to unity in defence of the territory to which a community belongs. Encompassing the two main SSE tenets of solidarity and sustainability, these alternative economies include anti-privatization struggles for the protection of local environments as well as for local land access and resource governance (e.g. Gibson-Graham, 2008; Miller, 2006a; Utting, 2015). This is best achieved through community-level solidarity and also through the building of alliances and the formation of inter-community networks, allowing communities to enlist the help of other actors to strengthen their claims and access valuable resources for mobilization (Barrett et al., 2005; Gutiérrez Escobar, 2011; Yashar, 2007).

An example of this can be seen in the Elicura Valley, where Mapuche as well as non-Indigenous citizens have organized in response to the proposed implementation of a hydroelectric project in their territory. The company implementing the project – Hydrowatt SA, a subsidiary of a large Spanish company that owns the water rights in the community – plans to develop three mini-hydroelectric plants in two of the valley's main rivers. According to participants, the communities in the territory are fearful that if implemented, the project would alter the flow, temperature and overall course of the two rivers, potentially exacerbating the already delicate water situation in the valley and likely significantly impacting surrounding environments and livelihoods. Because the project was presented as three smaller projects rather than one large one, however, this has enabled the company to evade the environmental impact assessment process as well as the need to consult with the Indigenous communities of the valley beforehand (Formas de Llamar, 2016). The company conducted hearings with the local municipal authorities as well as with CONADI; two participants explained that their community of Elicura was not informed of these meetings at the time. As is also the case with the forestry industry, they argue, there is a lack of transparency and consent when projects are being proposed and a lack of proper compensation for affected communities when they are implemented.

Upon learning of the proposed Hydrowatt project, the community of Elicura organized rapidly and efficiently, using their existing organizational structures (primarily their Rayen Wekeche Cultural Centre, mentioned in the previous chapter) and strong social connections to hold meetings and to discuss legal actions, such as making appeals to municipal bodies and drafting formal denunciations of the project. These meetings also became spaces for recruiting assistance from other individuals, nearby communities and non-profit organizations (such as Nahuelbuta Natural, an environmental NGO), and as an opportunity for these external actors to join in the discussion and to assist in response planning. Over the course of the past two years, communities across the territory have joined in the struggle to prevent the implementation of the project, forming a trans-community

network of support. While the company originally planned to begin operations in 2017, this process has been postponed and the project is now at a standstill – yet the community of Elicura and its associated network remain organized should the proposal be renewed in the future.

3.3 Scaling Up: National and International Movements for Food Sovereignty

As discussed at the beginning of this chapter, individual producers can benefit greatly from the connections that they make with external actors, organizations and networks that act as 'bridges' to resources, opportunities as well as to other helpful supports (e.g. Barrett et al., 2005; Folke et al., 2005; O'Brien et al., 2005). Through the various types of networks that they are engaged in – such as the Nodo network or trans-community actions for food sovereignty and governance – these producers also in turn have access to larger political networks beyond the immediate connections that they form. These linkages are often built by intermediate NGOs that have national and at times international reach, and that aim to amplify the voices of small producers and to promote their interests in the political sphere (Utting, 2015; Yashar, 2007). In joining these broader movements and networks, producers are able to further transcend beyond national boundaries in order to connect with transnational actors and networks that help them to subsequently place pressure on the Chilean state and to encourage political reform in their own country (Holt Giménez & Shattuck, 2011).

3.3.1 Slow Food Chile and the defence of local food products and practices

For those producers who participated in the Nodo project, they have in turn become connected to Slow Food Chile, a national-level network affiliated with the global Slow Food movement. The Slow Food movement takes the form of an international grassroots network comprised of decentralized bodies in over 160 countries worldwide, with active local structures called "Convivia" that are tied to local realities and work at the community level, directly with producers (Slow Food, n.d.). Overall,

Slow Food aims to preserve and promote the recovery of local food products as well as the traditions and ancestral knowledge systems that are tied to them. In Latin America in particular, the network aims to form a strong continent-wide alliance for the defence of the rights of the peasant world to clean and fair food and to sovereignty over their food systems (Slow Food, n.d.).

For the duration of the tourism project, this linkage served primarily as a source of 'responsible' tourists, as many of the young professionals that participated in Famtours were members of Slow Food Chile or of Slow Food in European nations, and invited through this connection. The Nodo's affiliation with the organization also served as an avenue for producers to participate in international Slow Food events (such as the annual Terra Madre conference in Italy), as well as to garner the larger organization's political support. Beyond this, through a diversity of projects and campaigns, Slow Food Chile advocates for at-risk local products and peasant production systems at higher scales, whether through promotion or lobbying. For example, one of the organization's campaigns aims to promote and thereby legitimize the production of raw milk cheese of Arauco, as well as to influence public pasteurization policy in favour of its producers. Slow Food Chile also aided in the development of the Ark of Taste (a Chilean chapter of a Slow Food International initiative), a project that formed the basis for the creation of the Nodo's culinary tourism routes. The primary objective of the Ark was to catalogue local food products that have patrimonial, cultural and ecological significance for rural peoples, aiming to promote, preserve and revitalize the products and the ancestral knowledge related to their cultivation or harvest (CNCA, 2014; Slow Food, n.d.).

Another example of the organization's defence of local products is through its *Presidia* program (also a branch of a broader international program), which launches small-scale projects devoted to the conservation of specific natural products as well as the local forms of production that are closely tied to them. In Chile, there are currently three active *Presidia*: the white strawberry (of Purén), the merkén Mapuche spice, and the kollonka blue egg hen (Rutas Culinarias Nahuelbuta, 2017; Slow

Food, n.d.). As discussed with the current president of Slow Food Chile, the *Presidia* products are unique to their territories and at risk of disappearance, and are each linked to certain communities or rural organizations committed to their preservation. Through the initiative, these groups of producers (to which several of the research participants belong) are able to promote these products and also to establish shared protocols regarding traditional production techniques and quality standards. These protocols are agreed upon by the producers involved, and are based on production methods that are not only traditional but are also environmentally sustainable, and would therefore contribute to the product's survival into the future. Participant EP5 described the program as follows:

> It is not an imposition, it is not for a professional or an institution to come and say 'now, to produce the grape you have to do it like this.' No, it is the community itself according to their experience, to their reality, they are deciding how to maintain the system… that it does not harm the environment, is as natural as possible. It also has a logic of ensuring this productive system, the agreement, only serves the peasant [productive] systems, and not the agribusiness. [34]

For example, in the formation of the kollonka hen *Presidia*, local organizations comprised of women who raise kollonka hens came together and collectively agreed that each household or farm included in the project would not exceed 60 hens. These conventions are then upheld and enforced by the producers that established them – which, in the case of the kollonka hen program, involved the formation of a women's network in the Araucanía region that continues to oversee this protocol.

