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Doctoral Program in Urban and Regional Development

PhD thesis

Degrowth at a Global Scale?

Geographies of Chile's Fruit Production and Export
between Extractivism and Socio-Ecological
Transformation

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Abstract

Degrowth is a critique of the societal goal of endless economic growth, as well as a political project for socio-ecological societal change, in the pluralist form of a “matrix of alternatives” (Latouche 2010), aiming at a socially just and selective reduction of production and consumption (Schneider, Kallis, and Martinez-Alier 2010; Demaria et al. 2013; Kothari, Demaria, and Acosta 2014; D’Alisa, Demaria, and Kallis 2015; Paulson 2017). Degrowth has emerged from multiple sources, from ecological economics to post-colonial studies, but geography, urban studies and planning, have engaged with it only very recently (and viceversa). The fundamental spatial dimension of the profound societal transformation envisaged by degrowth has only recently been the object of more research and debate, beginning to evolve the associated ‘spatial politics’ from focused on the local scale, mostly proposing the relocalisation of economy and politics (e.g. Latouche 2014), towards a more nuanced account of how to ‘spatialise degrowth’: indeed, a simplistic local/global dichotomy is hard to hold in front of the complex city-hinterland relations of planetary urbanisation (Brenner and Schmid 2015) and a relational perspective on geography in general (Massey 2005). In this perspective, the proposal of a generalised relocalisation modelled on nowtopias, ecovillages and bioregions, appears unrealistic (Xue 2014; Mocca 2020; Krähmer 2022). Recent debates on the “degrowth city” have evidenced the challenge to develop possible degrowth trajectories at the urban scale (Nelson and Schneider 2018; Lamker and Schulze Dieckhoff 2019; Brokow-Loga and Eckardt 2020; Savini, Ferreira, and Schönfeld 2022; Krähmer and Cristiano 2022; Krähmer 2022).

A further way to overcome the “local trap” (Purcell 2006) and “methodological cityism” (Angelo and Wachsmuth 2015) of considering only the local dimension, is to recognise that cities are based on relations with hinterlands. The process of urbanisation regards both cities and hinterlands and so must its critique in a degrowth perspective. A step in this direction are contributions on the critical analyses of the green city strategy (Næss et al. 2011; Mössner and Miller 2015; Xue 2015; 2018b; Krähmer 2020), evidencing how growth-oriented cities cannot be sustainable as decoupling remains a delusion (Parrique et al. 2019) based on externalisation (Moore 2000; Hornborg 2006; Lessenich 2016). To counter this model, also defined as an “imperial mode of living” (Brand and Wissen 2017), a proposal is that of imagining a “Solidary Degrowth City” (Brand 2020b; Eckardt 2020) with the idea that a local urban degrowth politics must start with the deconstruction of global relations of unequal exchange and externalisation, building instead relations of mutual solidarity. In this context, the exploration of the geography of production and trade of a commodity in Chile for global city hinterland relations, analysed in the form of a commodity chain (Leslie and Reimer 1999; Cook et al. 2004; 2006;

Bakker and Bridge 2006), aims at reworking and overcoming the local/global dichotomy in degrowth's conception of space. This study confronts the 'conventional' and extractivist case of Chilean agroindustrial fruit production with 'alternative' cases in which attempts are made to foster commercial relations based on principles of solidarity, close to degrowth values: i.e. relations in which power imbalances are reduced and export does not favour extractive forms of production but is integrated in strong and complex local economies and respects the environment. As much as these alternative practices do not (yet) form a coherent model, their analysis, in comparison to the mainstream model, provides the basis for reflections about how a degrowth transformation could and should approach the networks of planetary urbanisation, informing a more grounded and multiscalar 'spatial politics of degrowth'.

Keywords: Degrowth; Socio-Ecological Transformation; Relocalisation; Extractivism; Commodity Chain; Planetary Urbanisation; Fruit; Chile

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Attachments

The transcriptions of most interviews (those with relative informed consent granted by interviewees) conducted for this research are can be found under:

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1. Introduction

1.1 A Stroll Across the Market (Or: Why to Follow Fruit Around the World to Research Degrowth?)

When I go to my local market, I choose the local products. The apple and the cabbage from the stalls of farmers from the region, the chickpeas from central Italy and not from Mexico, even though the Italian ones are more expensive. The reason to do so is twofold. The main point is that I know (or I assume to know) about the impact of logistics, the ecological footprint implied by shipping things around the world and that this seems to be a useless, avoidable impact, in an era of ecological crisis. The second reason is that I assume that in many cases I can establish an easier, more direct, relationship to closer producers. If I buy my tomatoes from the farmer, there are no intermediaries. I am conscious that this does not necessarily mean that the local farmer behaves in any better way than a farmer far away – they may use the same amount or even more pesticides: what I value is rather the personal relationship itself – being able to chat about a recipe or to learn a word of Piedmontese dialect – and at least having the *possibility* to go there the next day and touch the earth where the cabbage has grown with my own hands. This seems, not controllable perhaps, but ‘touchable’. A dense, direct relation.

But then, what I also love about this market, Porta Palazzo in Turin, Italy, is precisely the opposite. It is its “global sense of place”, Doreen Massey (1994), described so vividly. Porta Palazzo is a local market in which one can immediately experience how a place is constituted by the meeting of relations (Massey 2005) – relations which are truly global, that touch Morocco, China, Romania, Nigeria and many other places through stories of migration as well as trade. I am, myself, a (privileged) German migrant in Italy. In other words, I love cities and I love them very much for this sense of global interconnectedness and “throwntogetherness” (Massey 2005) that characterises them. As much as I love the rural (which I think still exists), the countryside, for its (traditional? natural?) beauty, conscious that my situated gaze, coming from the city, sometimes romanticises, even though I am aware about how much the rural evolves as well, has a history as well, is historically constructed, globally connected (if, maybe, sometimes, at a lower pace and intensity than cities) and will continue to change in future (Massey 2005).

This research is not about *the* global vs. *the* local, *the* urban vs. *the* rural. But, as problematic as these dualisms are, and as much as many have tried to overcome them, it has something to do with these concepts. It has to do with the idea that these concepts express something important but that too often they are used in too easy, binary, opposition, while instead, more often than not, they are entangled in complex ways, which I want to understand in a deeper way. That is because this work is based on two – sometimes – clashing traditions of thought, I am, part by chance, part by choice, involved in: urban studies and the degrowth debate.

Degrowth, as I will discuss in much more detail below, is a debated and complex field, both academic and activist (I try to be both). But for sure, as complex as degrowth positions are, a certain preference for the local, sometimes justified by rational arguments, sometimes by a more romantic feeling, sometimes by both, often plays an important role. I have been engaged in the degrowth debate and movement for years now, because I am convinced that it is an excellent and necessary framework for the profound socio-ecological transformation we (in the global north and in alliance with others in other parts of the worlds) are called to embrace in the years to come.

Urban Studies instead are a wide and meandering field of academic debate, but it has, as one of its few certainties, at its centre of analysis the immensely complex object we call the city – thus, accepting it in the first place as something perhaps not definable, but existing. But also here, often, a certain urban romanticism surfaces, a certain ‘feeling good’ about studying the city, in the city, from the city, feeling that it is extremely fascinating. A romanticism, I understand very well.

Now (I am conscious that this cannot be a truly clean operation), what I want to do in this research is to strip away, as much as possible, these two romanticisms and take, on the one side all the critical arguments degrowth provides, about modernity, about progress, about globalisation, about economic growth of course – all concepts which (isn’t it even too obvious to say?) have to do a lot with ‘the city’ – and on the other side, the recognition though that the city is a fact: debatable in its terms, its definitions, not in its existence. Which kind of city? A city that is part of relational spaces, crossed and constituted by all kinds of ‘local’ and ‘global’ relations. Both the very material relations of planetary urbanisation (but also dependency theory, unequal ecological exchange, extractivism, urban political ecology etc.); the not-only-material relations depicted by Massey; the still (post-)colonial relations criticised in decolonial literature.

These two certainties together are the fundament of the basic argument I set out from: as much as many claims profoundly critical of contemporary

urbanisation (frequent (not only) in the degrowth debate), are true (or contain truth), the city is a fact. As a consequence, the simple idea that to solve our global social and ecological challenges, the best answer would be to unbuild our global (urban) geographies and to (re)localise politics and the economy, building contained, if open, local communities, is not a feasible strategy. And probably not even a desirable one. Instead, degrowth transformations need to start from and engage with existing geographies in all their complexities and contradictions and at all scales. Also *urban* geographies. And in particular engage also with those relations, also global and also material relations, that constitute these geographies. This is not the only question my two basic arguments lead to, but the one I have chosen to focus on: how can these relations, these spaces be reshaped to build what Ulrich Brand (2020b) has called the Solidary Degrowth City¹, i.e. a city not based on imperial mode of living that depends for its energy and resources on exploitative relations with other places but a city which establishes relations to those other places based on a logic of mutual support and benefit?

The empirical core of the research is the exploration of one, at least apparently, simple example of such a relation: fruit produced in Chile and exported to the world (see Section 6). Inside this case, I operate through differentiations. Most importantly making a difference between a ‘mainstream’ agri-industrial extractive model and a number of different ‘alternative’ approaches to do the same thing, reacting to the socio-ecological problems to which the former model contributes. This is not about a life cycle analysis. This is not about quantifying what the ecological impact of these products is. This is not about changing my mind about what to choose when I go to my local market (I am perfectly fine with the tensions in that choice and in that place – it is precisely what makes it so fascinating (cfr. Massey)). Making a fast forward to the end of this theoretical part (Sections 1 to 5), these reflections instead lead me to the following research questions:

Underlying theoretical questions:

Taking up existing research and research methods on commodity geographies (cfr. Section 3), how are the metabolic flows of cities, fundamental for their existence in a relational view of space, organised?

Do these research methods allow to identify different, more or less just and sustainable forms of these relations? Why are they more or less just and sustainable?

1 Solidarische Postwachstumsstadt, literally Solidary Post-Growth City. In German, due to the impossibility of forming an exact translation of the word degrowth, Postwachstum is often used instead. Not necessarily this has to do with the (in my view not particularly interesting) debate about the differences between de- and post-growth.

How can research in the tradition of commodity geographies allow to discuss differentiated perspectives for the transformation of these geographies in a degrowth context?

Discussing these in sections 2, 3 and 4 leads to the basic hypothesis that the multiscale spatial politics of degrowth should comprise a quantitative limitation of the flows of social metabolism around the globe, while not aiming at their elimination and secondly, a qualitative reorganisation of these relations, from extractive and exploitative to fair and solidary.

The empirical part (Section 6) is supposed to test this hypothesis through the case study of Chilean fruit, guided by the following questions:

1) Informing the empirical research

What is the global commodity geography of Chilean fruit made of? Which are the places, actors, nodes, relations and linkages, directly and indirectly involved? How do actors in the geography interact? With which power relations, how does one end of the geography influence the other?

2) Interpreting the results of the empirical research

What can the description of this global commodity geography imply for degrowth? In relation to the values and goals of degrowth, what could be seen as positive or problematic and why? In single nodes of the geography or in the relations between them? In terms of power geometries, ecological impact, social justice? If the commodity geography or parts of it can be criticised as extractivist, is the global scale a reason for this? And if yes, why and what does this imply?

3) Differentiating the interpretation between different 'forms' researched empirically

What are commonalities and differences between the different forms of this geography? How and why are these forms different? Can existing alternative practices of production and trade be a blueprint for a new model of global trade? And under which circumstances of economic and societal transformation?

4) Going back to theory

How much are the answers to these questions determined by the specific cases, their scale, the kind of product? What can this case study say in general about global metabolic relations in a degrowth perspective? Based on this research, what are the conclusions for a 'spatial politics' of degrowth? Is the global scale the problem of global trade relations or something else? Can global trade be compatible with a socio-ecological degrowth transformation? How and in which quantities? Why and how should the results lead to a different formulation of the 'spatial politics' of degrowth?

I will come back to these questions and to the methodology employed to try to answer them in Section 5. But before, in the rest of this first section I reflect on the necessity of degrowth and about my positionality in this research. In Section 2 I look deeper at the spatial dimension of degrowth in a variegated literature and try to evolve it. In Section 3 I discuss the literature on commodity geographies, which I consider the empirical tool to illuminate my research questions. In Section 4 I sum up my theoretical framework. Then, in the long sixth section I discuss the results of my fieldwork, arriving at the conclusions in Section 7.

To follow this product, fruit, finally is a tool, a way to enter a global network of relations. An unassuming product, which I hope, can help to build, with the lens of degrowth, a picture of the relations that make cities, which can help to build a more complex and more helpful idea about how to transform these all too often very unsustainable and unjust global urban geographies.

1.2 The Necessity of Degrowth: a Short Summary

It is quite unoriginal nowadays to write that humanity is facing profound global environmental and social challenges. Far from unanimous though is the way in which this multifaceted crisis should be addressed. Conventional wisdom argues for sustainable development and green economy, relying on the assumption that economic growth can be decoupled from environmental damage, which apparently is an illusion, as has been shown both in general terms (Parrique et al. 2019; Hickel and Kallis 2020) and analysing specifically green city policies (Næss et al. 2011; Mössner and Miller 2015; Xue 2015; 2018b; Krähmer 2020).

Beyond evidencing the necessity of a different approach to environmental crisis, if the strategy of decoupling is an unfeasible endeavour, we need to find different ways to solve global socio-economic inequalities: the “trickle-down effect” is no longer an option if growth is deemed to be ecologically unsustainable. This becomes even clearer when relations of unequal ecological exchange are taken into consideration (Hornborg 2006), clarifying that “wealth” in the “global north” and “poverty” in the “global south”² are not independent events but structurally connected to each other, two sides of the same coin. This can also be related to the concept of planetary urbanisation and the relationships between city and hinterlands or concentrated and extended urbanisation (Brenner and Schmid 2015; Brenner 2016). This again is closely connected to the ecological challenges, for

2 I use those expressions here in quotes as degrowth theories also criticise the very mainstream conceptualisations of wealth and poverty, “development” and so forth (Kothari, Demaria, and Acosta 2014; Lang 2017)

example through the “commodity frontiers” (Moore 2000), the processes through which continuously expanding capitalism commodifies places and goods, by way of accumulation by dispossession (D. Harvey 1982), accompanied by ecological destruction.

The degrowth critique though goes beyond Marxist criticisms of capitalism, deconstructing the very idea of progress and development (Latouche 2014; Kothari, Demaria, and Acosta 2014; D’Alisa, Demaria, and Kallis 2015; Lang 2017; Escobar 2015; Kothari et al. 2019; Nirmal and Rocheleau 2019) which in any version (also a socialist one) tends to the problematic idea that there is somehow one correct and universal direction all human communities and societies should follow unlimitedly to find happiness and well-being and that any such thing like *unlimited* progress and development, understood as unlimited economic growth and an unlimited increase of human well-being, is possible.

In this sense, degrowth, which is at same time critical analysis and political project, proposes itself as a “matrix of alternatives” (Latouche 2010), which aims at a profound cultural, social and economic transformation, centred around the “equitable downscaling of production and consumption that increases human well-being and enhances ecological conditions” (Schneider, Kallis, and Martinez-Alier 2010, 512). Degrowth strategies and proposals comprise, for instance, the re-politicisation of the economy, the decolonisation of the imaginary, decommodification, commons, conviviality, simplicity, sufficiency, basic and maximum income, community currencies, co-operatives, eco-communities, relocalisation, pluriversal alliances etc. (Latouche 2014; D’Alisa, Demaria, and Kallis 2015; Fitzpatrick, Parrique, and Cosme 2022; Nirmal and Rocheleau 2019; Demaria, Kallis, and Bakker 2019; D’Alisa and Kallis 2020; Barca, Chertkovskaya, and Paulson 2019).

Such a scenario of societal transformation has an important spatial dimension, which from the start of the debate has been conceived mainly as a move towards the (re)localisation of economy and politics, and a strategy of transformation mainly passing through small-scale transformations, such as ecovillages, bioregions etc. (Latouche 2014; Xue 2014; Mocca 2020). I will turn to a more detailed literature review in section 2, but here it is important to introduce that in fact for a long time the conception of space in degrowth narratives has been relatively limited and sometimes naïve. In recent years though, a wider debate has developed, mostly around political and planning proposals for a “degrowth city” (Nelson and Schneider 2018; Lamker and Schulze Dieckhoff 2019; Brokow-Loga and Eckardt 2020; Savini, Ferreira, and Schönfeld 2022; Krähmer and Cristiano 2022; Krähmer 2022). Many of these contributions come from design-oriented disciplines like architecture and planning. While they have without doubt advanced the debate and made fruitful contributions, showing for example

existing alternatives in concrete collective projects and evidenced the need to think creatively about the possibility of utopian transformations, the debate remains to a large extent normative. Frequent are abstract debates like the one if the city is better or the village, which actually ignores the complexities of existing geographies and treats space as a kind of *tabula rasa* on which to realise idealised projects, as I have argued elsewhere (Krähmer 2018). Such a conception of space and spatial politics, that focuses on a strategy of relocalisation, may certainly be part of a degrowth strategy but appears to be very limited in front of the vast transformative ambitions of degrowth. And, as (Mocca 2020) underlines, this local dimension has been uncritically assumed as being the right one, without any sufficient effort to debate and research thoroughly the spatial dimension of degrowth, as well as a potentially multiscalar ‘spatial politics of degrowth’. Only over the last couple of years a debate on the challenge of ‘spatialising degrowth’ has been emerging (see Section 2 for more details). Building on first steps in this direction (Mössner and Miller 2015; Xue 2018b; Nelson and Schneider 2018; Brokow-Loga and Eckardt 2020; Krähmer 2022; Krähmer and Cristiano 2022; Schulz and Braun 2021; Demaria, Kallis, and Bakker 2019; Mocca 2020; Khmara and Kronenberg 2022; Kaika et al. 2023; B. Schmid 2022), this research proposes to contribute to fill this gap in the degrowth literature.

1.3 Myself and this Research

Before diving deeper into the theoretical framework of my research, I consider it important to start with some reflections on the positionality of my research and myself as a researcher (Gregory et al. 2011 – entries on positionality, reflexivity, situated knowledge). Thereby I do not suppose to be able to clarify all my potential implications with the research topic nor to arrive at a total transparency which might be as illusionary as the presumption of a perfect objectivity – but simply to make a few remarks and reflections to recognise the embodiment and partiality of knowledge (Gregory et al. 2011) – entry on situated knowledge) which condition my research. I will come back to these questions when discussing my methods in section 5, but I consider it important to make this short disclaimer about my personal background and motivations here, before entering the detailed discussion of theory in the following section. Because my positionality is relevant not only in relation to my empirical work but has also influenced why and how I have approached the research as a whole and my work on theory. That is why in these lines I want to clarify what has motivated me to engage in this research. Even more so as the aim of overcoming presumably neutral and universal norms of how to do

research, at the centre of the debates on positionality, reflexivity and situated knowledge raised by Haraway, Rose, Katz and others, resonates very much with degrowth's objective to deconstruct the idea of development as the one and only right path to take for all human societies and communities (cf. Section 2).

For me – I started as an environmental activist with Greenpeace in Germany at the age of thirteen, eighteen years ago – the degrowth framework has become ever more convincing since I started to engage with it around ten years ago, becoming part of the Italian Movimento per la Decrescita Felice (www.decrescitafelice.it) and participating to the international scientific (and activist) conferences on degrowth (www.degrowth.org) in Venice 2012, Budapest 2016, Malmö 2018, Manchester 2021 and The Hague 2021³.

We are in the middle of a global environmental crisis that we humans, as a species, have produced and that threatens our own existence (or at least the relatively pleasant conditions of life we have found on this planet). To attempt to solve this crisis we need to reduce our societal throughput in terms of energy and matter, i.e. reduce total production and consumption. Obviously, the responsibility for this task is not equally distributed. We may all be on the same boat – but on different decks and in different positions of power. A study by Oxfam⁴ has famously shown that the upper 10% of the population is responsible for 52% of greenhouse gas emissions, while the lower 50% is responsible for only 7%. These inequalities (which are also spatialised) have all kinds of implications. Still, it must also be considered that this shows as well that 40% of the population is responsible for 41% of emissions (see also Chancel and Piketty 2015). And it is this 40% we as average citizens of the global North are part of. I am part of, as a white, middle-class German man living in Italy.

Certainly, there are governments with more responsibility, enterprises with greater guilt, rich individuals who more strongly benefit from the system that is behind these apparently simple numbers. It is, however, important to me to be aware of our co-responsibility as average western citizens. This responsibility does not consist so much in having actively and consciously chosen to live consumerist lives in a productivist capitalist growth-oriented society – which hardly is the case – rather it is related to the fact that in many ways we benefit from this system. And that we support it, as a consequence. My possibility to earn money as a researcher, without the need of growing my own food (which in part I would also enjoy doing) and without the need to dig the metals (which I certainly would not enjoy doing) necessary to build the computer I use to type this text, is also part of this. Even though it happens sometimes, the scope of such reflections is not to feel guilty, but

³ The 2020 conference should have taken place in Manchester but it has been postponed to 2021, due to Covid-19.

⁴ <https://www.oxfam.org/en/research/confronting-carbon-inequality> (Last access: May 2021)

to recognise the moral responsibility to change this state of things. I think there is a profoundly moral question at stake here and not simply an abstract, impersonal, mechanic historical or materialist necessity. Thus, degrowth: A profound rethinking of our society, our way of living, aiming at making compatible less production and consumption with more equity and greater collective and individual well-being. As degrowth has been playing an important role also in my life as an activist, this poses to me as a researcher the challenge to distance myself somewhat from an activist position in order to be able to critically assess the degrowth framework. Which is precisely what this research is about: a critical discussion of conceptions of space and scale in the degrowth debate.

Degrowth in space: having studied planning at the Politecnico di Torino, while being active in the degrowth movement, for a long time I have been struggling to connect these two perspectives. This has not been an easy task as interest in my university context for degrowth has been as limited as much as the interest for urban and spatial issues in the (Italian) degrowth movement (with a few exceptions, such as the formulation of this little and imperfect manifesto I contributed to a few years ago⁵). Only recently this has started to change and in particular at an international (mainly European) scale, researchers have started to work on the interfaces of degrowth, planning and geography. While for a long time it has been hard to discuss and share my research ideas with somebody on a common ground – as interests tended to be limited either to a degrowth approach or to a spatial approach – over the last couple of years with some colleagues we have been contributing to a slowly building international network of researchers interested in degrowth and space⁶ and I could write this book with my colleague Silvio Cristiano (Krähmer and Cristiano 2022).

Back to a more personal aspect of my implication with the research and a couple of contradictions, which are very much related to the core idea to research global relations over long distances. On one side, for Hornborg (2019), who writes in a degrowth context, “[t]he crucial political issue is ultimately not a person’s verbal adherence to this or that ideology or moral code but his or her real material impact on impoverished people and ecosystems in the Global South” (p.200). He points to the contradiction that in the global north it is frequently those privileged and wealthy, whose living standards are possible thanks to unequal ecological exchange, who defend “progressive” politics. I find that in Hornborg’s position there is a bit too much an individualisation of responsibility – I think the political sphere has at least as much importance. And it is probably also a somewhat

5 <https://www.decrescitafelice.it/2016/04/manifesto-decrecita-territorio-e-insediamenti-umani/> (last access: January 2021)

6 Loosely organised in the ‘Municipal Degrowth Network’, I have contributed to launch together with Silvio Cristiano and Anton Brokow-Loga.

simplified interpretation of the relation between global North and global South. A relation that hardly can be seen *exclusively* in terms of linear dependence and exploitation. But even so, Hornborg's argument raises an important point and a controversial issue in this context is the impact of my own research (and of my life as a researcher). In the first place, there is to mention the great impact in terms of GHG emissions of my flight to do fieldwork and back – several tonnes of CO2 equivalents⁷ – clearly more than the emissions I would have the right to emit in a year as an average world citizen, if we were to respect the agreements to mitigate climate change, in combination with global equity. A second personal contradiction is related to the house I live in: a (too big) house in the city with a garden in which I grow vegetables. So personally I try to get fruit and vegetables from my own garden or from the farmers' market. And then I research Chilean fruit sent to Italy. Why? Because, even if for me it might not be Chilean apples, I am convinced that in some way I will always remain entangled in some kind of global relations like this one. Margit Mayer (2020) argues that we as researchers are very much dependent on the unsustainable structures of planetary urbanisation ourselves. Not everyone, she writes, makes of this recognition such a radical choice as to leave the academic system and dedicate oneself to projects of alternative living and self-sufficiency. Equally important from her point of view is the choice to use the privileges of academia to change things, connecting directly to, even becoming part of activism. Mayer (2020) makes a powerful call for such engaged research. Today it is necessary not only to research but also to fight for the transformations we need and:

Besides strengthening movements, such groundedness in the empirical realities of 'the urban world out there' and an awareness of those 'othered' by and 'losing' in the global competitive regime of 'failing forward' neoliberalism (Peck and Theodore 2019, 258) are actually preconditions for our research. (p.47)

7 Source: www.atmosfair.de/en (Last access: March 2021)

2. Spaces of Degrowth: from Localism to the Relational Spaces of the Solidary Degrowth City

Over the last two decades a rich academic debate has evolved around the proposal of degrowth, conceived as a desirable project of socio-ecological transformation, in the form of a “matrix of alternatives” (Latouche 2010). A transformation based on a selective and just reduction of production and consumption. On the opposite, sustainable development and green economy are based on the idea of decoupling economic growth from environmental impact – a strategy proved to be unfeasible on both empirical and theoretical grounds (Parrique et al. 2019). It is worth noting that the degrowth critique is directed towards the proposal of *sustainable development*, considered a contradiction in terms. The term *sustainability* itself is generally considered a useful concept, in particular in the narrow sense of referring to stringent terms of ecological sustainability (which for degrowth must be always thought together with social justice and individual well-being)⁸.

In place of the idea that universal well-being can and should be achieved through endless growth, degrowth alternatively proposes to think of the possibilities of a ‘good life’ thanks to policies such as the reduction of working hours and more free time and space for art, politics, social relations, as well as the re-politicization of the economy in order to distinguish between useful work and impactful activities and the redistribution of wealth (D’Alisa, Demaria, and Kallis 2015). Degrowth means to improve local social justice through redistribution and globally reducing processes of unequal ecological exchange. Degrowth proposes sufficiency before efficiency and favours conviviality over individualism (ibid.).

In the following pages which draw on a more general review on literature on the nexus between degrowth, cities and space published in *City* (Krähmer 2022)⁹, I

8 The subtitle of the international degrowth conferences is “For Ecological Sustainability and Social Equity” - <https://www.degrowth.info/en/conferences/> (Last access: May 2021)

9 Publications have been identified with Google Scholar, Scopus, references in first identified contributions and through my personal connections with researchers in the debate. Focal points in this emerging debate (less than a quarter of reviewed contributions have been published before 2018) have been the books *Housing for Degrowth* (Nelson and Schneider 2018) and *Postwachstumsstadt* (Post-Growth City) (Brokow-Loga and Eckardt 2020), sessions at the international degrowth conferences in Budapest (2016) and Malmö (2018), a session at the AESOP conference in Venice (2019) and two thematic conferences in Germany in 2019. This

review existing degrowth literature, looking at what it says and implies about space and in particular about a relational and material perspective on human geography. That the transformations degrowth envisages have profound spatial implications may seem obvious but for a long time this has gained limited attention, as also Demaria, Kallis, and Bakker (2019) or Kaika, Varvarousis, Demaria and March (2023) remarked. Or, in Xue's (2021, 7) words, "the causal power and liability of space is yet to be recognised and employed by the degrowth advocates." Degrowth considers today's global socio-economic capitalist system to be profoundly unsustainable and unjust. In this, many 'diagnostic' arguments resemble those present in critical urban studies and fruitful connections can be made as I will suggest at the end of this section. Just one example: the debate on planetary urbanisation (Brenner and Schmid 2015; Brenner and Katsikis 2020) describes global relations between cities and hinterlands as part of the same process of urbanisation: In this process hinterlands are shaped as "operational landscapes" of global capitalism, i.e. destined, also through violent processes of creative destruction, to the production of metabolic flows for the places of "concentrated urbanisation", i.e. cities. Even though degrowth scholars, to my knowledge, have so far not referred directly to planetary urbanisation, similar arguments are common ground in the degrowth debate, based for example on the concepts of externalisation and unequal ecological exchange. The concept of externalisation reveals the false illusions of sustainable development policies, at the national and global (Parrique et al. 2019) as well as the local scale (e.g. Mössner and Miller 2015). This reminds of recent contributions to a debate on the future of urban studies which stated the need, when discussing urban sustainability, to also consider impacts occurring far away from places of consumption (Mayer 2020; D. A. Cohen 2020). Analyses of unequal ecological exchange show that wealth in the global north has been historically made possible by the exploitation of other places and spaces (Hornborg 2006). Decolonial scholars argued that "coloniality is the dark side of modernity" (Mignolo 2007): as modernity has been materially possible thanks to unequal ecological exchange and has been morally justified by the 'epistemic violence' that universalised 'provincial' European ideas. Degrowth, thus, should not aim to become a new universalism, but cooperate with other

review includes 30 peer-reviewed papers, 19 contributions to the two edited books and seven other contributions (most in English, some in German and Italian).

worldviews and movements in a pluriverse¹⁰ (Kothari, Demaria, and Acosta 2014; Nirmal and Rocheleau 2019).

In light of this diagnosis, the idea to restructure human metabolisms limiting them to a local scale can seem a promising solution and is often proposed in the degrowth debate, as I will discuss in greater detail in the following chapters. And not only – it is an old *topos* of ecological thought (cfr. Mocca 2020). But before exploring in detail the proposals of relocalisation and their critique, I want to take up Mocca’s (2020) argument that localism / relocalisation in degrowth is not just a problematic proposal *per se* but that it also lacks theoretical grounding. I would go further and argue that in general, the degrowth debate lacks consideration for geography (both as a reality and as an academic debate) (cfr. Krähmer 2018; 2022) and a conceptualisation of how degrowth proposals have a spatial dimension.

In this sense, I contrast critically a localist or ‘urbanophobic’ perspective, probably predominant so far in degrowth, with the ‘urbanophil’ perspective of planetary urbanisation – not with the aim of proposing an urbanophil version of degrowth, because as Souza (2020) convincingly argues, both “[b]oth ‘urbanophobes’ and ‘urbanophiles’ have always tended to oversimplify things” (p.79). Rather, I try to take up Souza’s ambitious task to overcome both simplistic extremes and while arguing that degrowth must tackle the city and the relations it is build on, this does not mean to neglect the importance of the non-urban (or even rural) and the fights occurring there. I cite Souza’s argument about urbanophobia and urbanophilia as another formulation for the oversimplification of debates about the goods and bads of cities to dualistic yes-or-no, black-or-white questions, which apparently can be found in multiple contexts. In opposition to such dualisms, I am interested here in differentiation and a how-question: how exactly are the metabolic flows of cities, fundamental for their existence in a relational view of space, organised?; are there different, more or less just and sustainable forms of these relations?; and, consequently, which could be avenues of change?

To this scope, this literature review has consciously covered contributions from diverse fields, from critical geography to urban and planning studies, for a comprehensive representation of the thinking on space and its transformation at different scales in the degrowth debate. Obviously, with such a wide perspectives it is impossible to claim that the review is complete, even more so considering the

10 The Pluriverse is a concept from decolonial thought, referring to the project of overcoming the idea of modern European universalism (i.e. the assumption that there is a set of human values valid everywhere, independently from cultural and historical context), describing this European knowledge as the bounded and situated (‘provincial’) knowledge it is, and building instead a global alliance of diverse and consciously situated and context-bound alternatives to overcome the global destructiveness of the socio-economic system built on those presumably universal European values. I come back to this in paragraph 2.3.3.

ambivalent use of terms like “city” and “space”. Also, to draw neat boundaries towards fields such as (critical) political economies or (urban) political ecology is impossible – with in mind the heterodoxy and multiplicity of the degrowth debate in itself (Barca, Chertkovskaya, and Paulson 2019).

Anyhow, it is possible to identify some focal themes in this literature around which I organise my discussion in the following pages: The critique of sustainable urban development takes a central place in this literature, as well as a gaze on local initiatives which pragmatically but with often utopian ambitions try to build better cities (and worlds). Some contributions have started to draft, at different scales, general policies for degrowth transformations in space; from housing issues to the organisation of urban planning. On the other hand, there are a series of limits to this literature, which tends to be excessively localist, but also, at times, universalist, and with little consideration for material geographies. In general, I argue that this literature could benefit from a relational conception of space, which is what I propose to introduce through a reading of planetary urbanisation and Doreen Massey. I conclude this section arguing for the development of a set of proposals for multiscale degrowth transformations in relational spaces, in which the idea of solidary degrowth city plays a central role: a city that politicises the relations beyond its boundaries, essential for its material and social existence. My empirical research is developed in this framework.

2.1 Deconstructing Sustainable Urban Development

The degrowth literature on cities has at its basis a critique of modern and postmodern urbanisation in general (e.g. Lietaert 2010; Latouche 2019). Urban spaces are figured as spaces of productivism that create loneliness and destroy landscapes as much as historical cities. Perhaps more important though is the contribution made by papers focusing on the critique of policies and strategies for sustainable urban development, unmasked as an ineffective, illusionary, apparent solution (Næss et al. 2011; Schneider et al. 2013; Mössner and Miller 2015; Xue 2015; Schindler 2016; March 2018; Xue 2018b; Cristiano et al. 2020; Krüger 2020; Krähmer 2020).

Analysing the limits of decoupling, leads authors to raise doubts about apparently virtuous cases such as Freiburg, Oslo, Copenhagen but also Huangzhou, China. Cities which, these analyses argue, do not succeed in their attempts to become sustainable, as the achievements of efficiency, e.g. in mobility and housing are contrasted and often overcompensated by the effects of economic growth. Xue (2018b) analyses the case of Copenhagen, a city that is often described as an exemplar case of green urban policies, for instance by the European Green Capital

Award 2014. But in reality Copenhagen's sustainability strategy is limited by at least three elements. First, impacts are externalised: only emissions produced locally are considered in the analysis and proposals of Copenhagen's policies. Emissions due to goods and services consumed in Copenhagen but produced elsewhere are excluded; also emissions by the flights to and from Copenhagen airport are not considered. Secondly, the exclusive focus on efficiency leads to confusion between actual reduction of emissions, in absolute terms and slower growth of emissions. When, for instance, in the construction of new buildings next to public transport the reduced increase of transport emissions in comparison to a no-public-transport scenario is taken as an emission reduction and the impact of the construction itself is ignored at all. Finally, in Copenhagen, sustainability policies are employed as a fix for economic growth: with economic growth finally being the ultimate strategic priority when, e.g. it comes to the choice of reducing – or not – parking space. Even more: the marketing of Copenhagen as a “producer” of green solutions is promoted as a way to enhance economic growth in the city and in Denmark as a whole – with the impacts deriving from future increases in consumption due to higher Danish incomes (if things work out as desired) being neglected (Krähmer 2020).

In another case, Mössner and Miller (2015) describe Freiburg as an “island of sustainability” which rather than transforming lifestyles, expels those who behave less “sustainably”: the car dependent single family detached home, in contradiction with Freiburg's sustainability policies, is simply built in surrounding municipalities. This raises concerns about spatial justice but the point is also that in this way the overall ecological impact is not reduced (see Rice et al. 2020 for a similar argument). Schneider et al. (2013) study the problem at a larger scale coming to the result that while the energetic efficiency of houses in Europe has increased over the last decades, overall levels of consumption have grown as the average household size decreased contributing to an increase in space use per capita and the consumption of household appliances (often produced far away) has grown.

Cristiano et al. (2020) scrutinise urban circular economy in the case of Naples, showing how it lacks a holistic perspective which considers also social justice and, importantly, in its approach to circularity, does not take into consideration the speed at which the economy should “circulate” – a factor that finally determines to an important degree overall social and ecological impacts, as perfect circularity and total recycling are never possible (cf. Parrique et al. 2019).

A common trait that these analyses of existing strategies for urban transformation in the vein of sustainable development show, is that these strategies may very well contain some effective elements, but fall short of the scale of transformation degrowth argues for. In many ways the limits of sustainable urban development

recognised in these studies are related to the metabolic relations of cities with their outsides. It is somehow clear in this literature that relations of cities to their various hinterlands are at the basis of externalisation and thus the reason for only apparent successes in making them sustainable. But what is missing is an explicit geographical analysis of such relations between cities and their constituent outsides. The empirical research proposed in section 6 contributes to fill this gap.

2.2 Degrowth Here and Now: from Nowtopias to ‘Pragmatic Localism’

Degrowth critique of contemporary urban realities evidences the need for alternatives. A strong stream of literature proposes case studies of successful small-scale alternative nowtopias, sometimes at the individual but mostly at the collective level. While in 2014 Schulz and Bailey wrote that there was a lack of empirical work on transformations of post- and degrowth economics in space, many such empirical studies have been published since then. An example for an individualistic nowtopia, is the tiny house movement, which, in the vein of voluntary simplicity, points at the reduction of personal consumption and closeness to nature, living in small mobile homes (Anson 2018). Anson though discusses critically how in this movement easily a logic of distinction of having the “fancier” tiny house is reproduced.

Perhaps more fertile are collective approaches. Schmid (2019) looks at the literature of degrowth together with that of post-capitalism, finding commonalities in promoting community-based alternatives. These, he proposes, can become ‘transformative geographies’ but must overcome the tension between the hopes posed in them and the structural, institutional limitations observers identify. To this end, Schmid proposes to go beyond rigid scalar conceptions of space, using instead relational understandings of space.

Sharing and togetherness are central concepts for degrowth’s goal to give more importance to human relations than to market relations (Jarvis 2019). Jarvis recognises the importance of such values for degrowth, to be lived, for instance, in cohousing projects. At the same time she warns against both the so-called sharing economy and an overly romantic vision of place and community: ‘real’ sharing is not automatic, she argues, as it requires a process of social negotiation in intentional togetherness (which may not occur in commercialised forms of cohousing). For Lietaert (2010), cities today are places where communities are weak; they are places of stress, competition and loneliness in his view. Also Lietaert proposes cohousing as a possible antidote, as cohousing project can support habits

of sharing (space, objects, time), enhancing the formation of communities as well as helping to reduce ecological footprints.

A particular position is Alexander's and Gleeson's (2019): they recognize a potential of transformation precisely in those (Australian) suburbs, other authors criticise as particularly unsustainable (e.g. Wächter 2013; Latouche 2019; Xue 2021). They are certainly aware that these suburbs today depend on high ecological impacts. But they propose to accept that they exist and must be re-inhabited. In this sense, they suggest to take advantage of their low density for a communitarian project of democratic autonomy. They propose to reduce cars, as well as to eliminate fences to use gardens for food production and the garages for production sites of artisans. Crucially, their proposal does not develop an idealised form of human settlement but engages with the complexities of an existing geographical context that could seem particularly hostile to degrowth transformations.

Brokow-Loga et al. (2020) point to a limit of all these approaches of 'pragmatic localism': the risk of remaining in a bubble, not managing thus to achieve change at a wider scale.

In a few but noteworthy cases, setting out from a local case, protagonists arrive at a critique and reflection about the transformation of larger scales, of state power, for instance. Interestingly, in these cases policies, considered to be close to degrowth values by the authors, are promoted in contexts of violent conflicts, by movements for autonomy in opposition to states and state-led development policies: be it the Kurdish Freedom Movement in Turkey (Akbulut 2019), the Zapatistas and allies in Mexico and Adivasi communities in India (Nirmal and Rocheleau 2019) or Greece when the dominant social imaginary of well-being through growth crumbled during the economic and financial crisis after 2008/2010 and was challenged, at least temporarily, by an alternative imaginary of commons, degrowth and solidarity (Varvarousis 2019).

Taken together, these case studies suggest that there is a wide range of possible and feasible alternatives which are already put in place, in very different places and tackling very different issues. On the other hand, the question remains if nowtopian bottom-up approaches in themselves have the potential to scale up, leading to societal degrowth transformations (cf. Mocca 2020).

Beyond case studies, Savini (2021) argues that existing literature on degrowth has a strong urban component in frequently presenting urban practices as virtuous but he criticizes that this body of research does not yet tackle the institutions of planning and drivers at their basis that foster economic growth. He identifies them in regional inter-city competition, the active creation of scarcity of urban land that keeps up real estate prices and a dependency of cities on their development to finance public goods (see also Rydin 2013) and rationalist and simplistic zoning

practices which define land uses and thus structures land markets. As a consequence, Savini proposes change on three lines. With ‘polycentric autonomism’ he envisages something quite close to bioregionalism: largely autonomous regions in metabolic terms which rely mostly on their own natural resources – autonomous too from any dictate of economic competition – and collaborate, solidaristically with other regions for some functions, e.g. electricity production. Then, he proposes to substitute the concept of scarcity with finity, in a framework of sufficiency and combined with redistribution, with the aim to generally decelerate and prioritise maintenance of existing values over development, also through the introduction of absolute limits to, e.g., second homes, real estate transactions, tourists. Finally he proposes to follow a principle of ‘habitability’, which aims at planning practices which rather than prescribing rigid zoning norms, preserve and promote the values of socio-ecological relations in a perspective of commoning which guarantee a good life and the ‘right to metabolism’. A ‘right to metabolism’ is what Olsen, Orefice, and Pietrangeli (2018), propose, conceived as an extension – or new formulation – of the right to the city. Many authors underline how for a degrowth city it is fundamental to think ecology and equity together.

For Eckardt and Brokow-Loga (2020) it is necessary to develop a holistic approach in urban policies, to go beyond sectorial and partial solutions which lead to dualistic choices and false oppositions between environmental sustainability (e.g. limiting land consumption) and social justice (e.g. building new houses for low-income families) (Bohnenberger 2020 makes a similar point). For Eckardt (2020) furthermore the postfordist city is characterised by a crisis of political participation, in which the idea of citizenship has been “erased” by a utilitarian idea of human beings in an entrepreneurial city subject to a capital with little territorial roots. In his view, voluntaristic and individualistic strategies to face the ecological crisis have failed. Therefore, for the solidary urban policy he proposes, he sees the necessity of a new belonging to place: neither exclusive localism, nor absence of roots in a place.

What is shared in most of these contributions is the idea to localise economic and material relations – but in a pragmatic fashion: community gardening, the creation of alternative local food networks and similar approaches to localise production in a field – food – that appears as relatively easily modifiable, are frequent approaches. Also to sustain local artisans and networks to repair more complex objects. But as far as I am aware there are no practice-based proposals to relocalise economic relations in a wider range of economic fields. I can only speculate about the reasons for this choice, but I suppose that they are mainly pragmatic: to grow food, to repair stuff is a relatively more simple task than to organise the autonomous production of complex goods or the organisation of complex services.

The other side of the coin is that in these experiences¹¹ and the correspondent literature, there is an emphasis on the value of personal relations, with the idea that they must be reinforced and that this can happen best at a local and communitarian level. While I suppose that effectively for the collective organisation of a common good (be it an urban housing project or an ecovillage) a continuous physical presence and in this sense a local dimension of crucial relations around the project is indeed crucial, this appears to be at least in tension with the important role that national and international networks of organisation have in the context of the degrowth and related movements. Take for example the international degrowth conferences, the national level of organisation of the Italian degrowth associations, the Italian “Network of Networks” the degrowth associations are part of, the annual Italian degrowth bike tour which through a super-local trip connects local experiences¹². I do not want to argue that the degrowth debate is pervaded by a naive view of human relations and the local scale (and in fact, as I will discuss below, most degrowth proponents have an *open* localism in mind), but that, opposed to local, nowtopian projects themselves, these non-local scales of relations have attracted so far too little interest and analysis. In fact they already experiment – if only in the restricted context of social movements – forms of relation compatible with degrowth values also over a distance. With all the tensions this leads to, for instance in terms of the ecological impacts of travel. Perhaps these non-local relations should no longer be conceived as a somehow transitional – necessary but not in-themselves-positive – means to be active for change. Rather it should be recognised that such relations exist – and of course not only in the forms of activists travelling to visit other activists – and they should become the objective of upfront research, debate and proposals for change.

11 I draw this idea not only from the literature but also from many encounters I have had in over the last ten years with a large number of such nowtopian projects, engaging in activities ranging from housing to agriculture, often in the context of my activism, e.g. during the annual Degrowth Bike Tours I help to organise with the Movimento per la Decrescita Felice (<https://www.decrescitafelice.it/category/bike-tour/> - Last access July 2021)

12 International Conferences (<https://degrowth.org/conferences/>); Italian Associations: Associazione per la Decrescita (www.decrescita.it) and Movimento per la Decrescita Felice (www.decrescitafelice.it); Network of Networks (www.retedireti.org/chi-siamo/); Degrowth Bike Tour (<https://www.decrescitafelice.it/category/bike-tour/>) - For all: Last access July 2021

2.3 Three Arguments for a Relational Conception of Space in Degrowth

While the preceding chapters have shown a panorama of degrowth proposals for spatial transformations, this chapter focuses on three aspects of this literature which can appear problematic in the light of important debates in urban studies and critical geography. These strongly interrelated issues regard the question of scale, a lack of engagement with material geographies and a potential decolonial critique of degrowth¹³. As I will argue with more detail in the following chapters, these gaps and shortcomings all point to a limited conceptualisation of space in the degrowth debate and are arguments for the engagement with relational conceptions of space.

2.3.1 The limits of localism

Framing degrowth as an utopian project in which history and politics do not end but struggles continue, Kallis and March (2015) call for an engagement with degrowth across scales. All the same their attention concentrates on nowtopian and small-scale practices (except a regional cooperative network in Catalunya). Their article is stimulating in engaging with a sci-fi novel tracing a planetary (degrowth) community but, as the authors themselves recognise, it remains to be seen how local communities could act together in this planetary utopia.

The localist tendency of the degrowth literature is a debated issue. Mocca (2020) provides a detailed critique of degrowth localism, distinguishing between a pragmatic localism that supposes that it is the local scale where most easily degrowth ideas can be experimented and a tradition of thinking in which the (re)localisation of social, economic and political relations is the strategic project. I would argue that the pragmatic localism, examples of which I have discussed in chapter 2.2, is not a problem in itself, if accompanied by strategies of transformations at wider scales. The following lines focus on the critique of relocalisation as a project.

(Re)localisation, intended as the re-organisation of economy and politics at the local scale, is the one spatial strategy of degrowth that has been central from the beginning, for example for Serge Latouche, who includes relocalisation in his 8Rs that summarise his project of degrowth (Kallis and March 2015). After him, many

¹³ I do not claim this to be an exhaustive list.

other contributions have proposed relocalisation as a project (Latouche 2016; 2019; Schneider and Nelson 2018; Gerber 2020; Dale, Marwege, and Humburg 2018; Trainer 2018; Vansintjan 2018; Rees 2015). Also D’Alisa and Kallis (2020), looking at the institutional and political dimension of degrowth, find that often in this debate small equals good and beautiful, and that there is the idea of an ideal scale, the bioregion, in which all flows are supposed to be controllable. On the other hand, a comprehensive review of degrowth literature (Fitzpatrick, Parrique, and Cosme 2022) shows that a disproportional amount of degrowth policy proposals can be related to the scale of the national state. But these are proposals generally written without a particular ‘spatial perspective’. There appears to be, in the degrowth debate, a disconnection between the scales of ‘general’ policy proposals (state) on one side and, on the other side, empirical case studies analysed (local) and a strategic project of relocalisation (towards local communities); a disconnection which may both reflect, again, a dichotomic conception of space between (local vs. global), without intermediate scales and tend to obscure the relations between these scales.

These projects or visions of relocalisation, Mocca (2020) shows, in many ways draw on long-standing traditions of utopian thought in general and green utopian thought in particular, be it Ebenezer Howard’s garden city, Murray Bookchin’s municipalism, Raimon Panikkar’s bioregions or Takis Fotopoulos’ *demoi*. Different as they are, many of these proposals seek to establish what they argue to be an ideal scale for a local community, often with clearly identified ideal numbers of population (e.g. 30.000 for the *demoi*, 10.000 for the bioregion) (Gerber 2020). At this scale, it is assumed to be possible to reach both an economic relocalisation of production, in, using Brenner’s and Katsikis’ (2020) words, the “contiguous hinterlands” and a political relocalisation, as direct personal knowledge and participatory deliberation is deemed feasible (Mocca 2020; D’Alisa and Kallis 2020). Rees (2015) argues for relocalisation based on the need to reduce complexity to make socio-economic systems manageable, while, on the opposite, excessive trade would incentivise unsustainable extractive choices; globalisation reduce local economic diversity and thus resilience; and, in any case, the end of cheap energy would raise transportation costs and thus lead to relocalisation.

Certainly, this localist preference is not a purely romantic imagination but it has also some important arguments. The wickedness of the issue is well-posed for example by Kish and Quilley (2017) who set out from the influential finding of ecological economics that economic growth is not simply an expansion and multiplication of the same forms but is rather strictly tied to growing societal complexity. This complexity has meant, centrally, the building of modern state institutions (through processes of violent dispossession and primitive accumulation) in the context of which the formation and guarantee of individual

rights has been possible (human rights, womens' rights, rights of sexual and ethnical minorities, disabled people etc.), as well as the evolvment of global empathy and ecological conscience, in the context of which also the degrowth debate can be situated. But the point is that this progress has come at those very ecological and social costs that degrowth and other movements have set out to reduce. As a consequence, the wicked question Kish and Quilley pose is if there can be a societal degrowth, thus a reduction of its complexity and at the same time a guarantee of these cherished rights. I would argue that logically there are several possible avenues to answer this, I agree, certainly wicked problem. Kish and Quilley see the only possible way to reduce societal complexity in a process of localisation, meaning fundamentally a formation of new communities and institutions alternative to the modern welfare-and-nation-state. These communities, they argue, through the possibilities of coordination that internet offers could then, hopefully, maintain as many as possible of the benefits of modernity. But considering all the problems that such a proposal of relocalisation entails from a geographical viewpoint, I think it is worth to develop another potential avenue of change, in which the possibilities of maintaining larger scales of societal organisation are explored, that must find dimensions and forms compatible with ecological limits. Perhaps also accepting to abandon in part the illusion of a sort of rational meta-control of the "global human society" that often transpires in degrowth and rather aiming at influencing the *tendencies* of change and transformation.

Degrowth proponents indeed generally do not propose a closed localism, limited only to the local scale and with rigid, impermeable boundaries, but rather an open localism, in which local communities coordinate with each other, or confederate and potentially organise some economic or political issues at a super-local scale (Liegey et al. 2016; Widmer and Schneider 2018; Schneider and Nelson 2018; Gerber 2020). In sum, degrowth localism is open and is based on the idea that the small scale allows to democratically (meaning immediate and participative forms of democracy) organise and control the communities' metabolism.

Putting the proposals of relocalisation in relation to degrowth's diagnosis of global capitalism, it could be argued that they propose to solve the issue of excessive consumption of nature and of unequal global relations by their negation¹⁴, founding in their place harmonic and independent communities. Proposals of relocalisation drafting universally idealised structures of human settlements consider the earth's space as a sort of *tabula rasa* instead of a complex system of stratified geographies (Krähmer 2018).

14 I owe this argument to Marco Santangelo

Commenting on debates on the right to the city, Purcell (2006), has warned against the “local trap”, arguing that it is

dangerous to make any assumption about any scale. Scales are not independent entities with pre-given characteristics. Instead, they are socially constructed strategies to achieve particular ends. Therefore, any scale or scalar strategy can result in any outcome (ibid, p.1921).

This should not be misinterpreted as a total indifference about scale: Swyngedouw (2004), for instance, argues that it can be very relevant to gain power at a certain scale in a social struggle. But it is important to recognise that there is nothing implicitly good about any scale; that no scale should be prioritised in a prejudicial way in any case.

The problem is that, as Mocca (2020, 89) argues, degrowth localism often assumes *a priori* that the local scale is somehow better and that at the local scale it is possible to achieve more than at national or international levels. Also from a simply material and energetic viewpoint, it appears unrealistic and extremely expensive to reorganise (and thus physically rebuild) contemporary geographies (Xue 2014; 2021). Heikkurinen (2019) makes the important argument that any transformation of things requires energy-matter and is thus problematic for degrowth. In this sense he argues that degrowth should operate through a “metamorphosis in being”; abandon the “will to transform” and “release” instead¹⁵. In the present context this can be interpreted as an argument for the need to re-inhabit existing geographies. Also the success of existing cases and experiments of local communities in reducing ecological footprint, managing wide-reaching citizen participation and scaling up, is so far little supported by empirical research (Mocca 2020). Cattaneo and Galvaldà (2010) have studied quali- and quantitatively if their rurban squats have managed to reduce footprints. Their results appear encouraging but they also write about the difficulty of separating such experiences from external connections and dependencies. Therefore, the low impacts they have calculated, risk being an illusion if the relevance of those relations is underestimated. Moreover, in Xue’s (2018a) view, it should not be considered to be automatic that local communities take degrowth compatible decisions. There is also Harvey’s argument (cfr. Mocca, 2020) that localism is often linked to an anti-urban, pro-rural perspective, based on an idealised idea of nature and a conception of the city as the origin of environmental problems (see also Xue 2021) – which actually are not so much related to the urban form, but rather to the sum of behavioural choices occurring in cities.

15 Heikkurinen might not agree with advancing this argument in this context, as he tends to think about degrowth after a major societal collapse, but it is stimulating to apply it to the (non)transformation of global urban geographies.

More fundamentally, Massey and Jess (2001) argue that "local" places always have been shaped by "global", i.e. external influences, be they of economic, cultural, social or ethnic nature. It is a "nostalgic" response to globalisation to propose to retreat into its "supposed opposite: nationalisms and parochialisms and localisms of all sorts" (Massey 2005, 65), a "pure" local dimension that really never existed. In Massey's (2005) perspective, as I will discuss in detail below, the local and the global "constitute each other": places are peculiar intersections and mixes of social relations of different scales and contain the global; global space is the sum of the immense complexities of these relations – relations which of course are not equal but form geographies of power which are directly related to the unequal development strongly criticised by degrowth. In this sense the local cannot simply be separated and isolated from the global in any pure way (Massey and Jess 2001; Massey 2005).

Not necessarily these arguments should lead to a complete refusal of the local scale and any kind of relocalisation. That a growing and globalising capitalism has often devastated livelihoods is certainly true. Indeed it is a "mad waltz [when] shrimp, fished in Denmark [is] deveined in Morocco where labor costs are lower, and strawberry yogurt [...] ingredients, in 1992, travel over 5,600 miles" (Bihouix cited in Liegey et al. 2016). Thus, the point may not be the question "local, yes or no?" but rather the power relations, the speed and quantity of transformation propelled by global relations. Thus, in opposition to the trend of recent decades, one might sensibly argue for a *trend* of relocalisation. But not with the goal of rebuilding a perfect localism that never existed, but rather as a tendency, part of a strategy of transformation across scales (Kallis and March 2015) in which the role of relocalisation must yet be defined.

Not all the contributions to the literature on degrowth and space are localist. For example, a few of the Nowtopian examples (Akbulut 2019; Nirmal and Rocheleau 2019; Varvarousis 2019), proposals for housing policies (Schneider et al. 2013; Bohnenberger 2020), as well as the idea of the Solidary Degrowth City (Brand 2020b; Eckardt 2020), look beyond the local scale. This notwithstanding, the impression is that so far studies on degrowth transformations across scales remain isolated and fragmented.

But in the literature there is also a repeated call to "re-inhabit" differently existing physical and built geographies, be they cities, suburbs or other (Latouche 2019; Alexander and Gleeson 2019; Krähmer 2018). A perspective which certainly does not exclude also physical change but recognises that it will be limited (ideally to few, strategic elements) and hardly result in completely new, idealised, settlement structures. This seems a promising perspective. But it also raises new questions. A proposal of universal relocalisation could quite logically elude strategies of

transformation at larger scales¹⁶. A perspective for which global flows continue to exist, needs to find answers on how those can be reshaped.

2.3.2 For an engagement with material geographies

Thus, if space is relational, relations continue to exist at all scales and these relations are also made of material flows. To study them, reflecting on how to transform them, becomes a crucial point. The reduction of societal throughput of matter and energy is one of the basic propositions of degrowth and in fact material flows are much discussed in the degrowth literature. Indeed, Kaika et al. (2023, 6) have defined the challenge of spatialising degrowth as one of “facing head-on the challenges posed by the metabolic demands of large-scale urbanisation”, but so far, in the literature focusing on cities and space this issue has been treated only superficially. Perhaps again because space is mostly thought of as made of distinct places and not as constituted by relations which are also material and have their geographies. Not that urban metabolisms are not an issue in this literature; it is very much so in the critique of existing urbanisation. But these critiques tend to be generic and quantitative critiques about the excess of metabolisms mobilised for contemporary urban lifestyles, there is a lack, instead, of specific empirical analysis of these metabolisms. And when it comes to alternatives, the problem tends to be solved hastily, eliminating it with the proposal of relocalisation. But the metabolism itself is treated in this literature or as a sort of black box or as a purely mechanical event of problematic social, catastrophic ecological and disputable economic indicators. It is not treated instead as a transscalar geographical phenomenon that connects and build spaces and places.

In the context of the debate on the Anthropocene, Görg et al. (2019) write that to understand the unequal patterns of the anthropocene, as well as to develop viable alternatives, it is fundamental to look at "Cross-scalar linkages in the Great Acceleration" (p.53). There is clear evidence, they write, that both institutions at the national level and the global position of a country is important for its history and possible strategies of development. For socio-ecological transformations

16 True, some of the cited projects of relocalisation recognise that trade would remain present to some extent (e.g. Rees (2015)) – but the general idea seems to be that it would occur on such a negligible scale that not much effort is dedicated to discuss how it might be organised. Rees mainly argues for trade in what is 'necessary' and is 'true ecological surplus' of a given local community. Which sounds reasonable but is very abstract and it leaves completely open how and by whom such criteria could be evaluated.

though, often local strategies are considered more effective: thus the interplay between scales must get more attention. In particular,

a better understanding of trade relations and their dynamics is paramount to understanding the underlying causes of the Great Acceleration. Trade mediates an increasing spatial disconnect between production and consumption (Erb et al., 2009), which impedes the identification of underlying drivers of growth in resource use. (p.54)

But, in the degrowth literature, there is so far no or little engagement with literatures and research agendas that investigate material flows and their geographies. In their systematic mapping degrowth policy proposals in the literature, Fitzpatrick, Parrique and Cosme (2022) identify trade as one policy theme but they note that “[t]rade is the least elaborated theme” (p.7). They identify only two proposals in the degrowth literature regarding trade: the reduction of long-distance trade and the renegotiation of international trade agreements. Proposals which are coherent with the results of this research but also very partial (see Chapter 7.2).

As I will discuss in greater detail in the following chapters, focusing on the literatures on commodity geographies and on how I employ them as a tool of enquiry in my research, I would argue that such an engagement with “material worlds” (Bakker and Bridge 2006), be it in the form of commodity chains and geographies, follow the thing (Leslie and Reimer 1999; Hughes and Reimer 2004a; Topik, Marichal, and Frank 2006; Cook et al. 2004) or also in the context of the debate on planetary urbanisation could be a fruitful contribution. Such an engagement could help both in further sharpening degrowth’s critique of global capitalism and help to avoid the temptation of assuming facile automatism through, e.g., relocalisation, through further evidence of the complexity of contemporary material geographies.

Among the few exceptions in the reviewed literature, is the proposal of the “Solidary Degrowth City” (Brand 2020b; Eckardt 2020). Both authors discuss critically how existing urban lifestyles are built on an “imperial mode of living”, i.e. on unequal ecological exchange which allows huge quantities of matter and energy to flow to cities in the global north. As a consequence they call to make existing geographies of global trade a question of urban politics. This points again to the necessity of adopting a relational conception of space in the degrowth debate. After having discussed more deeply the need of a relational view of space for the degrowth debate, I come back to the proposal of the solidary degrowth city and try to elaborate it as a guiding principle for this research.

2.3.3 Degrowth in the Pluriverse?

“[D]egrowth (...) is a social process of decolonization” Varvarousis (2019, 494) argues, referring in particular to the idea of the decolonisation of the (social) imaginary, decolonising it from the idea that growth is *per se* positive. This is a crucial point of the degrowth project and this use of the term ‘decolonisation’ is not accidental – but it is rather metaphorical (Varvarousis 2019). Reading urbanisation as not locally contained, as relational and based on global relations of unequal ecological exchange also leads to the problems of both epistemic and material violence raised by decolonial thought. Reflecting thoroughly on the North-South relations that are constitutive of contemporary urbanisation, both in material and immaterial terms and how degrowth has different meanings in different places, is one of the crucial challenges in spatialising degrowth, as Kaika et al. (2023) argue:

it is necessary to acknowledge that there are no ‘singular’ degrowth spatial practices that can fit and serve equally different geographical and social contexts and that any degrowth practices will bring uneven outcomes to the Global North and the Global South; and to high and low-income populations within the same regions (Kaika et al. 2023, 10).

Indeed, a critique that can be advanced to the existing literature on degrowth, cities and space is that many proposals are unreflective of their positionality and that authors often tend to assume a universal validity of their proposals (cfr. Krähmer 2022). A debate on decolonial thought and degrowth does exist (Demaria, Kallis, and Bakker 2019; Nirmal and Rocheleau 2019) but it is only at its beginnings and should take up with years of reflection on North/South relations in the context of urban studies (Kaika et al. 2023). Nirmal and Rocheleau make a case for the reduction of degrowth’s universalist aspirations and conceive it instead as part of a movement of movements in a decolonial post-development convergence. In this sense, “Degrowth advocates could curtail capitalist expansion and prevent territorial assaults in and by their home communities on places near and far.” (ibid, 471). Demaria, Kallis, and Bakker (2019, 441) argue:

“The concept of degrowth may make sense from a Southern perspective, not as an umbrella term that will encompass the variety of alternatives practised there, but as an attempt to deconstruct and undo in the West a Western imaginary that has been at the heart of colonialism and that domestic elites use in the Global South to justify inequalities and eradicate more egalitarian alternatives.”

If degrowth abandons pretensions to universality, it could indeed be the global north’s contribution to “Pluri-versality as a universal project” (Mignolo 2007, 500).

Degrowth already contains central elements that make it compatible for such a convergence (Kothari, Demaria, and Acosta 2014): degrowth proposes to reduce ecological footprints in the global north and to reshape geographies of externalisation and unequal ecological exchange.

This should not mean that degrowth as a project avoids to integrate important reflections and stimulate from decolonial thought and other, e.g. indigenous, ways of thinking, closing itself into a bubble of, e.g., “European culture”¹⁷. Also because nothing of this exists in purity, global north and south are categories that help to situate certain phenomena but are by no means exclusive, clearly definable and dualistic: rather they are interconnected and mixed in many ways, by trade, by migration, in multicultural neighbourhoods and so on.

While these can be material conditions for decolonisation, the point may be to recognise more explicitly that degrowth proposals and ideas about what is a good life – and a degrowth city – are context-bound and not universal. Paradoxically in particular when arguing for localist but idealised settlement structures (e.g. in the case of Widmer and Schneider 2018), some degrowth scholars tend to non-situated, universalist proposals. But one of the strong points of degrowth is exactly the heterodoxy and multiplicity of its proposals; degrowth should not attempt to become a new orthodox discourse but rather a “nomadic utopianism” that conceives degrowth as an open-ended process, with a plural vision open to critique (Barca, Chertkovskaya, and Paulson 2019).

In this vein, doing this research out of a perspective from the global north, is the intention. Because the other side(s) is/are equally important but I do know it/them too little to speak from their perspective, neither do I have the presumption to propose universal solutions. Or as Massey (2005, 80) puts it:

real space (space-time) is indeed impossible to pin down. But anyway, the argument should not really be about content (some patently vain attempt (...) to enumerate each and every one of those trajectories). Rather, it is a question of the angle of vision, a recognition of the *fact* (not all of the content) of other realities, equally ‘present’ though with their own histories.

I rather want to evidence potential elements of urban degrowth policies in the global north. In affinity with the decolonial project:

Nobody has access to an ultimate truth, and, consequently, no one person (or collective, church or government) from the right or from left, can offer a solution for the entire population of the planet (Mignolo 2007, 458).

Thus, I propose to work in the sense of the pluriverse (Nirmal and Rocheleau 2019) reflecting about the Global North’s contribution. While it is important to consider

17 I credit this reflection to a chat I had with members of Fairbindung e.V.

Mignolo's (2007) argument that "if the colonizer needs to be decolonized, the colonizer may not be the proper agent of decolonization without the intellectual guidance of the *damnés*" (p.458), the risk of radicalising such a position is the delegitimisation of action. Degrowth in this sense could be conceived in a way that allows action anyway – but not in the sense that the global north, generously, "frees ecological space" (Rees 2015). Arturo Escobar (2015, 31) writes in the degrowth vocabulary, "it is important to resist falling into the trap of thinking that while the north needs to degrow the south needs 'development'", meeting at a sort of quantitative average. Degrowth instead must be a project that is desirable on its own terms, for the people in the global north itself *and* compatible and in alliance, in a pluriverse, with projects of decolonisation in other parts of the world, such as *buen vivir* and *ecological swaraj* (Kothari, Demaria, and Acosta 2014).

The difficult part is that these 'components of the pluriverse' hardly can be neatly separated geographically – in an age of planetary urbanisation, concurring believes, cultures etc. co-exist in many places. Also this an issue that has so far received little attention in the reviewed literature, except the quite generic argument that degrowth wants inclusive and open places (e.g. in 'open relocalisation'). Again, a simple idea of relocalisation ('everyone in his place in the pluriverse') would be problematic. Rather, a "global sense of place" (Massey 1994) would be necessary. The point is to engage with the challenging project of pluriversality as a universal project:

Pluri-versality as a universal project is quite demanding. It demands, basically, that we cannot have it all our own way. The struggle for epistemic de-coloniality lies, precisely, here: de-linking from the most fundamental belief of modernity: the belief in abstract universals through the entire spectrum from the extreme right to the extreme left. (Mignolo 2007, 500)

This discussion about the positionality of degrowth as a discourse interlinks with the reflections on my own personal positionality in this research project (chapter 1.3). I will come back to this question again in relation to methodology in chapter 5.2. What should be said here, in close connection to the lines above, is that this research project certainly sets out from a global northern degrowth perspective and looks at places in the global south, to investigate the global north's potential contribution in a project of socio-ecological transformation. But this positionality is complicated, first, by the fact that a relation is at the centre of interest, and, second, by the question if Chile, on all terms, can be considered a place of the global south, or if things are not, rather, a bit more complex.

2.4 Relational Spaces and Places

In the previous chapters I have given an overview of the existing debate on cities and space in a degrowth perspective. I have noted that there are three important arguments for this debate to assume a relational view on space – a debate which all too easily resorts to localism, gives little attention to material geographies and sometimes risks falling into universalist ambitions. Mocca (2020), furthermore, criticises the lack of a consistent theoretical framework in this literature: degrowth, it seems, lacks a thorough conceptualisation of space and how to change it.

At the same time, some of the most recent contributions to this debate have started go beyond this simplistic approach engaging with both an urban dimension and the global relations this dimension implies. Among these the calls for a solidary degrowth city (Brand 2020b; Eckardt 2020) and Spanier's and Feola's (2022) argument to “bring the rural back in”, looking, also in post- and degrowth perspectives beyond the narrow limits of the city, with

the difficult task of *both* unmaking the cultural rift between city and countryside by insisting on their hybridity and interlinkage *and* empowering the rural as a liberated agent in planning for sustainable futures. (Spanier & Feola, 2022, p. 161, emphasis in the original).

How to contribute to this debate? How to fill the proposal of the solidary degrowth city with life? These questions are at the centre of the present research. I argue that an important way to do so is to engage with existing debates and concepts in critical urban studies which already have tackled many of the problems to which the degrowth debate hints. In particular here I focus on the idea that introducing a relational conception of space could help the degrowth literature to go beyond dichotomic ideas of global and local and romantic proposals of localism: spatialising instead both the issues of externalisation or unequal ecological exchange and potential multiscalar solutions.

Unlike my discussion of the urban/spatial degrowth literature, this chapter is not conceived as a comprehensive literature review. Rather it is a selective take on two influential contributions to the debate in urban studies: the concept of planetary urbanisation, first advanced by Brenner and Schmid (2015) and Doreen Massey's (2005) “ruminations” on the relationality of space. Both lines of thought, I believe, have many things in common (while there are, of course, also important differences). Most importantly, borrowing three points from Massey's (2005) opening propositions, space can be seen, a) as a product of interrelations, b) as the sphere of the existence of multiplicity and c) as always under construction. In particular the last point builds strongly on Lefebvre's (1974) idea of the production

of space, i.e. the idea that space does not simply exist, is not simply a surface, but is rather produced and transformed by social interactions. Certainly, this summary is a tremendous simplification and it passes over important ideological differences of more or less Marxist perspectives. But I hope that at the end of this chapter the scope of such a partial and instrumental reading of these fundamental theoretical contributions will be clear.

2.4.1 Planetary urbanisation, Planetary Mine

The concept of planetary urbanisation focuses precisely on the relations between city and hinterland, problematising a localist view of urbanisation. Central to this debate is Brenner's and Schmid's (2015) influential article that opens with a critique of the dominant "triumphalist" narrative of the "urban age" which assumes the city and the urban as something self-evident; narratives in which the city appears to be the winner of history, as exemplified by the omnipresent argument that nowadays more than 50% of the global population live in cities. They note, on the other side, a fragmentation of critical urban studies, related also to the fragmentation of the "urban". Brenner and Schmid argue that also this literature does not take into sufficient account the global processes related to endless capitalist accumulation and that it tends to focus on evidently urban places, not considering sufficiently the "landscapes of extended urbanization" or hinterlands. Places which, in their perspective, cannot any longer be understood as rural but are involved in the process of urbanisation: planetary urbanisation. In response to these limits Brenner and Schmid (2015) propose an epistemological framework organised around seven theses:

First, in their view the urban and urbanisation should be conceived as theoretical categories, not empirical objects. Thus, how the urban is conceptualised has to do with the context on which this is based and the practical and political implications of these conceptualisations must be considered. Secondly, the urban should be understood as a process not as a fixed form or spatial unit. Third, according to the authors, urbanisation can be distinguished in the three forms of concentrated urbanisation, extended urbanisation and differential urbanisation. Fourth, urbanisation is organised in a multidimensional fabric, made of spatial practices, territorial regulation, everyday life. Fifth, urbanisation has reached a planetary scale: the metabolic relations of the urban reach far beyond the contiguous hinterlands, physically adjacent to cities, encompassing also faraway extended hinterlands. Sixth, urbanisation unfolds through variegated patterns and pathways of uneven spatial development. Finally, Brenner and Schmid conceive the urban as

a collective project in which the potentials generated are both appropriated and contested. In this way, ‘classical’ urban struggles, e.g. against gentrification, can be linked to struggles in the extended urbanisation, e.g. against large infrastructure projects. This conception should not lead to, as Schmid (2018) underlines, an understanding of planetary urbanisation as a single process which comprises everything,

but rather as a complex interplay of related but contradictory processes marked by the uneven development of capitalism as well as by manifold, specific social and political determinations (p.592).

Thus, studying planetary urbanisation does not simply entail to look at global movements of capital, power, people. It involves as well careful case studies looking at manifestations of these processes in “everyday life”; studies about specific places with all the forces, injustices, resistances, struggles involved, Schmid (2018) argues. This approach implies a relational understanding of urbanisation, connecting concrete places among each other and to abstract processes, on multiple scales.

Thinking in a perspective of planetary urbanisation means overcoming a rigid urban/rural divide, as much as overcoming a local/global dichotomy, as the networks of city-hinterland relations are global but certainly have local impacts. Instead “urban” and “rural”, “local” and “global” must be conceived as inserted in a common process of urbanisation. Importantly, these processes are uneven in space, entailing spatial injustices. The hinterland is central to the process of urbanisation. City-hinterland relationships, materialised, for example in the flow of commodities can be, in this logic, of great interest to understand the working of urbanisation, “the city”, the economic system.

In the context of this analysis, the idea of relocalisation advanced by many degrowth authors may at first sight appear intriguing: a reduction of complexity in which relations are mostly contained in contiguous hinterlands of small-scale settlements which maybe cannot even be characterised as urban. But on the other hand, if one takes the complexity of these planetary geographies with its both material and relational dimensions, as a reality, it is also a further argument for the lack of realism and feasibility of the proposal of radical relocalisation (even if one wants to concede a positively intended utopian dimension to degrowth). Furthermore, the discussion of planetary urbanisation gives a new twist to the argument that it is existing cities that must be reinhabited in a degrowth transformation (Latouche 2019): if existing cities are part of processes of planetary urbanisation then reinhabiting them, differently, also entails an engagement with their global relations, not only with the physical manifestation of urban built environments. Which is precisely, I would argue, what Brand (2020) and Eckardt

(2020) implicitly say, when proposing the solidary degrowth city, which politicises its global metabolic relations.

Brenner and Katsikis (2020) further discuss hinterlands, alternatively calling them “operational landscapes of capitalism”. They note that until the 1970s the role of the hinterland and its relation to the city has played an important role in the study of the process of urbanisation. From the 1980s on though, an “ideology of the self-propelled city” (p.26) has emerged. A city that thrives and grows without apparent material basis and geographically disconnected, floating in the global nighttime images showing city lights amidst a dark sea of “nothing”. This argument speaks to the degrowth critique of sustainable development and the impossibility of decoupling growth from impact as there is no economic growth independently from a material basis (cfr. Parrique et al. 2019). But recently the “hinterland question” has come back central stage, Brenner and Katsikis (2020) go on, in particular in studies related to (urban) metabolism, looking at urban ecologies, e.g. measuring global material flows. All the same, what remains obscure in these approaches is what actually happens in the hinterlands, treated as “black boxes”. For new research on the hinterland in the age of Capitalocene, Brenner and Katsikis (2020) propose to develop a conceptual framework starting from “four key mutations of city/hinterland relations” (p.27) they identify for the last fifty years. The first change, “distanciation and infrastructuralisation” (p.28), describes the loss of importance of hinterlands contiguous to specific cities, directly providing them with food and other resources in front of the development of often far away territories of specialised global production (extended hinterlands). Secondly, hinterlands have also become “hinterlands of hinterlands” (p.28), i.e. they do not necessarily provide resources directly to cities but rather to other hinterlands. Brenner’s and Katsikis’ example is South American feed for Chinese cattle. Perhaps one might add that there is also the possibility of “reciprocal” city hinterland relations: Is a city always a city, a hinterland always a hinterland? What happens when a “hinterland” consumes resources from a “city”? In this sense a place might be considered city or hinterland in respect to a specific relation and overall be city or hinterland to a certain degree: but would a place ever be exclusively a hinterland or exclusively a city?

Brenner’s and Katsikis’ (2020) third movement is “from formal to real subsumption” (p.28), that is not relying anymore only on the surpluses offered by ecology and geography of a territory but increasingly fostering socio-technical transformations of territories “into configurations of large-scale territorial-ecological machinery” (p.28). This observation has a particular relevance for the analysis of my case study of Chilean fruit, considering the important degree of transformation this territory has experienced in order to be a global source of fruit (cfr. Section 6, in particular Chapter 6.2). Fourth, “metabolic rifts and cycles of

creative destruction” (p.28), like in the cities themselves, due to ecological exhaustion or socio-technical and economic change, makes the Capitalocene’s hinterlands “chronically unstable” (ibid.) and subject to, problematic, costly, conflict ridden transformations.

Externalisation and unequal ecological exchange are two, related, concepts which are much discussed in relation to degrowth and can easily be related to planetary urbanisation, framing them as characteristics of specific city hinterland relations. Externalisation is an argument often used in the degrowth debate to criticise proposals of sustainable development and green economy. It means that, in order to appear sustainable, cities and nations simply transfer the most impactful parts of economic activity to other, mostly poorer, places with less effective environmental regulation etc. (Parrique et al. 2019; Lessenich 2016) or simply outside city boundaries (Mössner and Miller 2015). Externalisation is often related to unequal (ecological) exchange (Hornborg 2006), which means that between countries – but one might as well apply this to cities and hinterlands – commodities with the same monetary value but different social, ecological, energetic values are exchanged. For example raw materials, which are labour, land and resource intensive, but economically poorly valued, are exchanged by the global south against economically costly, industrial products or less ecologically destructive produced in the global north; less labour intensive but produced by better paid labour.

While I have focused so far on the way in which planetary urbanisation can be a fruitful concept for the development of a more grounded conception of space for degrowth, a central element of degrowth might also enrich the conceptualisation of planetary urbanisation and certainly must be considered when using it here to reflect about degrowth concepts: in a degrowth perspective the destructive dynamics of planetary urbanisation cannot be only attributed to the specific form of capitalist accumulation but to the wider pursuit of (unlimited) growth. This means that also a different form of development, socialist development for instance, would still entail similar destructive consequences, as it equally has at its core an ideal of linear and unlimited progress and economic growth; economic growth meaning growth of social metabolism, thus material throughput, thus growth of hinterlands which must be “subsumed” to productivist exploitation to enable consumerist lifestyles in cities (cf. Formenti and Romano 2019).

Importantly, Brenner also argues that possibilities of different systems may be found in what already exists, “alter-urbanisations” in Brenner’s (2016) words. And, furthermore:

From the original dispossession of erstwhile rural populations through territorial enclosure to the intensification of land use, the construction of large-scale infrastructural investments and the progressive industrialisation of

hinterland economies to support extraction, cultivation, production and circulation, the growth of the city has been directly facilitated through colossal, if unevenly developed industrial and environmental upheavals across the planet. In this sense, the rural, the countryside and the hinterland have never been reducible to a mere backstage ‘ghost acreage’ that supports the putatively front-stage operations of large population centres. (Brenner 2016, 123)

This provides two further important elements: first that hinterlands are not simply passively implied in processes of planetary urbanisation. Second, that this process is not monolithic, it does not assume the same characteristics in each and every case. The idea of alter-urbanisations allows us, in consequence to differentiate and identify and study possible alternative pathways, or also simply recognise a diversity of possible city hinterland relations, studying existing geographies (like I do in Section 6, differentiating between cases in chapter 6.2 and in chapter 6.5).

In his book on the Planetary Mine, in which he dives into the concrete dynamics of the “operational spaces of capital”, Martin Arboleda (2020a) argues for planetary relations between social and environmental struggles. In his view, the labour force in the extraction sites in Latin America is surprisingly similar to the Asian/Chinese workers elaborating the extracted resources in industry, logistics, services. Similar in their material conditions and in terms of their provenance from processes of depeasantisation. Based on this observation, Arboleda argues for the potential of transnational alliances to form a planetary revolutionary subject. In a path to socialism that goes beyond mechanistic and unilinear understandings of stages in the evolution of society. But rather a “way forward to a different universalism, one based not on abstraction but on concrete specificity.” (p.242) For Arboleda such transnational alliances are based on (diverse) traditional communal livelihoods, overcoming their limitations (in scale and capacity to network and ally) precisely thanks to the modern forces of production, technology, etc. Fundamental for Arboleda is that the struggle is not based on

an ahistorical or transcendental moral imperative (...) [but] rather the most genuine product of the revolutionary transformations in the technical composition of labour that have followed the sprawling networks of material intercourse enabled by contemporary technologies of extraction. (p.237).