Overall, through its various projects and campaigns – such as its Ark of Taste and *Presidia* projects – Slow Food Chile serves as a valuable trans-scalar connection and opportunity for producers to promote and defend the native products that they rely on. As an international organization with grassroots participation, it provides support to rural producers in the defence and recovery of their products and traditional practices related to food. If its undertakings are directly

related to productive practices, they also nevertheless have political implications at the national and at times international level.

3.3.2 ANAMURI and the Vía Campesina movement

Another organization that became a strategic partner to the Nodo initiative and that also contributed to the Chilean Ark of Taste project was the National Association of Rural and Indigenous Women (ANAMURI), the largest women's organization in the country. In fact, many participants' affiliation with the organization predates their participation in the tourism project. ANAMURI was formed in 1993 and has functioned ever since as a national network and political platform, acting as an opportunity for rural peasant and Indigenous women across the country to connect with one another in order to represent the interests of their communities in the political sphere. Overall, the organization aims to recover and revalue the 'peasant identity', helping rural peasant and Indigenous women to defend their territories and practices, as well as their sovereignty over local food systems, primarily through lobbying as well as through political proposals. ANAMURI also provides training in agroecology for rural women – a form of agricultural production that is small in scale, promotes biodiversity and sustainability, and rejects the use of external inputs, employing traditional local methods and knowledge instead (Altieri & Toledo, 2011; ANAMURI, n.d.; Cid Aguayo, 2014; Meek, 2014).

ANAMURI is a grassroots or 'bottom-up' association, comprised of local women's organizations and providing a mechanism for these smaller local groups to come together and to mobilize beyond their respective communities (Altieri & Toledo, 2011; Yashar, 2007). In this way, ANAMURI is a large-scale network that still remains rooted in local realities, and that builds upon the existing social and institutional capital of communities and inter-community groups (ANAMURI, n.d.). Rayen Voygue, the women's organization of seed savers visited in Cañete, is one of these

groups, and its affiliation with ANAMURI enables its members to connect with other like-minded organizations throughout the country in order to strengthen and amplify their efforts to protect their seed heritage. In an interview with a co-director of ANAMURI (participant EP6), she explained:

> All of our actions are necessarily converging on the issue of food sovereignty. Considering that the essence of life and the heart of food sovereignty are our seeds. To have the seeds in your hands you have to multiply them, to give them [to each other], and to continue to multiply them. So, every action of ours, every activity that we have is related to this. [35]

As a result, the national organization provides a space for smaller groups to come together in the preservation and defence of their seed heritage, both amongst their communities and also at the political level (ANAMURI, n.d.; Cid Aguayo, 2014; Torres et al., 2015).

While the ANAMURI network is itself an avenue for political activism at the national level, it is also in turn linked to broader international food sovereignty movements – helping rural producers reach even higher scales to have their voices heard (Utting, 2015; Yashar, 2007). ANAMURI is one of five national organizations in the Latin American Coordination of Rural Organizations (CLOC), which is in turn a constituent of Vía Campesina, an international solidarity movement for the defence of local food sovereignty in peasant and Indigenous communities around the world. Like ANAMURI, Vía Campesina is formed from decentralized networks, comprised of smaller-scale rural organizations and movements and shaped by diverse worldviews and knowledge systems (Altieri & Toledo, 2011; Gutiérrez Escobar, 2011; Martínez-Torres & Rosset, 2014; Meek, 2014). This global network aims to support rural producers in lobbying for their independence from the hegemonic agri-food system and their right to have control over and define their own food production (Altieri & Toledo, 2011; Cid Aguayo & Latta, 2015; Gutiérrez Escobar, 2011; Patel, 2009).

Becoming connected to large-scale political networks such as these is especially crucial for rural producers in Chile today, as these alliances and platforms allow them to challenge current and

potential agri-food policies that threaten the resilience of their communities. Most notably, they have recently protested Chile's participation in international trade negotiations (such as the Trans-Pacific Partnership) that require the ratification of intellectual property agreements that would favour large biotech companies and severely infringe upon the rights of small producers over their own seeds (Jefferson, 2015; Ruta de las Semillas, 2016). This nation-wide network of organizations – with ANAMURI at the forefront – was also critical in the successful movement against a national seed privatization law (dubbed the "Monsanto Law"), resulting in its repeal in 2014 (DuMonthier, 2014).

As a result, in forming local organizations that promote food sovereignty within their communities (e.g. through the coordination of *trafkintus*), rural producers in turn are able to engage in overlapping political networks and connect to large-scale movements, with the help of 'bridging' organizations such as ANAMURI (Barrett et al., 2005; O'Brien et al., 2005; Utting, 2015; Yashar, 2007). These networks thus serve as opportunities for them to influence public policy that impacts their food systems, and to engage in national and at times global debates surrounding the issues that affect them and the resilience of their communities (Altieri & Toledo, 2011; Rangan & Kull, 2009).

3.4 Concluding Remarks

The themes analyzed throughout this chapter highlight the importance of the multi-scalar network strategies adopted by rural Indigenous and peasant producers in Nahuelbuta for the building of community resilience. These producers engage in a diversity of economic and political networks that enable them to exert agency outside of their traditional local spaces, as a way of collectively addressing vulnerabilities as well as the fundamental political structures that create or exacerbate these vulnerabilities. The Nodo project is an example of one of these network strategies, as it is an opportunity for producers to use tourism as an avenue for economic development on their own terms, as an alternative to joining mainstream produce and tourism markets and for remaining focused on

their shared goals for fostering social, economic, cultural and ecological resilience. In turn, these goals fit into a wider and historical context of trans-community development across Nahuelbuta, asserted in long-standing inter-community networks based on traditional economic values. Overall, these various types of network strategies have provided important opportunities for producers to unite in order to collectively achieve broader resilience goals.