These contemporary technologies which interconnect the “planetary mine”, in Arboleda’s vision should become also the networks of resistance. In opposition not to the “culturally specific manifestations of social domination, [but] its underlying foundation in the production and reproduction of social life.” (p.241), overcoming “the false dichotomy between universal and particular” (p.215). Arboleda underscores this argument with the experience of opposition to a large open pit mine in northern Chile and Argentina which indigenous people and workers have

been quite successfully blocking (or at least made economically much less viable and profitable) over years. Arboleda's reading is stimulating in showing the potential of connection between struggles and alliances over continents to resist the transnational destructive megaprojects of extraction. It appears contradictory however to recognise the multiple forms of domination and to criticise mechanistic understandings of history, and then to argue that it is *one* underlying mechanism that needs to be transformed: "it is not the political relations between states that need to be transformed but the wage system that acts as the foundation for such relations." (p.252). Certainly this mechanism exists and is part of a capitalist economic system based on growth and development. But in this formulation, I would argue, it seems to be a dualist fight between good (the exploited labourer + nature + originally rural, indigenous peasant populations) and evil (capital + law of value). This reading seems to ignore the immense cultural force that the idea/ideology of growth and development has assumed globally (not everywhere but in many places, not only in the global north). The promise of wealth that modernity or some versions of it evidently still entail for many – a promise that for a consistent part of the world population, and not only capitalists, has also been fulfilled¹⁸. Thus, it is not sufficient to fight this "evil" outside. The impression that the meaning of the overcoming of capitalism remains somewhat mysterious, remains as a consequence. The "evil" is also (unequally distributed, sure) inside us (see also chapter 1.3) – positive alternatives with a different promise of a good life (in diverse, pluriversal versions) must be built rather than awaiting universal victory (is there capitalism yes or no, black and white? Or are there grey tones of degrees of capitalism and growth and development?).

Criticisms have been advanced also in front of the axiomatic assumption in planetary urbanisation that everything is urban and that there is no outside to urban theory (Jazeel 2018) and nothing beyond urbanisation (Peake et al. 2018). Similarly, Reddy (2018) criticises that planetary urbanisation, rather than overcoming the urban/rural dichotomy, claims, in this dichotomy, a dominance of the urban over the rural. But, spoiled from these universalistic ambitions¹⁹,

18 About the concept of class:

- class highlights the unequal & differentiated nature of (capitalist) society, with unequal responsibilities & benefits
- but class is also an abstract category that projects a mechanistic view of society, deresponsibilises individuals (& groups) & it obscures the complications of many / everybody / Western middle classes in capitalism & gives the illusion of a mechanistic solution that abolishes all problems (i.e. socialism)

19 In the 2018 theme issue of *Environment and Planning D: Society and Space* in which the critical texts cited here have appeared, Peake et al. (2018) in their introduction highlight how both Brenner and Schmid in their response to these criticisms argue, in short, that the "allegations"

planetary urbanisation gives a fruitful analytic contribution, as also critiques recognise (Jazeel 2018; Peake et al. 2018). Indeed I am skeptical about the idea that the urban, urbanisation, have completely subsumed “erstwhile rural” spaces and thus urbanisation has become the only all-encompassing global trend. Rather other voices (cf. Reddy 2018), other spaces continue to be relevant. What I consider helpful in the idea of planetary urbanisation for this work, is its focus and explicit linkage of the spaces of extraction with those of (urban) material consumption in (not only) the global north. But rather than considering processes of extraction, agricultural production etc. as exclusively part of a planetary processes of urbanisation, I find it useful to consider them *also* part of planetary urbanisation, amongst other processes and struggles: local political questions, agricultural transformation, indigenous struggles, rural subsistence... Including such relations of power and associated material flows into critical analyses, can help to build a degrowth perspective on urbanisation which does not point only at its local and formal outcomes but considers its relational, extended and material dimension.

2.4.2 For a Relational Space

In this paragraph I look at Doreen Massey’s contribution on the relationality of space and place; in particular at her seminal book *For Space* (2005). Readers may disagree with this argument, but for the scope of this research at least, I find it useful to think of Massey’s contribution as a more general formulation of many of the concepts of planetary urbanisation. By this I mean that Massey’s arguments coincide, as argued at the beginning of this chapter, with those of planetary urbanisation insofar as both propose a relational perspective of space and the idea that space is always (re)produced through these relations. But then, while planetary urbanisation gives a very specific imprinting to this general idea – conceptualising a hierarchical relation between (exploiting) cities and (exploited) hinterlands, Massey allows for a greater degree of diversity, multiplicity and contemporaneity. She argues, indeed, that space is the sphere of multiplicity, where contemporaneous plurality can coexist. “Space as a simultaneity of stories-so-far” (Massey 2005, 9), not too distant from Jessop’s (2003) argument about the multiformity of globalisation. Not necessarily, in this perspectives cities are simply cities and hinterlands hinterlands, one exploiting, the other exploited. To be sure,

of planetary urbanisation to be totalising are wrong. But who is right in this debate is not relevant here and for this research. The point here is to say that I take important parts of the planetary urbanisation proposal as helpful theoretical tools, without considering them as having the potential for universal explications.

there is exploitation, but relations are plural, intertwined, complex. True, also Neil Brenner speaks about the possibility of 'alter-urbanisations' but his seems a rather exceptionalist view of alternatives.

Is it too much of epistemological violence to argue that planetary urbanisation may be more acute in the critique of exploitative capitalist spatial relations and Massey in the conception of the possibility of alternative relations?

But let us first look with more detail at Massey's arguments. It is fundamental to recognise the scope of her reflections. Massey is explicit about this in the opening of her book. For her, thinking differently about space is not a theoretical endeavour but rather it must be productive for contemporary political battles, for a "relational politics for a relational space" (Massey 2005, 61). Her three opening propositions (space as a product of interrelations, space as the sphere of the existence of multiplicity, space as always under construction), are related to politics. First, they relate to anti-essentialism; Massey rejects the idea of fixed identities and instead focuses on their construction through relations. Thus, identities are influenced by space and spatial identities (places, nations) are constituted in relations. Secondly, Massey's propositions are about the idea that world history cannot simply be told from the perspective of western straight men: "the very possibility of any serious recognition of multiplicity and heterogeneity itself depends on a recognition of spatiality." (Massey 2005, 11). And then it is fundamental for her to conceive the future as open, beyond the inexorability of the grand universal narratives of modernity, such as narratives of progress, development, modernisation, but also Marxism's succession of modes of production. Only with an open future there is politics for Massey. But for an open future, space must be open too; not a simple container and not a holism with all possible links but "a space of loose ends and missing links" (Massey 2005, 12); with some things that can and should be linked, others that can and should not.

In this perspective, Massey refuses to oppose space to time, she opposes the common Western idea that conceives space as something fixed and immobile (space, she shows, does not equal representation) and time as something progressing. Like Jessop (2003), she asks to think space and time together, conceiving space not as an immobile closed system but as open, ongoing, always in production:

[a]s well as injecting temporality into the spatial this also reinvigorates its aspect of discrete multiplicity; for while the closed system is the foundation of the singular universal, opening up makes room for a genuine multiplicity of trajectories, and thus potentially of voices. (Massey 2005, p.55)

And this multiplicity of voices and relations is also what shapes ourselves, our identities. Thus, for Massey, the real importance of space lies in "the coeval

multiplicity of other trajectories and the necessary outwardlookingness of a spatialised subjectivity.” (p.59) To really accept this multiplicity also means acceptance that also this (Massey’s, mine) is *one* view: there can be multiple imaginations, theorisations, understandings, meanings (p.89).

An example of the potential that the spatialisation of social theory has, is the concept of globalisation and in particular a critical perspective on it. Post-colonial critique has decentred Europe, it has led to the recognition that the classical modern story with Europe at the centre (and its ideas of progress and development), was just one possible way of telling the story. And it has unveiled the violent conditions on which modernity has been built. This point of Massey’s, allows for multiple cross-linkages: it is related as much to planetary urbanisation, which analyses and criticises a particular form of this violent imposition of modernity in the process of urbanisation and city-hinterland relations, as much as to decolonial challenges to modernity and degrowth’s ambition to answer these, contributing to (multiple, pluriversal) alternatives in the global north. And it underlines the relevance that a spatial perspective can assume in this search for alternatives, studying the relations that (still existing) modernity is made of.

Furthermore, Massey shows, modernity has at its centre a conception of space as “naturally” divided in parts – of some kind of original societies and cultures with their “natural” spaces. But this assumption does not hold empirical testing, “when was the old community ever ‘spatially circumscribed’? (...) [D]istinctive cultural spaces were maintained (...) through connections rather than disjunctions (...)” “locality” is simply a contingent component of that “space of flows” rather than its antithesis” (p.66), she argues citing Oakes. The idea of already divided up spaces in combination with modernity’s linear and universal conception of history has led to a representation of other cultures as not only elsewhere in space but also “behind” in time, justifying colonisation and making immigration terrifying. Instead, thinking of space as offering “actually existing multiplicity” and thus “not the same societies at different stages of development, but different societies facing each other at the same Time” (Massey 2005, p.69–70, citing Fabian), leads to a radically different perspective.

Globalisation then, in the current dominant narrative, is depicted as free unbounded space, unfettered mobility, a world of flows – in apparently radical contrast to the modernist world of bounded place. The actual structural characteristics between the two imaginations though are similar. They have in common their claim of inevitability: postmodernity’s globalisation is like modernity’s progress. Who (e.g. Chad, Mali) is not like us, will be like us soon, don’t worry (the narrative of development, “sustainable” development, too, as being universal, the same for everybody that also degrowth and decolonial perspectives criticise, cfr. Chapters 2.1 – 2.3). Again, this narrative obscures the

presence and potential of different trajectories. And, it obscures, again, that “precisely their entanglement within the unequal relations of capitalist globalisation ensures that they do not ‘follow’. The future which is held out as inevitable is unlikely to be reached.” (p.82) and economics (and science) are conceived as external, uncontrollable forces, out of political consideration. Globalisation is not simply an inevitable fact but a political project, continuously remade and this gives the opportunity for a political answer. Paradoxically, globalisation is presented as without alternatives but then it is actively forced, produced, by the world’s most powerful agencies:

World economic leaders (...) gather to congratulate themselves upon, and to flaunt and reinforce their powerfulness, a powerfulness which consists in insisting on *powerlessness* – in the face of globalising market forces there is absolutely nothing that can be done. Except, of course, to push the process further. (p.84)

An argument closely linked to the discussion of the role of statehood in the face of neoliberalism/globalisation that assumes crucial relevance also in the discussion of the Chilean case and the fundamental role the state had in building the Chilean fruit industry (cfr. Paragraph 6.1.2). A role that reflects the differentiated potential that the state has facing globalisation: in some cases the state may be a victim of global forces, in other cases, rather, it governs these processes – in any case, the state is needed to stabilise regimes of accumulation, argues Jessop (2003).

Massey is not only critical of globalisation but also of its most obvious answer to it, the resort to the ‘local’. The local and the global for her are always constituted by each other and there is no original local to come back to. When debating globalisation or global connections, as this research attempts to do, the object of debate should not be

a kind of denuded spatial form in itself (distance; the degree of openness; the numbers of interconnections; proximity etc. etc.), but the relational content of that spatial form and in particular the nature of the embedded power-relations. There is no mechanical connection between distance and difference. (p.93)

This speaks directly to the case study of this research, which, engaging with the various actors of the global commodity geography studied, attempts to work out also the (im)balances of power between these actors (cfr. Section 6, in particular chapter 6.4.) , through an analysis of the potentials of these actors to determine how the relations between them function.

For Massey there are always connections, relations beyond, loose ends, “neither hermetic closure nor a world composed only of flow (...) is possible (...) There is only ever, always, a negotiation (and a responsibility to negotiate) between conflicting tendencies” (p.95). This logic of “negotiation between conflicting

tendencies” is a central contribution of Massey’s reading of space that in this work I want to bring to degrowth’s conceptualisation of space. A step beyond dichotomic oppositions between local and global, beyond the idea that one is always and *a priori* better than the other, a quest for differentiation. And indeed, Massey argues for a politics of relationality, against the tendency “to imagine the local as the product of the global but to neglect the counterpoint to this: the local construction of the global.” (p.101): in this view the global always emanates from ‘somewhere else’, it is unlocated, against which a politics of general ‘defence of place’ against the global originates. Instead, global neoliberal capitalism is locally produced and, as a consequence, there is a local possibility to intervene on the global, a “local responsibility for the global” (p.102).

Like spaces are not simply the surfaces of maps, places are not simply points on it, “[i]f space is rather a simultaneity of stories-so-far, then places are collections of those stories, articulations within the wider power-geometries of space.” (p.130); products of connections and disconnections, meetings and non-meetings, inclusions/exclusions. Thus, being places made of encounters they are not the same when the encounter has passed. They are “here *and* now”, not already defined, immutable entities, but entities always remade anew by conflictual negotiation.

In this negotiation, in developing politics for it, for Massey, always the specific case and the specific power relations must be considered:

The question cannot be whether demarcation (...) is simply good or bad. Perhaps Hamburg should indeed open up, while the Deni [indigenous people in the Amazon] are allowed their protective borderlands. Holding such apparently contradictory positions may be perfectly legitimate. (p.165)

Thus, there is no general spatial principle, the local is not always right, the local is not always good: it always depends on what changes on which and whose terms. Finally, Massey proposes a responsibility with a temporal and a spatial extension: “the spatial counterpoint to an ethics of hospitality. A politics of outwardlookingness, from place beyond place.” (p.192) In London, for example, local policies could challenge the city’s narrow sectorial focus on finance, support alternative globalisations, make a politics of consumption, build alliances with other places (p.192).

Summing up, for Massey, the global is made locally, space is as concrete as place; connections are fundamental and a retreat to an idealised local is not possible: because it has never existed and the local and its uniqueness is made precisely out of the relations at the crossroads of which the local, place, is created. Thus, progressive politics must be thought differently in different places but they must have the relations to other places through which each place is built at their core.

For Brenner, Schmid and others on the other hand, the planetary process of urbanisation simply is a dominant fact, an overriding force of which no place can escape. I would not interpret these as necessarily mutually exclusive positions. The relationality of planetary urbanisation focuses on the exploitative relation between cities and hinterlands. Certainly, this perspectives reveals a lot but it also reduces places to be or cities or hinterlands, concentrated or extended urbanisation. Reddy (2018) remarks how cities can be places of both concentrated *and* extended urbanisation: there is no neat boundary. Massey's perspective instead offers a much wider, much more open conception of places as "collections of stories", as the localities where some of those relations which form space meet. Planetary urbanisation contradicts this open perspective when it is assumed as an unavoidable process, without the opportunity of political negotiation. But also Brenner recognises the possibility of 'alter-urbanisations'.

It seems productive to me to take the proposal of planetary urbanisation as the description of a problematic tendency, as a spatialisation of the accounts of externalisation, unequal ecological exchange etc. and Massey's relational space as a wider interpretative framework in which these tendencies occur. A framework which offers no easy way out: a retreat to the local is no possible answer to planetary urbanisation. But the terms of this process must be understood and negotiated. The propositions of degrowth offer guidance for this process of negotiation, but certainly, as Massey underlines and in coherence with the debate on decoloniality, these negotiations must be multiple and specific.

While the relationality of space proposed by Massey offers much wider perspectives, all the same, for the present research, a focus on that specific type of relation, between cities and hinterlands, that planetary urbanisation offers, can be fruitful. While planetary urbanisation's totalising tendency may be problematic, when considering concentrated and extended urbanisation as specific (maybe frequent and common) cases of places in relational spaces, this provides at least a working hypothesis for the analysis of the commodity geographies I approach in the case studies. Furthermore, city hinterland relations can be diverse and studying this diversity can be a way to reflect about possible alter-urbanisations, i.e. potentially different, more just and sustainable forms of urbanisation, in the vein of the Solidary Degrowth City.

2.5 Towards Multiscalar Degrowth Transformations in Relational Spaces: A Solidary Degrowth City?²⁰

A sometimes simplistic proposal of relocalisation and a limited engagement with material geographies as well as occasional tendencies towards universalist proposals, I have argued, are main flaws of the reviewed literature on degrowth and space. I have looked at relational conceptions of space in order to overcome these limits. Now I try to combine these discussions, trying to develop a framework for a multiscalar strategy of degrowth transformations. This is certainly not the only possible way to discuss degrowth transformations across scales – and it is open to criticisms and improvements in the vein of degrowth as ‘nomadic utopianism’ (Barca, Chertkovskaya, and Paulson 2019) – but it could be a productive one.

In the first place, I must shortly go back to the definition of degrowth, which can be summarised in three essential goals, based on the basic proposition that unlimited economic growth is impossible as well as undesirable and that its pursuit has devastating social and ecological consequences (see Latouche 2010; Schneider, Kallis, and Martinez-Alier 2010; Demaria et al. 2013; D’Alisa, Demaria, and Kallis 2015; Kothari, Demaria, and Acosta 2014; Paulson 2017 for more comprehensive introductions): In this sense degrowth means (1) a quantitative but selective reduction of the social metabolism, i.e. production and consumption, as a basic condition for sustainability; (2) an improvement of social justice through redistribution and the reduction of exploitative relations, e.g. between global north and south; (3) a pursuit of (individual) well-being and happiness with reduced material wealth (in the global north), substituting the ideal of unlimited consumption with more importance, in time and space, granted to conviviality, social relations, arts, culture, political engagement. Degrowth, furthermore, can be considered as the global north’s contribution to a pluriverse of alternatives.

A synthetic proposal of how these propositions could transform space and place²¹ – or rather, how space and place need to change in order to promote these propositions, in a relational view of what space and place are, is illustrated in Figure 1²².

20 Also this chapter draws heavily on the article published in *City* (Krähmer 2022).

21 Such a binary division of course is problematic and it should later be overcome, but it is temporarily helpful for the sake of clarity.

22 Of course this proposal is: (1) conceived in a eurocentric perspective – e.g.: the places here defined as hinterlands are not only hinterlands – as justified in the section above; (2) mainly materialist, ignoring largely, for instance, issues of place identity (cf. Massey and Jess 2001)

	<i>Degrowth propositions</i>		
<i>Spaces / Places</i>	(1) selective reduction of production and consumption	(2) local and global social justice	(3) well-being and happiness with reduced material wealth
Spaces (of material and immaterial relations, e.g. between places of extraction in the South and consumption in the North)	Selective downscaling of overall material flows; limitation of the overall quantity of mobility of both human beings and economic goods, at different scales → Localist tendency	Building solidary economic relations; a just distribution of the access to mobility and flows; contrasting unequal ecological exchange and imbalanced power relations.	Collective choices about which relations, flows, mobilities to be prioritised; according to their contribution to happiness and well-being rather than economic growth.
<i>Transversal:</i>	Degrowth, in the global north, operates in alliance with other movements in a Pluriverse of Alternatives and situates its proposals in relation to other parts of the world (<i>In the literature: Kothari, Demaria, and Acosta 2014; Escobar 2015; Nirmal and Rocheleau 2019</i>)		
<i>In the literature:</i>	Discussed mostly in terms of a generalised relocalisation (<i>Rees 2015; Widmer and Schneider 2018, Gerber 2020</i>); little or no debate on the selectivity of this reduction.	Only the proposal of the Solidary Degrowth City explicitly tackles this point. (<i>Brand 2020; Eckardt 2020</i>)	Isolated proposals: keep some trade where production exceeds local production (<i>Rees 2015</i>); Imports for occasional locally unavailable luxuries (<i>Widmer and Schneider 2018</i>)
Places (where relations meet; meaning here in particular places in the global north, conceiving degrowth as a contribution to a pluriverse of alternatives)	Sufficiency in space use and other forms of consumption; change in the modalities of land use (e.g. from industrial to agroecological practices of agriculture).	Redistribution of wealth; just access to land, housing and metabolism.	Practices focusing on sharing, togetherness and conviviality; to ensure well-being with reduced material consumption in the global north
<i>Transversal:</i>	Rethinking of Spatial Planning and Policies according to the principle of sufficiency (<i>In the literature: Schneider et al. 2013; Wächter 2013; Xue 2014; 2018a; Bohnenberger 2020; Savini 2021</i>)		
<i>In the literature:</i>	Tackled in many aspects: e.g. calls to limit urban expansion, surface areas per capita (<i>Schneider et al. 2013; Wächter 2013; Xue 2014; 2018a; Bohnenberger 2020</i>)	Debated frequently; arguments to think ecology and equity together (<i>Schneider et al. 2013; Ferreri 2018; Olsen, Orefice, and Pietrangeli 2018; Hurlin 2018; Eckardt and Brokow-Loga 2020; Bohnenberger 2020; Cucca and Friesenecker 2021</i>)	A central focus in the reviewed literature; e.g. on cohousing (<i>Liettaert 2010; Hurlin 2018; Jarvis 2019; Cucca and Friesenecker 2021</i>)

Figure 1: Strategies for degrowth transformation in Spaces and Places (from Krähmer 2022)

Crucial in this proposal is that, coherently with Massey's arguments (cfr. Paragraph 2.4.2), it does not indicate general spatial rules but rather tendencies. Tendencies in relation to the contingent global situation of nowadays' socio-ecological crisis. It is furthermore contingent to a perspective from the global north, considering the

role of degrowth as part of a pluriverse of alternative. In the merit of the proposal it is important to highlight that it gives equal importance to the categories of space *and* place. As much as these may appear as represented in a simplified dualism, it is necessary to consider that the relationality and entanglements of both are at the centre of the proposed framework. The distinction between the two, in relation to the main arguments taken from the literature though, makes clear which are the gaps of this existing literature: places are very much an object of this literature, spaces are much less so. In this gap fits the present research. Of course this framework so far is a very essentialised proposal and could and should be developed in greater detail in relation to specific spaces, places and types of relations – in chapter 7.2 I will discuss how the results of the case study on Chilean fruit can be related to this proposal; if and how they substantiate and/or contradict it.

A Solidary Degrowth City in Solidary Degrowth Spaces

To elaborate a bit more on how the proposal of Figure 1 can be understood, it is worth to go more into the details of the few considerations on the relationality of space in the degrowth literature so far.

While the call for an “open relocalization” and to “think about limits in terms of distance instead of borders, thereby giving birth to overlapping, interconnected territories, rather than territories that simply happen to share a border” (Liegey et al. 2016) may be a starting point for thinking degrowth beyond the local, this position still suffers from a too easy dismissal of larger scales of relations. In this sense, in the reviewed literature on degrowth and space, the already mentioned proposal of the “Solidary Degrowth City” stands out. It speaks to Massey’s (2005) argument that global neoliberal capitalism is locally produced and that there is a local possibility to intervene on the global, as well as a “local responsibility for the global” (p.102). The Solidary Degrowth City indeed is a proposal to internalise resource extraction and social and ecological impacts not only in the calculations of urban footprints (which may be a starting point) but also in an urban politics, like in the politics of responsibility, care and implication called for by Massey (2005). The proposal of the Solidary Degrowth City (*Solidarische Postwachstumsstadt*) has been advanced by Ulrich Brand (2020b). It sets out from the description of our current mode of living in the global north as “imperial” (Brand 2020b; Brand and Wissen 2017), i.e. as based on the systematic exploitation and appropriation of people and resources from elsewhere (from nearby and from the global south, from contiguous and extended hinterlands) and the creation of ecological debt for the future. Obviously this concept is closely related to

externalisation and unequal ecological exchange (and planetary urbanisation could be interpreted as a spatialised form of the imperial mode of living). As an alternative, as the horizon of a process of degrowth, Brand positions a solidary mode of living, materialised (also) in cities:

It is not about renunciation. I believe this is definitely the wrong wording, less of the existing still is not good. A solidary mode of production and living must develop another, resource-light model of wealth. (Brand 2020b, 38, my translation).

This solidary approach to degrowth can be read as an answer to the call of degrowth needing to ally globally with fellow movements (Burkhart, Schmelzer, and Treu 2020), like *Buen Vivir* in Latin America. Arboleda (2020a) makes a similar argument for global alliances, but under Marxist premises. As both Acosta (2020) and Brand (2020a) argue, *Buen Vivir* has emerged to fight the (neo-)extractive system dominating contemporary Latin America, opposing the destruction of nature and livelihoods it entails in the name of global capitalist growth and instead proposing a plural alternative of good life. A good life that looks back at traditional values of indigenous communities (and is promoted by these communities, who have been oppressed by colonialism as well as by development) but does not reject modern technology if compatible with a lifestyle harmonious in relation to other people, communities and nature. *Buen Vivir* and degrowth should ally to fight together capitalist development and propose plural, viable and positive alternatives to it (Acosta 2020; Brand 2020a):

The relation between these two processes is obvious: If economies in the North are no longer to grow, demand must fall. In this case it would no longer make sense for countries in the South to base their economies on exporting raw materials to the North. (Acosta 2020, 94)

In this sense this is not about a naive pluralism in which “anything goes”. Precisely the relational conception of space (and of economy and society) forces us to make choices of value and to consider not only immediate and close consequences of our actions but also those which are, apparently, far away, across continents. You could say that something of Kant’s categorical imperative – and its universalistic ambition – remains, but in a form in which the law according to which one should act, cannot be simply decided on in one’s own head, but must be negotiated in relation. And in a form that does not regard only individual but also collective action. Nor can pluriversal alternatives be developed in isolation, neither can they be conceived in an ethical void – there must be agreements, negotiations, connections between them – but this must not lead to the unilateral imposition of a new universalism, the challenge is Mignolo’s demanding “Pluri-versality as a universal project” (2007, 500).

In fact, it is foremost the global relations relations in culture, politics and economy that must change, in order to move from the current model of ‘predatory’ extractivism to a scenario of ‘sensible’ extractivism, which respects social and ecological standards (Brand 2020a). This could be achieved “through the introduction of social and ecological standards, more advanced technology, compensation payments” (Brand 2020a, 248) and other measures. Reducing the dependency of Latin American (and other) countries from extractivism and resource exploitation, liberating it from the grasp of the “planetary mine” (Arboleda 2020a), would allow to develop alternative, local economic models, finally reducing radically the exploitation of natural resources as well as social exploitation.

Abandoning the global north’s imperial mode of living is a fundamental part of this transformation of the violent structures of global capitalism: a solidary mode of living regards all aspects of urban life, from housing, over transport, to production. “To change would also be the relations between cities and those places from where they get the means to function from” (Brand 2020b). Brand evidences that such a transformation of the capitalist model cannot come about without politicisation, conflict and negotiation (cfr. Massey above about the politics of relationality) and concludes with two examples: the creation of a network of solidary cities for refugees during the European refugee crisis and a conflict about the extension of the airport of Vienna. In this case the Austrian federal court has decided to stop the extension as it would counter Austria’s climate targets. The meaning of such a conflict and decision, Brand argues, goes far beyond the punctual question of a third runway. It can be part of a necessary process in which powerful actors, like airlines, are weakened in the name of the solidary project of climate protection policies and progressively the cultural perspective on flying, part of the imperial mode of living, changes. Perhaps, making it perceived as outrageous and ridiculous to fly from Vienna to Milan for a weekend of shopping.

Eckardt (2020), in a contribution to the same German book on the Post-Growth City, makes closely related arguments for a solidary urban politics. This politics, he argues must be based on a new sense of belonging to the city, which cannot be a localist project. His arguments remind of Massey’s and ‘her’ global sense of place:

Considering the entanglements of local systems of production and consumption in global chains of supply and exploitation, it is necessary to open local political communities to the people who are victims of these processes. Which consequences are drawn from this; e.g. welcoming a greater number of climate refugees, is the responsibility of the local political community. But this community, before, needs to fight for this space of discussion and decisional power in front of national and global powers. This will only be possible with the

formation of not only local but also regional and global coalitions for such a re-territorialisation of local politics. (Eckardt 2020, 68, my translation)

The Solidarity Degrowth City, operating in alliance with other movements and places (no longer just hinterlands), should thus be part of Solidary Degrowth Spaces: spaces in which relations are not neglected but rather shaped cooperatively, in the respect of human diversity and ecological sustainability. So far, the Solidary Degrowth City and the Solidary Degrowth Space are little more than slogans, but they offer a fundamental conceptual and political perspective to complement the local proposals and experiments discussed above. Certainly though, to assume this role, their proposal needs to be substantiated. For example by playing out in case studies (like the one in Section 6) the principles proposed here and in this way explaining how these goals might be achieved.

The point here is not, of course, to introduce through the back door a justification for destructive global trade and mobility at destructive speeds and scales in the conceptualisation of degrowth. Quite the opposite: certainly the current speed of global transformation and the continuous tendency to further accelerate are in no way compatible with ecological and social sustainability. In proportion certainly “[t]he challenge is to regrow localized interdependent networks, and degrow colonial, dependent global networks while re-making the patterns and terms of connectivity across scales.” (Nirmal and Rocheleau 2019, 473). The point is that relocalisation is not enough and *if* it is not enough, *then* it is necessary to tackle *also* wider scales of spaces and relations in the degrowth debate.

2.6 Conclusions

What has the degrowth debate to say about space has been the initial question of this section. Reviewing existing literature, I have answered this question criticising this literature for three limits: a sometimes universalistic, non-situated perspective on urban and spatial transformations, a lack of consideration for the materiality of geographies and, most of all, a problematic and ungrounded preference for apparently obvious but unfeasible and undesirable, localist solutions. These can be pragmatic and stimulating nowtopian experiments but it becomes problematic when they are supposed to be universal solutions. I have argued that these limits are important arguments that the degrowth debate should assume a different, relational, perspective on space.

I have thus engaged with two diverse important contributions on the relationality of space – the debate on planetary urbanisation and Doreen Massey’s arguments.

The idea that space is produced by relations, that space contains alternatives and differences and that the local and global, the city and the hinterland are not separate, dichotomic categories, but rather produce and constitute each other in relation and in (conflictual) negotiation can be profoundly fruitful for degrowth. Degrowth which, for instance in the critique of processes of externalisation that render unsuccessful sustainable urban development, recognises the importance of relations beyond the local but only indirectly and without really analysing them.

In this sense, I have proposed a tentative theoretical framework of degrowth transformations of space across multiple scales, that proposes to change places (both cities and hinterlands) and, fundamentally, the relations between them. This proposal tries foremost to set a research agenda that could attempt to fill with life the proposal of the Solidary Degrowth City. A proposal which precisely argues to politicise the external relations cities depend on and to try to reshape them differently, building, in alliance with pluriversal alternatives, solidary degrowth spaces. Three principles on which to build such a strategy of transformation are clear: the necessity to re-inhabit existing geographies, the urgency to consider the relations which constitute space and place, including material flows and the need to think in the perspective of a pluriverse, of which degrowth in the global north is a part.

The case study at the core of the present research (in section 6), is an attempt to (begin to) answer the ambitious request of this research agenda, according to that it is necessary to first look in detail at global relations of exchange in order to build proposals on how to transform them in a degrowth perspective. The hypothesis to test (cfr. Figure 1) is that in these relations the goal of unlimited growth is problematic, and thus, a quantitative limitation of these flows is desirable, without implying their elimination, but finding ways to change the quality of these relations, from extractive and exploitative practices towards solidary alternatives. The study of commodity chains and networks, the following section will focus on these concepts, can be a way to empirically study city hinterland relations, on a range that can go from the “operational landscapes” of global capitalism to the project of the “Solidary Degrowth City”.

3. Commodity Geographies

In the previous section I have discussed the theoretical challenge of my research: to contribute to multiscalar spatial strategies of degrowth, focusing on how to transform the *relations between places* in the context of a wider socio-ecological transformation. To circumscribe the task, I propose to approach more specifically a material relation at a global scale, focusing empirically on a global “commodity geography”, i.e. a relation around the trade of a an object or a commodity. This allows to connect abstract theory to concrete, empirically observable processes. “Matter matters because it is through grounded research that we encounter differences that make a difference” as Bakker and Bridge (2006, 21) put it. Cook, Crang, and Thorpe (2004, 174) define the task, while describing the scope of their case study on tropical fruit, as follows:

we seek to contribute to a wider political/academic project whose aim is to show that, if we pick up a paw paw, a prickly pear, a kumquat, any commodity, we have in our hands a bundle of social, cultural, political, economic, biological, technological, geographical, historical and other relations which ensured that it travelled from those places, to that shelf, in that form, at that time and at that price.

Researching the geographies of commodities is a way to respond to calls to connect the abstract to the concrete, theory to everyday life (C. Schmid 2018) and to consider the specificities of spatial relations (Massey 2005).

The proposal of this section is to employ the research tradition in economic geography on commodity geographies “as a conceptual tool for studying urbanization in a relational way” (Valz Gris 2021, 109). I connect the framework of a relational geography of urbanisation (see previous section) to the concept of urban metabolism (borrowed from Marx through the literature of urban political ecology; cfr. Valz Gris 2021), materialised in commodity geographies which are perpetrated many times through extractive economic-political strategies. To synthesise the different tasks of some central concepts and research traditions employed in this research, commodity geographies are about commodities and the relations established around them, studies of extractivism show the social and ecological damages that their extraction produces, the urban/social metabolism is the process that needs these flows of commodities for its own circulation and planetary urbanisation describes the planetary process in which commodity extractions in one place is connected to urbanisation, i.e. to consumption in other

places far away; degrowth is a radical critique of and proposal for alternatives to these realities.

Connecting these literatures and these different perspectives can be very fruitful but has, surprisingly, been rarely done so far, as Valz Gris (2021) argues, his study of lithium extraction and trade being a rare exception (but it does not include the degrowth literature). Intertwining these literatures and research traditions, which have very different methodological, conceptual and value approaches but study closely interrelated – if not actually the same – questions, helps to overcome some of their respective limitations, able to enrich not only the relational study of planetary urbanisation, as Valz Gris proposed, but also the literature on degrowth, one of the critiques of global capitalism and economic growth. In this endeavour, the literature on commodity geographies provides not only but foremost the conceptual-methodological approach that has informed this research, as I will detail in section 5. Certainly there are further literatures that could be mobilized for this research, among these, for instance (urban) political ecology which several times surfaces in this research in single contributions but is not treated systematically: as always though, there are the constraints of time and capacity of one single researcher that make an exhaustive consideration of all possibilities impossible.

Before getting into the literature on commodity geographies, what actually is a commodity? According to the Oxford Learner's Dictionaries²³, a commodity very simply is “a product or a raw material that can be bought and sold”. A crucial characteristic of this definition is that an object (be it a raw material or a product) can become a commodity only when it is apt to be bought and sold. It is, thus, an object that has already been “commodified”, i.e. made tradable, inserted into a market relation (cfr. Paragraph 3.3.4). This process of commodification is central to the expansion of capitalism, i.e. a market-based economy, along commodity frontiers (Moore 2000; Conde and Walter 2014). But in this research the focus is not on frontiers, i.e. the expansion of capitalist relations, but rather operates in already commodified, existing market-based relations and looks at how they can be variously organised and characterised, at what are their differences according to and in relation to their more or less commodified socio-ecological contexts.

This section has the goal to review existing research on the geographies of commodities (chapter 3.1 summarises the different research approaches that have been employed) in order to delineate on one side the methodological challenges that this type of research makes arise (collected in chapter 3.2) and, on the other side, to get an idea of what have been results of precedent research on which this work can build on (as discussed in chapter 3.3). Finally, chapter 3.4 looks at

²³ <https://www.oxfordlearnersdictionaries.com/definition/english/commodity?q=commodity> (Last access: November 2022)

existing approaches, policies and practices that attempt to transform commodity geographies to make them more just and sustainable.

3.1 Commodity Geographies: Chains, Circuits, Networks

This paragraph has the aim to provide an overview of diverse streams of literature and research traditions in a vaguely defined field I propose to call here “commodity geographies”. A large number of diverse concepts and approaches have evolved around the study of commodities or more in general the study of objects and their travels around the globe with trade, varying according to the method, the focus of interest and the ideological position of the respective research. These stretch from economic to geographic approaches, from ethnography to urban political ecology, from work informed by Marxism, world-systems theory and neoclassical economy. Of this diversity of studies I will try to give an overview in the following pages, while focusing in particular on work around the concept of commodity chains. The scope is not so much that of a comprehensive literature review, which would be an arduous task in relation to the multiplicity of ways in which commodities and their geographies have been studied in diverse contexts and perspectives but rather to focus on ways of analysis and strategies of interpretation that are fruitful and fertile for the conduction first and the interpretation then of the empirical work presented in section 6. Furthermore, I give emphasis to studies thematically close to my case studies, i.e. focusing on global fruit geographies, on Latin America, Chile, and contributions relevant to establish connections with the degrowth debate.

An overview of approaches

Global Commodity Chain (GCC), Global Value Chain (GVC), Systems of provision, Circuits of Culture or Commodity Circuits, Commodity Networks, Commodity Networks inspired by Conventions Theory, Gendered Commodity Chains, Global Production Networks (GPN), Supply Chains, Supply Chain Capitalism. This is an incomplete list of terms (collected from, among others, Leslie and Reimer 1999; Hughes and Reimer 2004a; Murdoch and Miele 2004; Raghuram 2004; Coe, Dicken, and Hess 2008; Centemeri 2017) that have been proposed and used for the study of commodities, their geographies, the relations between their production and their consumption. Other terms will appear in this review which at times are employed in a similar manner, in other cases refer to related types of studies: e.g. commodity

frontier, trails, material worlds. To refer in general to the entirety of these diverse literatures here I use the term “commodity geography/ies”, useful to transcend the not particularly illuminating debate on the best spatial metaphor to use: chain, circuit, network or something else. This term is not widely used but has been employed for example, without giving a particular definition, by Cook et al. (2004). This diversity of research on commodities is no wonder considering how central commodities are to the market form in general and to a growth-oriented capitalist system in particular. For Marx commodities are the “economic cell form” of capitalism (see Gregory et al. (2011), entry Commodity). Studying commodities thus is a basic entry point to study an economic system based on the massive production of commodities (capitalism and beyond) and its geographies.

A common ambition in the literature on commodities is to get “behind the veil” of commodity ‘fetishism’, often referring to David Harvey’s (1990) call. For Leslie and Reimer (1999) the basic motivation for such research is to overcome the limitations of both overly materialist approaches, ignoring symbolic levels of meaning, and too culturalist readings which are insufficiently grounded. Hence the interest of bringing together different sites – everything between production and consumption, also because “viewing the chain as a whole, commodity chain analyses provide a space for political action by reconnecting producers and consumers (McRobbie, 1997)” (Leslie and Reimer 1999, 402).

Chains

A first way to conceptualize and study such relationships is *Commodity Chain Analysis*, also called the *Global Commodity Chain (GCC)* approach (Leslie and Reimer 1999; Hughes and Reimer 2004b; Murdoch and Miele 2004; Raghuram 2004; Coe, Dicken, and Hess 2008). Notwithstanding the numerous terminological and conceptual evolutions in the literature, the chain appears as the most frequent reference point against which other approaches compare, probably due to its intuitive nature. The concept originates in political economy and has first been conceptualized by Hopkins and Wallerstein (1977), in the context of world-systems theory. The idea is to take a consumable item and trace it back to its inputs – the scope being to unveil global connections (core-periphery) shaped by actors other than nation states. Other origins of the commodity chain concept can be found in French economic geography with the term *filière*, used to describe a set of firms vertically linked around the creation of a product, as well as in agri-food studies (Gregory et al. 2011), entry commodity chain). A distinction proposed in research on commodity chains is between producer-driven and buyer-driven commodity

chains, according to which in some chains producers, in others buyers have greater power (Raghuram 2004; Hughes and Reimer 2004b).

While this research tradition has laid the basis for further inquiry, there have been a number of criticisms to this approach. In particular it has been described as focusing too much on production, using consumption only as a starting point without problematising it in itself, ignoring in particular the wide range of cultural issues associated to it and ignoring human agency involved in it (Leslie and Reimer 1999; Murdoch and Miele 2004; Raghuram 2004), as much as neglecting distribution (Murdoch and Miele 2004).

It has also been argued that research on GCC tends to conceive the chain – as the term indicates – as something linear, ignoring horizontal linkages and interactions in the different sites these relations touch (Coe, Dicken, and Hess 2008), assuming also a linear trend to industrialisation and globalisation to which all chains, in capitalism, are supposed to conform in the long run (Murdoch and Miele 2004). Furthermore, it has been noted that the linear conception of the chain is related to a dualistic concept of core and periphery, with production in the latter and consumption the former (Leslie and Reimer 1999; Hughes and Reimer 2004b).

The related approach of *Global Value Chain (GVC)*, which tries to look more closely at the distribution of value along the chain has been subject to similar criticisms of linearity (Coe, Dicken, and Hess 2008).

A particularly important element of criticism to GCC for this research is that there has been a lack of engagement with space. Berndt and Boeckler (2011, 1061–62) argue that

[i]n these literatures, places at different scales and the borders defining these places are pre-given. Goods, people, ideas, and capital move between these places and cross borders. We turn the territorial logic upside down and argue that it is these mobilities which produce places and borders. Once liberated from the 'territorial trap' (Agnew, 1994) space transforms into a bundle of relations, constituted in interaction, mediated medially, communicatively, biographically, economically, politically, and remaining distantly unlimited: "Space, then, is the product of the intricacies and complexities, the intertwinings and the non-interlockings, of relations, from the unimaginably cosmic to the intimately tiny" (Massey, 1999, page 8).

Leslie and Reimer (1999) indeed ask to "spatialize" commodity chains, considering the importance that space and place have in them. A large debate has been on whether in the analysis of commodity geographies vertical (follow the product) or horizontal (analyse local relationships around it) elements should be predominant. The commodity chain literature has very much focused on the vertical links, but in specific places and sites important relations occur which shape the chain in important ways. Also can a horizontal approach show links between different

chains. Leslie and Reimer (1999) argue for an integration through a geographical approach:

Miller (1997: 12) explicitly calls for multisited ethnographies of the articulation between production, distribution and purchase. It is crucial to recognize varying spatialities of consumption. Coffee, for example, is linked to sociality and selfhood in very different ways in coffee-producing regions such as Tanzania than in coffee-consuming nations such as Europe or North America (Leslie and Reimer 1999, 410).

This, importantly, provides an opportunity for differentiation, overcoming a monolithic understanding of capitalism and its consequences:

For Weiss (1996: 103) this demonstrates that 'it can no longer be presumed that global forces like commoditization lead inevitably to the eradication of specific local meanings, no matter how ostensibly powerful and seductive commodity forms might appear' (Leslie and Reimer 1999, 410).

Circuits

Another approach, more attentive to the cultural aspects of consumption has been variably defined as *circuits of culture* (Leslie and Reimer 1999) or *commodity circuits* (Hughes and Reimer 2004b). This approach, combining elements of political economy and post-structuralism, can be seen as embedded in a wider literature on commodity cultures, with relations to fields such as economic anthropology, studies of material culture and critical ethnography (Hughes and Reimer 2004b). A central element here is the change of the spatial metaphor: from linear chains to circular circuits, in which the focus is not so much on “unveiling” the origins of a product – as origins are always socially constructed, also by consumer knowledge. Consumers in fact, in this perspective, should not be assumed to be unknowing but rather active subjects in the circuit (Leslie and Reimer 1999; Hughes and Reimer 2004b).

Criticisms to this approach have argued that it centres too much on the role of objects and to little on the role of human actors (Raghuram 2004) and that the image of an endless circuit entails the risk of losing political edge, being unable to foreground exploitation (Leslie and Reimer 1999).

Bakker and Bridge (2006) write about commodity circuits:

Conceding that commodities do indeed have their origins in social relations that are largely obscured by the commodity form, this work demonstrates how commodities – through their circulation, exchange and use – also perform myriad social functions as 'things in motion'. (p.12)

The idea of this kind of research is to understand commodity fetishism rather than simply transcending it, with two implications for resource geographies:

- i - A way of overcoming a simplistic distinction of production and consumption as distinct fields of research - also to connect consumers and producers politically
- ii - A recognition of the central role that the cultural meanings and associations play in shaping their geography and history (Bakker and Bridge 2006) - e.g. how the rise of sugar has been closely linked to the rise of sugar as a "cultural commodity" in industrializing Europe. Something that cannot be explained in physical/nutritional terms alone.

An example of research on commodity circuits is Cook, Crang, and Thorpe's (2004) essay on the marketing of tropical fruits, an essay focusing on the cultural context in which the marketing was inscribed.

Characteristic for the circuits of culture tradition is also a different methodological approach in comparison to 'classical' commodity chain research - an aspect which surprisingly has received little attention from reviewers. While research on GCC, coming from a political economy approach, aims at the general and structural reconstruction of entire commodity chains, using mainly statistical data, official documents and similar sources, for literature in the commodity circuits tradition, being more interested in specific stories, product biographies as they are sometimes also called (e.g. Raghuram 2004), a methodology of choice is ethnography. This is perhaps best exemplified by Cook et al.'s "*follow-the-thing*" approach, experimented for instance in a study that has traced papayas from a London supermarket back to a field in Jamaica (Cook et al. 2004); in their research they employ a "multi-locate ethnography" to unveil the connections between western consumers and distant producers, giving homogeneous attention to the different actors, phases and places of the circuit they analyse.

Networks

A further evolution in the literature tackling geographies of commodities, has been the proposal of *commodity networks*; another shift of the spatial metaphor with the aim to overcome the linearity of both chains and circuits, conceiving the connections between actors as "complex webs of interdependence" (Hughes and Reimer 2004b). This literature is strongly influenced by Actor Network Theory and its notion of agency of both human and non-human actors. Commodity networks are considered to be localised in space (ibid.). Raghuram (2004) has advanced the criticism that this approach risks reducing complex systems to mechanistic frameworks, considering actors as located at nodes and the links between them;

this can “disembody” them from their social context. Similarly, Jones, Heley, and Woods (2019, 141) argue that

little consideration is given to other components of locality such as landscape and the environment, or the role of cultural and historical practices, institutions and policy regimes in creating the possibility for particular development trajectories to take hold.

Raghuram (2004) has proposed to “gender” the global commodity chain, and to consider producers, also “third world women” not just as being exploited but also as persons with agency, who also act as consumers themselves. Murdoch and Miele (2004) on the other hand have suggested to use the approach of commodity networks, but with the guidance of Conventions Theory: “Conventions Theory proposes that the heterogeneous arrangement of any particular network can be linked via repertoires of justification to the surrounding cultural or discursive context.” (p.108).

Finally, the *Global Production Network (GPN)* approach must be mentioned, as discussed by Coe, Dicken, and Hess (2008). They characterise GPN as an approach that overcomes the linearity of GCC and GVC, and aims at considering all relevant actors (not only firms) as embedded in their social, environmental, political contexts and networks in a relational world view. They argue that in order to “follow-the-network” in such a complex manner would require multi-national research teams, rather than the “lone researcher” – indeed, in the present research, operating as an individual has certainly posed limits to its completeness (cfr. Sections 5 and 6).

At the same time, Coe, Dicken, and Hess criticise existing GPN literature, identifying three fundamental gaps. First, logistics has been ignored by the vast majority of research, notwithstanding its fundamental importance in global networks. Secondly, firms are mostly treated as ‘black boxes’, focusing on relations between them and ignoring those within firms which themselves can be complex power relations with territorial dimensions. Finally, they miss consideration of how production networks are related to the environment, both in terms of inputs and outputs. They point at the possibility of conceiving networks of production not just as economic processes in which value is added, but also as metabolic systems with flows of matter and energy, involving physical transformations of nature, relating (again) to the field of political ecology. Furthermore, they criticise a narrow understanding of power relations in GVC literature and arguing that not always power relations are clear and linear:

the specific configurations and asymmetries of power within GPNs are infinitely more complex, contingent and variable over time. For example, the power relationships between firms and their suppliers are rarely as simple as the

conventional wisdom tends to suggest whereby the large automatically dominate and exploit the small. Size does not always matter. (p.276)

According to Werner (2018), in a first moment studies in the GPN framework have focused on cases of “felicitous inclusion” into global economic relations, situations in which actors have benefited from this participation. Currently though, they argue, case studies have started to look at GPNs as both results and vehicles of uneven development – framing the latter, according to the respective ideological position as simply a “dark side” of market integration or as a (con)caused by it. A dark side of integration of firms in global markets would be, for example, that even when market integration is successful, working conditions do not necessarily improve. But, Werner argues, to focus on firms (or regions, at most), like mainstream GPN studies do, has its limits, while other actors (e.g. the state, workers) get limited attention. Also Coe, Dicken, and Hess (2008) discuss a set of non-firm actors involved in GPN. While the role of international organisations such as the WHO is frequently considered, less attention is given, for example to international standards (ISO). The nation-state, the authors claim, retains a crucial importance in GPNs (a result also of my empirical research in Section 6), with complex interactions between spatially fixed and bounded states, and networks which are spatially flexible and dynamic. Further actors are macro-regional entities such as trade agreements and – little considered by the literature – labour, consumers and civil society. In the case of labour, dynamics are determined by the fundamental flexibility and mobility of capital and the relative fixity of labour. (Final) consumers are also little considered in the literature, if not as passive absorbers of the produced commodities. Finally, civil society organisations, in particular transnational ones, the authors argue, have assumed an important role, at least in certain sectors, such as agriculture and food, and should be taken into account. The power relations between actors, Coe, Dicken, and Hess argue, are often characterised by “friction”, i.e. the presence of both collaborative and competitive behaviour.

Also, Werner criticises, structural causes at the macro-scale of uneven development are neglected in mainstream GPN studies; rejected as too rigid. Instead, GPN studies in both world system theory and more orthodox Marxist traditions find that GPNs are vectors of the reproduction of global inequalities rather than of a process of “catching up” through the integration in world markets. Finally also Werner invites to differentiate carefully and sides with such studies which (inspired, she writes, by Gramsci, Massey and others) do privilege nor the individual firm, neither a given totality but

seize upon open non-teleological understandings of dialectical relations (Hart, 2016) wherein ‘totality is a conceptual procedure, rather than a empirical or

conceptual premise . . . in which the whole is discovered through the analysis of the mutual conditioning parts' (McMichael, 1990: 391; see also Friedman, 2016).

Werner illustrates how such an approach opens the view for irregularities and contradictions: it is neither the “tide that lifts all boats” nor an inevitable “race to the bottom”. Both tendencies coexist and are often connected to each other. Not necessarily is there dispossession before the access to capitalist market relations (the example is on cocoa); in the Eastern European garment industry, for example, in which, after the End of Communism some regions are successful, relations of dependency shift, creating “novel East–East geographies of uneven development” (Werner 2018, 7). Also the understanding of relations between Global South and Global North should be revisited. Not necessarily and always, the South produces and the North consumes.

3.2 Commodity Geographies: Four Methodological Remarks

Taking together the diverse approaches research traditions in commodity geographies and considering the criticisms that have been made to one or the other stream of literature, it is possible to identify synthetically four important methodological issues in the existing literature, which are relevant for my empirical research in Section 6.

1) Limits and focus of the analysis. Production vs. Consumption. And logistics and distribution?

Maybe the most crucial point: how far should the analysis go? Which actors need to be considered? Should there be a focus on vertical relations along the biography of the product or should horizontal relations in different sites be emphasised or rather both be considered as Leslie and Reimer (1999) argue?

While one of the starting points of this literature has been the aim to “re-connect” consumers to producers and to “unveil” the conditions of production (relating them to capitalist exploitation), later on many criticisms have emerged over an excessive focus on production in case studies, which conceive consumers as passive receivers without knowledge about and influence on production (Leslie and Reimer 1999; Hughes and Reimer 2004b) and, on the reverse, producers as

passive objects of exploitation without agency (Raghuram 2004). Criticisms which have paved the way for much research focused on the role of consumers and of the cultural contexts in which consumption is situated.

Less effort has been spend instead on the role of logistics and distribution, as Coe, Dicken, and Hess (2008) have noted, while Arboleda (2020b) points at the growing importance of actors of distribution (supermarket chains in his case study). The ambition in most cases is to cover the whole chain but only very few case studies (e.g. Cook et al. 2004; Knowles 2014) manage to do so. But also these approaches have their limits: in Knowles' focus on life stories along the "flip flop trail", for instance, sometimes boundaries of research are hard to be established and not always it is totally clear why a specific part of the story is included in the research or not. Potentially every connection, every actor involved directly or indirectly may be relevant but not everything can be done. Thus, choices about which aspects to include merit the greatest attention and have important implications for the empirical research on commodity geographies. Not always in the reviewed literature, these choices are made transparently, often it is assumed to be self-evident that the analysed elements are the relevant ones.

2) *Which spatial metaphor?*

This question appears to be the most debated in the literatures on commodity geographies, as authors attribute all kinds of characteristics to the different terms employed: chains, circuits, networks. I would argue that this question *per sé* is not central, and as much as the debates around these metaphors have evidenced important questions (e.g. the discussions around linearity vs. circularity, embeddedness vs. the foregrounding of exploitation), it is not priority here to choose which metaphor to side with. Employing the wider term commodity geographies, and being aware of the important differences that different focuses of analysis offer, is a good solution for the scope of this research. The empirical part will show that the linear metaphor of the chain has been useful to construct a first level of order with the scope of orientation, while the intricate networks of connections around steps of the chain become a central focus of the discussion of the research results in relation to the theoretical framework.

3) *Scale: global, local, both?*

Probably in relation to the origin of these literatures in world system theory, most research has been focusing on the idea of "global" commodity chains or networks.

Surprisingly, this preference has gained little attention in literature reviews. It appears that most literature assumes something inherently valuable about this global dimension, which usually remains undefined (beyond references to World - System Theory and Hopkins and Wallerstein (1977)). Only Coe, Dicken, and Hess (2008) make an explicit point about this, defining global simply as border crossing, while Hughes and Reimer (2004b) note this global preference and shortly remark that local cases might also be interesting.

It is interesting to relate this to the literature on planetary urbanisation discussed in paragraph 2.4.1. While Brenner and Katsikis (2020) underline the planetary/global character of contemporary urbanisation and thus city hinterland relations, of which commodity geographies can be seen as an expression, they certainly do not focus on national boundaries. Rather, they emphasise that contiguous and distant hinterlands coexist. (And, by the way, it had been also Hopkins and Wallerstein's (1977) intention to go beyond the national unit of analysis when first proposing commodity chain analysis). Indeed, Valz Gris (2020) notes, in his reading of the commodity (chain) literature, that, remarkably, authors have not considered the possibility to use the research on things to establish a new gaze on the city.

Is this a sort of 'global trap'? Massey (2005) reminds us of the local making of the global, to be considered alongside the influence the global has on the local. Thus, the global, very much like the local (consider the discussion of the limits of degrowth localism in paragraph 2.3.1), should not be *per sé* considered to be the better scale. Implications for this research? To look at a global scale here is a choice with precise motivations, but anyway the global here should not be reified but rather a continuous attention to the interplay between different scales is crucial.

4) Documents & data vs. ethnography?

Another aspect that is not treated explicitly by most authors in the reviewed literature, is which methodology should be employed to study the geographies of commodities. While literature in the GCC tradition has tended to focus on the analysis of statistical data and official documents, literature on circuits of culture frequently uses ethnographic research as the central instrument. Also, interviews and surveys are used in many case studies, the choice being often to mix different sources of information, which seems to be the most sensible choice also to research the global geographies of Chilean fruit.

3.3 Problems of Global Commodity Geographies in the literature

But what are the results, which are the debated themes in this research field? After the overview of research traditions, in this paragraph I turn to a review of some of the most debated issues in relation to commodity geographies in the reviewed literature, drawn both from single case studies and from theoretical contributions. While the picture of the diverse approaches of commodity geographies drawn above may make them appear as quite neatly distinguished, actual case study research more often than not mixes approaches and makes references to several streams of literature. The following examples illustrate this diversity of approaches, while raising important issues through the content of the reviewed research. The issues discussed here have many connections to the wider theoretical discussion in section 2 about degrowth in a relational space. They illustrate, through the reading of existing literature, the potential that case studies of commodity geographies have in this theoretical framework.

3.3.1 North-South, East-West, Global-Local

Studying the relationships between different parts of the world has been a crucial starting point for research into commodity geographies, since Hopkins and Wallerstein (1977) coined the term commodity chain. In the original formulation this had the form of imbalanced north-south relationships in which the global south appears as the producer and the global north as the consumer. This is still one of the dominant lines of commodity geography research – and there are good reasons for it, but more recent contributions have also criticised this approach arguing that different directions and orders of relations in this way tend to be obscured: be it, e.g., east-west relations, south-south relations, or simply local geographies of a commodity.

In the context of a case study on a crop grown in the global south – quite typical for the GCC approach – about the history of the cocoa commodity chain in Bahia, Brazil, Mahony (2006) praises the commodity chain approach as able to connect local to global processes. At the same time, she notes as a limit of this concept that it focuses on only one crop. Thus, it is not able to explain precisely why, for example in Bahia, at this time cocoa has become the dominant crop and not rather sugar, coffee or something else, as in fact planters in the region for a long time

have experimented with diverse plants and only slowly cocoa has become the region's principal product. She explains the choice for cocoa with the international development of a demand for cocoa, but also with local factors, such as the (scarce) availability of labour (also due to the prohibition of slavery) which made easy-to-grow cocoa more attractive than sugar. Beyond the role of soil, climate and policies that limited logging to guarantee material for shipbuilding (and while sugar requires sun, cocoa needs shade).

In the research tradition of commodity circuits, Cook, Crang, and Thorpe's (2004) analyse connections both between global and local and north and south in a study on the marketing of tropical fruits. The authors argue that in these marketing efforts colonial discourse and the figure of singer and actor Carmen Miranda have played a central role. And that these cultural elements of discourse around the commodity are so strongly connected to the development of its production and consumption that simply casting this veil away would actually signify to ignore large parts of the story. Thus, endeavours about commodities should not simply intend to tell the 'real' story, casting the 'false' one away, but rather also recognise the role of the stories told around commodities.

In a rare example of a "local" commodity geography, Saguin (2014) analyses the urban metabolism of fish from a lake in the Manila metropolitan area, combining the tradition of studies on commodity chains and follow-the-thing with that of urban metabolism derived from urban political ecology. He shows that even if aquaculture in some way relieves pressure on capture fisheries, it produces a materially different fish associated to different socio-natures and metabolic relationships. In particular the lower quality fish, big head carp, has faced a series of challenges before it has been possible to make it a widely consumed fish in Manila. Growing easily, its production is cheap and more resilient than that of other species. But given its taste, its origin (which is lowly valued due to pollution etc.) and the difficulty to cook it, in order to be accepted even by lower income groups, it had to be distanced from its origin and its name and is thus presented as if it was and used to substitute more expensive marine fish species. Now it is widely consumed in particular by poorer people who also suffer from the impacts of pollution concentrated in the fish.

Also at a local or regional scale, does Jones, Heley, and Woods' (2019)'s research operate. They provide a case study on the relations of Welsh wool production, from a sheep farmer over different steps of transformation up to wool carpets. Their wider goal is to overcome the limits of place-centred rural studies approaches on the one side (which look only at things happening in one place) and research on global production networks on the other side (which look at the network but with a limited concept of place). They propose to overcome these limits with the methodology of assemblage:

A key tenet of assemblage thinking (...), which draws together place-based and network approaches, is the understanding that assemblages are not discreet wholes or seamless totalities (DeLanda 2016). Rather, assemblages are in constant interaction with other assemblages, such that we can consider how place assemblages interact with translocal production assemblages, and how these relations have been and continue to be changed through globalisation. (p.139)

Knowles (2014) instead offers a very detailed account of the global commodity geography of a flip-flop, which she terms “trail”, from oil extraction (in Kuwait) to a garbage dump site (in Ethiopia). Knowles argues against grand theories of globalisation and for small, usable concepts – but at the same time she argues that theory is always present and never post-empirical but rather shaped in dialogue with empirical research. This approach to theory is rich and original but sometimes makes her research also a bit theoretically weak and anecdotal. The few conceptual conclusions from her research are that globalisation is fragile and continuously remade, based on (diversely) precarious lives and that globalisation is different than usually imagined (but imagined by whom?, this remains unclear). There are not only bright and shiny centres of the accumulation of network value, the author argues, but globalisation is plural and open, also made of the backroads of lower value products. This reveals, in her analysis, the entanglements with migration, the important role of China (also in the development of Africa) and the borderland struggles (e.g. with pirates at the Horn of Africa) menacing the Global North's wealth and the attempts to securitize these backroads or trails. In line with Doreen Massey's argument she invokes the local production of the global:

Finally, in among the seething inchoate mobilities composing globalisation, its hyper-locality is declared. Globalisation is lived in houses and in neighbourhoods. It is lived through work. And it is lived in the social relationships of these restless groundings. What stretches these things beyond the local, what makes them global, is a chaotic patchwork of movement, on different scales, by different people, by objects like flip-flops, by materials like plastic, and by substances like food. (p.193)

Knowles does not only assume an original position in relation to globalisation, analysing the local reality and entanglements of global relations, she also looks at a case that goes beyond the standard example of a raw material extracted or a crop grown in the global south and consumed in the global north. In her case, oil is extracted in a wealthy oil extracting country (Kuwait), shipped to a rich but non-western state (South Korea) to be transformed into plastics which is then brought to rising China to be made into flip flops, which are traded, consumed and disposed in a poor country in Africa, Ethiopia. A geographical reality very distant

from the standard imagination of the producing South and the consuming North, with a producing East and a consuming South. A different geography though with the same realities of unevenness: the South, Ethiopia, remains the poorest actor in the chain, consuming this particular commodity precisely due to its own poverty and dependent on the exploitation of another poor population in China for its production.

Crewe (2004) looks at the fashion commodity chain in which rising competition between retailers on one hand and the differentials in labour costs on the other, has led to a process of externalisation, moving the production to countries of the global south, at the cost of both workers in the north (losing their job) and the south (working at terrible conditions). But she also notes that for some workers in the South these conditions may even be an improvement.

These are just a few examples of the geographical scales and relations, commodity geographies focus on. From an original idea of studying north-south core-periphery relations of exploitation, both the potential geographical extensions and the moral and political lenses of studies in commodity geographies have extended, revealing the complex entanglements of globalisation. They can both tell stories that are in line with traditional understandings of production/extraction of raw materials and low value products in the South/periphery/hinterland and consumption in the North/core/city, as well as stories that complexify this story and include other geographies (South-South, East-West, East-South etc.) that criss-cross an (unevenly) interconnected global space. This is an invitation to never forget that a case study can be rich and informative but that they only study one case. To avoid the risk to consider an outlier to be the rule, case studies should be connected to other sources of information and interpretation, such as statistics, other forms of analysis and theoretical frameworks that can scrutinise entire systems (cfr. Section 5).

3.3.2 The role of different actors and (im)balances of power

Commodity geographies are constituted by actors making them, extracting, producing, transforming, trading, consuming, disposing. While this is clear to all authors, the choices about which actors to focus on and about the ways to look at actors participating in these geographies, varies a lot. There are ethnographic gazes focusing on individual life stories as much as large historical perspectives in which specific names only have a marginal role. Most of the times though, the way in which these actors interact and relate to each other and which are the

(im)balances of power is a focus of interest. How these relations are depicted though depends very much on the approach of the specific contribution.

In Knowles' (2014) flip-flop trail, companies play a role but their role is narrated through the voices of the individual workers or bosses or engineers employed by them. The author focuses on the life journeys of people involved in production, trade, consumption, disposal of flip-flops. The flip-flop trail connects very different personal (life) journeys, showing their competitive dis/advantages and differences, different needs of navigational skills, revealing places also apparently disconnected from the trail. The same is true in Cook et al.'s (2004) case study on papayas. In these and similar ethnographic case studies individuals play the most prominent part. While firms appear to a certain degree, the role of state actors and other institutions is quite marginal: only when their policies directly and evidently interfere in the individual actors' roles, they are taken into focus and most of the times this does not occur at the core of the story. This concedes individuals a proactive role in shaping their life but may also obscure underlying structural dynamics and power imbalances.

Studies in the more classical commodity chain tradition tend to look very much at firms as actors (but not only) – an approach criticised for example by Alford and Phillips (2018) who urge for more attention on the role of the state – sometimes at the level of individual companies, but very often just in terms of categories (growers, wholesalers, distributors etc.). The latter is the case for example in Mahony's (2006) study on cocoa but also in another example of the empirical employment of a GCC approach which focuses on the relations between business actors and policies in African coffee commodity chains, with an interest in management and role of national policies more than geography: Ponte (2002) looks mainly at the political and institutional setting of the commodity chain, analysing which are the actors, the rules, relations between state and companies etc. Ponte shows that the chain of the same product can assume different characteristics in different countries, in terms of how the trade works in each case, while they do not include information about growing and working conditions and do not look at the concrete geographical conditions and implications of a commodity chain and its change.

In Topik, Marichal, and Frank (2006)'s edited book "From Silver to Cocaine", which offers a panorama of the history of Latin American commodity chains in an economic history perspective, authors take a rather distant position in relation to the actors they study. Often they go beyond firms and attribute important roles also to states and supranational organisations and their policies. For instance, McCreery's (2006) contribution analyses the history of indigo over the mutual substitution of three different chains in history, related to three different producing regions (El Salvador, South Carolina, Bengal). Their analysis focuses on

the comparison of factors of production (land, labour, capital, technology) but importantly they emphasise the crucial role the state and political developments have played in shaping the history of this chain: the success of all chains has come to an end for political reasons, rather than due to limitations in land, labour or capital. Also in the South African fruit export industry, the state has played a crucial role (Alford and Phillips 2018), in particular in shaping the governance (through the three functions of facilitation, regulation and distribution) in collaboration and close interaction with private governance (and not in the absence of the state, as in the classical narrative on neoliberalism).

Topik and Samper (2006) write about the coffee commodity chain, comparing the cases of Brazil and Costa Rica. While the first has been the world's largest coffee producer for over 150 years, Costa Rica has a quantitatively marginal role, focusing on high quality. Still, it is successfully on the market. On one side this shows that quite different forms of producing and marketing the same product can survive on the world market – and also how they interact: the authors argue that Brazil's entry in coffee production after its independence from Portugal at the beginning of the 19th century did not simply capture existing demand, but largely helped creating it, thanks to high production volumes and low prices based on the exploitation of workers (first slaves, then free labour) and nature. They also trace the evolution of the power balance in the chain. For a long time, as the market was expanding, growing demand absorbing growing production, growers, also small growers which played an important role in both countries, had a relatively powerful position. Later on, the import of coffee into large consumer countries concentrated in the hands of few companies. This happened in particular in the major coffee-consuming nation, the USA, where a process of vertical integration started, resulting in the dominance of the market from export over import to roasting and sale by a handful of powerful multinational food agglomerates. The production of coffee beans instead remains very fragmented, and producers have little power in the chain.

Miller and Greenhill (2006) looking at guano and nitrate based fertilizer commodity chains, evidenced the powerful role of international trading companies but they also highlight that countries at the supply end (in this case Chile and Peru) can obtain important parts of revenues. Countries in the south, they say, are not necessarily the losers. Exploring the history of rubber and its commodity chain at the beginning of the 20th century, Frank and Musacchio (2006) raise a couple of important issues. First, they show the importance of uncertainty and volatility in such commodity chains. In the case of rubber it is the relatively sudden boom of cars that makes demand explode and supports the collapse, on one side, of the Brazilian rubber boom (extracted from wild trees in the Amazon), shifting towards plantations in British and Dutch colonies in South East Asia

(where capital, land and labour were available in sufficient number). They argue that there was a number of factors (among which a limited availability of labour and limited access to land) which impeded Brazilian producers to invest in plantations but that uncertainty and the impossibility to foresee the boom has played a fundamental role. Secondly, they make an interesting argument about power structures in commodity chains, discussing it in relation to world system theory's assumptions about core and periphery²⁴: not necessarily, they argue, it is the industries in the core which assume the more powerful position and are able to extract all the profits, benefiting from low commodity prices. In their case at least, highest profits in the tire sector coincided with highest rubber prices and thus the highest profits went to commodity producers.

A relationship between actors that is frequently discussed in the literature, is the one between producers/distributors and consumers. In the research tradition of circuits of culture, Morris and Young (2004) highlight the importance of the construction of an image of nature and of imaginary geographies in relation to the places of production of food commodities (meat in their case) in order to communicate an idea of quality and to support the marketing of the commodity. Simplified and stereotyped images which make appear production landscapes much more natural than they are and tend to give the idea of a traditional small-scale agriculture, obscuring that chains may be dominated by large players – not necessarily at the level of producers but certainly at the level of trade and/or distribution to the final consumer. Jarosz and Qazi (2000) have noted similar approaches in the marketing of Washington State's apples.

In their case study, Murdoch and Miele (2004) compare two opposed "culinary networks": McDonald's and Slow Food. Both entities follow opposed rationalities, profit, efficiency, standardisation, low prices vs. local diversity, food embedded in ecological and cultural values, which due to higher costs need to be "aestheticised". Contradictions are identified in both cases: McDonald's, which achieves low prices externalising environmental and social damage and Slow Food, which internalises (or reduces) these costs, which leads to high food prices, economically and culturally accessible only to middle-class consumers, hindering its elementary goal to limit fast food culture. Furthermore, the authors show how actually both, theoretically opposed entities, are able to survive on the same world market.

Cook et al. (2004, 646) describes the position of a papaya buyer of a London supermarket chain like this:

24 In the original formulation of world systems theory, they argue, peripheries were the places producing commodities. In a new formulation, peripheries simply are peripheries and one can thus realise that also core countries are important commodity producers (Frank and Musacchio 2006, 290).

You couldn't sell lower quality produce than your competitors. Her performance was reviewed monthly. (...) Recently she'd visited a pineapple farm in the Ivory Coast. That really upset her. Seeing all that poverty. First hand. Knowing that she was directly involved. But these experiences and feelings went with the territory.

Interesting is how this quote shows the complexity of power relations in a commodity chain: an apparently powerful figure is limited by a further level of control, on one side, on the other, she is also able to forget her moral preoccupations once she is away from its sources.

These reviewed examples from the literature highlight the diversity of actors and the multi-faceted forms of relations that can be scrutinised when researching commodity geographies. While a situation of imbalanced power – often associated to a South-North commodity chain, with weak local producers, powerful multinational traders and distributors – has frequently been the focus of analysis and certainly often is a reality, some studies show that this is not the only possible configuration. This has important implications. Optimistically it can be seen as an argument for the possibility of alternatives to exploitative relations, but it must also be considered that global markets are capable of containing very different types and forms of relation in parallel, at the same time. And the existence of a different case, a different story, in itself does not unmake exploitation and extractivism perpetrated elsewhere. Furthermore, like the considerations made in the precedent paragraph, also this observation about the diversity of commodity geographies, cautions about the possibility to generalise from a case study and invites to connect it to other types data and information.

3.3.3 Growth of global capitalism, Monocultures and Land Use Change

Monocultures (in the place of production or extraction) appear to be a frequent result of the commodity geographies of global capitalism. An issue that transpires more often implicitly than explicitly from the reviewed case studies. These are monocultures at the level of agriculture, with large plantations that often substitute forests or agricultural systems with high levels of biodiversity oriented at subsistence economies or local markets. The social and ecological impacts can be enormous. And there are 'economic monocultures' in the sense of entire regional and national economies dominated by single export sectors, with the fragility this implies for an economy and a society depending on global markets

and environmental and social conditions for production/extraction, which both are, frequently more volatile and unstable than expected.

As an ecological issue, monoculture appears in Moore's (2000) account of the history of sugar in which the expansion of sugar plantations is responsible for deforestation and soil degradation. He argues:

The expansion of sugar cultivation went hand in hand with monocultural production, a prime example of capitalist agriculture's drive "toward the radical simplification of the natural ecological order" (Worster, 1990; also see Haila & Levins, 1992: ch. 5). Such simplification is inherently disruptive. Under conditions of generalized commodity production and the imperative of ceaseless capital accumulation, monocultures are especially unstable owing to the competitive pressures of the world market.

In particular, of course, certain forms of industrialised agricultural techniques and their evolutions in competitive markets, require monocultures and lead to the transformations of agrarian landscapes, as the apple yards in Washington State: no more big free-standing trees, but small and densely planted shrubs (Jarosz and Qazi 2000). Most studies in commodity geographies though focus on economic issues and even though nobody uses the term and the issue is often not discussed explicitly, in many occasions the problem of regional (or national) economies based on 'economic monocultures', transpires. This is true for example in the case of rubber extracted in the Brazilian Amazon (Frank and Musacchio 2006) – an economy that led to a rapid boom and to a rapid collapse when rubber extraction moved from wild trees in the Amazon to plantations in South East Asia.

The agrarian and the economic side of monoculture are often closely related, as another case illustrates. Wells' (2006) is a study of the Henequen commodity chain. It focuses on the region of production, Yucatan in Mexico. In the specific case the ecological destruction of a fragile ecosystem is accompanied by exploitative and cruel labour relations, political corruption and the incapacity (or impossibility?) to transform the economic gains obtained from the export of this commodity into any form of stable regional economic development. But also, this is the topic evidenced by Brand, Dietz and Lang (2016), apparently virtuous systems of economic redistribution in Latin American countries governed by the Left are fragile when they are mostly based on the extraction of specific raw materials.

Monocultures, be they in agriculture or in the economic dominance of certain raw materials, are part of a generally increasing tendency of the material transformation and destruction of nature. Another line of studies merits to be shortly mentioned at this point: researchers interested in global ecological change lately have looked at supply and commodity chains as explaining causal factors in quantitative research. Methodology and research traditions are quite different

from what is the focus here, but it is relevant that from very different premises such research comes, for instance, to the result that commodity export is an important driver of deforestation and consequent carbon emissions in Cambodia (Johansson, Olin, and Seaquist 2020). It shows from another perspective the often devastating impacts of global trade. Referring instead, in a Marxist tradition, to Boyd, Prudham and Schurman, Arboleda (2020a, 183) argues:

For these authors, the real subsumption of nature refers to systematic increases or intensification of biological productivity with the purpose of accelerating turnover times of capital [economic growth, in other words]²⁵. Nature, they argue, is not merely appropriated but rather (re)made to work harder, faster, and better.

Thus, nature becomes tradable in “new markets in ecological commodities, mitigation banking and environmental derivatives” (ibid.). This increase in the extraction of resources, be it raw materials from the earth or agricultural commodities, is closely linked to global capitalist growth. In particular, in recent years, the impressive industrialisation and urbanisation of China, Arboleda (2020a) writes, has led to an enormous and destructive global increase of global demand of resources. Raw materials for construction as well as foodstuff imports for workers, who often are proletarianised ex-peasants. (Chile is Arboleda’s case for the export of materials like copper from its mines to China. But also food follows this path; China has become the most important market for Chile’s fresh fruit exports, cfr. Section 6). Arboleda argues that this should not be interpreted so much as a move to a Chinese imperialist hegemony – even though political involvement and associated violence do exist. Rather, this is a central theoretical point in his framework, national entities, the states and their involvements, are surface appearances in global relational geographies, like those of resources: the essence is global capitalism, the overall quest to increase relative surplus value, manifest in the (power of) transnational companies and their intricate webs of subcontracting, contributing to the fragmentation of class power. Framing these issues in terms of national relations like world system approaches, theories of dependency and unequal exchange have done, Arboleda writes, leads to the obfuscation of the centrality of exploitation and the class conflict. In a degrowth perspective, without negating exploitation and class conflicts, this analysis could be reframed putting a stronger accent on the essential drive to overall metabolic growth, expressed, in this case, in Chinese economic expansion. Metabolic growth which also in a non-capitalist system would have the same destructive impacts. In today’s reality, for sure, capitalism is the driver of such growth.

25 My note.

Furthermore, Arboleda (2020a, 109–139) shows that over the last years and decades a logistics turn has occurred in the global economy: the dimensions of global trade, in particular maritime container trade, have exploded together with the precipitous growth of Asian tigers first and China second, not only increasing total volumes but also moving the most important space of maritime freight from transatlantic to transpacific. But the logistics turn does also have important qualitative aspects. Transportation has evolved from a cost into a value-adding activity (p.115) and it has become a highly technological, scientifically organised and evermore concentrated and vertically integrated sector in which innovations to reduce the costs of long supply chains (and thus of the circulation of capital) have been crucial (an example of how efficiency helps growth rather than the reduction of ecological impacts). Easing supply chains, building new infrastructures, of course, is as much a political project as it is an economic necessity for capitalist companies, Arboleda writes. Logistical corridors have also become, Arboleda argues, privileged sites of protests by workers as well as other social groups, and infrastructure blockades have become an important instrument of social movements.

Chile, as will be discussed in greater detail in chapter 6.1, is a country in which (regional) economic monocultures, have long played a prominent role, as the term of the “commodity-region” (Daher 2003; Bustos-Gallardo and Prieto 2019) underlines. This is true both for the north where nitrate is extracted (Miller and Greenhill 2006) and grapes are grown (Murray 2002) and for the centre where most fresh fruit is cultivated.

Considering the important role it plays in much research on commodity geographies, the monoculture, both agrarian and economic, is a central concept for this research and the critique of planetary city-hinterland relations in the form of commodity geographies. With the hypothesis that frequently the problem is not so much the production of export commodities *per sé* but dynamics of growth due to which a single – or few – commodity chains become the dominant source of income for a country or region. This is strictly related to quantities and dynamics and politics of unlimited economic growth: these factors allow (agrarian) commodity chains to scale up in order to lead to large scale transformations of land uses and economic systems with highly problematic outcomes – coherently with the degrowth argument that economic systems, in order to be sustainable must be subject to limits.

3.3.4 Commodification, Depeasantisation, Extractivism

(Unlimited) growth supports the restructuring of ecological and economic systems in the direction of agrarian and economic monocultures. These processes of transformation assume specific forms which have been variously interpreted under keywords such as commodification, depeasantisation, extractivism. The following contributions are situated in research traditions which go beyond the case study of specific commodity geographies. Rather they assume larger systemic perspectives. They help to illuminate issues of power relations and of the distribution of value along commodity geographies. And, if one considers economic and political systems and nature as “actors” themselves, these contributions illustrate relations between them.

Such a different way of studying commodities and their geographies has been experimented by Moore (2000) who proposes the concept of commodity frontier (see also Conde and Walter (2014) who relate it to degrowth), understanding the frontier as a “zone beyond which further expansion is possible”, i.e. uncommodified land. Commodity frontiers show how

place-specific commodity production shapes and is shaped by the socio-spatial expansion of the law of value – ongoing primitive accumulation – under which people are forced to ‘sell to survive’ (Moore 2000, 411).