Key to the formation of "bridges" between and beyond communities are community leaders such as the Nodo's tourism managers or the local seed curators' groups, vital in linking communities to one another as well as to larger organizations in networks that have positive impacts not only on the resilience of their respective communities, but of the territory as a whole. The alliances that these actors form with non-governmental groups such as Slow Food and ANAMURI are essential, as these organizations similarly bring rural producers together and also provide them with a platform for collective political action. As a result of these connections, small rural producers are thus able to defend their autonomy over development and food production, mobilizing at national and even global scales in order to challenge and shape the public policies that impact them and their communities.

4.0 Thesis Summary and Final Discussion

As examined throughout the second chapter, rural peasant and Indigenous food producers in the Nahuelbuta territory adopt numerous and diverse strategies for alleviating environmental, economic, cultural and social vulnerabilities and thereby building resilience across a variety of dimensions within their households and communities. Whether adopted proactively (e.g. sustainable agricultural practices) or in direct response to top-down influences (e.g. 'steering' of INDAP support), these producers attempt to sustain their native products and traditional productive practices as well as to maintain autonomy over their livelihoods and productive systems. What this thesis demonstrates, however, are the limitations of these household strategies – and even community-level strategies – as these approaches are typically small-scale, and often involve navigating or subverting top-down impacts and parameters ('bounce-back' resilience) rather than directly challenging these forces ('bounce-forward' resilience). As a result, I have argued that producers must not only come together through community-level organization but must also move beyond community boundaries in order to garner the resources and support necessary for defending and securing territorial governance and sovereignty over their food systems, and thus effectively impacting the resilience of their communities.

Key contributions: 'Politicizing' resilience

Studies of socio-ecological resilience with respect to rural communities have predominately been centred on questions of rural agency, focusing particularly on community response to episodic shocks and disturbances (e.g. natural disasters). In this respect, many theorists have identified a significant gap in the resilience literature, as this approach tends to overlook the impacts of broader political and economic influences and the gradual changes that they stimulate while also placing the burden of resilience-building on communities alone (e.g. Anderies et al., 2013; Cheshire et al., 2015;

Wilson, 2012). This thesis addresses this gap in that it illustrates how the Chilean state simultaneously generates vulnerabilities in rural communities, while also limiting individuals' abilities to respond to these effects. In terms of agricultural systems, this is most clearly manifested in the unavoidable trade-offs that producers must face within their political and economic context, as they are often dependent on state support yet consequently obligated to choose between managing economic vulnerabilities versus mitigating environmental and/or cultural ones. Various resilience theorists have indeed argued that rural food producers must deal with implicit trade-offs between food security and conserving or promoting biodiversity at the household level, often due to economic factors and top-down constraints that limit their choices and behaviours (Carpenter et al., 2001; Hodbod & Eakin, 2015; Janssen & Anderies, 2013; Leslie & McCabe, 2013; Wilson, 2013). For the producers involved in this study, the state support that they rely on typically involves abandoning traditional practices in favour of more modern and environmentally harmful ones; on the other hand, they can only maintain their traditional products and food practices to the degree that they are willing to suffer the associated economic costs. Wilson (2013) describes this in terms of the state providing "corridors" in which producers can build resilience, due to the restrictions placed on producers by the mainstream political system and its ideological underpinnings. The second chapter of this thesis in particular highlights that within Chile's political and economic frameworks, which are centred on maximizing export-oriented agricultural production in rural areas, producers have limited space and capacity for building resilience across the dimensions that are most important to them (i.e. economic, environmental and cultural).

Theorists such as Bebbington (1999) and Davidson (2010) frame these 'politicized' discussions in terms of assets or resources, arguing that state and economic power structures significantly influence individuals' access to resources that are necessary for responding to adversity and building resilience. In addition to state agricultural support as discussed above, the findings of this analysis

have demonstrated how the monopolization of land for forestry and hydroelectric projects, as well as the privatization of important natural resources such as water and seeds, have caused direct environmental consequences and have also stripped rural peoples' of their rights to use these resources for the continuation of their livelihoods and cultural practices. Beyond this, however, these top-down forces not only cause vulnerabilities themselves but also in turn limit the capacity of producers to mitigate these vulnerabilities. Diversification strategies, as discussed in the second chapter, serve as the most significant example of this: producers diversify their products in response to environmental and economic hardship, yet this strategy is reliant on sustained access to healthy land and water – and thus subject to continuing and perhaps worsening land expropriation and degradation in the future. What these findings therefore show is that individual strategies for building resilience, such as livelihood diversification or sustainable agriculture, are limited within an environment that has been consistently shaped by state policies and the economic activities that they permit and facilitate.

It is important to point out that this thesis does not negate the importance of individual agency – more precisely, of small-scale resilience strategies adopted at the individual and household levels. It identifies these forms of agency to be important for mitigating risk (in household food systems especially), but also recognizes their limitations within the current political and economic context and the ensuing trade-offs that participants must navigate in order to adopt these strategies. The challenges and trade-offs faced by producers as well as the lasting ideological imprint left by the dictatorship likely explain the lack of widespread adoption of resilience-building strategies and behaviours seen in the six communities visited, limiting their positive impacts on resilience at the community level. This is highly consistent with a study carried out by Eakin and Wehbe (2009), which found that farm-level adaptations to climate change, such as household stewardship behaviours, are necessary yet insufficient for broader system (community or territorial) impacts

because of the inconsistency of their adoption in communities. As individual choices and capacities are heavily influenced by external factors as well as opportunities, individual community members appear to contribute asymmetrically to community resilience, thus making the 'scaling up' of their positive benefits difficult (Eakin & Wehbe, 2009; Leslie & McCabe, 2013; Wilson, 2012). These findings imply that top-down forces are highly influential in determining *who* is motivated to and capable of building resilience (in this case, who can afford to maintain autonomy in production) as well as determining *how effective* these strategies actually are in the face of external impacts (how well these strategies 'scale up' to the community level).

When we expand this analysis to include community-level actions for resilience, we are faced with the same two problems: first, there remains a lack of participation within communities that limits their resilience impacts; and second, community-level strategies are similarly constrained by the context in which they operate – more specifically, by the resources, capacities and opportunities available to the community in question. Magis (2010) explains that like individuals, communities require key resources or 'capitals' for collectively building resilience, those most relevant to this thesis being: natural capital (i.e. land and water access), human capital (i.e. capacities and skills of community members), and cultural capital (e.g. traditional knowledge systems). As a result, communities with strong social and institutional capital might nevertheless be lacking in these other capitals, often as a direct result of the same top-down influences that restrict the impacts of individual and household strategies. Again, this thesis does not deny the visible benefits that community groups and institutions generate for producers, such as the economic benefits derived from producer's groups and supply chains, the cultural benefits gained from knowledge-sharing and teaching between producers, or the environmental benefits of community-wide sustainability efforts. Rather, in recognizing the limitations of individual and household resilience strategies as well as those adopted

by entire communities, this analysis has sought to highlight the limitations of these benefits in terms of the development of broader system resilience.

Key contributions: Multi-scalar resilience strategies

The conclusions of this study highlight that rural actors are not passive recipients of top-down influences, but rather active agents in the development of community resilience – yet it simultaneously stresses their need for external support, particularly from individuals in other communities as well as from non-governmental affiliates. As stated by Barrett et al. (2005), "their [communities'] resilience cannot be found entirely within themselves. Self-reliance is fine but self-sufficiency is a myth" (p. 99). It becomes important, then, for individuals to transcend the shortcomings of their household- and community-level resilience strategies by garnering resources and support through connections made with networks and actors beyond the boundaries of their communities (Dwiartama & Rosin, 2014; Moore & Westley, 2011; Rangan & Kull, 2009). According to O'Brien et al. (2005), these strategies involve complementing strong 'bonding' social capital (relations among community members who share a common identity) with more inclusive 'bridging' social capital ties (links to other groups or organizations). In response to appeals made by several theorists across the literature, this thesis therefore does not view resilience building within an isolated community sphere with clear, impermeable boundaries, but rather looks at these processes from the perspectives of individuals who act across scales (Amin, 2004; Biersack, 2006; Berkes & Ross, 2016; Rangan & Kull, 2009).

It is necessary to re-iterate here the important role that the majority of research participants have played in the formation of both 'bonds' within their respective communities and also 'bridges' beyond the boundaries of these communities. As touched upon throughout the thesis, these producers appear to comprise a minority of active agents in these six communities in terms of their desire and

ability to build resilience. While the adoption of this kind of agency can be heavily influenced by external factors (as previously discussed), it is evident that these few individuals are in turn crucial for coming together to collectively shape these factors from the bottom up. As a result, the development of broader resilience outcomes may be limited in certain contexts lacking in the presence of these key leaders, and the capacity for resilience building may ultimately be dependent on the presence of this type of active minority.

Some theorists have viewed community leaders as key in their abilities to "mediate relations across spatial scales" (Beer, 2014, p. 14) and to "bridge seemingly insurmountable chasms differently, and possibly more successfully, than others" (Moore & Westley, 2011, p. 12). These are skills and actions that are crucial in forming important cross-scale relationships. Following this multi-scalar resilience framework, my analysis reveals the importance of the numerous and diverse 'bonding' linkages that key individuals have formed between their respective communities and also with external organizations. It can be useful to view these links as 'horizontal' and 'vertical' connections, respectively, with both types of connections being crucial in accessing the resources and support needed for effectively building resilience (Berkes & Ross, 2013; Coronado, 2014). In terms of horizontal linkages, the seed exchange networks forged between communities in Nahuelbuta, and at times extending to communities throughout the broader south-central region, have provided participants and their communities with necessary physical and cultural resources for preserving their food heritage – namely, a diverse source of native seeds and crops as well as the traditional knowledge systems that are tied to them. Furthermore, communities involved in the network have gained social support in the defence of their food sovereignty, and more broadly in the maintenance of traditional economic practices and values based on cooperation and an overall rejection of capitalist ideology. Likewise, inter-community networks such as those formed around the Elicura Valley in response to the Hydrowatt project have provided Elicura's Mapuche community with the

social and political support required in their efforts to defend their territory. As previously mentioned, these benefits can be considered important natural, cultural and social 'capitals' or 'assets' that are gained through these horizontal connections and that are necessary for effectively building broader territory-level resilience (Bebbington, 1999; Blay-Palmer et al., 2016; Magis, 2010).

My discussions with participants additionally revealed the importance of 'vertical' linkages made with external organizations and networks beyond the community and inter-community spheres. As discussed by theorists such as Bebbington (1999) and Moore and Westley (2011), alliances formed with networks and organizations across scales can be considered resources in themselves, but are also crucial for securing other types of resources and for building the capacity to mobilize and defend local assets. Likewise, the findings of the study demonstrate the value of producers' participation in the Nodo tourism project, not only from their participation in the network itself but also from their connection to vital resources that enable them to build cultural resilience through tourism. What is important to specify here is that not all vertical connections are equal in terms of community support and benefit, and individuals must therefore be strategic in their selection of these associations. Concerning the formation of vertical linkages in the development of Indigenous tourism initiatives, Coronado (2014) argues: "it is expected that the capacity for achieving cultural control…. might differ depending on the network strategies of the organizations: who they ally themselves with" (p. 19). According to the author, alliances made with organizations for the purpose of strengthening tourism ventures must act to improve their capacity for controlling their cultural and natural assets rather than undermine it. Accordingly, the findings of the study show that producers' associations with the Nodo project represent a unique opportunity for them to receive external assistance without compromising their control over cultural and territorial representation through tourism, and while allowing them to pursue their own autonomous development pathways outside of the mainstream economy.

Beyond this, the vertical linkages that producers have formed with Slow Food and ANAMURI have provided them with access to a broader political platform in which to pursue meaningful resilience objectives. As described by Martin-Puig (1993) in reference to Indigenous movements in Latin America: "Indigenous peoples have been empowered by alliances with actors that have provided them greater capacity for applying pressure" (p. 74). For those linked with Slow Food, this has meant increased capacity for defending local products and practices through becoming connected with a movement for promoting and lobbying for these traditions. Producers connected with ANAMURI have similarly gained political traction in their connection to a rural-based movement that amplifies their collective voice. Organizations such as Slow Food Chile and ANAMURI in turn also form 'bridging' connections themselves, linking rural producers horizontally to other producers and communities across the country, and vertically to higher-scale movements such as Vía Campesina (Folke et al., 2005; Patel, 2009; Rosset & Martínez-Torres, 2012). Importantly, in forming both horizontal and vertical associations – on their own and with the help of bridging organizations – these producers are not solely contributing to the resilience of their respective communities. In their attempts to dismantle the dominant corporate agri-food regime in order to make room for diverse alternative food possibilities, their multi-scalar strategies have the potential to contribute more broadly to the resilience of all peasant and Indigenous communities in their territory and even their country.