Moore (2000) conceptualises commodity frontiers as the zones and processes of capitalist expansion and furthermore argues that the roots of contemporary ecological crises lie precisely in this process (started in the 16th century) of “frontier industrialisation”, e.g. of the sugar cane production in the Americas and not only later in the process of industrial revolution of 18th-19th century England. The sugar commodity frontier (e.g. on the Portuguese island of Madeira) had been anticipated by a stage of small settlers cultivating mixed crops (e.g. wheat + tobacco) for both subsistence and surplus (“surplus frontier”), in this way preparing the way for more intensive commodity production. The transition to sugar, driven by foreign capital, Moore argues, has been a process of primitive accumulation (dispossessing smallholders). This transition implied their integration in the world-economy as food stuff needed to be imported and larger units of production needed to be formed. Further consequences of the sugar complex’ expansion in the Americas were widespread: from deforestation to soil degradation leading to an increasing need of labour input (thus slavery) and all the same decreasing yields. Thus, sugar production required the continued expansion on ‘virgin’ land for both cultivation and fire wood harvesting as well as the activation of further economic sectors, such as slave trade and cattle farming (for

manure to fertilize and to move the mills). Summarising: revenues, mostly for financiers, built on heavy ecological and social impacts and the global integration of the world-system.

Similarly, commodity geographies often appear in the form of and are debated through the concept of extractivism (Gago and Mezzadra 2015; Brand, Dietz, and Lang 2016), i.e. a form of global capitalism based to an important degree on the exploitative extraction of rare materials and/or agricultural commodities, with little benefits but much social and ecological impacts for territories and populations. Extractivism is a concept that has a specific Latin American origin and while it has originally been employed in particular to criticise the impacts of mining, in recent years its application has been widened to refer to the impacts also of other primary economic sectors (Valz Gris 2021) and indeed the concept is not only academic but also widely employed in social struggles by activists – and criticised by industry representatives, as I learned in my fieldwork (cfr. Section 6). Gago and Mezzadra (2015) in reference to the Marxist idea that capitalism needs a constitutive outside from which to capture resources, argue that in a contemporary situation in which spatially no real outside to capitalism is left and no (commodity) frontiers are available, these frontiers are produced by capitalism and the strategy of extraction and appropriation passes through the violent restructuring *inside* capitalist spaces. (Neo)extractivism, in their interpretation, is part of this process. Brand, Dietz, and Lang (2016) interpret neo-extractivism in Latin America as a development model around a ‘commodity consensus’. Neo-extractivism, they argue, has been a relevant phenomenon in Latin America since the 1970s and even more so from the 2000s onwards, but often it has not been clearly conceptualized, which they propose to do reading it as a development model, i.e. a temporary stabilization of contradictory capitalist relations – in which accumulation can take place for a certain period of time under relatively stable conditions. What has happened according to their reconstruction has been first an increase in primary resource demand which has led to economic growth in Latin America. In countries with left wing governments this growth has been redistributed among the population but then a sudden decrease of prices due to lower Chinese demand led to economic deceleration and recession in Latin America. As a political answer both taxes and rates of extraction have been increased. Neo-extractivism is different from classical extractivism in that gains are redistributed to the masses, which constitutes a parallel to the differences between progressive and liberal developmentalism respectively. But for both approaches the appropriation of nature and international trade are central (ibid.). Even so, this model should not be seen as determined exclusively by international trade relations, rather it is a specific answer to those dynamics. In fact around 2000 and after, the role of the

primary sector in Latin American economies has grown strongly (ibid.). While neo-extractivism contributed to the reduction of poverty in progressively governed countries, this model can be criticized for the destruction and de-democratization of nature, as well as power centralization and the poverty reduction strategies which, operating through conditional cash transfer programs have contributed to integrate population in financial markets (ibid.) - and global markets, one might add, reminding of Moore's (2000) commodity frontiers. The authors argue that the destruction of nature will not necessarily become an urgent problem for overall capitalist development, since dangerous negative impacts can be spatially externalized and temporarily postponed (Brand, Dietz, and Lang 2016, 136).

It is precisely this extended valorisation and commodification of nature which allowed socially progressive policies to be put in place in some Latin American countries – but with assistentialist policies, which reduced poverty but did not change power relations and instead guaranteed political and social stability for the extractive model. New constitutions in the region recognise the importance of nature and indigenous rights (and even refer to the concept of *buen vivir*, often considered to be close to degrowth: Kothari, Demaria, and Acosta (2014)). But the implementation of these constitutions remains very limited and hard to realise under the current development model. Environment protection laws and institutions suffer similarly limited levels of implementation:

While information on the volume and value of extraction – which demonstrates a government's success – has been made publicly accessible, in many countries information on the conditions of contracts and concessions is only partial or is difficult to find. The same limitations apply to data on the exact destiny of the revenues collected (Brand, Dietz, and Lang 2016, 145).

Adding up to this, since 2012 a rollback of environmental regulations has been taken place, in the wake of lowering global prices and competition at any cost. A development now countered by a new wave of social movements. Finally, Brand, Dietz, and Lang (2016) argue that a strategy to overcome the neo-extractive development model would necessarily imply a socio-ecological transformation beyond growth.

A crucial aspect in the process of commodification, in the transformation towards extractive models, has been and continues to be a process of depeasantisation at the global scale (Arboleda 2020a). This means both immediately violent and relatively spontaneous processes in which traditional agrarian livelihoods are destroyed and former peasants incorporated in commodity production as workers and as inhabitants into cities, mostly in the form of shantytowns. This can occur through direct destruction, e.g. the transformation of rural landscapes through plantations, dams or mining projects and as well through the attraction of rural

inhabitants to cities through the promise of progress (ibid.). This process has been fundamental to fuel industrial growth both historically and nowadays in China but also in Latin America, inducing millions of people to move. Not only does this process provide workforce, it also helps to keep wages low, thanks to the presence of an, in Marxist terms, “labour reserve army” (ibid.). The process of primitive accumulation that needs the depeasantisation – i.e. the separation of people from their means to be self-sufficient (p.150) – for Arboleda is, in a Marxist tradition, intrinsically linked to the value logic of capital accumulation. “Extraneous force”, i.e. the state, here plays a fundamental role. Capital itself may not be violent but it opportunistically exploits extraneous violence (pp.151-2). The (neo)liberal state, the argument goes in extreme synthesis, first supports the appropriation of socio-ecological common goods (water, land, minerals etc.), taking it away from traditional uses such as subsistence agriculture, under the argument of operating for the common good of development and growth and then protects private property rights to these goods, in a supposedly “value-neutral” position of claimed objective scientific efficiency (ibid.). This predatory action for Arboleda is a systemic trait of capitalism and thus cannot be attributed to individual acts of cruelty or opportunism, as much as those may also occur.

That the role of financial instruments has become ever more important in contemporary capitalism is a widely shared idea which has also been applied to commodity geographies. Arboleda (2020a, chapter 6), in his exploration of the planetary mine argues that debt has emerged as a fundamental instrument to reorganise the global supply chains of the mining industry (see also the research of Valz Gris 2021). As a consequence, “to finance the megainfrastructural systems required to attract foreign direct investment for primary-commodity production”, also states (in Latin America) have contracted more and more debt. Also, peasants, in a process of proletarianisation have been obliged to access debt. This has been a fundamental instrument in the process of their depeasantisation (Arboleda 2020a). Finally, in the global north there are shareholders, also and importantly among the middle class and even workers: their request for returns (be it also simply to guarantee their pension), drives managers to orient their activity further towards short-term returns. Capitalists in this sense are not independent themselves from the logic of the law of value (ibid.). This again has effects on the modalities of commodity extraction, motivating its intensification, while perhaps, in order to be more efficient in the short term, reducing the quality of its organisation (ibid.).

Growth-oriented capitalism needs, the studies reviewed here argue, a continuous and increasing flow of material inputs which must be extracted somewhere, with little or no consideration for nature, workers and peasants. Marxist approaches, which are common in this context, frame this essentially as a systemic characteristic of capitalism, as this system essentially needs a constitutive outside

for the accumulation of capital. One could argue in a degrowth perspective, that this drive is even more profoundly embedded in the modern idea of endless progress and development: these destructive dynamics are not only driven by profit-seeking capitalists, but rather by a wide societal alliance, mediated through the desire of increasing one's own wealth and supported, culturally, by the promise of progress and development. In any case, an extractive logic becomes necessary to fuel the system's metabolism with the commodities it needs. The continuous expansion and growth of the system implies a continuous moving forward of the commodity frontier, a progressive commodification of what is not yet commodified, including the destruction of pre-existing rural livelihoods to incorporate its components (land, resources, people) into its metabolism. (And in the process, frequently agrarian and economic monocultures are installed). These studies show that this goes together with structural as well as direct violence.

These streams of literature are closely related to my research questions if commodity chains/networks/circuits beyond a certain geographical scale ever and only exist as manifestations of the mechanisms of commodification and extraction or if international relations of trade can also exist in other forms, as part of solidary degrowth spaces (cfr. Chapter 1.1). They invite to consider, in trying to find answer this questions, not only what is immediately visible in relation to the concrete situation but also to which wider processes these experiences contribute. A punctual improvement of the conditions of a group of farmers, for instance, might under the premises of these literature traditions be criticised for being part of a process of commodification and depeasantisation, of their inclusion into the extractive logics of global capitalism. In the conclusions, I will reflect on this point in relation to the case study.

3.4 Transforming Commodity Geographies: existing approaches

Central aim of this research is to reflect on the possibility to transform and govern city-hinterland relations at multiple scales and in a degrowth perspective. The ambition to transform the ways in which these relations are organised, is not new: in fact it has long been one of the goals of literature on commodity geographies. Much of this literature is critical about how these geographies are organised. This critique of the functioning of existing commodity chains, circuits or networks, has led to discussions about how it may be possible to improve them and several research contributions have looked at real or potential alternatives to extractive

and exploitative commodity geographies. In fact, this ambition lies at the very origins of this research tradition, as Miller and Greenhill (2006) remind us: commodity chain research should help to evaluate “real economic alternatives” at each point of the chain, as Hopkins and Wallerstein (1986, 160) argued in their seminal article. This search for alternatives starts from the recognition of exploitative labour conditions and/or environmentally harmful practices in specific chains and situations – the alternative to the systemic reproduction of unequal development in Marxist literature instead is, of course, outside the reach of case studies as it presumes revolutionary change of the whole socio-economic system.

But there hardly is such a thing as a coherent or systematic literature on these alternatives. In a problem-driven approach, I scrutinise here different types of strategies to transform and build different commodity geographies, taking from the literature but also the recent political debate on a supply chain law in Germany. In this sense, the discussion in this chapter should not be considered as a systematic review of such alternatives and strategies but rather as instrumental to prepare the parallel considerations in relation to the alternative practices in the Chilean case study (chapter 6.5). It is possible to differentiate between these strategies following two dimensions: who promotes them (the industry, activists and social movements, the state) and where they act (the consumer side, the production side, the trade relation).

Change from within the industry? Supply Chain Governance, Auditing Systems, Certifications

The closely interrelated concepts of supply chain governance, auditing systems and certifications, are instruments that try to make commodity chains more socially and ecologically sustainable from within the industry. An example of supply chain governance is the Round Table on Sustainable Palm Oil (RSPO), an initiative of multiple stakeholders, to guarantee, in theory, the sustainability of palm oil production (Bastos Lima and Persson 2020). There are cases in which the industry answers to pressures by public opinion (e.g. criticising working conditions), implementing internal measures, such as auditing systems. Hughes (2004) writes about an auditing system for the cut flower trade in Kenya, supposedly build to answer consumer requests for ethical production standards. Actually though such requests do not come from consumers directly but are rather modelled on a “virtual” consumer imagined by NGOs who advocate better working conditions on one side and supermarket chains on the other (companies which fear scandals which then effectively might lead to a consumer response). As much

as the consumer, also the worker on which these standards are modelled is virtual and standardised. The result is an “auditing economy” which leads to very limited improvements for workers and has the main goal to ensure profits for supermarket chains and big exporters, providing a response to potential criticisms (ibid.). Crewe (2004) shows how the critique and protest by consumers and NGOs against terrible working conditions in fashion commodity chains in the global south have prompted many companies to establish codes of conduct and agreements on ethical trade. But the impacts on real working conditions are limited and certainly do not transform the overall logic of the commodity chains, the guiding interest being the industries’ public image.

Often such approaches guided by the industry pass through the tools of certifications, such as GlobalGAP, GRASP, Rainforest Alliance, which determine in many way how the production is organised, also in the case of Chilean fruit, often mixing social and ecological standards with aesthetic and other quality requirements, as I will discuss in detail in paragraph 6.4.2. Such initiatives are (indirectly) consumer-driven by public debates in consumer countries about negative impacts of the production of the respective commodity elsewhere. An evident limit is their characteristic of industry self control. Furthermore, while an underlying assumption may be that producer countries are too weak or unwilling to guarantee sufficient environmental protection, often these initiatives are resisted by producer countries not willing to let foreign environmental or social standards be imposed on them (Bastos Lima and Persson 2020). Not always, also in the Chilean case, the implementations of such standards is easy and can favour larger over small producers due to the costs of certification (cfr. Section 6). Most importantly though, these measures focus on technical instruments, hardly changing the structural problems of commodity geographies (cfr. Chapter 6.3).

Radical Certifications? Organic and Fair Trade

An at least in theory more radical approach are certifications that foster alternative (food) networks, created from the bottom-up, such as organic agriculture (Guthman 2004), Slow Food (Murdoch and Miele 2004) and fair trade (Jaffee and Howard 2010; Braun and Gröne 2021). These certifications follow more transformative principles to reshape the ways in which production is done and how trade is organised. But also they have their limits. Guthman (2004) shows how organic agriculture has evolved into an industry itself and while this certainly has helped to increase its reach, it has also meant to lose much of its transformative ambitions – the main motivation to become an organic farmer in the US now being the potential rent available from the certification. The certification in itself tends

to uniformity, contradicting the basic agroecological stance for diversity, Guthman argues.

Jaffe and Howard (2010) make a strong argument about the limits of both fair trade and organic certified alternatives to conventional agriculture and trade: while these movements have had some real success in bringing considerations about chemical inputs in agriculture and unfair trade relations into the mainstream debate, their success has also limited their radicalism, reducing them to largely unidimensional certifications (no chemical inputs, minimum prices respectively). It has been their rapid growth and institutionalisation that has led them to be coopted and incorporated into capitalist logics of accumulation and thus become an occasion for profit for those multinational companies, representative of a system which the movements who built those certifications had originally criticised. Similarly, Braun and Gröne (2021, 260) position fair trade as “one of the most successful real-world experiments of alternative economies”. This has subjected fair trade also to a number of criticisms; such as fundamentally acting inside and thus accepting the logics of neoliberal capitalist trade and marketing and as reinforcing through an often moralising communication the ‘othering’ of Southern producers and of clichés which depict them as needy of the ‘paternalistic’ assistance of white consumers in the global North. At the same time though, Braun and Gröne have analysed that inside the fair trade organisation (in Germany in their case) there is growing awareness about the language and framings used in their marketing. Also my case study (cfr. Paragraph 6.5.3) hints to a differentiated imaginary in fair trade organisations in Chile, beyond a simplified idea of North-South dependence working also towards the establishment of fair forms of South-South exchange. Finally, to producers I met who operate with fair trade, this system makes a concrete positive difference (cfr. Paragraph 6.5.3) and certainly not in a perspective of paternalistic help received from the north, but rather as supportive of their self-empowerment as small producers who professionally move in the complex environment of fruit production – not though, a per sé post- or anticapitalist form of self-empowerment.

Moreover, Murdoch and Miele (2004) show that Slow Food, rather than substituting the fast food culinary networks it has set out to challenge, exists very well in parallel with them in different niches of the same market, with higher prices being attractive mostly for wealthier consumers. The fact that commodity chains of very different characteristics can very well survive together on the world market can on one hand help to overcome monolithic conceptions of capitalism and questions linear understandings of its historical and geographical development. On the other hand it also shades doubt on the transformative potential that “alternative” commodity chains – on their own – have. As Murdoch and Miele (2004) illustrate, it is not sufficient to create a new, ‘morally better’ product to transform an economic

system: it does not imply the abolition of the destructive, exploitative system in contrast to which the alternative has been built.

The limits of consumption-based alternatives

These first two approaches, consumer-driven and promoted by producers, present important trade-offs: While industry internal initiatives can have wide-reaching implications, change tends to be insufficient, if not pointing overall in the wrong direction. More radical certifications, on the other hand, face the two risks of remaining in a niche without changing the wider system or of growing but being coopted.

Interestingly, the commodity geography literature, when looking at potential alternatives, has mostly focused on such consumption-driven strategies. Perhaps the usually narrow focus on one commodity and the actors directly involved in the commodity's chain, circuit or network, is not the best perspective to think about alternatives. Perhaps it is necessary to extend the view to other levels and the alternatives to exploitative and destructive commodity geographies lie not so much in analogue alternative geographies but rather in their social context? In fact, a crucial aspect of policies of this first type – even when becoming part of public policies (e.g. the organic agriculture standards set by the EU) – is that they finally put faith on individual consumer choice. Consumers are supposed to lead to transformations, choosing on the basis of their conscience or desire for quality. Of course this is the easiest way to begin to experiment strategies such as organic agriculture and fair trade, but it appears to some extent problematic when becoming the centre of public policies: if relations of unequal (ecological) exchange exist, which from a moral point of view need to be transformed, should a choice for a commodity with such characteristics continue to be available?

Localised systemic change? Urban food policies

The critique of approaches that point towards consumption-based change, motivates to search for policies that try to tackle commodity geographies in other ways.

One example are urban food policies. Such policies have the scope, starting from the analysis of the existing food system of a city, to integrate and develop existing urban policies which regard food (e.g. localisation decisions on (super)markets), into a coherent food policy (Toldo et al. 2018). Such policies are both motivated by the desire to guarantee an equal access to food in the city (e.g. avoiding food

deserts), as well as the objective to improve the relations to producers, in the direction of more just relations, as demanded by political food movements, as they recognise the level of control exerted by cities over food systems (ibid.). In this vein, they look at all parts of the system: production, distribution, consumption and waste. Such policies are a quite recent development, answering to the finding that “[c]ities have been progressively identified as main drivers of the global food system” (Calori et al. 2017, 1026).

At the present moment, urban food policies apparently have three potential flaws. First, situated in a logic of sustainable development, they are hardly able to recognise the need of systemic change degrowth perspective requires. Second, their possibilities of implementation may be less wide-reaching than their possibilities of analysis²⁶. Third, they are sectorially restricted to food. All the same, an interesting characteristic of these policies is that they are based on a recognition of a city’s responsibility for its provision and of its relations to its hinterlands.

Change by law? The German Supply Chain Act

A further field of policies is also based on a recognition of the consuming side’s responsibility for conditions of production elsewhere, but at a national scale: a recent wave of legislation on supply chains in European countries (Lorenzen 2021). This approach is here exemplified by the German *Lieferkettengesetz*. The basic idea is that this law should legally oblige German enterprises to ensure human rights and basic environmental standards along their supply chains. A harsh discussion inside the previous German government had accompanied the formulation of this law (Lorenzen 2021). Meanwhile, a large coalition of NGOs and trade unions had formed the *Initiative Lieferkettengesetz*²⁷ in order to support a stringent version of the law. This coalition of actors has proposed a number of criteria for an effective law that would need to comprise all companies operating in Germany with global supply chains, comprise social and ecological standards and be legally enforced, with violations punished by high economic sanctions (Initiative Lieferkettengesetz 2020). The Supply Chain Act²⁸ finally adopted by the German parliament in July 2021 is a compromise. The law focuses on duties of companies (over 3000 employees only, 1000 from 2024) to report about their compliance of social and ecological standards to a German federal entity.

26 At least in the cases of Turin and Milan though (the cities the cited studies refer to) it remains very unclear which are or can be the concrete instruments of implementation and final results.

27 <https://lieferkettengesetz.de/> (last access October 2020)

28 Gesetz über die unternehmerischen Sorgfaltspflichten in Lieferketten

Sanctions are monetary but apply not to actual violations but rather to violations of the duties to report and control. Violations of human rights and environmental standards become subject to civil processes in German court but affected people cannot go to German courts directly. Only German NGOs or labour unions can do so for them – if they have a stable presence in the country where the violation occurred. Finally, while the law covers a wide range of human rights violations and environmental damages that lead to human rights violations, all cited cases are ‘direct’ violations of rights, nothing hints to, for instance, economic activities that indirectly and in the long term destroy livelihoods (except partially paragraph 2, number 2, point 10) or the ecological basis of human life (locally and globally) through, e.g. the excess production or extraction of a certain commodity itself, or in relation to an excessive contribution to the emission of GHGs.

Notwithstanding these important limitations of the adopted law, this type of act, at least in principle, recognises the social and ecological responsibility by an importing nation for crude forms of exploitation even if they occur abroad. It shows that taking such responsibilities is possible by public institutions for an entire nation-state. This is a relevant change of perspective compared to industry-driven instruments like certifications and auditing systems that rely on individual consumer choice. Certainly though, an important problem is foreseeable. If in such a legal construct the entire extent of externalisation of environmental problems of a country like Germany would be taken into account, considering also wider impacts on the climate, global biodiversity etc., then this would unmask the impossibility of a continuously growth-oriented economy (cf. Parrique et al. 2019).

Towards integrated approaches for the socio-ecological transformation of commodity geographies?

This short review of existing strategies to transform commodity geographies is certainly incomplete. It would probably be possible to enlarge such a review both in width (considering other types of approaches) and depth (analysing many more case studies). These limits notwithstanding, this short overview provides a couple of indications functional for the analysis and interpretation of the empirical research in Chile (cfr. Section 6):

- Attempts to transform these geographies do exist and operate at different levels, with different strategies.
- To which outcomes they can contribute depends on the specific actors involved and in particular on their power relations: it is crucial in researching the outcomes of such initiatives to look at their degree of inclusiveness, considering who is excluded and who of the participating

actors is able how to set the initiative's agenda (Bastos Lima and Persson 2020).

- Effects can be rather cosmetic, if not mainly beneficial for the industries rather than workers and the environment.
- In other cases, these strategies are more transformative but remain in a niche.
- In an unchanged socio-economic system, at some point, strategies of transformation which do not challenge structures encounter structural limits, e.g. when the assumption of the necessity of an indefinitely growing production remains.

The arguments advanced by Bastos Lima and Persson (2020) invite to a careful construction of policy proposals in the sense of the Solidary Degrowth City: the result of the politicisation of city metabolisms and commodity geographies must not simply result in a consumer-driven form of sustainability governance but must also take into consideration livelihoods and traditions in other places. In fact, also those reviewed policies which try in some way to influence more directly the production side, are in one way or another driven by a moral desire of the consumption side to avoid being involved in destructive practices elsewhere, through their consumption. While this in itself can hardly be argued to be wrong, it is insufficient. Indeed, another way to think about changing the character of the extraction of commodities, would be the implementation of strategies that build economic alternatives to extractive forms of commodity production for export in the places of production, promoted by local actors, which could be combined with other instruments discussed here, such as certifications. This is part of the discussion of the empirical research in Chile, for instance in paragraph 6.5.4, where a local community has decided to combine export with the collective construction of strong local economic ties.

In the perspective of real north-south alliances, the interests of communities at the producing end must take a much stronger role. And perhaps, to this scope, the power of the intermediators, multinational companies for instance, needs to be reduced. Instead, for example, strategies of economic transformation towards economic diversity would be needed for producer regions nowadays totally dependent on an economic monoculture of a single (or main) export commodity. A collaboration, in sum, between places of consumption, who take the impacts of their consumption into serious political consideration, and of places of production, who want to get out of the risks and fragilities of extractive monocultures. Aware that this implies, at the global scale, in many cases a limitation or even reduction of the volumes of extractions, production, distribution and consumption.

4. The Degrowth Transformation of Global Commodity Geographies: a Theoretical Framework

In the second and third section, I have looked at very different literatures both regarding the central object and objectives of this research and the way in which these can be treated in empirical research. I have already pointed out the central issues of these literatures, here I summarise them, to propose a coherent and synthetic theoretical and conceptual framework.

The outset of my research is the recognition that in the degrowth debate, which shows the necessity of a profound socio-ecological transformation, currently a very limited conception of space is prevalent. While it is generally recognised that cities are dependent on globalised geographies of commodities, pointing in particular at processes of externalisation, exploitation, unequal ecological exchange, the strategies proposed to solve these contradictions often propose some idealised spatial forms of contained (if open) local communities with limited numbers of inhabitants. The aim being, among other things, to simply eliminate the contradictions of a global social metabolism through the relocalisation of politics and economics. For a number of reasons, reviewed and discussed in detail in section 2, such a strategy appears to be limited, unfeasible, undesirable. Among these, the present research focuses on the issue of the metabolic relations that connect places and spaces, adopting a relational conception of space to overcome degrowth's limited conception of space: at its centre both Massey's lesson about space as made of relations and planetary urbanisation's analyses which evidence the complex and widespread relations of contemporary urban geographies and their hinterlands. But, if one may easily agree that relocalisation cannot be more than a partial answer to the questions a degrowth transformation poses, this implies that new and different answers to a number of challenges must be found. The main issues being: if it is the expansion of capitalism and economic growth which, through the commodification of nature and territories, has led to the development of global commodity chains, planetary urbanisation and so forth, how can there be global city hinterland relations without the brutalities of economic growth? And which can be multiscalar strategies and policies to govern and transform city hinterland relations in a degrowth framework?

The project of the solidary degrowth city, drafted by Brand and Eckardt, attempts to answer this challenge, asking to politicise such relations, including considerations about their modes of operation and the formulation of goals and strategies to transform them, into urban degrowth policies. This research adopts this framework and tries to fill it with life, through the engagement with existing data and literature, as well a case study: “global” (i.e. transported over long distance, inserted in a net of relations that stretches over multiple territories across continents) fruit exported from Chile to Italy and Europe, in the diverse forms this relation takes, between a mainstream extractive growth-oriented form and alternative practices which, taken together, can be a starting point to imagine not only different quantities but also qualities of relation along these global geographies.

A few important conclusions can already be drawn from the reviewed literature on commodity geographies. Not necessarily are these conclusions true for each and every case – immensely different things are commodities in immensely different situations. But a pattern seems to emerge at least for such cases, on which much research focuses, in which one commodity – often an agricultural, certainly a little transformed product – produced for global export in an extractive logic, has assumed a dominant or very important role in a given national or regional economy. In such cases, it seems, that after a, more or less short-lived, boom with considerable (but mostly unequally distributed) local gains – but also accompanied by violent processes of commodification and depeasantisation – the economic (and agricultural) monoculture that is established has a problematic long-term impact on producing regions or nations. These impacts can be summarised in: destruction of sustainable traditional livelihoods, exploitative labour conditions (favoured by a lack of alternatives, if not coercion towards work required for the monocultures to function) and ecological destruction. These results are favoured by the economic dependency created through the export orientation of commodity producing regions; dependency on export markets and multinational companies. Only rarely the gains economies based on commodity exports have contributed to a stable local economy. A few exceptions from this rule seem to exist, in which at least some gains have been obtained for the local economies (e.g. Miller and Greenhill 2006 about Nitrate in Chile). The unequal distribution of economic and political power plays a fundamental role in shaping these chains and their outcomes. Very often, forces external to the producing regions assume a crucial role. In the past, colonial powers determined the structures of land ownership, the agricultural experimentation and adaptation, the labour relations as well as the export relations. Today, multinational corporations, at the level of trading and commercialisation assume this role, usually in alliance with local governments and global institutions.

In a secondary role of power we find local elites at the political and economic level. They may have a choice to take part or not in the global chain or network, but also their alternatives often are limited – or at least they are not easily at hand. This is beyond the question if they act out of personal interest or out of higher ideals for the development of their country – I suppose both may be the case and I doubt that this is the crucial question. Certainly, most of the times local elites are able to profit from global export oriented economies. But also apparently powerful actors, like large landowners can get easily into trouble, for instance when they invest into a certain crop and the world market changes, making their investment unprofitable. The uncertainty and unpredictability of global markets play a crucial role in limiting the power of local producers.

Local communities are usually the least powerful actors in these geographies. Those who finally depend for their survival on the success of the global commodity, in many cases after a process of destruction of traditional relatively self-sufficient livelihoods. Of course the situation varies between cases in which their participation in the chain is reduced (e.g. the extraction of a raw material with little labour needs and frequently negative impacts on, e.g., their small-scale agriculture) and the many cases in which they make their living in labour intensive agricultural production – be it as dependent labour on large scale plantations or as (formally) independent producers selling their produce to export companies. In any case though, their power to change things appears limited once they are firmly installed as factors of production of an export-oriented economy. This unequal distribution of power finally has to do with the unequal distribution of value over GCCs/GVCs/GPNs (cfr. Werner 2018).

In degrowth's strive for more local and regional autonomy (not autarchy), the power of multinational actors, like global companies, should be reduced. How? The break-up of multinational companies nowadays seems to be a very remote political option. Perhaps to build more diverse local economies might help to reduce multinationals' power: if a region or nation (as well as producers located there) are to a lesser degree dependent on single commodity markets, also the power of companies acquiring these products in front of these places is limited.

Also central in the commodity geography literature is the problem of monocultures at the agricultural as well as the economic level. Certainly specialisation supports spectacular phases of growth but these are often followed by harsh falls while the phases of growth themselves may bring some economic wealth but at the same time ecological destruction as well as high levels of inequality. Once one accepts that growth and development are not necessarily positive, the overall tendency seems clear: any degrowth strategy of transformation of global commodity geographies, should overcome regional and national monocultures focused on the export-oriented production of one or few

commodities at industrial scales. To be sure, this would increase costs but this is perfectly coherent with the overall need to reduce social metabolism that degrowth postulates.

Much of this is not a new story to whom is acquainted to dependency theory, the critique of development and globalisation and the critique of global capitalism. In the following lines I will try to sketch some aspects that become central when viewing these conclusions in relation to the degrowth values discussed above.

Which could be the fundamental directions of transformation of global trade relations in a degrowth perspective? So far, two strategies of transformation, a quantitative and a qualitative one, interconnected at many levels, can be identified (coherently with Figure 1 and Krähmer 2022).

First, the base line, that can be drawn from degrowth literature (while no commodity geography literature, to my knowledge, has engaged with this point) is as important as apparently banal: it is a question of quantity. Degrowth has, at its core a conception of limits to the dimensions and speed of human metabolism. Of course trade relations, being a physical and spatial manifestation of this metabolism, are subject to these limits. It is the continuous growth without limits of global trade, that like other elements of endless growth, is destructive. Thus, certainly degrowth should embrace a tendency of relocalisation, in quantitative terms. But it also means that the problem is not the fact itself that products travel long distances, that material and immaterial relations, which have always been constituent of our human geographies, extend beyond what can be called the “local”, “contiguous hinterlands”, “bioregions”, but their quantities, their speed, their endless expansion. The limits needed are both global, ecological limits (related, e.g. to the climate crisis) and local, territorial, socio-ecological limits, meaning that trade-oriented activities should grow only as far as is compatible with local ecologies, livelihoods and related socio-economic systems. A consequence would most likely be that eating a fruit from the other side of the globe becomes a luxury, in the sense of ceasing to be an everyday normality – but, in combination with fairer wealth distribution, accessible to everyone. This conception of limits, which are quantitative (but this should not lead to think that they can easily be calculated) seems to me a major contribution of degrowth to the debate about (alternative) trade relations, in which the question of limits tends to be ignored²⁹.

But then quantities and qualities are not independent. This is why it is not enough to calculate quantities. Instead, also under these premises, it is important to

29 To give an example, people involved at different levels in fair trade projects, to whom I spoke at the Macfrut Fair (September 7 – 9, 2021, Rimini), were both interested and puzzled when I interrogated them about this point.

endeavour in case studies the qualitative differences that can occur between the different forms global trade and global metabolic relations can assume in a context of endless growth versus degrowth scenarios. Thus, secondly, trade and related activities must change in their modes of operation, according to socio-ecological principles. This means, e.g., that fair prices for products are paid, that the formation of excessively powerful multinational actors is avoided/their power is reduced, that agricultural products are not treated simply as commodities with a price tag, that trade relations are governed cooperatively by partners in both places of production and consumption, that agrarian monocultures are avoided, agroecological practices incentivised (even at the cost of not guaranteeing the kind of constant, homogenous quality we have become acquainted to) and also economic monocultures are avoided (in relation to place-based limits), i.e. discouraging developments that make any region or state excessively dependent on the production and export of one or few specific product(s). In line with the lessons from decolonial thought and with literature on agrifood systems and commodity geographies, these general principles should not be defined in their details through process of global standardisation and homogenisation, but rather be the outcome of political processes in specific territories, in dialogue with global partners. Finally, it would be probably naive to expect such transformations in isolation, in a, in other words, business-as-usual scenario. Certainly they can only be thought as part of a wider socio-ecological transformation, voiced currently by climate and climate justice movements as much as by those fighting for pluriversal alternatives to the universalisms of western modernity.

Coherently with debates between degrowth and decolonial arguments (see discussion about the relationality of space and pluriversal alternatives above), in the logic of Solidary Degrowth Spaces, sketched in chapter 2.5, such change needs to be promoted in a dialogue between producers and consumers, between cities and hinterlands. I have discussed existing policy approaches that attempt to transform commodity geographies in chapter 3.4. That discussion has shown that there is no single magical tool and that all suffer in one way from the capitalist, growth-oriented socio-economic system they are inserted in – as such there is a large degree of uncertainty about how a systemic socio-ecological transformation can come about. But what seems plausible is, that in a context of “strategic pluralism” (Wright 2013), multiple policies and projects, operating at diverse scales, with different strategies and in the context of pluriversal alliances are needed. The second part of my case study will not be able to exhaust the question of how to shape alternatives in itself, but try to offer a more detailed view on the opportunities and the challenges the construction of such alternatives pose. In the perspective of strategic pluralism, the fundamental shortcomings of movements

such as organic and fair trade, as discussed by Guthman (2004) and Jaffe and Howard (2010) should not induce to consider such initiatives useless. Rather we should perhaps change our expectations in front of such initiatives: it cannot be expected that such movement- and consumer-driven initiatives alone change the system. Such interstitial strategies of transformation have, in this perspective, two functions: to experiment practices that later can be upscaled (of course, considering also here the limits of too much and too rapid growth that led to much of the limits of mainstream organic and fair trade, as Jaffee and Howard (2010) have argued), and to bring issues into the mainstream political discussion that otherwise would have been marginal. It seems reasonable to assume that a “symbiotic” strategy of transformation, like the laws on supply chains, (e.g. the German Lieferkettengesetz) would not have had a chance without decades of debates and experimentation on fair(er) trade practices. Also valuable are reflections about how to improve such initiatives in themselves, like the proposals by Jaffee and Howard (2010), that they should from the beginning have forms of governance that, e.g., exclude large companies and guarantee a role for small farmers and civil society actors. This interplay of interstitial and symbiotic transformations, opens the door, in a perspective of strategic pluralism (Brokow-Loga 2020; Wright 2013), the way to a finally “ruptural”, fundamental transformation, comprising, e.g. the break-up of the power of multinational companies and the introduction of local and global limits to production, consumption and trade.

Accordingly with this pluralist approach, in this research, I have tried to pay attention to both actors and issues situated at the immediate and specific level of trade relations, as well as to the political scale. And equally, the kind of transformation to which this research tends, is characterised by this diversity.

5. Research Goals and Methodology

Geography in my view is close to being the perfect discipline (...) more of an aspiration than an accomplished fact. It wants to do things such as truly integrating the physical and the social that are inherently difficult and perhaps impossible. We keep not quite getting there and yet we keep on trying. (...) this aspirational quality is a source of real strength at the same time that it makes it hard to be clear to outsiders and sometimes to ourselves about what we're up to.

(...) But I would resist any attempt to discipline the discipline. We owe it to ourselves and to others (though they do not know it) to defend this undisciplined space.

Erica Schoenberger (2007, 37)

5.1 Research Goals and Questions

How to approach the complex theoretical challenge (summarised in section 4) of rethinking spatial strategies for multiscalar degrowth transformations in an age of planetary urbanisation through empirical research? I have argued that commodity geographies can be a relevant tool to research relational spaces across scales. In this sense, I have chosen to explore a global geography of trade: fresh fruit, from its production in Chile, followed through the process of export, to their sale markets in Italy/Europe. This commodity geography is explored in the diversity of its forms, differentiating between a 'mainstream' extractive model and a number of alternative practices, functioning as cases of the diversity of existing city hinterland relations. Confronting these practices and studying their interrelations, aims at reflections about how and in which points such relations should and could be transformed in a degrowth perspective. Cities are here understood as enmeshed in and made by complex webs of relations, e.g. with their various hinterlands close by and far away. Relations which should not be considered as tending necessarily towards the same trajectory everywhere but may show the possibility of "alter-urbanisations" (Brenner 2016). It is in this sense that I aim to find potential appeals for a spatial politics of degrowth, towards the idea of a solidary degrowth city part of solidary degrowth spaces; a city potentially able to politicise and transform the relations reaching beyond its boundaries on which it depends (Brand 2020b).

Going from the strictly empirical to the discussion of the case study in the light of the theoretical framework, the specific research questions for the empirical part of the research (already anticipated in chapter 1.1) build on the basis of the literature and the theoretical framework and aim to test and detail the theoretical hypothesis that a multiscalar spatial politics of degrowth should comprise a quantitative limitation of the flows of social metabolism around the globe, while not aiming at their elimination and secondly, a qualitative reorganisation of these relations, from extractive and exploitative to solidary. These questions are:

1) Informing the empirical research

What is the global commodity geography of Chilean fruit made of? Which are the places, actors, nodes, relations and linkages, directly and indirectly involved? How do actors in the geography interact? With which power relations, how does one end of the geography influence the other?

2) Interpreting the results of the empirical research

What can the description of this global commodity geography imply for degrowth? In relation to the values and goals of degrowth, what could be seen as positive or problematic and why? In single nodes of the geography or in the relations between them? In terms of power geometries, ecological impact, social justice? If the commodity geography or parts of it can be criticised as extractivist, is the global scale a reason for this? And if yes, why and what does this imply?

3) Differentiating the interpretation between different 'forms' researched empirically

What are commonalities and differences between the different forms of this geography? How and why are these forms different? Can existing alternative practices of production and trade be a blueprint for a new model of global trade? And under which circumstances of economic and societal transformation?

4) Going back to theory

How much are the answers to these questions determined by the specific cases, their scale, the kind of product? What can this case study say in general about global metabolic relations in a degrowth perspective? Based on this research, what are the conclusions for a 'spatial politics' of degrowth? Is the global scale the problem of global trade relations or something else? Can global trade be compatible with a socio-ecological degrowth transformation? How and in which quantities? Why and how should the results lead to a different formulation of the 'spatial politics' of degrowth?

These questions for the sake of clarity, are here written in a linear logical order. The process of formulating and reformulating them has been a reiterative one,

throughout the duration of this research and I have come back to them and adjusted them frequently.

5.2 Methodology

The development of the methodology for this research has been anything but straightforward. While it was soon clear that to approach the intricate theoretical task through empirical research would require an eclectic approach to research, how exactly this could be constructed has been subject to continuous evolutions. Repeatedly I have considered two aspects: the relation between methodology and positionality and the question of how case study research can be used to cover a global commodity geography. I will reflect on these theoretical questions in the following pages and then focus on the practical choices I have made.

On Positionality and Social Responsibility

The considerations on my positionality at the beginning of this thesis (chapter 1.3) are closely connected to the development of the methodology. As Schoenberger (2007) argues, methodology is strongly intertwined with one's own personality and positionality: "questions of identity, history, and social position (...) are involved in producing both ontological and epistemological commitments and a sense of the rightness and wrongness of things." (p.27). This regards my previous research experiences as well as my political position as a degrowth researcher and activist; for sure this has influenced the research design and there is always a risk that the politics influence the results. But with Schoenberger (2007) I agree that it is more helpful to be conscious about this risk and critically reflect it, than to embrace the illusionary ideal of value-neutrality: "The politics help you identify the important questions, but they can't tell you what the answers are" (Schoenberger 2007, 31). During the research these questions have surfaced often: how much should I insist on my politics, i.e. orient the research in a way that I would be able to find answers to my research questions? How much, rather, would it be more productive to follow unexpected avenues of research and let me guide by the people and relations I encountered? The reality of research has been a compromise. Doing fieldwork and speaking to people throughout the research, has widened the initial perspective, most visibly in the vignettes from fieldwork in chapters 6.2 and 6.5. They are full of 'loose ends' (like space in Massey's description) which could be followed to many elsewheres. Only systematising and discussing these results in

the process of writing has made it possible to form them into a narrative that corresponds to the framework of the research, most explicitly in the concluding section of this dissertation. And this operation of systematisation has unavoidably be influenced by my 'sense of the rightness and wrongness of things'.