Potential limitations and future directions

It is important to note the potential limits of this research, principally due to the participant recruitment process. As the participants involved were sampled through the Nodo project, they were already demonstrated leaders in their communities, and appear to represent a minority of individuals with a strong interest in achieving environmental, cultural and communitarian goals, as discussed in

both main chapters. As a result, the findings of the study may overstate the presence of this form of agency in the region. Similarly, the six communities involved in the study were already connected to the tourism project at the time of participant recruitment, and may therefore be characteristic of better-connected communities in general. As a result, these communities may not be representative of other communities in the territory or, more broadly speaking, in the country – but they may nevertheless serve as positive examples for building resilience within the Chilean context. It would be useful for future studies of this nature to take this analysis one step backwards, in order to investigate the accessibility of these types of economic and political network opportunities for producers in other rural communities in the country.

Despite the fact that this is a "place-based" political ecology study (Biersack, 2006), in that it examines the unique and context-specific interactions between top-down and bottom-up forces in the Nahuelbuta territory, and in turn within the Chilean context, the findings of this thesis may nevertheless be relevant in other political and economic contexts. In an increasingly globalized and neoliberal world, rural subsistence-based communities in countries around the globe are faced with similar threats and vulnerabilities, and studies of this nature can provide examples of "best practices" for resilience-building, informing other communities' responses to these threats (Blay-Palmer et al., 2016).

Final thoughts

In accordance with the primary objectives laid out in the introduction, this thesis has addressed existing debates in the community resilience literature, seeking to weigh both the role of top-down political and economic forces in shaping rural vulnerability while conversely investigating how rural peasant and Indigenous actors work across scales to mitigate these vulnerabilities. The individuals involved in this study, as well as the resilience strategies and behaviours that they have adopted,

demonstrate both the potential and the limitations of rural agency for building community resilience in Nahuelbuta, and more broadly within Chile's wider political and economic context. All in all, this analysis has revealed the value of multi-scalar resilience strategies in addressing livelihood vulnerabilities and challenges and in contributing to the development of resilience in communities across the territory.

In looking at rural agency from a multi-scalar perspective, this thesis (as well as the associated report provided to the research participants) can provide an opportunity for producers to reflect upon current vulnerabilities and resilience challenges, potentially helping them to uncover new avenues for resilience in their communities and territories. At the same time, in emphasizing the role of the state in shaping the possibilities for rural resilience, it also contributes to research that demonstrates the need for political frameworks that support the rights of rural peoples to their traditional resources and territories as well as to food sovereignty (e.g. Altieri & Toledo, 2011; Aylwin, 2008; Haughney, 2012; Kowalczyk, 2013; Schlosberg & Carruthers, 2010; Susskind et al., 2014). Overall, the findings of this study advocate for the validation of rural peasant and Indigenous peoples' claims to land, resource governance and control over their food systems, as well as pointing to the need to provide support for communities in the political sphere in their efforts to build resilience.

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Appendices

Appendix A:
Community Participant (CP) Information

Participant	Mapuche/non-Mapuche	Gender	Nodo participant	Designation in project
CP1	Non-Mapuche	F	Yes	Entrepreneur
CP2	Non-Mapuche	F	Yes	Entrepreneur
CP3	Non-Mapuche	F	Yes	Entrepreneur
CP4	Non-Mapuche	F	Yes	Entrepreneur
CP5	Non-Mapuche	F	No (no involvement in tourism)	N/A
CP6	Non-Mapuche	F	Yes	Entrepreneur
CP7	Mapuche	F	Yes	Entrepreneur
CP8	Mapuche	F	Yes	Entrepreneur
CP9	Mapuche	F	No (but involved in tourism)	N/A
CP10	Non-Mapuche	F	Yes	Manager
CP11	Non-Mapuche	M	Yes	Manager
CP12	Non-Mapuche	M	Yes	Manager
CP13	Mapuche	F	Yes	Manager
CP14	Non-Mapuche	F	Yes	Manager
CP15	Mapuche	F	Yes	Manager
CP16	Mapuche	M	Yes	Manager
CP17	Mapuche	M	Yes	Manager

Appendix B:
General Consent Form

The following is a direct translation of the consent form signed by each individual before his or her participation in the study:

Wilfrid Laurier University: Informed Consent Statement
Situating Community Resilience within the Political Landscape: An Investigation of Rural Livelihoods in Chile's Bíobío and Araucanía Regions

Principal Researcher: Julia Ercolani, Masters of Environmental Studies student in the Department of Geography and Environmental Studies at Wilfrid Laurier University, Waterloo, Canada. Email: erco9590@mylaurier.ca

Co-Researcher: Cristóbal Ignacio Rojas Alday, Research Practitioner: *Nodo de Turismo Culinario Comunitario Nahuelbuta* project, University of Concepción. Email: crojas@udec.cl

Supervisor and Co-Researcher: Dr. Alex Latta, Associate Professor, Wilfrid Laurier University. Email: alatta@wlu.ca

You are invited to participate in a research study. The purpose of this study is to look at the political, social and economic factors that shape opportunities for sustaining local cultures and ways of life in communities that are involved in the *Nodo de Turismo Culinario Comunitario Nahuelbuta* project. I am interested in gaining a better understanding of the challenges faced by small producers, including issues of resource availability and access, as well as how their involvement in the culinary tourism project helps them to address these challenges.

INFORMATION

If you agree to participate in the study, the principal researcher will be visiting you for a period of 1-2 days in order to get to know more about the basis of your livelihood in relation to the local territory. This will involve informal discussion with the researcher as she accompanies you during your daily activities. She will take notes of what she is learning during these activities.

You will also be asked to participate in an interview, which will last approximately 60-90 minutes, depending on your time availability. You will be asked to answer questions related to your productive activities as well as your participation in the culinary tourism project. With your consent, interviews will be audio recorded and later transcribed, but this is not a requirement for participation. If you choose not to have the interview recorded, the researcher will solely take notes during the interview.

RISKS

The risks for participating in this study are relatively low. Revealing personal information during interviews might raise concerns of privacy, but the researcher is committed to protecting the privacy and confidentiality of the participants (see the "CONFIDENTIALITY" section). Discussing personal information or political and economic issues may also result in discomfort or emotional distress. You have the right to refuse to answer any question that you do not feel comfortable answering, and are free to withdraw from the interview or the study itself at any point in time.