There is another question of positionality of course. My position as a white, male, western, northern, middle-class researcher in Chile. Now, writing this after fieldwork, I realise that this a question that leads to necessarily contradictory reflections: this is not 'simply' the story of a wealthy researcher from the north researching an impoverished social context in the south. It is more complicated than this. Many of the people I interviewed during my time in Chile, were more privileged than myself, in terms of money and social position. Others certainly were not. This has to do a lot with Chile's (colonial) history and with the country's social structure. Chile (cfr. Section 6) is the wealthiest country in South America (when adopting standard measures, such as GDP, HDI) and in many regards has living conditions which are not too dissimilar to large parts if Europe – which led me to discuss with Chilean acquaintances about why they tend to describe Chile as a third world country.

At the same time, Chile is a very unequal country. I did not make a representative survey, but it is hardly accidental that most of the more privileged interviewees were white and male. While among the less privileged, many were women, migrants and indigenous (Mapuche) people. Thus, my positionality was different in relation to different specific contexts of research, not simply the one of an European researcher coming to Chile. In some occasions, it seemed that being an outsider made things easier, putting me in the position to be treated as a guest by very hospitable Chileans. While certainly my incomplete contextual knowledge made me miss some things. In some cases, my position as a researcher led to the hope or expectation of being able to do something for the people I spoke to. Most strongly I had this impression in Talca (paragraph 6.5.4). In particular, I always remember Graciela Oviños' observation, who reminded me of the social responsibility of research saying that many had passed asking questions and few had coming back leaving something. To her and others I answered that it would be difficult for me to come back, considering the long distance and my reluctance to take planes. The one minimum promise I made was to come back to everybody with a Spanish summary of my research, to let them know at least what I have done with it and hoping that it will be of some interest for them.

On the methodological challenges of a case study to research a global commodity geography

The most important choice for the methodology of this research has been to pass through a case study rather than a survey method or other quantitative approaches in the conviction that case studies, thanks to their engagement with context-based situations, can help to ground theory and make complexity manageable (cfr. Flyvbjerg 2006). The “advantage of the case study is that it can ‘close in’ on real-life situations and test views directly in relation to phenomena as they unfold in practice” (Flyvbjerg 2006, 235). Thus, case studies help precisely to find elements that speak against the researcher’s expectations and it is the proximity to the situations that helps the researcher to learn about them; case studies tend to falsification rather than verification, as they deal with the complexity of real life and the concrete, containing also conflicting stories. Flyvbjerg’s perspective on case studies is part of his wider engagement for social science that “matters”, which for him must be *phronetic* social science: a social science not in search of general, universal truths, emulating (at least traditional views of) natural science, but rather one that has a practical, context-based scope in trying to be a support for society to take political decisions. In Lancione’s (2013) words:

social science is not about explicating the rules that govern society as-a-whole, rather [it] is about actively helping society in reasoning about its diverse, multiple, and context-specific practical rationalities.

Such a perspective aligns well, both with the ambition of a research oriented at reasoning about the political implications of its results and with the pluriversal and thus context-bound orientation of degrowth. It also reminds that even if this research tries to contribute to theoretical reflections, these should not be assumed to be true universally and independently from context.

Employing a case study approach to research a global geography of relations constitutes a complex methodological challenge. Perspectives from far away, used for instance in much research on planetary urbanisation, can easily show, through potent images of global maps of interconnectedness, the force of the process of urbanisation. On the other hand, the embeddedness of ethnographic fieldwork is able to point out the diversity of everyday life, to explore the differences between different situations and hence show the possibilities of change also at a small scale. Both paths appear as unsatisfactory when pursued in their extremes (Valz Gris 2021). In front of the totalising force of zenithal views of planetary urbanisation, as feminist critiques point out, action easily appears as impossible and differences disappear as irrelevant minutiae (ibid.). Also are these types of analyses unable to grasp issues for which statistical data is unavailable. The

embeddedness of ethnographies instead, struggles to cover extended global geographies “as they make the very ‘field’ of ‘fieldwork’ a rather unclear idea” (Valz Gris 2021, 43) and the time and the bodies of the researcher are limited. And ethnographic approaches are not always able (or wanting, cfr. Knowles 2014) to generalise. While there is no possibility to definitely overcome the differences between the two approaches, they do not form a dichotomy and numerous attempts exist in which researchers have tried to combine the strengths of both. Flyvbjerg (2006, 242) indeed argues that “[g]ood social science is problem-driven and not methodology-driven, in the sense that it employs those methods which for a given problematic best help answer the research questions at hand.” The solution to this dilemma chosen by Valz Gris is the concept of a “thin” and mobile, multi locate ethnography. The alternative chosen here, as I will detail below, is a multiscalar construction of the case study, combined with elements of statistical data and document analysis which frames the embedded realities of fieldwork in wider contexts, while at the same time the abstract realities of numbers and theories are grounded in the concrete experiences of encounters I made in Chile and Italy.

The main source to shape the methodology of my research have been the literatures on commodity geographies (see section 3). Indeed, the high complexity implied in the analyses of such geographies and the difficulty to tackle it successfully in research, is often discussed in these literatures (cfr. Chapter 3.2): indeed, empirical research on commodity geographies tends to delude its theoretical ambitions of completeness. Many reviews of this literature lament that there is focus only on production or too much focus on consumption. Consider Coe, Dicken, and Hess (2008) who acknowledge that often research referring to the GPN framework lags behind the theoretical ambitions of the framework of capturing the complexity of production networks, including both all the vertical relations of the chain and the horizontal relations of the sites in which the steps of the chain are embedded. Also the difficulty to fulfil completely the promise of a full-scale research from one end to the other of a commodity chain/geography has often been discussed. In some cases, researchers have actually managed to bridge this complexity, e.g. (Cook et al. 2006; L. H. Cohen 1997; Knowles 2014) with ethnographic approaches, contributors to Topik, Marichal, and Frank (2006) with a world-history approach. But while these case studies have managed to look at the geographical extent of the chain from production to consumption, certainly none of these studies is complete in the sense of covering with the same detail issues of production and consumption and of vertical and horizontal relations in the respective case. Surprisingly, while choices about which aspects to research are explicitly made in the case studies, the theoretical contributions to this debate

seem to have the tendency to not recognise the necessity of such choices and often hold up the ideal of achieving a perhaps unachievable completeness (a bit like Italo Calvino's story about the Khan who asked for a 1 to 1 map of his territory). For my research this has implied accepting its unavoidable incompleteness (Valz Gris 2021) and always keeping in mind the question of how and when to choose on what to focus – and to then make these choices explicit, transparent and as much as possible justifiable in view of the theoretical scope of this research. I have left these choices open questions for as long as possible, answering them step by step as the empirical work progressed and the more relevant (and sometimes, I admit, more accessible) places, actors and relations have become evident.

On the Choice of the Case

A fundamental step for the empirical research has been, of course, the choice of the case, far from obvious in my theoretical framework. In Flyvbjerg's (2006) view, case studies can be the basis for generalisation, if the right cases are chosen. Among the three strategies of case selection he proposes (extreme, critical, paradigmatic³⁰), for my research the most sensible strategy is that of a paradigmatic case, i.e. cases that illuminate "more general characteristics" (p.232) of the societies (or geographies) the study is about. The choice of such a paradigmatic case is no easy task and according to Flyvbjerg no general rules can be established ("No standard exists for the paradigmatic case because it sets the standard", p.232); rather the choice is based on intuition. This should not be considered a problem, as we simply must justify our intuitive choices, as I hope to do below. If, finally, the chosen case can be considered paradigmatic, cannot be determined with certainty in advance, Flyvbjerg concludes.

The choice of fresh fruit as my case can be justified by two arguments. First, in order to keep the complexity of the case study in relation to a complex theoretical framework manageable, I chose fruit as a relatively simple object without too many different inputs and steps of transformation. Furthermore, in order to make the case more easily comparable to other situations, I considered a commodity produced, traded and consumed all over the world the best: a commodity that is rather frequent, ordinary, everyday, appears closer to the idea of a paradigmatic case than one driven by the dynamics of an 'exotic' fashion.

The choice of the specific geography of the case then has been radically subjective. It started from two of the main alternatives to buy fruit available where I live, in Turin. First, local fruit from the farmers' market, the 'typical degrowth case',

³⁰ Also a representative or random choice would be possible. Flyvbjerg discourages this approach, arguing that such cases contain less information.

which, even though not part of the empirical research, remains as a background reference. Second, imported fruit in the supermarket instead, the object of this research. A supermarket was the starting point that led to Chile by coincidence: a “Pink Lady” apple³¹ from Chile has been among the first imported fruit I found. As random as this choice had been apparently, it is reflected in data, being Chile a major global producer of fresh fruit for export and being strongly shaped as a country by commodity production for global markets (cfr. Chapter 6.1). Chilean fresh fruit can work as a paradigmatic case being a widely diffused commodity – in terms of production as well as consumption. And it seems typical of the forms of globalisation degrowth criticises: a growth- and profit-oriented global economy that satisfies the wants of wealthy people (in relation to global standards, thus most Europeans for example), without or little consideration for social and environmental impacts. During the course of the research then – and in some way thanks to the complications in relation to the covid-19 pandemic which extended the time of preparation and for theoretical reflections – I chose to look not only at the ‘mainstream’ model of global Chilean fruit but to search also for existing alternative practices (cfr. Chapter 6.5); a choice which has changed and improved the research design in important ways, allowing to study not only the limits of a growth-oriented economic model but also the potential and limitations of alternatives.

On Research Organisation and Research Tools

How have I, finally, organised the research? And which have been the specific ‘tools’ employed during this research? The case study research has used, more as an entry point than as the final goal, a follow-the-thing approach (Cook et al. 2004), in which the item, is traced from its place of consumption back to its place of production, across the different steps of distribution, logistics etc. But I have not performed what Cook et al. call a multi-sited ethnography. Extending on Cook et al.’s study, I have given a stronger emphasis on the “horizontal integration” of the chain in the various places, following Leslie and Reimer (1999). Very much like Jones, Heley, and Woods’ (2019, 144) in their research on wool production in Wales, I followed an approach in which the “spatiality (...) was not predetermined” but

31 At the beginning of this research I tried to focus on apples, later, because of difficulties in accessing the field (contacted firms and institutions would not answer, which made me search for personal contacts which resulted more productive but led to other types of fruit) and because I realised, studying literature about Chilean fruit export, that actually there is a whole fruit business, with apparently little differences – regarding the aspects relevant here – between different species of fruit.

rather followed the evolution of the relations traced step by step; the collection of information and data followed an inductive approach, accepting “openness and uncertainty” and this collection of primary data was supplemented and contextualised through the collection of secondary data from grey literature, industry reports, statistics and so forth. A similarly hybrid approach has been described by Christian Schmid (2018, 595):

We (...) developed a transductive approach to urban research in which our conceptualizations informed and inspired our more practical endeavors; concomitantly, the experiences we could gain through our activisms constantly challenged our theoretical reflections, thus stimulating us to revise our concepts.

Such an open, hybrid, transductive approach, going back and forth between theory and activism, between interviews, field visits and statistics and official documents is what I have tried to apply to this research.

The concrete entry point of the research was a Turin supermarket, as I mentioned, from where I initially tried to trace the commodity back to Chile, without success, as many contacted people did not respond. Thus, I also needed parallel entry points to this commodity geography: I contacted diverse entities involved in the production and trade between Chile and Italy/Europe, entities controlling and regulating at different points, research institutions, as well as institutions promoting international trade. And I used personal contacts.

Before starting actual fieldwork, I have started the research contacting key figures related to the case in order to build a general picture of the places, actors and factors involved in the geography in order to be able to then choose on which points to focus. Then, I have collected more general data in order to contextualize the case study results in a wider picture and vice versa to ground general information in the empirical deepness of a case study. I went to the Macfrut Trade Fair in Rimini in September 2021 which was a first opportunity to enter face to face dialogues with actors of the global fruit industry.

All these informations have been crucial to organise the actual fieldwork which took place in Chile (while in Italy and other European countries I only performed a few interviews) with the help of contacts provided both by initial interviewees and, crucially, personal contacts. Before going to Chile the idea had been that of a case study with two main threads:

- 1) Understanding the ‘mainstream’ system of Chilean fruit production and export

- 2) Looking for alternative practices at different steps of the “chain”

While this general logic has been maintained, in practice the fieldwork has split up into several ‘sub-cases’, in the logic of a multiscale construction of the case study,

apt to capture the complex, transscalar and multi-local nature of the case “Chilean fruit production and export”. In the ‘main’ sub-cases, I performed detailed fieldwork of more or less a week in production and followed contacts with exporters, while I only shortly visited ‘minor’ sub-cases. Furthermore, I interviewed a number of experts / key actors who helped to gain information about the ‘general’ characteristics of the Chilean fruit production and export geography (See Table 2 – see Figure 4 for connections between sub-cases and interviews).

Figure 2: Table of Sub-Cases

Sub-Case	Main / Minor	Mainstream / Alternative Practice
Nancagua	Main	Mainstream
Leyda	Main	Mainstream
Mi Fruta, Fair Trade	Main	Alternative Practice
Tralcao	Main	Alternative Practice
Lago Ranco	Minor	Mainstream
Chimbarongo	Minor	Mainstream
Agroecology	Minor	Alternative Practice
Campochange	Minor	Alternative Practice

Of the four main sub-cases, two could be defined ‘mainstream’ (Nancagua, paragraph 6.2.1 and Leyda, paragraph 6.2.2) and two ‘alternative practices’ (Mi Fruta, paragraph 6.5.3 and Tralcao, paragraph 6.5.4). What sounds like a quite rational and traditional organisation of case studies, actually had not been planned in this way in the first place. I had planned to follow these two threads, but it was rather the following from contact to contact, conversation to conversation, information to information (and of course reflecting intermediate results critically respect to provisional schemes of the geography), i.e. going back and forth between theory and practice, between planning and serendipity, that finally helped me to build up this reasonable research design and set-up. I will discuss in chapter 6.5 that the reality of course is more complex than this binary division in mainstream and alternative practice suggests and that there are many entanglements between these sub-cases. As can be seen in Figure 3, I have had several entry points to my case study but certainly some were more fertile than others and led me indirectly to many other contacts³².

32 That finally the two “mainstream” contacts came through one initial entry point and the two “alternative” practices through another one, is in large part serendipity, but certainly also linked

Beyond interviews, the most important method in my research, I used to some degree field observations and fieldnotes, photography, participant observation in a few cases (helping during fruit harvests in particular). Fieldwork in Chile lasted approximately three months and a half³³: a sufficient duration to grasp some very detailed information, but short of the long-term fieldwork of ethnographic approaches. In compensation, document analysis has been an important instrument to complement and contextualise the results of fieldwork.

to the type of first contact I had – I contacted Beatriz Bustos precisely thanks to a critical geography journal article of hers.

- 33 Impossible to provide a precise indication of fieldwork duration as the period I stayed in Chile also involved free days and days of desk research and organisational work. But then also free days often contributed to my learning of contextual knowledge that support this research, troubling an easy distinction between work time and free time.

Scheme of connections between contacts and interviewees
 (excluding short, informal chats; people who only passed contacts in brackets)

↓ Directly passed contact
 ... suggestion only, made contact myself

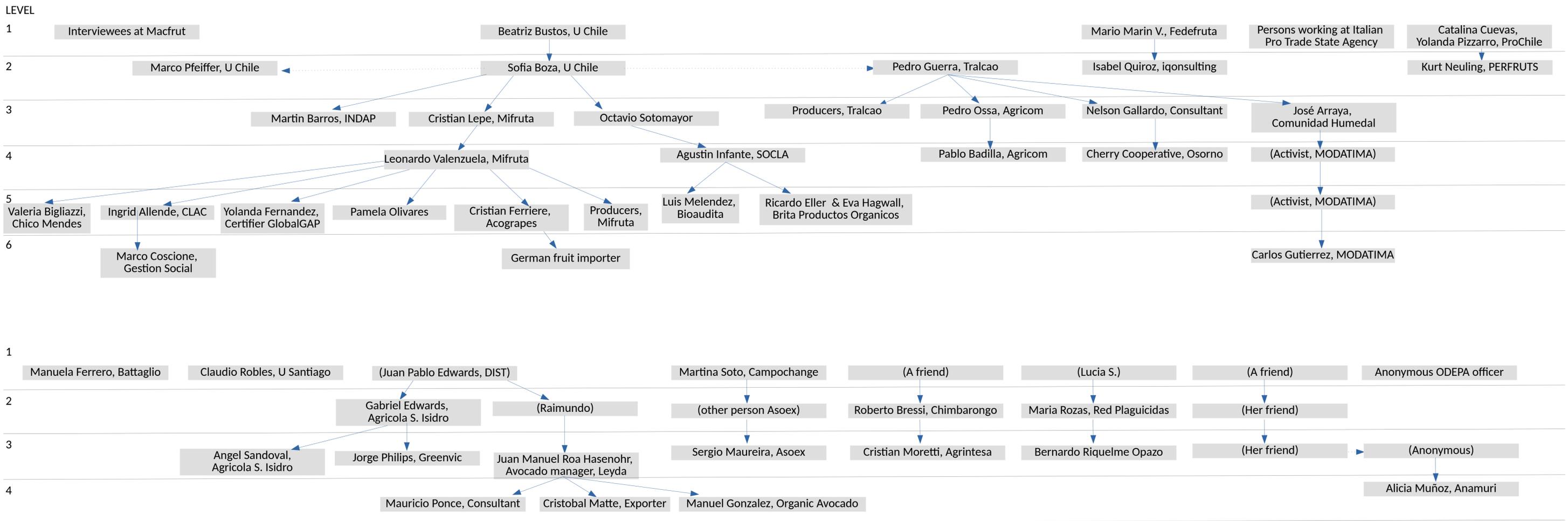


Figure 3: Scheme of connections between interviewees

On Interviews

Semi-structured interviews with experts and informed participants have played a central role in my research. In a review of common qualitative research methods in human geography, Hitchings and Latham (2020) note that while to perform interviews is the most common method, the overwhelming majority of papers in the sample they analyse provides very little information about the reasons of the choice of this method. Moreover, they found very little information about the approach that had been adopted in detail, like sample size, the reasons to choose certain interviewees, the duration of interviews, the questions asked. This urges me to try to be somewhat more precise and transparent, also in relation to the call for “truthful” phronetic social science (Lancione 2013), I have referred to above, and the acknowledgment that transparency and reflections about one’s own methods is crucial for good research in (human) geography (Schoenberger 2007). The reason to choose interviews as a central method for my research certainly lies in the flexibility interviews offer (Hitchings and Latham 2020) and the possibility to relate to a large number of related but different issues in relatively little time. An issue is, of course, that interviewees always provide their view on the topic and not ‘the truth’. In fact, interviews do not provide, writes Schoenberger (2007), direct answers to research questions, they are data on which to base research. And also Hitchings and Latham (2020) advice that quotes from interview should not simply be taken as plain facts and direct access to knowledge.

William S. Harvey (2010) provides precious advice on interviewing elites. While few of my interviewees are elite members in the strictest definition he gives (people holding high positions in high level companies), he underlines that who is considered elite is indeed very relative and context-dependent. In this sense for many subjects I have interviewed – managers in fruit production or export companies, experts working for government institutions etc. – his guidance has been valuable. Gaining access to elites has been, without doubt, a crucial difficulty in my research (like Harvey describes in relation to their experiences). A direct approach by emailing institutions has provided some but limited results in the Chilean case. As also Harvey’s text suggests, it had proved useful and necessary to try out all possible avenues to gain access, including personal networks.

Certainly then for me as a young researcher, there has been issue of limited personal experience (only some interviews done for my Master’s Thesis) and a necessity to learn – which has sometimes also lead to failure (see below). Learning that has been learning by doing during this research. One point to negotiate in particular has been the issue of transparency, crossing with that of power relations with the interviewees (cfr. W. S. Harvey 2010). In particular, I have been very doubtful about if, how and when to disclose to my interviewees the wider setting of

my research in the degrowth framework because I assumed that for many interviewees working in a business context, degrowth might be a sort of taboo concept and that, as a consequence, mentioning it, would close doors. I realised soon, also confronted with the ethical issues in doing research (and the responsible officer at my university) and the necessity to have signed consent forms (a requirement that may indeed complicate elite interviews, as Harvey (2010) argues, as it requires further time from individuals with little time available), that hiding this information would be finally counterproductive. I then adopted an approach in which I first send personalised messages to open the conversation in which I did not refer to degrowth but focused on the empirical interest to understand the working of a global commodity geography, trying to argue why it was important for me to get an interview from that particular person. I tried to keep the message short, inviting them to ask further information about my research if they wanted to. If the contact was established, I sent them the information sheet (including reference to the wider degrowth research framework) and consent form. If this was the best way to do it, I am not sure. This has been the procedure for formal, semi-structured interviews, which were (if consent was given) registered and later transcribed. To a few of these interviews I spoke a second time months later with new questions and new perspectives. Some interviews, in the main sub-cases in particular, were complemented with informal chats during the days we spent together. There has been also a number of shorter, informal conversations, e.g. at the Macfrut Trade Fair, for which I did not request consent (I simply presented myself as a researcher). These interviewees remain anonymous.

It is evidently important to interview a sufficient number of people. But how many is sufficient? I do not think that it is possible, in the qualitative and exploratory context of the present research, to establish the right number of interviewees beforehand (to be sure, in theory, the higher the better, but in practice one must come to terms with one's limited availability of time). Even more so in a case study, like this one, in which no interviewee has a complete view of the studied commodity geography, but everyone's involvement is partial. For this reason, the total number of interviewees does only give limited information and it is equally important to consider how many in a certain role, e.g. farmers, people working in export firms etc., have been interviewed. Even so, this has not been a strive for high numbers of interviewees in all the steps of the commodity geography – due to the time constraint already mentioned but also because the search for (context-based) truth in this research does not lay in statistical averages of answers but rather in the juxtaposition of information given by different interviewees, pieces of (participant) observation and documents, statistics, grey literature. Taking together all types, I performed 87 interviews for this research (cfr. Figure 4).

Whom to interview specifically has been chosen in dialogue with the representation of the pieces of the commodity geography, as I have been building it for myself and the research, reading academic and non-academic literature, newspaper articles, browsing the Macfrut trade fair, following links on the internet, from Google Maps to company websites and back, participating to webinars and conferences, videos and lectures by experts and participants, and of course through interviews themselves. As the first impersonal contacts have been hard to achieve, personal contacts³⁴ have been a crucial entry point. A table, build step by step collecting information, helped me to keep trace of the evolution of this picture and to decide about who it was important to contact. Many entities and persons have been contacted before going to Chile by email and invited to online interviews. The interviews were semi-structured, i.e. based on loose catalogues of questions, based on my research questions, but adapted to the specific interviewee and their context, and aiming to capture both the interviewee's perception of the whole geography, as much as information about their specific involvement in a specific part of the respective commodity geography. While this approach certainly has the downside of being a less systematic form investigation, I believe it helped to make interviewees feel comfortable and thus more prone to provide more detailed information. Furthermore it helped to be receptive for unforeseen topics and arguments, following a problem-driven approach like Flyvbjerg proposed. Interviews have been conducted in different languages according to the interviewee's preferences: English, German, Italian and my, at least initially, quite shaky Spanish, but I believe that major misunderstandings have been avoided. I translated the quotations from interviews into English, where necessary. The duration of interviews has been approximately between thirty minutes and an hour for formal interviews, while it was usually between ten and twenty minutes for informal conversations.

34 I thank in particular my Chilean PhD colleague Juan Pablo Edwards at DIST, and Beatriz Bustos Gallardo and Sofia Boza at Universidad de Chile who have been the most important persons who allowed me to enter the field.

N	Date	Sub – Case	Type of Interview	Interviewee	Role	Affiliation	Type of organisation	Place	Interview Language
1	14/04/21	General	Formal	Persons working at Italian Pro Trade State Agency	/	/	Italian Pro Trade State Agency	Online	Italian
2	13/07/21	General	Formal	Mario Marin Valdebenito	Project manager	Fedefruta	Producer association	Online	Spanish
3	27/07/22	General	Formal	Octavio Sotomayor	Expert			Online	Spanish
4	04/08/21	General / Sustainability Policies	Formal	Catalina Cuevas, Yolanda Pizzarro	Sustainability department responsible	ProChile	Pro Export State Agency	Online	Spanish
5	18/08/21	Agroecology	Formal	Agustin Infante	Researcher	SOCLA	Agroecological Institute	Online	Spanish
6	07/09/21	General	Informal	Anonymous		Italian Fair Trade Organisation (Ananas in Togo)		Rimini, Macfrut	Diverse
7	07/09/21	General	Informal	Anonymous		Italian Supermarket Chain		Rimini, Macfrut	Diverse
8	07/09/21	General	Informal	Anonymous		Italian fruit producer cooperative which also acts as importer		Rimini, Macfrut	Diverse
9	08/09/21	General	Informal	Anonymous		German gov agency (supports producers in the global south to import to the EU)		Rimini, Macfrut	Diverse
10	08/09/21	General	Informal	Anonymous		Italian importer of food from Cuba		Rimini, Macfrut	Diverse
11	08/09/21	General	Informal	Anonymous		Global naval company		Rimini, Macfrut	Diverse
12	08/09/21	General	Informal	Anonymous		Bolivian Embassy in Italy		Rimini, Macfrut	Diverse
13	08/09/21	General	Informal	Anonymous		Italian company that produces fruit selection machinery		Rimini, Macfrut	Diverse
14	08/09/21	General	Informal	Anonymous		Italian freight forwarder		Rimini, Macfrut	Diverse
15	08/09/21	General	Informal	Anonymous		Italian producer cooperative		Rimini, Macfrut	Diverse
16	08/09/21	General	Informal	Anonymous		Colombian municipality		Rimini, Macfrut	Diverse
17	08/09/21	General	Informal	Anonymous		Colombian banana producer cooperative		Rimini, Macfrut	Diverse
18	08/09/21	General	Informal	Anonymous		Association of Italian wholesale markets		Rimini, Macfrut	Diverse
19	09/09/21	General	Informal	Anonymous		Dominican Republic producer cooperative		Rimini, Macfrut	Diverse
20	09/09/21	General	Informal	Anonymous		Indonesian export company		Rimini, Macfrut	Diverse
21	09/09/21	General	Informal	Anonymous		Italian importer that trades fairtrade ananas from Costa Rica		Rimini, Macfrut	Diverse
22	09/09/21	General	Informal	Anonymous		Guatemalan Embassy in Italy		Rimini, Macfrut	Diverse
23	09/09/21	General	Informal	Anonymous		Italian – Latin American state development aid agency (fruit export project in Colombia)		Rimini, Macfrut	Diverse
24	09/09/21	General	Informal	Anonymous		Italian plastic packaging producer		Rimini, Macfrut	Diverse
25	16/09/21	Mifruta	Formal	Cristian Lepe	Manager	Mifruta	Producer, Coop Firm	Online	Spanish
26	21/09/21	Fairtrade	Formal	Anonymous	/	/	German Fairtrade Importer	Online	German
27	08/11/21	General	Formal	Manuela Ferrero	/	Battaglio	Importer	Orbassano	Italian
28	07/12/21	Campochange	Formal	Martina Soto	Cofounder	Campochange	Alternative, local trade	Santiago	Spanish
29	13/12/21	General	Informal	Sofia Boza	Researcher	Uchile		Santiago	Spanish
30	15/12/21	Nancagua	Formal	Angel Sandoval	Agronomo	Hacienda	Mid-scale mainstream producer	Nancagua	Spanish
31	15/12/21	General	Formal	Plantation workers	Workers	/	Mainstream producer	/	Spanish
32	16/12/21	Nancagua	Formal	Don Gabriel Edwards	Owner	Hacienda	Mid-scale mainstream producer	Nancagua	Spanish
33	26/12/21	General	Informal	Claudio Robles	Researcher (Historian)	Usach	University	Santiago	Spanish
34	12/01/22	Tralcao	Informal	Jimena, Pedro Guerra's wife	Producer	Comunidad Mapuche Tralcao	Small-scale producer	Tralcao	Spanish
35	12/01/22	Tralcao	Informal	Anonymous		Comunidad Mapuche Pon Pon	Related to fight against Arauco	Close to Tralcao	Spanish
36	12/01/22	Tralcao	Formal	José, viviana, Diego Huechante	Producer	Comunidad Mapuche Tralcao	Small-scale producer	Tralcao	Spanish
37	12/01/22	Tralcao	Formal	Graciela Oviños	Producer	Comunidad Mapuche Tralcao	Small-scale producer	Tralcao	Spanish
38	12/01/22	Tralcao	Formal	Eduardo Hernandez	Producer	Comunidad Mapuche Tralcao	Small-scale producer	Tralcao	Spanish
39	13/01/22	Tralcao	Formal	Jonathan Nauto	Producer	Comunidad Mapuche Tralcao	Small-scale producer	Tralcao	Spanish
40	13/01/22	Tralcao	Informal	Anonymous	Producer	Comunidad Mapuche Tralcao	Small-scale producer	Tralcao	Spanish
41	14/01/22	Tralcao	Formal	Pedro Guerra	Leader, Producer	Comunidad Mapuche Tralcao	Small-scale producer	Tralcao	Spanish
42	14/01/22	Tralcao	Formal	Cristian Carrillao	Producer	Comunidad Mapuche Tralcao	Small-scale producer	Tralcao	Spanish
43	14/01/22	Tralcao	Formal	Cesar Manuel Martin	Producer	Comunidad Mapuche Tralcao	Small-scale producer	Tralcao	Spanish
44	14/01/22	Cerecoop Osorno	Informal	Anonymous	Producer	Cerecoop Osorno	Mid-scale producer in Cooperative	Close to Osorno	Spanish
45	14/01/22	Cerecoop Osorno	Informal	Anonymous	Producer	Cerecoop Osorno	Small-scale producer in Cooperative	Close to Osorno	Spanish
46	15/01/22	Tralcao	Informal	Anonymous	Researcher	Universidad Valdivia	University	Tralcao	Spanish

47	17/01/22	Tralcao	Formal	José Arraya	Secretary General	Comunedad Humedal Rio Cruces	Activist	Valdivia	Spanish
48	17/01/22	Tralcao	Formal	José Martinez	Deputy President	Comunedad Humedal Rio Cruces	Activist	Valdivia	Spanish
49	18/01/22	General / Lago Ranco	Formal	Pedro Ossa	Agronomo & Producer	Agricom	Exporter	Rio Bueno	Spanish
50	24/01/22	Agroecology	Formal	Agustin Infante – 2° Interview	Researcher	SOCLA	Agroecological Institute	Yumbel	Spanish
51	25/01/22	General	Formal	Sergio Maureira	Secretary General	Asoex	Exporter organisation	Online	Spanish
52	27/01/22	General	Formal	Martin Barros		INDAP	State agency – support for small producers	Santiago	Spanish
53	02/02/22	General	Formal	Marco Pfeiffer	Researcher	Uchile	University	Car	Spanish
54	02/02/22	General	Formal	Mario Marin Valdebenito – 2° Interview	Project manager	Fedefruta	Producer association	Santiago	Spanish
55	04/02/22	General / Nancagua	Formal	Jorge Philips	Agronomo	Greenvic	Exporter	Buin	Spanish
56	07/02/22	General	Formal	Pamela Oliveras	Expert (many different working exper/		/	Los Andes	Spanish
57	07/02/22	General	Formal	Nelson Gallardo	Agronomic Consultant	Consultancy	Consultancy	Online	Spanish
58	07/02/22	Mifruta	Formal	Hector Vera	Producer	Mifruta	and variety represent	San Felipe	Spanish
59	07/02/22	Mifruta	Formal	Juan Ferreira	Producer	Mifruta	Coop Firm	San Felipe	Spanish
60	08/02/22	Mifruta	Formal	Juan Lazcano	Package plant owner & Producer	Mifruta	Coop Firm	San Felipe	Spanish
61	08/02/22	Mifruta	Formal	Carlos Leiva	Producer	Mifruta	Coop Firm	San Felipe	Spanish
62	09/02/22	Mifruta	Formal	Marco Orosio	Producer	Mifruta	Coop Firm	San Felipe	Spanish
63	09/02/22	General / Sustainability Policies	Formal	Kurt Neuling	Manager	Perfruts	Regional Sustainability Program	San Felipe	Spanish
64	10/02/22	Mifruta	Formal	Pedro Lucero	President, Producer	Mifruta	Coop Firm	San Felipe	Spanish
65	10/02/22	Mifruta	Formal	Cristian Ferriere	Manager	Acograpes	Exporter	San Felipe	Spanish
66	10/02/22	Mifruta	Formal	Leonardo Valenzuela	Agronomo	Mifruta /autonomous	Coop Firm	San Felipe	Spanish
67	14/02/22	Agroecology	Formal	Ricardo Eller & Eva Hagwall	Producers	Brita Organicos	Small Agroecological /Organic Producer	Pinto	German
68	14/02/22	General	Formal	Isabel Quiroz	Founder and Consultant	Iqonsulting	Fruit market consulting firm	Online	Spanish
69	16/02/22	General / Tralcao	Formal	Pablo Padilla	Jefe de programa Manzanas y Cerezas	Agricom	Exporter	Curicò	Spanish
70	17/02/22	General / Chimbarongo	Formal	Roberto Bressi	Producer	Agrigold / Janigold (?)	Producer / Italian producer cooperative	Chimbarongo	Italian
71	19/02/22	Agroecology	Formal	Luis Melendez	Certifier	Bioaudita	Organic Certification Firm	Rancagua	Spanish
72	22/02/22	Leyda/Melipilla	Formal	Manuel Gonzalez	Owner		Campo palta organico	Leyda	Spanish
73	22/02/22	Leyda/Melipilla	Formal	Juan Manuel Roa	Manager	Agricola El Jardin	Large scale avocado producer	Leyda	Spanish
74	23/02/22	General	Formal	Maria Elena Rozas	Independent researcher	Red Accion Plaguicidas	Activist network	Online	Spanish
75	02/03/22	General	Formal	Alicia Muñoz	Activist/Founder	Anamuri	Workers and Campesino Womens’ organisation	Santiago	Spanish
76	03/03/22	General / Mifruta	Formal	Ingrid Allende	Certifier, Gestor de Fortalecimiento pa	CLAC	Latin American Fair Trade organisation	Santiago	Spanish
77	04/03/22	General / Leyda/Melipilla	Formal	Cristobal Matte	Owner, Founder	Sociedad Comercial Espino	Exporter	Santiago/Vitacura	Spanish
78	28/02 – 07/03/22	General / Mifruta	Formal	Yolanda Fernandez	Certifier		Company working for GlobalGAP	via Whatsapp	Spanish
79	08/03/22	General / Agroecology	Formal	Bernardo Riquelme Opazo	Owner		Producer, Bee producer	online	Spanish
80	08/03/22	General / Sustainability Policies	Informal	Anonymous ODEPA officer	/	ODEPA	State agency – research & policy development in a	Nunoa	Spanish
81	08/03/22	General / Water	Formal	Carlos Gutierrez	Co-Coordinator of local group	Modatima	Activist network	Santiago	Spanish
82	09/03/22	General	Informal	Person working in Ministry of Agriculture	/	Ministero Agricultura	State institution	Santiago	Spanish
83	21/04/22	General / Water	Formal	Mauricio Ponce	Consultant	Consulting Society	Consultants for project of farmers to “technify” th	online	Spanish
84	27/04/22	General / Fair trade	Formal	Marco Coscione	Consultant	Gestion Social	Consultant for CLAC and other companies	online	Italian
85	28/04/22	Mifruta / Fairtrade	Formal	Valeria Bigliazzi		Chico Mendes		online	Italian
86	30/05/22	General / Mifruta	Informal	Person working at German import company	Co-Owner, Einkauf&Vertrieb	Duerbeck	Importer	online	German
87	31/05/22	General	Formal	Cristian Moretti	General Manager	Agrintesa	Importer and Italian Producer Coop	online	Italian

Figure 4: Table of conducted interviews

On failure

Acknowledging failure as a researcher in general and in fieldwork in particular is uncommon but should be done more often, transparently and honestly, as it can be an occasion for others to learn, to represent also the dark sides of research and it can be political in the sense that it provides a different perspective on work and life than glossy surfaces of success (Harrowell, Davies, and Disney 2018; Hitchings and Latham 2021).

There have been two productive examples of failure in the course of this research. First, the failure of establishing contacts to a sufficient number of research participants so as to be able to build the apple (and specifically Pink Lady) geography I originally had envisaged. But, like in the accounts Harrowell, Davies, and Disney (2018) provide, this failure has had a productive result: it helped me to realise the commonalities across the Chilean fruit export sector and showed me the possibilities and opportunities to look beyond one specific species of fruit.

Second, in connection to the travel limitations imposed in relation to the pandemic, I had tried to build an alternative case study about a fair trade coffee trade between Guatemala and Germany. This project failed completely due to the difficulty of establishing contacts but it resulted productive in helping me to define ways to build up the research about alternative practices of fruit production and trade in Chile.

Less productively, during this research there has often been a sense of failure due to the fear of one's research being useless for the social change one envisages. I have been familiarised with this fear through years of activism, engaging for far-reaching global change in front of the climate crisis etc. and I have learned that one should rarely expect directly visible, immediate change when working in this direction. The rewards for my work hardly will come from that. All the same, this never totally eliminates the fear of doing something totally useless in front of doubtless urgency and this fear has without doubt become stronger in the lonely experience of research than in the collective experience of activism. Even more so as with this research I am trying to expand the degrowth debate theoretically and while the idea of contributing with something theoretically new (at least establishing new connections between fields and debates) is exciting, it has also made me very much self-conscious about having possibly taken a path totally wrong, a dead-end or of only intellectual, no practical interest. I hope that the discussion of the results and the conclusions of this research will prove this fear wrong.

6. A Relational Geography of the Chilean Fruit Industry Between Growth & Monoculture and Solidarity & Diversity

The most purists do not want to buy imported fruit because they understand what the chain of imported fruit means. It means a high energetic cost to transport this fruit, as much as it costs a lot of energy to transport a car from Japan. All that is imported has a high energetic cost and a high level of waste production, as the package materials to carry stuff on a ship are immense: cardboard, plastics. The product does not come alone, a lot of package material comes with it.

Interview to Pablo Badilla from Chilean fruit export company Agricom.

Pleasant guitar music lulls us as we fly over orchards of apples, oranges, blueberries. Cut. The sun sets over a lush green valley filled with fruit trees. Cut. We are in a packing plant. Neat images show us specialised machines that with the help of many human (mostly female) hands of careful and smiling workers wash, select, pack blueberries, oranges, apples. We watch as fruit is filled into smaller plastic and larger cardboard boxes, with more or less packaging material according to the needs of the species and the desires of buyers. Cut. The final images show us a truck carrying the fruit towards the seaport and finally containers inside the port. Fruit ready to be send to the world³⁵.