BENEFITS

The study will contribute to understanding how the *Nodo Culinario* project's goals and outcomes fit into a broader set of conditions and relationships that impact efforts to build a collaborative basis for local economic development based on communitarian tourism. To the extent that this research is able to inform policy discussions, it can also contribute to efforts to recognize and respect indigenous and peasant rights to resources and to local economic strategies.

CONFIDENTIALITY

As topics discussed may be of a sensitive nature, no names or other potential identifiers will be used in the final results of the study, and pseudonyms will be used in field notes and research results in order to ensure the confidentiality and anonymity of participants. Nevertheless, given existing publicity around the *Nodo Culinario* project, it might be possible for those reading the outputs of the study to make an educated guess about the identity of the research participants.

All information disclosed to the researcher is considered confidential. Only the researcher and two co-researchers will have access to the data. Audio files recorded during interviews as well as photos taken during the visit will be uploaded to the researcher's password-protected laptop and deleted from the recording device and camera immediately following each interview. The laptop as well as all written notes will either be in the possession of the researcher or kept in a secure location at all times. The interviews will be transcribed, after which the recordings will be deleted. The transcripts and photos will be retained for a minimum period of 7 years, as they may form the basis for a longer research project. The georeferenced photos will also be shared with the *Nodo Culinario* project team, and may be retained indefinitely as a basis for long-term monitoring of environmental change.

Quotations from interviews may be used in the final results of the study, but no names or physical identifiers will be used. You have the option to participate in the project as a whole but not have your quotations used in the final report.

CONTACT

If you have questions or concerns at any time about the study or procedures, you may contact the researcher, Julia Ercolani, at erco9590@mylaurier.ca or at 9-82565289. You may also choose to contact the researcher's supervisor, Dr. Alex Latta, at alatta@wlu.ca, or at (01) 519-884-0710 ext. 3115. This project has been reviewed and approved by the University Research Ethics Board. If you feel that you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Dr. Robert Basso, Chair, University Research Ethics Board, Wilfrid Laurier University, (519) 884-0710, extension 4994 or rbasso@wlu.ca.

PARTICIPATION

Your participation in this study is voluntary, and you may decline to participate at any time without penalty. You have the right to refuse to answer any question or participate in any activity. If you withdraw from the study, every attempt will be made to remove your data from the study and destroy it.

FEEDBACK AND PUBLICATION

The results of the research will be shared through a written thesis and academic presentations as well as possibly in published journal articles. Where possible, all of these outputs will be made publicly available, but as they will be in English, a separate Spanish-language report of findings will be submitted to the coordinators of the *Nodo Culinario* for distribution to all participants.

Participant's Initials: _____

CONSENT

I have received, read and understood the informed consent statement and understand the potential risks and benefits of participation. By signing below, I agree to participate in the study:

Participant signature: _____ Date: _____

Researcher signature: _____ Date: _____

I agree to have my interview recorded:

Yes ☐
No ☐

I agree to have quotes from my interview included anonymously in the results of the study:

Yes ☐
No ☐

I agree to have photos of resources or activities taken by the researcher, and agree to their use in research outputs:

Yes ☐
No ☐

Appendix C:
Direct Quotations (Spanish)

The following are the original Spanish transcriptions of the quotations used throughout the thesis:

Chapter Two

[1] No me enseñaron a preparar la papa nativa. No nos enseñaron a preparar la quinoa. Nos enseñaron a preparar algo más con linaza…. Por muchos años la gente que mantenía la papa nativa… llegaba la gente PRODESAL y les decían: 'esta papa le trae enfermedades a sus cultivos. Bótela.' Y así se fue desplazando la semilla del territorio. La gente fue perdiendo su identidad cultural y su identidad patrimonio alimentario a través de eso…. porque la gente de INDAP les dice que 'esa papa está contaminada' o 'esa quínoa, no se la dimos nosotros – ¿de donde la sacó?'

[2] PRODESAL, me dijeron 'coloque tal cosa, para matar a este bichito. Coloca esto otro.' Y yo no. No, quiero natural, no mas. Hay plantas que se me mueren, pero ni modo…. todo el mundo le dicen 'no, tiene que ganar tanta plata'…. Pero yo veo que, lo que yo estoy comiendo esta sano, yo lo produzco, y si puedo venderlo yo se lo que estoy vendiendo…. trato de mantener siempre, mantener lo orgánico, nada de químicos.

[3] Si no tiene un permiso uno no puede hacer nada. Ese es el problema. Tengo que esperarme una año mas para poder tener mi pieza sanitaria para hacer todo hecho, el proceso del marisco…. y ya ahí le dan el permiso, antes no. Entonces por eso, no puedo hacer nada todavía…. uno tiene que traerlo para su casa; si usted lo sale a vender ahí mismo al publico tiene problemas con sanidad.

[4] La resolución sanitaria… exigen tantas cosas que a uno que en el fondo mas vale trabajar así, no sacándola… pero también tiene una desventaja porque no podemos ofrecer por Internet, o… poder ofrecer por ejemplo a instituciones publicas…

[5] Todos venden a caseros…. Todos tienen su casero. Su contacto.

[6] Hay mucho cambio aquí en Elicura. Ese rio era súper, harta agua, Rio Elicura. Entonces allá hay harta agua, cuando los inviernos antes llovía mucho…. el rio pasaba por ahí, ahora no. El lago salía al camino - se inundaba todo, todos los años… que eso no pasa.

[7] Teníamos maqui todo el año… y en la noche, comiendo avellana. Eso era la vida que teníamos antes. Pero ahora ya es difícil porque esas cosas, los cerros, se lleno de forestales… ahora cuesta encontrar lo poco que hay…. yo me acuerdo que íbamos a la murtilla y encontrábamos diferentes sabores de murtilla…. y resulta que ahora cuando uno va, están los pinos… yo le encuentro el sabor del pino a la murtilla, de verdad.

[8] Los esteros están todos escritos por empresas, por gente particulares de otras partes. Entonces que vengan un día y le digan 'mira, no puede tener mas agua por el sentido que ustedes no tienen derecho de agua escrita.' Eso podría pasar en el futuro porque como dicen que en el futuro va a faltar mucho el agua. Y eso seria un gran problema que tendría la gente del campo, porque son muy pocas personas que tienen sus derechos de agua.

[9] Esas tres cosas que, en forma paralelo… en ciertos momentos la cabaña me ha dado mas dinero, después pagaba la artesanía… en un momento el huerto cuando lo puedo trabajar, también me dio mas…. mientras uno subo el otro bajo, y el otro se mantiene.