This highly aestheticised marketing video for Chilean fruit for export is surprisingly transparent in showing intensive agriculture and the high level of technology and mechanisation involved in the process of fruit selection and packing. A far cry from how apple producers in the state of Washington tried to associate their industrial methods of production to a, not longer existing, traditional agrarian landscape, like Jarosz and Qazi (2000) noted twenty years ago. But this representation – while transparent about the use of technology – does not

35 <https://www.youtube.com/watch?v=O2AZCk3e8gM> (Last access: July 2021)

tell us anything about the labour conditions (only smiling workers), the power relations, the social and ecological impacts of the business.

What is behind this veil? How does the geography of fruit grown in Chile, sold around the world, in Europe, in Italy, work? How can we interpret this in a degrowth perspective? Is there space for differentiation? What can we learn from this for a 'spatial politics' of degrowth? This section is about Chilean fruit (commodity) geographies, with some glances on other global cases, based on academic and grey literature, fieldwork in Chile, interviews to people involved in the fruit production, trade and governance in Chile, interviews to many different actors from different countries at the Macfrut Trade Fair (Rimini, Italy, September 7 – 9, 2021) and interviews to actors on the Italian side of fruit import. See Figure 4 and Table 2 for a summary of interviews and sub-cases and Figure 15 for a map of (sub-)case study locations in Chile. For more information about methods see section 5.

After having drafted in the first sections the theoretical framework and the methodology of this research, this section turns to the case study, which forms the empirical core of this work. As mentioned already in the methodology section, this case study really is a mosaic of different pieces and levels of analysis, some looking broadly at connections in global space, some zooming deep into the specificity of a place. Looming in the background are fragments which tell of a global geography of fruit production and trade (collected in the literature and on the Macfrut Trade Fair) but the main level of analysis is the geography of the Chilean fruit commodity, focusing on the country of production, but including also some of its crucial global connections, in particular to Europe and Italy. A case split again into 'sub-cases', specific sites of productions, processing, trade and economic and political decision, which constitute some very punctual focuses. Together with academic and grey literature, I assume that all these pieces together form a reasonably complete picture of the commodity geography I try to portray but some elements were included, others excluded, some treated in detail, others more superficially. I will try to justify these choices as I proceed with this section.

Specifically, these pieces of the story (and with them this section) have been organised into a coherent story as follows: the first chapter gives a general overview, depending, beyond information collected in interviews, heavily on grey literature and statistical data, about global fruit geographies and the Chilean role in it. This chapter also provides a synthetic model of the linear commodity chain of fruit produced in Chile and exported. The second chapter dives deep into the fieldwork, focusing on vignettes of what I define the 'mainstream version' of the Chilean fruit commodity geography. In the third and fourth chapter I proceed to a first level of discussion, focusing on what are, first, dimensions of socio-ecological conflict in Chile around the fruit industry and, secondly, trying to identify the

underlying mechanisms through which the organisation of a system of global trade influences territories of production. After this detailed analysis of the working of the mainstream Chilean fruit industry, in the fifth chapter I go back to fieldwork, looking at fragments of a potential alternative model of a global (fruit) trade geography in Chile – an alternative model that is incomplete and in the making but that already exists in some pieces. This structure is not to build a simplistic dualism between a ‘bad’ and a ‘good’ model. Instead also these alternatives are critically scrutinised in their potential to really respond to the challenges posed in chapters three and four. And I discuss how these alternative practices are not placed in a void but rather are in many ways intertwined with the mainstream model. Afterwards, the final section takes up the results presented here to reflect about possible answers to the questions posed in the theoretical framework on the basis of this empirical work: That is, which are the issues of the global commodity geography empirically investigated here in relation to the degrowth framework and which might be degrowth strategies and policies to transform such a geography.

6.1 Chilean fruit in Global and Historical Context

Before diving directly into dense accounts of fieldwork it is important to situate the case in a wider context. But the context of this case can be approached in many ways, according to the manifold research object that is the Chilean fruit production and its global relations. This commodity geography is situated on one side in the national context of Chile, its history, natural, social and economic geography. On the other side it is part of a wider global history and current global economic geographies in general (partly touched upon in Section 3) and of global fruit trade in particular. Considering the complexity of these entanglements, the context setting in the present chapter is necessarily incomplete and fragmentary. I hope that the elements chosen to illustrate these diverse entanglements of the Chilean fruit commodity geography are helpful for their scope: the situated understanding of the fieldwork results presented in the following chapters.

This chapter is organised as follows: in the following paragraph, I resume some general data on the global fruit industry and trade in general and the position and history of the Chilean fruit industry in this context in particular. In the next paragraph I propose a synthetic model of the organisation of the linear fruit commodity chain. The final paragraph gives a macroeconomic overview of the role and importance of the fruit industry in Chile at the national and regional scales, based on statistical data and grey literature.

6.1.1 Geographical Pre-Conditions and Elements of a Global and Chilean History of Fruit Export

Excluding a few specific crops (e.g. sugar, coffee, pineapple – cfr. (Topik, Marichal, and Frank 2006)), until most of the 20th century, the production and consumption of food was organised at a local and regional scale (Friedland 2004). But California, which became a model for Chile's fruit production started to build its fruit export industry already at the end of the 19th century, substituting the countries of the European Mediterranean (Robles 2010). After the second world war, food commodity chains have started to expand more generally, to become more complex and to increase the physical distance between producers and consumers (Friedland 2004). This occurred in the context of globalisation analysed by the literatures on world-system theory and on commodity geographies, as discussed in Section 3 in general terms. But this is also a starting point for the specific theme of global food and fruit geographies. Fruit, it should be noted, is a high value commodity (differently from bulk commodities such as soybeans, cotton or grain)³⁶: indeed, as the following chapters will show, the export of fresh fruit requires and allows for a relatively large amount of attention to detail and care, expressed in the treatments on the plantation (cfr. Chapter 6.2), in terms of certifications and technologies used for transport (cfr. Chapter 6.4).

According to the FAO (2020), fresh fruit and vegetables globally are the second most important agricultural commodity in terms of export value after meat, and of their 138 Billion USD value in 2018 more than the half was attributed to fruit exports – even though only between 7 and 8 percent of the total global production of fruit and vegetables is traded internationally (but growth is fast, cfr. Figure 7). A 2004 report by the US Department of Agriculture has summarised global patterns of trade in fruits and vegetables as follows:

Rising incomes, falling transportation costs, improved technology, and evolving international agreements have led to substantial growth in the volume and variety of fruits and vegetables traded globally. Three regions— the European Union (EU), the North American Free Trade Agreement (NAFTA) area, and Asia (East, Southeast, and South)—are the major destinations, as well as the major sources of supply, for this trade. All three regions depend on Southern Hemisphere countries for imports of juices and off-season fresh fruits, and on equatorial regions for pineapple, the leading fresh fruit import. (...) While intraregional trade still dominates global trade patterns in fruits and vegetables, extraregional trade has become more important in the past decade. Most of it

36 www.ers.usda.gov/data-products/agricultural-trade-multipliers/glossary.aspx (Last access: January 2023)

involves global north-south trading, due mainly to the countercyclical seasons of the two hemispheres. Tariff structures in the EU and NAFTA tend to reinforce this pattern (Huang 2004, iii).

The USDA report advances a series of hypotheses on the causes for the increasing international trade in fruit and vegetables:

These major trading patterns exist for a variety of reasons, which can be loosely grouped as supply, demand, institutional, and other factors. Supply-side factors include such fundamental aspects as climate, location, technology, costs, factor endowments, and infrastructure, among others. The ability to maintain quality through technology has enabled the emergence of a global market, for example, by allowing tropical fruits to be introduced into markets previously unreachable. Demand-side factors, which include rising incomes and the creation of a middle class that demands quality produce in all seasons and is willing to pay, have had major consequences for trade. The cheaper prices and better quality resulting from lower tariffs and improved technology have also increased demand (Huang 2004, iv).

Beyond these causes, also dietary changes towards more fruit and vegetable consumption and differentials in labour costs are mentioned in the report³⁷. The report further argues that while a large number of diverse commodities are comprised in the group of fruits and vegetables, many factors determining the evolution of their trade appear to be shared – among which an overall increase in volume combined with a trend towards diversification. Even though published twenty years ago, Huang's analysis is in line with the observations I have made in Chile, as we will see.

Friedland (2004) argues that international is not the same as globalised: according to his analysis, focusing on tomatoes and lettuce, agrifood commodity chains, at least 20 years before he wrote, were not truly globalised – only distribution was concentrated in transnational companies, while both production and marketing remains fragmented and place-based (as opposed to the automobile industry for example), rather aggregating into regional commodity systems. It might be doubted that considering economic concentration alone is a good criterion to define something global or not – why should a small local actor not be part of a process of globalisation? But the core of the argument that in food commodity geographies, frequently a relatively fragmented local production and marketing

37 According to the report an important reason for global trade with fruit and vegetables is the diversity offered by diverse sources with different varieties and seasons – but can this argument so easily be accepted? While many varieties in many places are getting lost and global imports are often standardised, limited to a reduced number of species and varieties?

are opposed to relatively concentrated international distribution, seems to be true until today and also in Chile. Jarosz and Qazi (2000) in relation to “Washington’s world apple” argue:

We theorize that the Washington apple is globalized in a form quite distinct from the world car or the world steer. While Washington growers have joined forces to develop global marketing strategies aided by state subsidies and just-in-time delivery systems, fresh apple production and packaging remain locally situated, tied to a distinctive landscape wherein the global is embedded within the local (p.1-2).

Certainly the unevenness of globalisation (cfr. also Knowles (2014) and Latour (2014) on capitalism as a localised “makeshift affair”) is manifested here both in the fact of very specific geographic patterns as much as in the uneven degree of economic concentration across commodity geographies and chains.

The argument that until recently food geographies have been localised is partly in contrast with the Chilean history of fruit export. The point certainly is quantity – some crops, like sugar or cotton, as already mentioned, have been globalised for a long time. They were important elements in the history of European-centred colonisation and globalisation (Moore 2000; Hornborg 2006). But also the Inka empire, to stay with a South American example, knew at least interregional trade, e.g. of coca leaves that were sent from the Amazon to the Peruvian highlands. Chilean fruit export has made its first steps already in the 16th century (Lacoste et al. 2011; Silva and Marin 2016; Figure 4). Nowadays, the market has expanded to a wide range of fruits and vegetables, as everyone can easily observe in a European, US-American or Chinese supermarket. A global system of trade of agricultural products in general and of fresh fruit in particular has been truly established. The specific places of origin, the climatic conditions, the infrastructures and the distances from market still have their importance and personal relations do play an important role in these geographies. But competition between countries producing the same fruit at the same time of the year does exist and the logic, the process of trade are fairly standardised. Stories are very similar as far as regards the international trade relations – while local conditions differ widely. This justifies to focus in this story not exclusively on Chile but to integrate information from the literature on other cases and from interviews with people from other countries encountered at the Macfrut fair.

Summing up, global (and Chilean) trade in fruit is not new but has expanded fast over the last decades, favoured by technological innovation as well as institutional support. This trade depends very much on specific geographical and climatic conditions; taking advantage of these different conditions around the world is a crucial rationale for this commodity geography.

Counterseasonality

A basic condition for Chile's possibility to export fresh fruit, as interviewees have agreed, is Chile's position in the Southern Hemisphere: the consequent counterseasonality of fruit makes transport over long distances to markets in the Northern Hemisphere, with its associated costs and higher prices, attractive, even though cultivated fruit species are the same as in the northern hemisphere (e.g. Interview to Cristian Moretti). An example are apples which, produced locally, have passed through months of storage in European spring and summer – but can arrive in a few weeks shipped from Chile. Or cherries which are sought for in China for the New Year's feast (Interview to Octavio Sotomayor). Chile is the biggest fresh fruit exporter in the Southern hemisphere but New Zealand³⁸ and South Africa are important competitors. Also Chile's geographical isolation (the fruit producing regions are enclosed by the Pacific Ocean, the Atacama Desert, the Andes and the Antarctic region) has been an advantage as diseases and pests which are problems in other regions do not occur there (Interview to Octavio Sotomayor). As a consequence entry controls for biological material are strict.

Chile as a Country of Commodity Regions

Before getting further into Chile's fruit production and export, it is relevant to note that Chile is strongly dependent on commodity exports in many regards. So much so that it has been described as a country of commodity regions (Daher 2003; Bustos-Gallardo and Prieto 2019) and as a “planetary mine” (Arboleda 2020a). Exports account for about one third of Chile's GDP, according to the CIA world factbook³⁹. The most important export product is copper of which Chile is the biggest global producer⁴⁰, making for more than half of Chile's total export value (Banco Central Chile 2022). But also other mineral products like lithium play an important role (Valz Gris 2021). In this context, in 2021, fresh fruit, with an exported value close to 6 billion dollars FOB (Free on board), made for 6,2% of Chile's exported value (calculated on data of the Chilean central bank: Banco Central Chile 2022), even though ODEPA had calculated a contribution of all

38 New Zealand is able to achieve higher prices on world markets, probably thanks to faster conversions to new varieties and has been expanding its apple orchards over recent years (iQonsulting 2021) and it has been more successful in guaranteeing the quality of their kiwis (Interview to Cristian Moretti)

39 www.cia.gov/the-world-factbook/countries/chile/#economy (Last access: July 2022)

40 www.statista.com/statistics/264626/copper-production-by-country/ (Last access: July 2022)

agriculture and forestry products for 2018 of 23,7% of exported value (ODEPA 2019), apparently including related industrial products in the calculation.

According to Sagredo Baeza (2014), this relevance of commodity exports is not new. The very formation of the Chilean nation-state is profoundly entangled with the production and export of commodities (and one could look further back into Chile's colonial history) (ibid.). The expansion both to the north and to the south of the Chilean borders from its historical core area around Santiago (between La Serena and Concepción) has been motivated by the occupation of areas that could produce goods relevant for the expanding world market in the context of the Industrial Revolution in the 19th century. To the north, the production of nitrate was at the basis of the Pacific War against Bolivia and Peru that expanded the borders of Chile northwards making it the exclusive producer of Salnitrium (Miller and Greenhill 2006). On the other hand, borders were extended southwards, violently expropriating the Mapuche (which had succeeded in resisting the Spanish Empire) from their lands in order to produce agricultural crops; wheat in the first place (Sagredo Baeza 2014). This wheat was related both to the mining in the North – it helped to feed the workers there – and the Industrial development of England, which became Chile's main market for wheat (ibid.). This wheat, thus, is part of what Hornborg (2006) analysed as England's Time Space Appropriation fundamental for the development of capitalism⁴¹. These process can be interpreted in the terms of Jason W. Moore's (2000) commodity frontier (cfr. Paragraph 3.3.4).

Generally, it appears that Chile has fared relatively well compared to other export-oriented countries in Latin America, at least according to indicators like the HDI (disputable certainly in a degrowth perspective, as the GDP is a central component of HDI): Chile is situated at rank 43, with a value of 0.851 (Very High Human Development) – a higher position than any other Latin American country. The same index though, adjusted by planetary pressures (CO2 emissions + material footprints), is significantly lower (0.774)⁴², like in all high income countries. The life expectancy is high (80.2 years), but so is inequality (Gini coefficient of 44.4), which is most likely related to the tradition of neo-liberal social and economic policies: “There are people who live in Europe living in Chile, there are people who live in South America, and people who live more or less in Africa” (Interview to Martina Soto).

41 In these territories, one piece of my Chilean fieldwork took place, with a Mapuche community that now exports cherries to Chile. Is this their emancipation? Or their cooptation by global capitalism? (cfr. Paragraph 6.5.4)

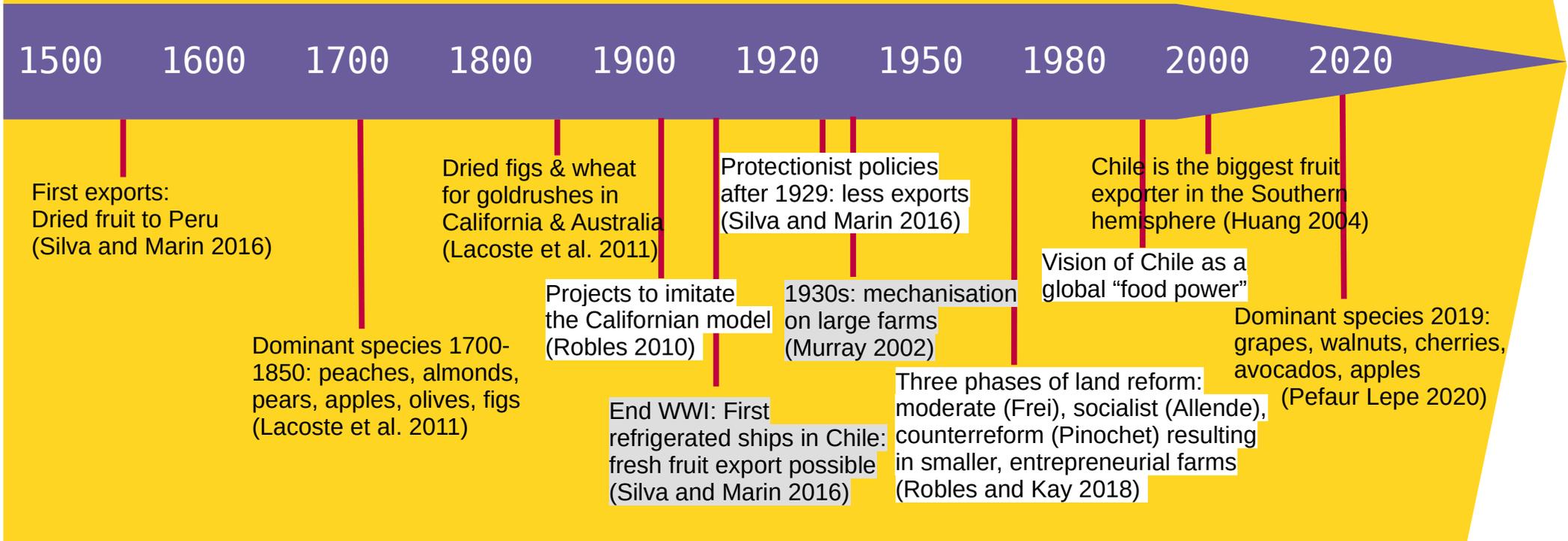
42 Data from: <http://hdr.undp.org/en/content/human-development-index-hdi> (Last access: March 2021)

A Short History of Chile's Fruit Export Industry

Back to fruit. In Chile, the production of fruit has a long history and it has been established with the scope of export from the beginning (for an overview see Figure 5). In their short history of fruit cultivation and trade in Chile, Lacoste et al. (2011) highlight that the cultivation of old world species of fruit has begun as soon as the Spanish colonised these territories, in the 16th century. Some in these context even speak of “ecological imperialism”, as traditional techniques of agriculture and land use based on endemic species were substituted by imported species and imported growing techniques (ibid.). Silva and Marin (2016) in their account of the history of Chile's food industry, mention early antecedents of food export back in the 16th century when grain and dried fruits were sold to Peru, the centre of the Spanish colonial empire in South America. The six dominant species of fruit between 1700 and 1850 were peaches, almonds, pears, apples, olives and figs (Lacoste et al. 2011). Already at that time, the optimal climatic conditions for the cultivation of these fruits combined with the small domestic market, favoured their export. In the first place, this regarded dried peaches for Peru. In the middle of the 19th century, dried figs, together with exports of wheat, helped to feed people in the gold rushes in California and Australia (Lacoste et al. 2011; Silva and Marin 2016). Lacoste et al. (2011) argue that while technology has changed and nowadays the focus is on the production of *fresh* fruit for export, this secular history has posed the basis for the current global importance of Chile as a fruit producer. Furthermore, they affirm that this history of production not only for export but also internal consumption of fruit has helped to build economic diversification, as these productions require relatively small surfaces and intensive techniques of cultivation and thus allow small producers to participate. Silva and Marin (2016) point at first steps towards an industrialisation of agriculture between the end of the 19th and the beginning of the 20th century – for the time being still focused on dried and canned fruit for export; the time of fresh fruit had not yet come, waiting for the technologies allowing their export. This possibility emerged at the end of WWI, when ships with the capacity to transport fruit keeping it refrigerated, arrived in Chile.

At the beginning of the 20th century, Robles (2010) writes, the idea to imitate California's success as a fruit producing and exporting region became popular in Chile. These hopes though encountered a series of obstacles. Internally, the limited economic and scientific development with little agronomic knowledge. Externally, the long distances between Chile and its markets in combination with limited transport capacities stand out.

Timeline of Chilean fruit production and export



Key

- Policies
- Technological Innovations
- Other Events

Anyhow, first exports of fresh fruit started to be sent out and the efforts to increase this sector were important: associations were founded, conferences held, state support was provided to collect information about markets in Europe and North America and on growing techniques in California, passing them on to growers in Chile (Robles 2010).

Silva and Marin (2016) calculate that in 1916 the area dedicated to the production of fruit reached 22,3 thousand hectares. At a political level, the authors emphasise how the crisis of potassium nitrate exports – that started to be substituted by synthetic alternatives during WWI and definitely collapsed in the global crisis of 1929 – had an important impact. While Chilean governments before pointed very much on exports, afterwards they turned to a protectionist strategy, trying to substitute imports by local production. Only in the 1980s (processed) fruits and vegetables – and agroindustrial products in general – returned to play a relevant role together with a new export oriented policy (Silva and Marin 2016). Data collected by Robles (2010) shows an important growth in fruit production over the first three successful decades of the 20th century. But while also exports grew, its relative importance increased less than in competing regions (California, Spain) and cereals remained the most important crop. But at the end of the 20th century (1999-2001), Chile had become the most important exporter of fresh fruit in the Southern Hemisphere, accounting for close to 35% of the total value of fruit exported from this world region, in competition with Argentina, South Africa and New Zealand, and exporting in particular to the US and the EU (Huang 2004, 8).

Thus, on one hand, the international trade of fruit has been existing for centuries, including in Chile. On the other hand, the last decades have brought a fast growth of trade, both in general⁴³ and specifically for fruit and vegetables. This growth of trade has been reliant on and related to both population and economic growth and technological development. In particular, the global trade of *fresh* fruit depends on efficient technology and organisation.

The land reforms and the evolution of agrarian capitalism in Chile

There is a complex relationship in Chile between the evolution of agrarian capitalism and the production of fresh fruit for export (Murray 2002; Robles and Kay 2018). The question of who owns the land has been a focal issue of Chilean politics before, during and after the land reforms promoted by the left-wing governments of Frei and Allende. Murray (2002) relates his analysis of the

43 <https://ourworldindata.org/trade-and-globalization> (Last access: September 2021)

evolution of the role of the Chilean peasantry in the second half of the 20th century centrally to the question of land ownership. He frames the process under the term “depeasantization”, a process of decline in terms of the relative economic (and consequentially political) importance of peasants. In Chile this process has been particularly intense in relation to the land reforms occurred first under the socialist government and then under the neoliberal reform agenda under and after the military dictatorship. Murray discerns a number of phases in the history of Chilean peasantry. From colonial times onwards a system of unequal land distribution with a coexistence of large (latifundios) and small farms (minifundios) had evolved up to the 19th century. The latter were often at least part time dependent from work on the large farms. An increase in export orientation then favoured an increase of the role of latifundios, first with labour intensive techniques, then (from the 1930s) through mechanisation. As this led to a reduction of peasant labour demand and thus to worse economic conditions for peasants, political struggles ensued, leading to diverse land reforms between the 1950s and 70s. Robles and Kay (2018) make a similar argument: they identify three phases of agrarian reform in Chile. A first phase of moderate reform under centre-left governments (guided by presidents Alessandri and Frei) successfully focused on the improvement of productivity (focusing on the expropriation of unproductive farms) and tried, with limited success, to give access to land to larger parts of the population. In a second phase of radical reform under the government of Salvador Allende, expropriations occurred independently from considerations of productivity. As a consequence, land access became much more diffuse but productivity declined, in particular in collective enterprises that lacked machinery and suffered from a structure that disincentivised effective cooperation (Robles and Kay 2018). (The spectre of the shortcomings of this historical phase still haunts the debate on agrarian reform today in Chile and characterised many conversations during my fieldwork about the intentions of reform of the constitutional assembly – indeed rejected in the 2022 referendum – and Gabriel Boric’s recently elected left-wing government.) This process of reform favoured the discontent of the former landowner class which supported the military coup in 1973 (Murray 2002). After the military coup, under the dictatorship of Augusto Pinochet, an agrarian counterreform followed (Robles and Kay 2018). Importantly though, this counterreform was not a complete return to the precedent state of affairs: Restitutions to old landowners only regarded approximately 30% of the expropriated land. Around 40% instead were given in various forms to *campesinos* and other new private owners. This, argue Robles and Kay, was a paradoxical completion of the first phase of reform but in the context of neoliberal economic policies. There was no government support for smallholders, which led to a lack of resources and little possibilities to compete on the (export) market. After some

time, approximately 60% of smallholders had lost their recently gained land, selling it to new owners, often at very low prices (Robles and Kay 2018; Murray 2002). Murray (2002) argues that in this process, peasants passed from a dependency on *latifundios* to a dependency on global capitalism, as medium-scale farms operating for the export markets emerged. In his view, this process importantly contributed to the growth of Chilean agrarian exports between the 70s and 80s. The whole of this process, “a capitalist agrarian revolution” (Robles and Kay 2018), has been fundamental for the transition of the Chilean agrarian enterprises to capitalist structures – this transition strongly related to increase in exports which became the economic basis of this new agrarian structure, creating a “new agrarian bourgeoisie” (Robles and Kay 2018) (like in the case of Gabriel Edwards, cfr. Paragraph 6.2.1).

After the democratic transition in Chile, agricultural policies changed little and the focus, at the time of Murray’s (2002) fieldwork in 1994, focused on grape producers in the north and apple producers in the centre of Chile, continued to be on competition. As a consequence, Murray argued that, at the time, the failure of small farmers was seen as a natural part of Chile’s process of agricultural modernization and when help was offered it pointed towards a restructuring towards export-orientation (while today also, at least in some cases, support for sales on local markets is offered). Murray describes a process in which small farmers that specialised in grapes for export, became totally dependent, both for credit and for the sale of their produce on large export companies. Then, a combination of stagnating world market prices, high levels of indebtedness and land transformed into monoculture, led to a situation of crisis in which many farmers were forced to sell their land (at low prices) to the firms they depend on in order to repay their debt and the land concentration under remaining farmers increases. The process with apples in Maule has been somewhat more gradual. Fruit production had been a traditional agricultural activity in the area and not a new entrance (like in the Northern areas of grape production), with the export activity starting in the 1960s. All farmers Murray interviewed continued to grow also other crops beyond apples and of apples they grew at least two varieties. These factors, in combination with a much lower level of indebtedness made the perspectives of small apple farmers in Curicó seem much more positive than their grape farming colleagues further north, Murray argues. “This is despite the fact that the global market for apples has presented deeper problems than the market for grapes” (Murray 2002, 215). But also apple farmers are dependent on the evolution of the world markets. Murray explains the differentiation between these two groups of peasants as follows:

In terms of natural antecedents, the Curicó group is favoured by climatic factors which make irrigation relatively unproblematic and cheap, and

encourage agricultural diversity. Higher land quality in the Central Valley also reduces the preparation costs of land significantly. (Murray 2002, 215).

Finally, Murray hypothesises, the process of “de-peasantization” and land concentration has continued, with a general loss of power of peasants and an increasing role of global fruit business, resembling the earlier unequal distribution of land in Chile. It is in this relation between agribusinesses and small farmers that for Murray global relations of unequal power and dependency are locally played out. In conclusion, Murray writes that, as long as neoliberal policies prevail, a further decline of peasantry in Chile is very likely if not unavoidable.

These issues discussed by Murray, the difficult position of smallholders in relation to large export companies, as well as the export orientation of Chilean agrarian policies, are issues that have emerged as central also today, nearly thirty years later, and will return frequently in the following pages.

6.1.2 The Role of the Chilean State

Ultimately, why did fruit production develop in Chile? For China and the USA. It's not because the fruit producers said: I will invest in better machines, no, it's because the Chilean State opened a door and told them: 'you can be the granary of an economy like China'. So, what happens? That export is proportional to markets like the US and the 'social development' goes much slower. (...) But this is not necessarily due to the 'bad' fruit sector but because the state does not provide the instruments for this improvement.

Interview to Person working in Ministry of Agriculture.

The evolution of Chile's fruit and apple industry has been favoured by state policies intervening in agriculture in general and favouring export in particular in the vision of making Chile a global “food power”. This transformation, according to Bustos-Gallardo and Prieto (2019) part of a wider process of transforming Chile into a country of commodity-regions, has not come about without a price. The general Chilean neo-liberal project, Bustos-Gallardo and Prieto (2019) argue, required the commoditization of the regions. A process with the final scope of the private appropriation and availability for trade of the territories and their resources. Also later introduced laws, e.g. on the use of water and environmental protection, due to their sectoral nature have not been able to change this tendency substantially.

Also according to Mario Marin Valdebenito from producer organisation Fedefruta, the state had a fundamental role in establishing the Chilean fruit export industry. Chile has been, Murray (2002) argues, one of the purest cases for neoliberal experiments under the guidance of Milton Friedman. Chile is a “highly mercantiled society” (Interview to Person working in Ministry of Agriculture). Similarly, Arboleda (2020a) defines Chile, under Pinochet’s dictatorship, as a testground for neoliberal policies proposed by the “Chicago boys”. In their presumably value-neutral expert perspective (just a variant of ordoliberalism, Arboleda argues), the state needs to provide the invisible hand, favouring and protecting private property. The market-based handling of water rights, implemented in this political context, and still in force, is a good example (cfr. Paragraph 6.3.2). As Jessop (2003) argued in general terms, also the Chilean state is a state that in many ways has been actively involved in the contested making of the forms and conditions of globalisation and has been in many ways promoting them. Jessop wrote: “states can be variously victims and governors of globalisation, it is not obvious which role they take.” (Jessop 2003, 15). The Chilean state, in relation to fruit, seems to be more a governor than a victim of globalisation.

A neoliberal state thus is not an absent state but rather a state that creates the conditions for companies to operate as undisturbed as possible. The state indeed has played a crucial role in establishing Chile’s role as a global fruit producer. This has already come out in the short historical overview in the precedent paragraph: it has promoted the technological exchange and innovation that has contributed to lay the knowledge basis and it has created the organisational conditions to establish Chile’s fruit industry through the land reform and counterreform (Robles and Kay 2018). The goal being to make Chile a global “food power” (Panez, Roose, and Faúndez 2020, 19):

By establishing itself as the meta-purpose of the entire agricultural sector, for 30 years it allowed the imposition of a logic of competition in which only the productive is acceptable. This contributes to the determination to become a powerful (global) force, while those areas that are non-competitive in nature, such as small-scale agriculture, tend to be subjected to increasing pressure to incorporate market logic into their productive dynamics.

At the same time, the fruit export model has developed faster than the state’s regulation capacities; regulation for instance of the power imbalances between small and large producers; in this sense a stronger state with a stronger capacity to regulate would be needed (Interview to Person working in Ministry of Agriculture). This notwithstanding, the same person argues, in many ways Chile has benefited from the promotion of exports (Interview to Person working in Ministry of Agriculture).

The Chilean state takes an active role in supporting export-oriented agriculture also through the construction, often in public-private partnerships, of infrastructures for irrigation and transport (Panez, Roose, and Faúndez 2020; Arboleda 2020b). The role of the Chilean state has been crucial also in helping to establish trade relations. An important precondition for them are usually free trade agreements (Panez, Roose, and Faúndez 2020, Interview to Person working in Ministry of Agriculture). “Free trade agreements have been vital, they opened us the doors of the world. If you look at it, as free trade agreements have advanced, also the fruit has grown” (Interview to Sergio Maureira). These agreements are the preconditions to establish agreements on phytosanitary protocols and certifications, which are usually necessary to export a plant product (ibid.) and they usually imply lower tariffs and thus lower trade costs. Chile already in 2009 had 28 free trade agreements covering 63 countries, representing 80% of global GDP and most of the world’s population which acted as an important “catalyst” of Chile’s growth of fruit export (Barrera Miranda and Sotomayor Echenique 2010). In particular the FTA with China has been much lobbied for by agricultural organisations and has indeed achieved a strong rise of agricultural exports to China, which, in 2018, has become Chile’s largest export market of fresh fruit.

According to interviewee Octavio Sotomayor (who has worked for the state agencies ODEPA and INDAP), the Chilean state has proved to have strong, “musculus” institutions. This strength is played out through several state institutions (cfr. Figure 6), which will appear throughout this discussion of Chilean fruit production and export. Here I shortly summarise some informations about their role.

The SAG⁴⁴ (Servicio Agrícola y Ganadero) is an institution that serves in particular for phytosanitary controls, with the aim of guaranteeing that no new plagues enter the country (e.g. controlling the entrance of plant material at airports) and that fruit that is exported does not contain plagues which could lead to export blocks (cfr. Paragraph 6.2.1). Therefore the SAG is operationally involved in the organisation of the commodity chain (cfr. Chapter 6.2) and with the use of pesticides (cfr. Paragraph 6.3.3).

The INDAP⁴⁵ (Instituto de Desarrollo Agropecuario) instead has the goal to support small-scale *campesino* agriculture, with credit, subsidies and technical support, for instance for irrigation projects (Interview to Martin Barros). As small-scale producers cannot so easily enter the fruit export commodity chain, the INDAP appears in relation to projects to favour the participation of small producers in the fruit industry (e.g. paragraph 6.5.4). Another of INDAP’s interventions is a

44 www.sag.gob.cl (Last access: July 2022)

45 www.indap.gob.cl (Last access: July 2022)

programme of support to “transform small farmers into stable suppliers of the agroindustry and have, as a consequence, a stable income”⁴⁶ (Interview to Martin Barros). In the context of fruit this regards in particular berries which often are grown by small producers (Ibid.). Furthermore there is some support for cooperatives, in the form of credit and technical advice and nowadays also more importance is given to support the creation of local or national markets for food products (Ibid.; see the cases of Campochange and Mi Fruta that have benefitted from state support in paragraphs 6.5.2 and 6.5.3).

The ODEPA⁴⁷ (Oficina de Estudios y Políticas Agrarias) is an institution for the study of the agriculture and the development of new policies and strategies. ODEPA’s studies are an important source of data and its work informs many technical meetings around the country, which presumably influence the strategic evolution of Chile’s agriculture in general and the fruit industry in particular. I encountered ODEPA for instance in relation to the sustainability strategy for Chile’s agriculture (cfr. Paragraph 6.3.1).

While, SAG, INDAP and ODEPA are part of the Ministry of Agriculture, ProChile⁴⁸ is part of the Ministry of External Relations. Its scope is to promote Chilean products on export markets and, in relation to the fruit industry, it helps to establish trade relations in collaboration with Chile’s embassies (cfr. Interview to Yolanda Pizarro and Catalina Cuevas).

Other institutions are INIA⁴⁹ (Instituto de Investigaciones Agropecuarias), also dependent on the Ministry of Agriculture, a research institute that investigates new technological solutions and products for Chile’s agriculture (while ODEPA investigates socio-economic trends and provides data) and CORFO⁵⁰ (Corporación de Fomento de la Producción), a state institution dependent on several ministries with the scope to develop Chile’s economy and promote its innovation. In relation to agriculture it contributes, for instance, to finance specific projects like the Valparaiso region’s sustainability strategy (cfr. Paragraph 6.3.1).

State institutions often work together with industry organisations, for instance with ASOEX⁵¹, the export companies’ association, for the promotion of Chilean fruit in other countries (Interview to Sergio Maureira) and with Fedefruta⁵², the federation of Chilean fruit producers to which most of the medium and large

46 Also other commercial connection for small producers are supported, like the supply of school food and farmers’ markets.

47 www.odepa.gob.cl (Last access: July 2022)

48 www.prochile.gob.cl (Last access: July 2022)

49 www.inia.cl (Last access: July 2022)

50 www.corfo.cl (Last access: July 2022)

51 www.asoex.cl (Last access: January 2023)

52 www.fedefruta.cl (Last access: January 2023)

producers are associated; “professional and very aggressive organisations” (Interview to Octavio Sotomayor).

The point here is not an evaluation of how powerful these institutions are. Opinions on this varied a lot between interviewees, from who (e.g. Octavio Sotomayor) argued that the Chilean state is fairly strong, to who asked for a stronger role of the state: for instance Mario Marin Valdebenito (Fedefruta) who argued for more state involvement to promote the growth of Chile’s fruit industry in general and others, like Roberto Bressi who rather argued for a greater engagement in favour of smallholders and the establishment of cooperatives. Certainly, agrarian subsidies in Chile are quite low, covering around 5,6% of total production costs, compared to 24% in the United States and 26% in the European Union, but a bit higher than in directly competing countries like New Zealand and South Africa (ODEPA 2019). According to the same study most subsidies are directed towards smallholders, irrigation projects and their control, as well as towards research and innovation.

At the Macfrut trade fair, many other states have shown their active role, in particular in the form of export promotion agencies and embassies (e.g. of Panama, Colombia, Guatemala, Bolivia, Indonesia) in promoting their produce to buyers. Also on the European side the involvement of the state in the import of agrifood commodities is strong, starting with quality requirements (cfr. Paragraph 6.4.2).

It is clear that the role of the state in creating and maintaining the conditions for Chile’s fruit export industry has been fundamental, as also Pefaur Lepe (2020) argues. In many respects the state, often in collaboration with industry actors, has provided and provides the normative and organisational basis for the industry and provides concrete economic and organisational support. The state has helped to establish the industry, the plantations, the export relations; the state diffuses knowledge about how to grow, irrigate, treat, pack, export fruit. A global fruit commodity geography like the Chilean one, is hardly imaginable without the role of the state, it is not simply a spontaneous economic phenomenon. Knowing, as a consequence, about the important role of politics in this economic geography is a crucial element for the later discussion about possibilities to transform and differently imagine this geography (cfr. Section 7).

6.1.3 The Global Fruit Commodity Chain: a Synthetic Model

How is the global fruit trade organised? Which are the main actors and steps in the commodity chain from plantation to supermarket? In this paragraph I propose a summary of the process of fruit production, trade and export, derived from my research. While there are some variations between the sub-cases, the main steps are the same. This synthetic model helps to situate the focuses of my fieldwork which do not homogeneously cover all aspects of the commodity geography. The main actors and connections in the Chilean fruit commodity geography (based on fieldwork and interviews) are summarised in Figure 6: Figure 6a gives a simplified scheme of the main steps of production and trade and connecting influences, 6b provides a more detailed and complex scheme of connections, differentiating between specific groups of actors.