[10] Yo antes iba a mariscar, en un rato llenaba todas esas mayas, que tu vistes. En un ratito la llenábamos. Por ejemplo, los caracoles ya no así son ahora… eran así, todo grande, todo distinto. Eran inmensos…. en comparación con los que vistes. Habían mucho de todo. Pero si tu vas ya no queda prácticamente nada.

[11] Acá la forestal nos contamina el agua, los campos, los frutos silvestres… porque yo igual era recolectora de frutos silvestres… me gustaba hacer las mermeladas de mora, de frutilla, y del maqui… muchas cosas que ya no acá en el cerro.

[12] Uno ahora tiene que proyectarse a un turismo por las cosas que las tierras no dan… el campo es chico. Bosque queda muy poco…

[13] Ojala que no desparezcan, como desapareció el maqui blanco…. yo lo puedo mostrar hoy día porque estoy haciendo algunas pequeñas plantas para regalar a la gente que tiene previos, fundos, para que pueda cultivarse de nuevo.

[14] No solo somos Mapuches, somos protectores…. llevar eso a la casa, plantar eso en la casa, tratar de seguir protegiéndola… mi hija, tiene cosas que ella no ha visto, no conoció, y mis nietos. Si no trata de mantener esas cosas cerca de su hogar, plantar… no las van a conocer tampoco.

[15] No, no todos, somos algunos, no mas. Intentamos nosotros de que los otros lo hagan pero no siempre quiere. Por eso yo misma en el invernadero me sale pasto… muchos le echan un químico que mata pasto. Le echan una ves y ya no sale mas pasto. Que momento que me llegan hartas hormigas, con que lo puedo eliminar, sin ponerle químicos, nada. Hay gente que no lo hace… somos pocos los que trabajamos orgánico.

[16] Hace años atrás nosotros realizamos las fiestas costumbristas…. pero era muy poca la gente que participaba en la comunidad. Al final siempre fue mi familia, nosotros como familia lo empieza. Entonces cuesta mucho. Cuesta mucho hacer entender a la gente que no es por mi bien, no hay por un bien persona…

[17] Habían muchas familias que habían perdido sus casas completamente y no tenían alimento…. nos empezamos a reunir y nos empezamos a organizar y formamos un campamento que fue uno de los campamentos mas grandes que hubo acá en Llico. Lo organizamos a través de la junta de vecinos ya que iban pasando los días y vimos que no llegaban los militares, que no había ayuda.

[18] No hay trabajo y la mayoría de las mujeres hacen lo mismo, para poder vivir de día a día. Entonces ya hay poco mariscos. Y uno tiene que ver formas de cómo puede hacer y optar por otras cosas…. porque aquí el sistema es malo. Aquí no hay apoyo municipal. No hay trabajo…. después que hubo el terremoto ya se empezó a hacerse a un lado, esta comuna.

Chapter Three

[19] No solamente estoy valorando una vista escénica, estoy valorando un patrimonio cultural… también estoy valorando la cultura de un pueblo originario, valorando la forma de vida porque esta ligada a la naturaleza…. no solo estoy viendo el tema escénico. Es mas integral.

[20] No con tanta gente…. no es la idea de todos los días tener turistas. No quiero eso, quiero tener un tiempo libre…

[21] Hablan de cantidad masivo…. hablan de cantidades y sea ojala que traigan un montón de turistas…. Lo mío no es tener todos los días lleno de esto acá no, porque seria contaminar.

[22] Mi mama, este año tiene 75 años, y esas manos artesanías, esas historias se esta perdiendo..… no queremos que eso, esa historia, se pierda. Que no tengamos una forma de contar a las otras generaciones como es la historia del queso. Por eso queremos ver la forma de que esta ruta…. muestre mas que el producto…. muestre la historia igual.

[23] Tengo que darle valor a los productos locales, los productos de temporada; ayuda a motivar a la gente de los territorios para que se queden en los territorios.

[24] Para que los frutilleros se sientan dueños de un patrimonio o parte de un patrimonio cultural que hay que proteger. Si, esta es la razón de la ruta - no es tanto lo comercial, sino que exponer el valor, un patrimonio biológico y alimentario para que no se pierda. Mientras mas gente lo conozca, mas la gente interesada ven, y los frutilleros que hay, van a quedarse. Los hijos van a ver con interés que eso funciona y sirve para generar recursos y no van a abandonarlo…

[25] Es para poder mostrar…. que podemos mostrar a la gente, explicarle a la gente, de quienes somos nosotros, de como vivíamos antes…. son tantas cosas que se están perdiendo, y si nosotros no traspasamos, si nosotros no las conversamos, no las damos a conocer con personas que realmente necesitan saber, ¿como van a saber? Al menos yo estoy muy contenta con este grupo de Ruta de Nahuelbuta. Estoy muy contenta para poder demonstrar y conversar y recordar…. mantenemos nuestras tradiciones todavía.

[26] No tengo miedo, porque se hasta donde puedo abrir la cultura.

[27] Para mi el turismo comunitario es una conducción colectiva de algo que tenemos que sea mostrado y reconocido y en eso se involucra la comunidad, no es solo una persona…. el turismo comunitario que su base no es la competencia.

[28] Yo creo que el turismo comunitario…. se puede lograr grandes cosas, podemos llegar al estar todos unidos como ruta o como provincia, podemos mostrar muchas cosas. Pero tenemos que estar unidos. Ir poniendo la idea para potenciar la provincia mas que nada.

[29] Trabajamos con mas gente - la gente que es artesana, la gente que hace pan, la gente que tiene huertos, alguien que puede ser guía…. entonces es una forma de turismo comunitario donde entra indirectamente mucha gente porque cuando llega el turista quiere comprar almacena, panadería, se mueve todo por el comercio de la actividad productiva por el territorio.

[30] Existió el concepto comunitario – pero desapareció por la dictadura. Antes la gente vivía mucho en comunidad. Había un concepto de cooperativismo…. ese concepto de trabajar en comunidad. Entonces la mentalidad del Chileno cambio, y se volvió individualista…. Pero antes Chile no era así, era muy cooperativo, la gente se ayudaban todos, y los campos antes del golpe se hacia una cosa que se llamaba *mink'a*, que era que yo tenia un campo, le pedía ayuda a mis vecinos, y ellos venían a ayudarme gratis y yo después le iba ayudar a el gratis. Y todos teníamos buena cosecha y vivían bien.

[31] En Chile, hay un sistema campesino que fue decimado en la dictadura o sea las organizaciones campesinas… las destruyeron. Ha costado mucho reconstruir ese sistema.

[32] Cuando yo hablo de economía solidaria estoy hablando del mercado, del mercado local - con distinta forma…. haciendo también una valorización de lo que otras y otros pueden entregarnos o entregar nosotras a otros…. Porque lo intercambio, la lógica se da desde otra forma, es por necesidad. No involucra precio sino que una necesidad de algo…. la necesidad que tenia los pueblos o la comunidad sobre ese producto.

[33] También rescatamos todo la papa nativa que había antes…. estábamos haciendo *trafkintu* de cosas que existían antes, la linaza por ejemplo, que ya no se ve…. ahora el hecho de estar en organizaciones, hemos rescatado tantas cosas – la quínoa, porque la quínoa ya no había.

[34] No es una imposición, no es que venga un profesional o una institución y diga 'ya, para producir uva país tu lo tienes que hacer así.' No, es la propia comunidad de acuerdo a su experiencia, a su realidad, va decidiendo como va mantener el sistema… que no dañes el medioambiente, sea lo más natural posible. También tiene una lógica de asegurar este sistema productivo, el acuerdo este, solo le sirva a los sistemas campesinos no a la agroindustria.

[35] Todas nuestras haceres están convergen necesariamente en el tema de soberanía alimentaria. Considerando que la esencia de la vida y que el corazón de la soberanía alimentaria son nuestras semillas. Tener las semillas en las manos tienen que multiplicarlas, entregarlas, y seguir multiplicándolas. Entonces, cada acción nuestra, cada actividad que tenemos están relacionadas con estos.

Appendix D:
Interview Guides and Themes

Interview Guide: Community Participants (CPs)

General themes	Specific themes
1. Productive activities	a) Daily and seasonal productive activities (subsistence or market); household economy; traditional productive practices b) Market; sale of products c) Current state of traditional activities (household/community); loss of vs. continuation/succession of activities d) *Mapuche participants only*: Cultural aspect of production; activities in relation to culture/identity
2. Environment	a) Resources important for survival and livelihood b) Any experiences of environmental change in recent years; resource access/availability/quality and effects on main productive activities c) *Mapuche participants only*: Relation of environment to culture/ worldview; effects of any identified changes on Mapuche way of life/well-being
3. State agencies	a) History of and current relationships with the state (i.e. general feelings towards the state) b) Direct contact with state agencies (e.g. funding agencies) – purpose of this contact and overall satisfaction with these relationships
4. Tourism **Excluding CP5*	a) History of involvement in tourism; importance of tourism in relation to other household activities b) Previous and/or current goals for their tourism ventures/activities c) Reasons for joining the Nodo project; observed benefits or costs, economically or otherwise d) Views on tourism in relation to their livelihoods and communities; potential costs or benefits to engaging in tourism in general e) *Mapuche participants only*: Distinguishing features of 'Mapuche tourism'; potential cultural benefits of and/or threats as a result of tourism f) *Tourism managers only*: Reasons for joining the project as managers, and their perceived role within it
5. Community aspects	a) Community history and activity; perceptions of community participation and cohesion b) Personal involvement in community-level organization(s) c) Community goals according to participant
6. Political activity	a) Personal involvement in political activity / history of political activity b) Connections to non-governmental organizations, and how these connections were formed

Interview Guide: Expert Participants (EPs)

Participant(s)	Position/organization(s)	Interview themes
EP1, EP2	Academics (of the University of Concepción), Nodo project leaders	a) Nodo project history; objectives, activities, and implications for participants/communities involved b) Role of the university/academics in its implementation c) Personal role in the project d) State relations (e.g. funding sources, municipal support) e) Links to other non-profit organizations
EP3, EP4	Government agents: EP3 – regional tourism agency EP4 – national tourism agency	a) State outlook on tourism/cultural tourism or 'Mapuche tourism' in the region/country b) State relations with peasant/Indigenous communities; direct communication/ support c) Goals and primary activities of the agency, respectively
EP5, EP6, EP7	NGO leaders: EP5 – Slow Food Chile EP6 – ANAMURI EP7 – Travolution	a) History, primary objectives and activities of respective organization b) Personal role in the organization c) Implications or benefits for communities connected to the organization d) Relation to the Nodo project

Appendix E:
List of Important Non-Timber Forest Products

The following is a summary of the non-timber forest products (NTFPs) mentioned by several participants as important to their livelihoods, as well as the main challenges affecting the abundance and/or quality of these products today:

Participant	Main NTFP(s) harvested	Observed changes and effects
CP1	- Avellana (*Gevuina avellana*), or the Chilean hazelnut	Decrease in abundance surrounding Nahuelbuta National Park, resulting in a high level of demand and rising prices for the product, as well as a decline in its household consumption, with many families choosing to focus on its commercial sale instead (Wolodarsky-Franke & Díaz Herrera, 2011).
CP6	- Nalca (*Gunnera tinctoria*), or Chilean rhubarb - Changle (*Ramaria flava*), an edible fungus - Wild berries – murtilla, maqui	A producer of artisanal marmalades, CP6 has perceived a decline in these products over the last two years especially. Her main product is marmalade made from nalca, which requires high volumes of water and is therefore suffering greatly due to the presence of plantations around her community of Los Álamos. While she used to collect the product from three different locations, the nalca now grows only in one of these.
CP7, CP9	- Avellana - Wild berries – blackberry, maqui, murtilla	Participant CP7 described changes in the abundance of NTFPs surrounding the Elicura valley since she was a young girl. She recalled that products such as the avellana and maqui berry were eaten in abundance in her household, but that she has perceived a significant decline in the wealth and diversity of these products since (and she now has to purchase avellanas for household consumption). She also remarked on differences in the quality and flavour of these products (e.g. arguing that she can discern the flavour of pine trees in the murtilla berry). For participant CP9, the variety of these products in the areas surrounding Elicura has declined since the planting of eucalyptus. She is an artisanal weaver and has relied on the collection of a diversity of products for the preparation of dyes of different colours; recently, it has become more difficult for her to find this diversity in nature, and she has had to purchase many of her dyes instead.
CP14	- Wild berries – mulberry, maqui	For participant CP14, the harvesting of these products used to supplement her main income from seafood. Due to the replacement of native forest by plantations surrounding Llico, she is no longer able to find these products.