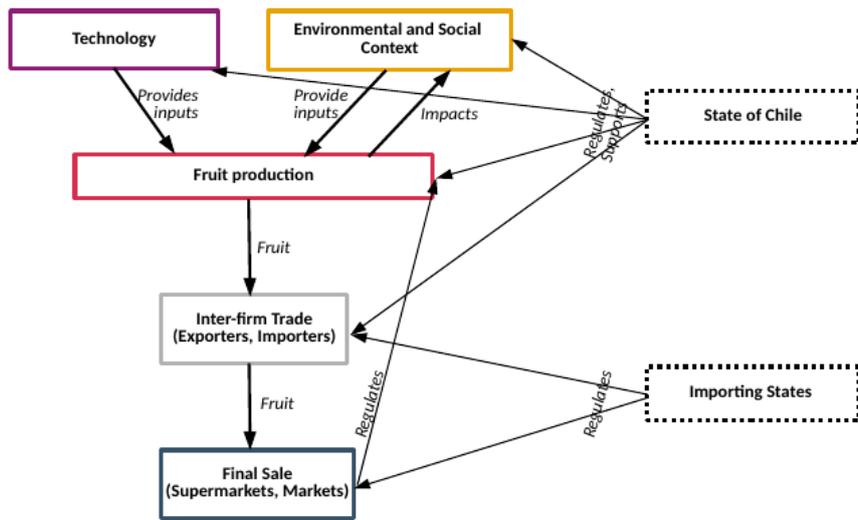


Figure 6a: Simplified scheme

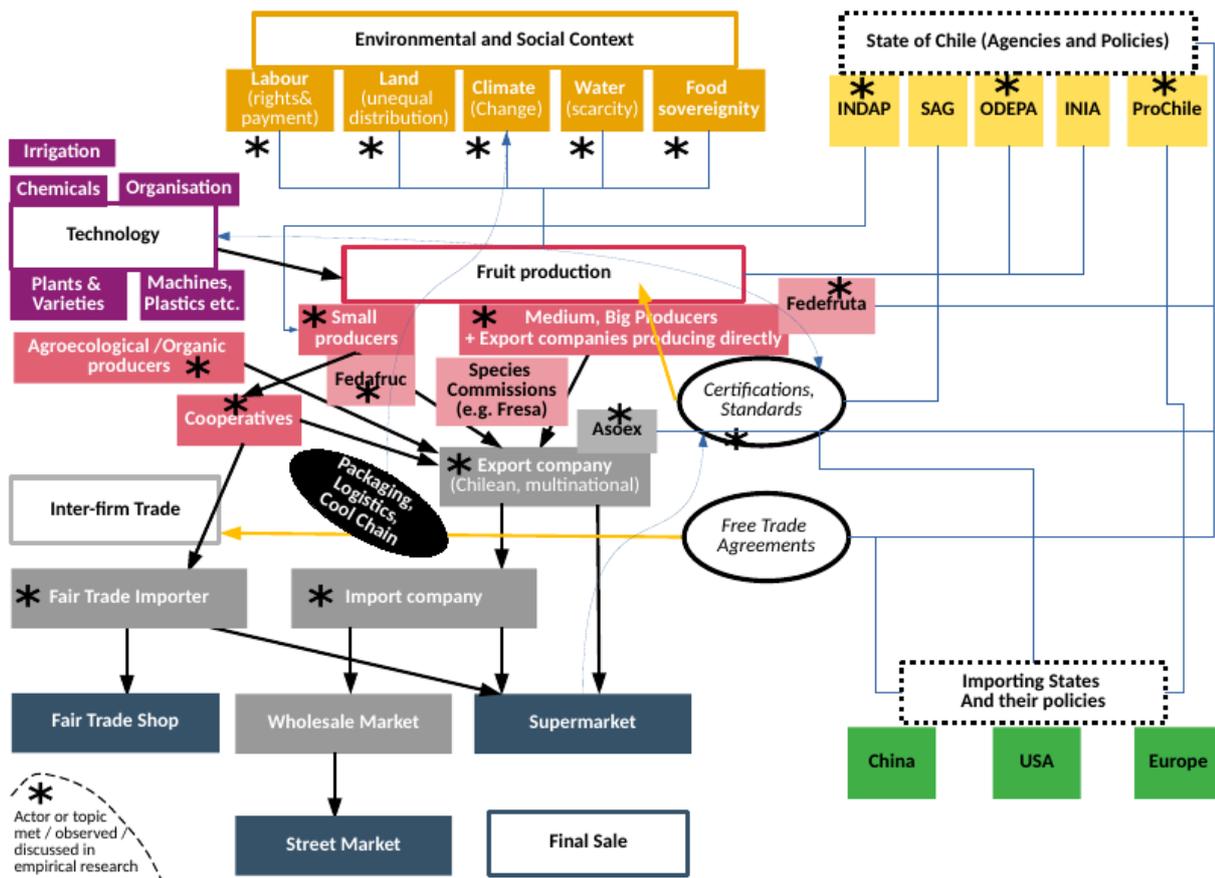


Figure 6b: Detailed scheme

Figure 6: Scheme of actors and relations in the Chilean Fruit Commodity Geography (by Author)

This figure gives a complex (and relatively complete) image of the far more than linear interconnections in the Chilean fruit industry and its global connections. Not only the linear commodity chain from plantation to supermarket is represented here, also the crucial role of the state and its institutions and of the environmental and social context without which the commodity chain could not exist.

In this paragraph though I want to concentrate on the part of this geography which can be define as the linear commodity *chain*. And thus the part of this geography that produces, transports and trades fruit, from the field until market or supermarket. These steps are indicated in the scheme with 'Fruit Production' (Red), 'Inter-firm Trade' (Grey), 'Packaging and Logistics' (Black)⁵³ and 'Final Sale' (Blue). Following chapters will then look at the other connections and further implications of this chain, extending it into a more-than-linear geography. The choice to start with discussing this linear chain as a crucial part of the geography can be justified by three arguments. First, it helps to bring order into a complex web of connections. Secondly, it is the part of the story the interviewees working in the industry were most interested in, it is this part of the geography with which they work everyday. Finally, the other aspects of this geography would not be connected in the way they are without this chain. To give an example: the water crisis in Central and Northern Chile would exist and supermarkets in Europe would exist also without this commodity chain but they would not be connected to each other (at least not in this direct manner).

According to the information provided by my interviewees, this linear commodity chain can be described in the following steps:

1. Production on the farm
2. From producer to export company, from orchard to port: National logistics, selection and packaging
3. From export company to import company: International logistics between port and port
4. Arrival at import company, national logistics and retail sale in Europe (or elsewhere)
5. Payment and money flow back to export company and producer

At this level of generalisation, the process has been described accordingly both by interviewees involved in Chilean fruit production and by interviewees at the Macfrut trade fair for other countries. But of course, variations do exist – those that I encountered during fieldwork, I will illustrate in chapter 6.2, while describing

⁵³ This appears in the scheme in a simplified form as logistics is relevant several times throughout the chain and because it has not been a central point in the research.

some of these steps in greater detail. Here I only provide a synthetic and simplified overview.

1) Production on the Farm

Fruit is grown on orchards or plantations which are concentrated in central Chile and along the central valley (see Figure 12). During the whole process from establishing a plantation (they can have a lifetime of decades but in many cases, according to the fashions of the market, cfr. Paragraph 6.4.6, after ten or fifteen years, the species or the variety is changed), through cultivating trees with irrigation, fertilizers, pesticides, until harvest, it is necessary to exercise as much as possible control on nature through technologies (cfr. Paragraph 6.4.3), to avoid undesired variations and to respect the standards and quality requirements of buyers (cfr. Paragraph 6.4.2).

Fruit orchards or plantations can be described in terms of ownership as independent or as vertically integrated and owned by export companies, as well as in terms of size as small, medium-sized and large. The distinction between small producers which only in a few specific occasions manage to participate in export markets (see the Mapuche community of Tralcao and Mi Fruta in chapter 6.5) on one hand, and medium and large plantations on the other hand (see *Agricola San Isidro* and *Avocados from Leyda* in the following paragraphs) corresponds to important differences in terms of power relations between actors (cfr. Paragraph 6.4.4). According to interviewees, a plantation, depending on the cultivated fruit, needs to be of at least 15 or 30 hectares – this being a threshold to be attractive enough for export companies and thus being able to easily access export markets (cfr. Interview to Mario Marin Valdebenito). With the exception of berries and strawberries in particular, markets in which small producers are relevant also for export, smaller producers generally have a hard time to access export markets. Above this threshold, sizes of plantations vary widely, up to several thousands of hectares. But the organisation of the chain mostly remains the same, even if plantations are owned directly by export companies (in that case of course, there are less commercial transactions but the rest of the organisation stays the same).

Fruit orchards are labour intensive but they need a labour input that varies strongly from season to season. They strongly depend on temporary workers, who now make for 85% of all workers employed in the sector (Pefaur Lepe 2020), many of them are migrants from Haiti and Bolivia. As a consequence, working conditions are often precarious (cfr. Paragraph 6.3.3).

2) From Producer to Export Company, from Orchard to Port: National Logistics, Selection and Packaging

After harvest, the fruit is moved from the orchard to a packing plant, which in many cases is owned by the export company, in other cases by the producers or it is an independent company⁵⁴. There, a process of selection takes place (to further control natural variability and imperfections and adapt fruit to quality requirements) and the fruit is packed into boxes as required by the client. Afterwards, fruit is moved to the port by trucks (or directly to destination if it is in Chile or a neighbouring country).

The geographical distribution of processing plants only partly follows that of plantations: while, in 2011, a number of plants was distributed in the entire territory, the highest number was concentrated in the Metropolitan region, underlining the importance of the capital Santiago (Pefaur Lepe 2020).

From the arrival at the packing plants, the fruit passes in the hands of the export company: This step is of crucial importance in particular for small to medium-sized producers which alone would be unable to sell their fruit on the world market. A passage from production, in some way or another, in contact (or conflict) with nature to a world of trade and logistics in which the human-made is predominant, even though the organisation still needs to adapt to the characteristics of a perishable good like fresh fruit. Export companies have a particular powerful role.

3) From Export Company to Import Company: International logistics between Port and Port

The international transaction can occur in different ways. The “standard” version is an export company that sells to an import company. But there can also be a producer that sells directly and in some cases supermarket chains (e.g. Walmart in the US) buy directly (Interview to Catalina Cuevas and Yolanda Pizarro of ProChile).

The relations between export and import companies often are stable for long periods of time and are based on high degrees of personal trust, as decisions about sending fruit to certain destinations are often taken through informal gentleman agreements (cfr. Fieldnotes, 04/02/22). The transport to the port and the

⁵⁴ The latter appears to be more common in the case of fruit like the table grape (see paragraph on Mi Fruta, below) which allow lower degrees of automatization and thus makes smaller plants, located closer to production sensible. Other fruit like prunes, pears, apples, peaches and so on can be packed and selected in semi-automated ways in large plants owned by export companies.

international maritime logistics are generally organised by the export company, sometimes supported by a freight forwarder. The passage between exporter and importer generally occurs at the port of arrival: in this way it is the exporter taking over responsibility for the perishable good arriving safely (Interviews to Italian freight forwarder at Macfrut).

At the technical level, logistics are determined by the characteristics of the product: fresh fruit and vegetables are perishable goods. Thus, transport must be as fast as possible and refrigerated. Transport routes are fixed and usually have regular departures of ships once a week. In some occasions, transports are direct, from port of departure to port of arrival, in others, containers are changed from ship to ship in a Hub&Spoke system. The representative of a naval company reported that relations with clients are generally stable, regulated by contracts renewed every 6 to 12 months in which the naval company guarantees ship space in change of guaranteed volumes of trade.

4) Arrival at Import Company, National Logistics and Retail Sale in Europe (or Elsewhere)

At the harbour of destination (for Europe the vast majority arrives at the port of Rotterdam and is distributed from there: Interview to Cristobal Matte – reason why it is difficult to have statistics for single importing countries like Italy: Interview to Person working at Italian Pro Trade State Agency) the import company takes over and moves the fruit to its warehouses, from where it may move directly on to supermarkets or wholesale markets or is further stored and/or packed differently. From here on, nothing much changes in respect to national fruit: the fruit is treated the same way (Interview to Cristian Moretti) and is sold to the last firm buyer: supermarkets or smaller traders at wholesale markets.

At supermarkets or wholesale markets, the fruit is integrated into a homogeneous offer of fruit all year round – only the indication of the country of origin testifies of the fruit's trip around the world, distinguishing it weakly from local fruit which may equally be available out of season because stored for long months in fridges. Chilean (and other imported) fruit here plays the role of filling gaps in local availability or offering “exotic” species of fruit that cannot be grown locally.

Supermarkets are the last to receive the fruit but they play an important role in determining the organisation of the whole chain as their requests of standards and quality requirements strongly influence how production is organised (cfr. Paragraph 6.4.2) and it is here that finally value is transformed into money: their request for constant, year-round supply is the reason for the whole system to exist.

5) Payment and Money Flow Back to Export Company and Producer

While the fruit passes hands from producer to export company it is not yet definitely sold, the producer does not know the price at which they will finally sell (maybe months later) their product. In the most common system of payment, called consignment, producers receive the money after the fruit has been sold to the import company, in accordance to the market price in the importing country at the time of sale (Interview to Cristian Moretti). Then the export company detracts all the costs (for transport, customs, phytosanitary controls and the export company's commission) and the money finally flows back to the producer, who receives this sum generally months after the fruit left his plantations and at this point hopes to be able repay all the costs (Gwynne 2003, Interview to Octavio Sotomayor, Written communication with Leonardo Valenzuela, Interview to Sergio Maureira). In Chile now it is common that at least minimum prices are guaranteed in each contract to the producer (Interview to Juan Manuel Roa). Furthermore, producers in many cases receive a partial advance payment when they send the fruit (Interviews to Angel Sandoval and Sergio Maureira). Not always are producers able to pay back all their costs; it is possible that if the final sale goes bad that the producer has to pay back part of the advance received from the export company. Which can be an issue if the money has already been spent and the producer remains in debt with the export company (Interviews to Angel Sandoval and Sergio Maureira). In rare cases the fruit is directly sold to the export company before export takes place (Interview to Sergio Maureira).

6.1.4 The Importance of Fruit for Chile: An Overview in Data

Chile is a profoundly agricultural and rural country. (...) If I look at the agriculture in general, without doubt fruit production is the queen of this space: in terms of irrigation, of improvement of water use, of labour.

Interview to person working in the ministry of Agriculture

While this research is largely based on qualitative accounts and qualitative evaluations, relating these to relevant quantitative data is an important element of contextualisation and the goal of this paragraph. Globally, over the last twenty years a rapid growth in the export values of fruit has occurred, tripling values in

this period (see Figure 7). Chilean fruit exports have evolved following a very similar trend, only very slightly increasing its share in the global market. In relation to its main direct competitors in the Southern hemisphere though (Argentina, South Africa, New Zealand), Chile has gained positions and increased its market share over the last sixty years.

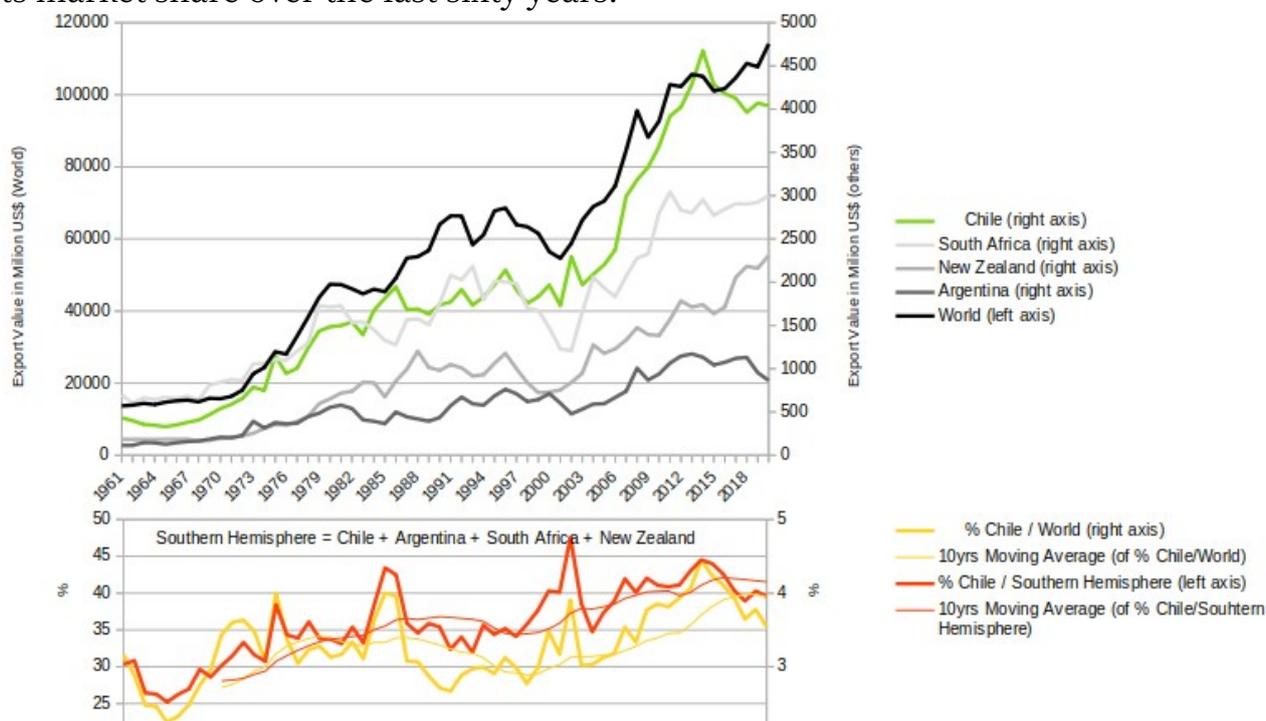


Figure 7: Global, Southern Hemisphere, Chilean Fruit Export Values of 1961-2020
Data source: FAOSTAT, accessed in December, 2022 (Graph by author)

The evolution of Chilean fruit exports has experienced continuous growth between 1999 and 2019 as Figure 8 shows. The most significant part of this growth has been provided by the export of cherries. As already mentioned, in 2021 the export of fresh fruit made for 6,2% of Chile's exported value (calculated on data of the Chilean central bank: (Banco Central Chile 2022)). The main markets for Chilean fruit are, in decreasing order, China, USA, and the EU (Pefaur Lepe 2020) – but these proportions vary a lot according to the single fruit species. Globally, in terms of value, Chile is the most important exporter of Grapes, Cherries, Blueberries and Prunes (Pefaur Lepe 2020).

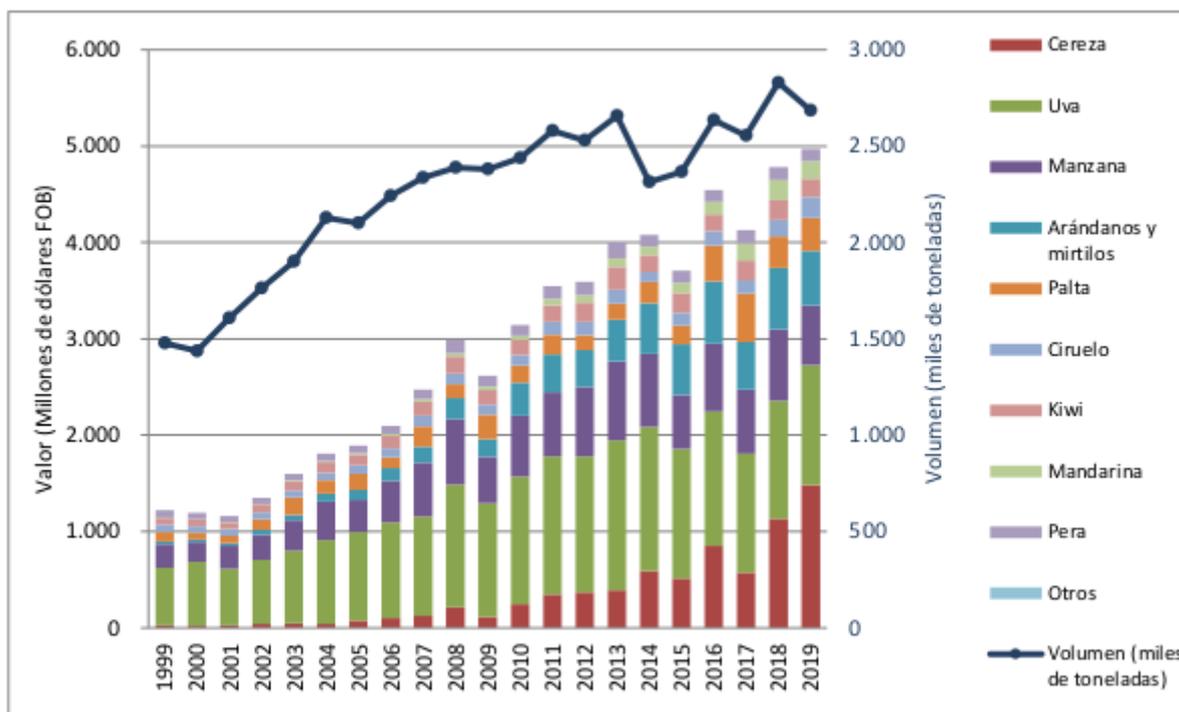


Figure 8: Evolution of Chilean fruit exports between 1999 and 2019, per volume and value, per fruit species. (Graph from Pefaur Lepe, 2020)

More than 60% of Chile’s fruit production is exported (ODEPA 2019). The great majority (~74% in 2019: Pefaur Lepe 2020) of fruit is exported directly as fresh fruit. The following maps (Figure 9, Figure 10, Figure 11) show the growth, both in terms of quantity and export destinations, of the three most important fruit species in 2020 (cherries, grapes and apples) for Chilean export from 1986 (oldest available data in the FAOSTAT detailed trade matrix), over 2003 up to 2020 (most recent available data)⁵⁵. These maps illustrate in the first place the overall quantitative growth of Chilean fruit export over these decades. Secondly they hint to the growing number of countries that serve as buyers for Chilean fruit. But they also show that the evolution has been different for different fruit species.

55 It should be noted when comparing this data over time that it is given in the value of dollars of the relative year (it is thus not corrected for inflation) (Written communication with FAOSTAT, december 2022).

Cherry Exports Chile

in 1000USD. Source: FAO

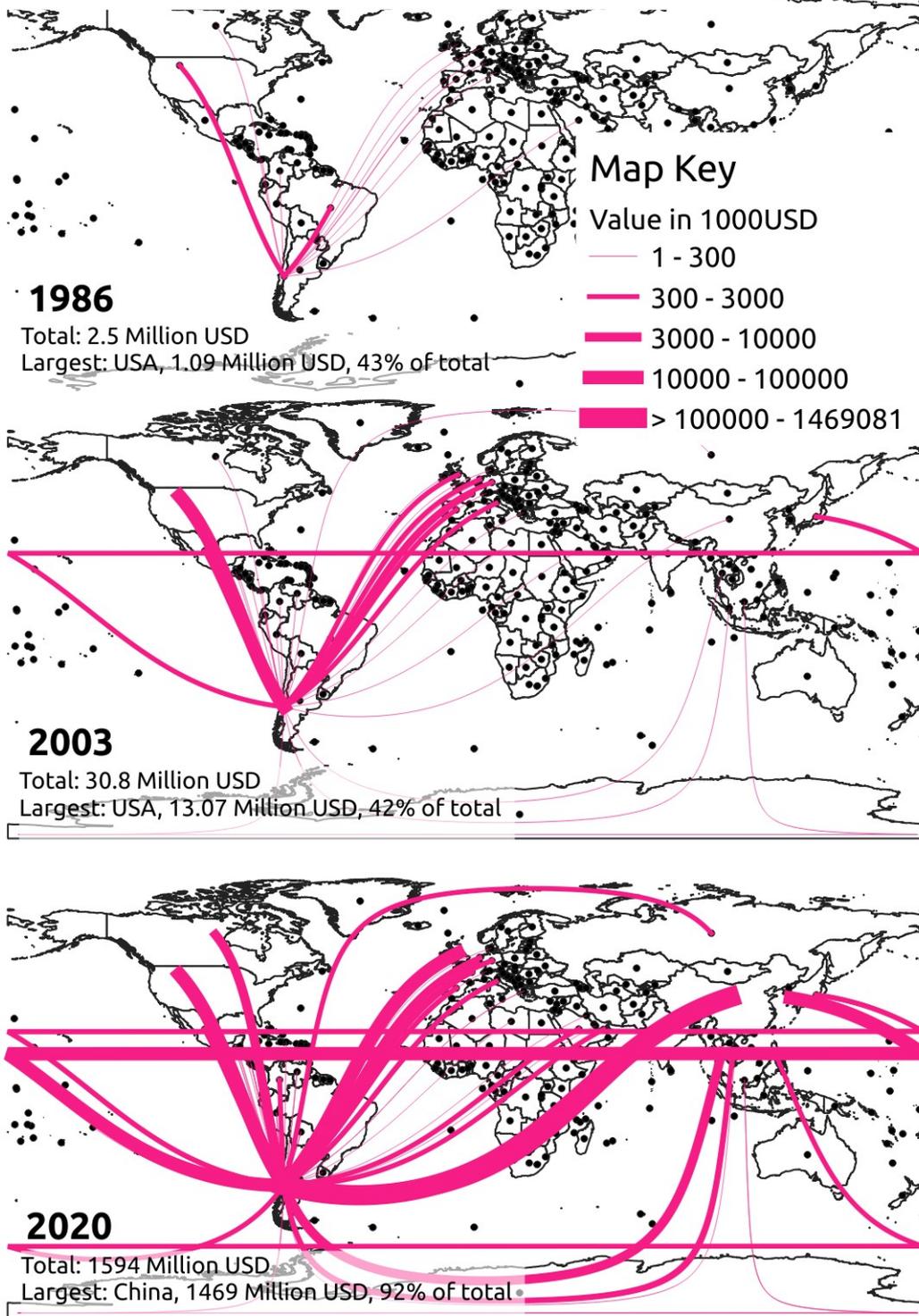


Figure 9: Maps of Chilean Cherry Exports 1986, 2003 and 2020 (Maps by author)

Cherries are nowadays the most important species in terms of value. As the maps and the associated data (Figure 9) clearly show the boom of cherries has been fairly recent and then dominated by one buyer: China.

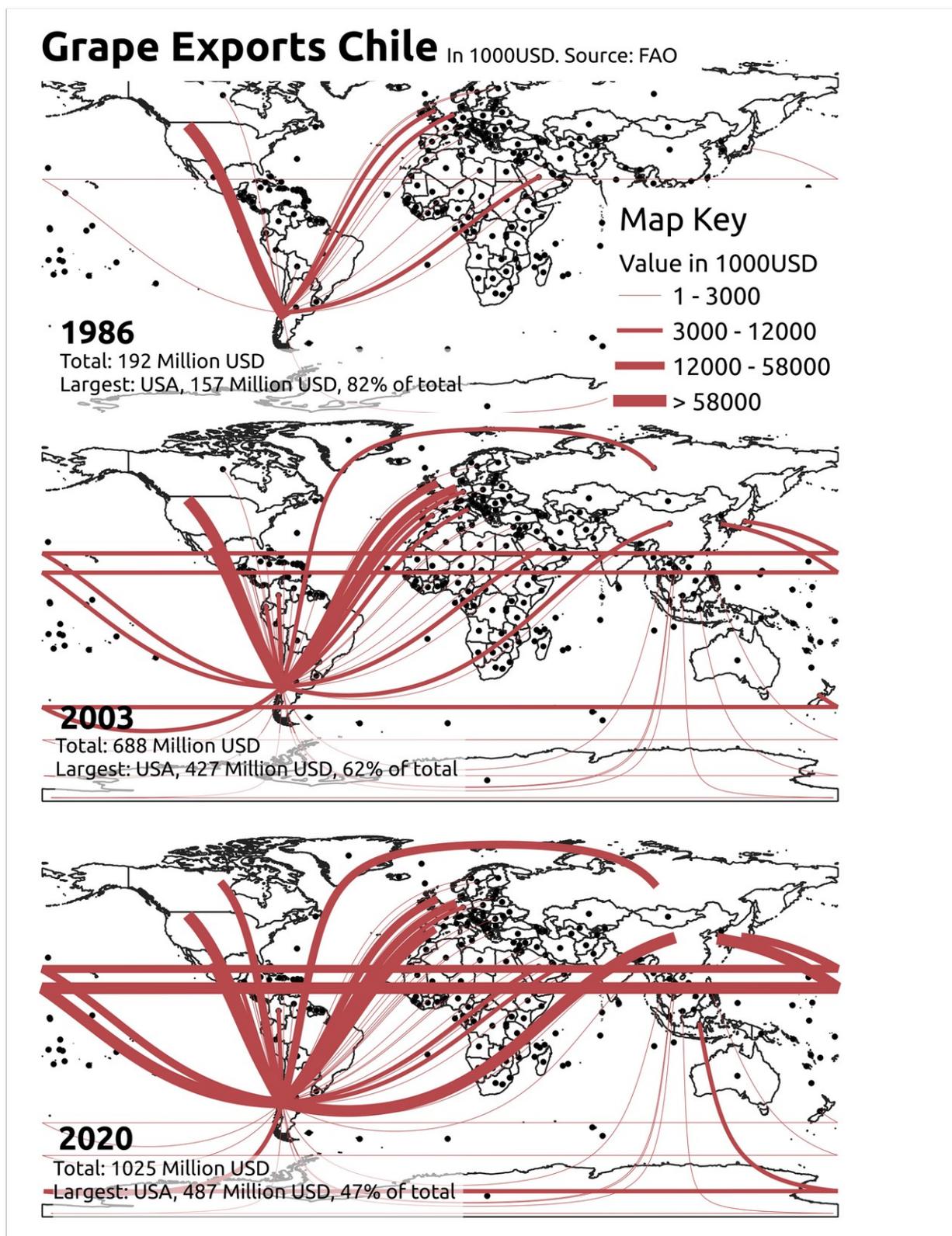


Figure 10: Maps of Chilean Grape Exports 1986, 2003 and 2020 (Maps by author)

The export of grapes instead has a longer history and the geography of its export destinations is more differentiated (Figure 10): importantly, it has become more differentiated over time, as opposed to the development in cherries, with the USA remaining the most important export destination but reducing its share of the total exported value.

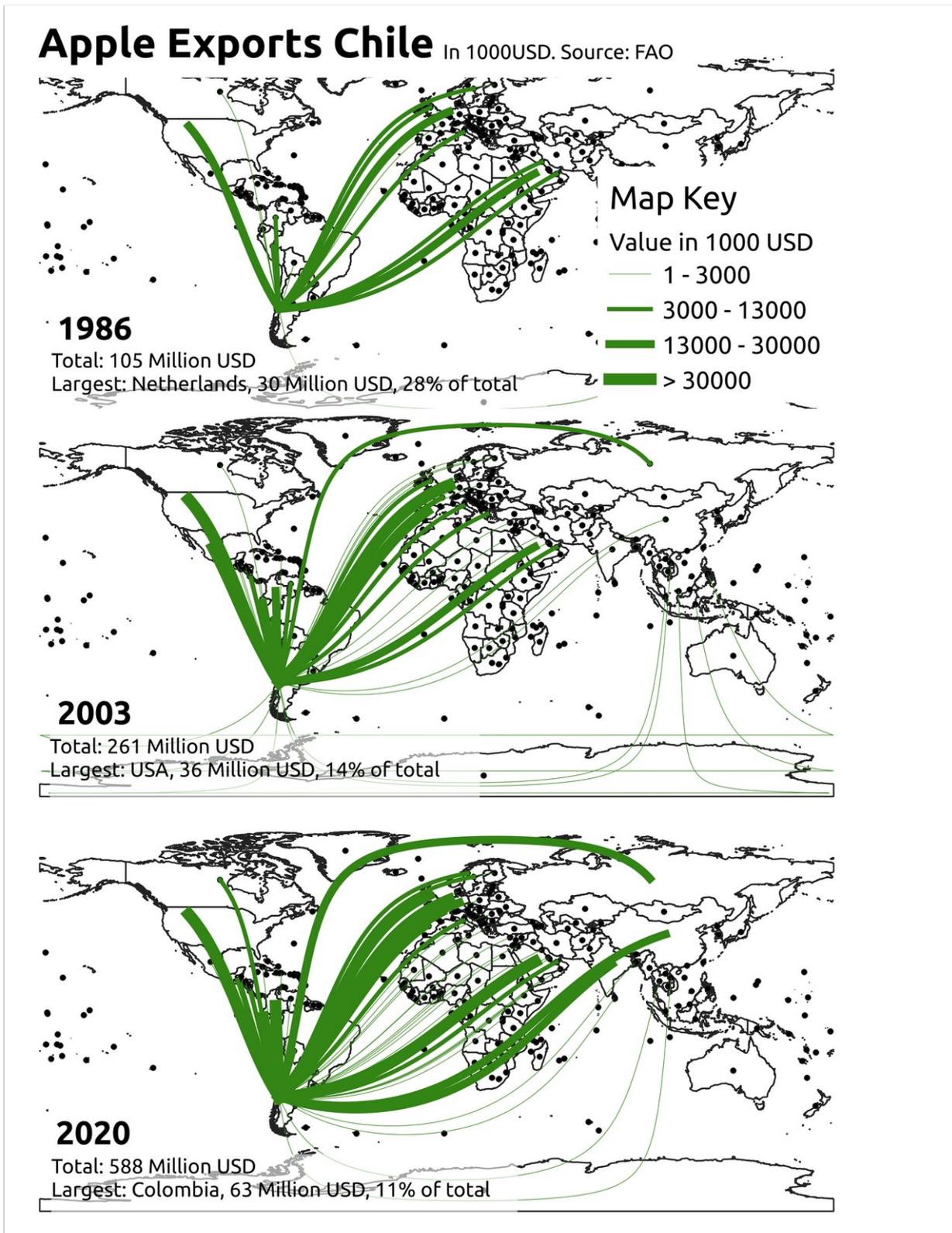


Figure 11: Maps of Chilean Apple Exports 1986, 2003 and 2020 (Maps by author)

Apples finally have experienced a much more moderate growth and have long been surpassed by cherries (Figure 11). On the other hand though, the geography of apple buyers is very well distributed on a global scale and the relative importance of the main buyer, which has changed several times, is much lower than in both cherries and grapes.

Coherently with the growth in exported volumes and value, between 1999 and 2019, the surface dedicated to fruit production has nearly doubled from approximately 180.000 hectares to approximately 340.000 hectares, with an average annual growth rate of 3,2% (Pefaur Lepe 2020). In 2020-2021 fruit was grown already on 374.809 hectares (INE - Instituto Nacional de Estadísticas 2021). Most of this growth in surface has been dedicated to plantations of cherries (+35%) (cfr. also Figure 8), nuts (+34%) and hazelnuts (+24%), while pears (-5%), peaches (-2%) and japanese prunes (-2%) have declined and kiwis, grapes and apples have changed little in their surfaces (Pefaur Lepe 2020). The most important species in terms of planted surfaces in 2019 were grapes (14%), nuts (12%), cherries (11%), avocados (9%), and red apples (8%) (ibid.).

These surfaces, in 2018, were distributed in little less than 17000 plantations or orchards (while in 1999 there were approximately 14000), with an increase in particular of small orchards, of less than 5 hectares, which increased from 38 to 52% of the total number – important to note though that this is the number of single exploitations and that several of them may belong to the same owner (Pefaur Lepe 2020). According to the last agricultural census, the agricultural units producing fruit (administratively united companies, even if including plantations in different regions) in 2020-2021 were 45.442 (INE - Instituto Nacional de Estadísticas 2021). In 2019 little less than 600.000 workers were employed in the fruit industry, 85% of them as temporary workers (Pefaur Lepe 2020).

The production across Chile, as Figure 15 shows, is characterised by a strong regional differentiation (Sofía Boza et al. 2020), following the varying climatic conditions along the country's north-south extension: most of the fruit production is concentrated in the centre between the regions of Valparaiso and Maule. This area concentrates 77% of the total national area of fruit plantations (Pefaur Lepe 2020). Data from between 2008 and 2018 analysed by Boza et al. (2020) shows that more than 80% of fruit production for export in Chile is concentrated in the centre and centre-south, in the regions (in order of importance) of O'Higgins, Maule, Metropolitana and Valparaiso. Regions further south, like Los Lagos, have a relatively marginal contribution but have experienced fast growth over the period. According to different bioclimatic conditions, across these regions the cultivated fruit species vary, with grapes and avocados extending further north, apples and

blueberries further south and also the relative main export markets vary according to the different fruit species (Sofía Boza et al. 2020).

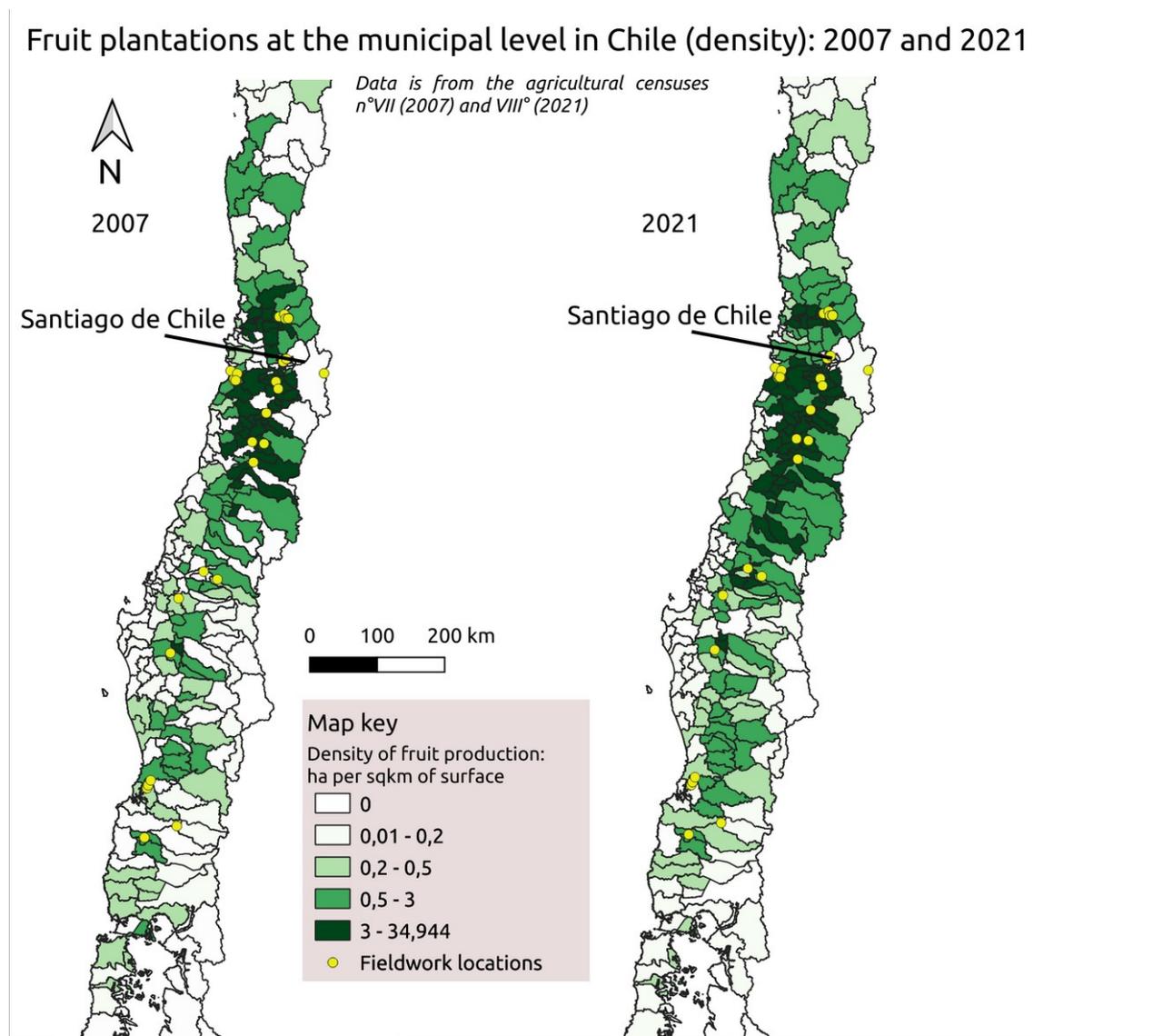


Figure 12: The distribution of Chile's fruit production at the municipal level and its change between 2007 and 2021 (Maps by author)

Figure 12 shows that in fact most of Chile's fruit production is even more spatially concentrated, when analysing data at the municipal scale, in particular in the municipalities of the longitudinal Central Valley south of Santiago de Chile, where most flat surfaces and the best soils are concentrated. The change between the datasets of the two censuses indicates a modest spatial expansion of fruit production, coherently with the general increases in cultivated surfaces.

New fruit plantations at the municipal level (density): 2007 and 2021

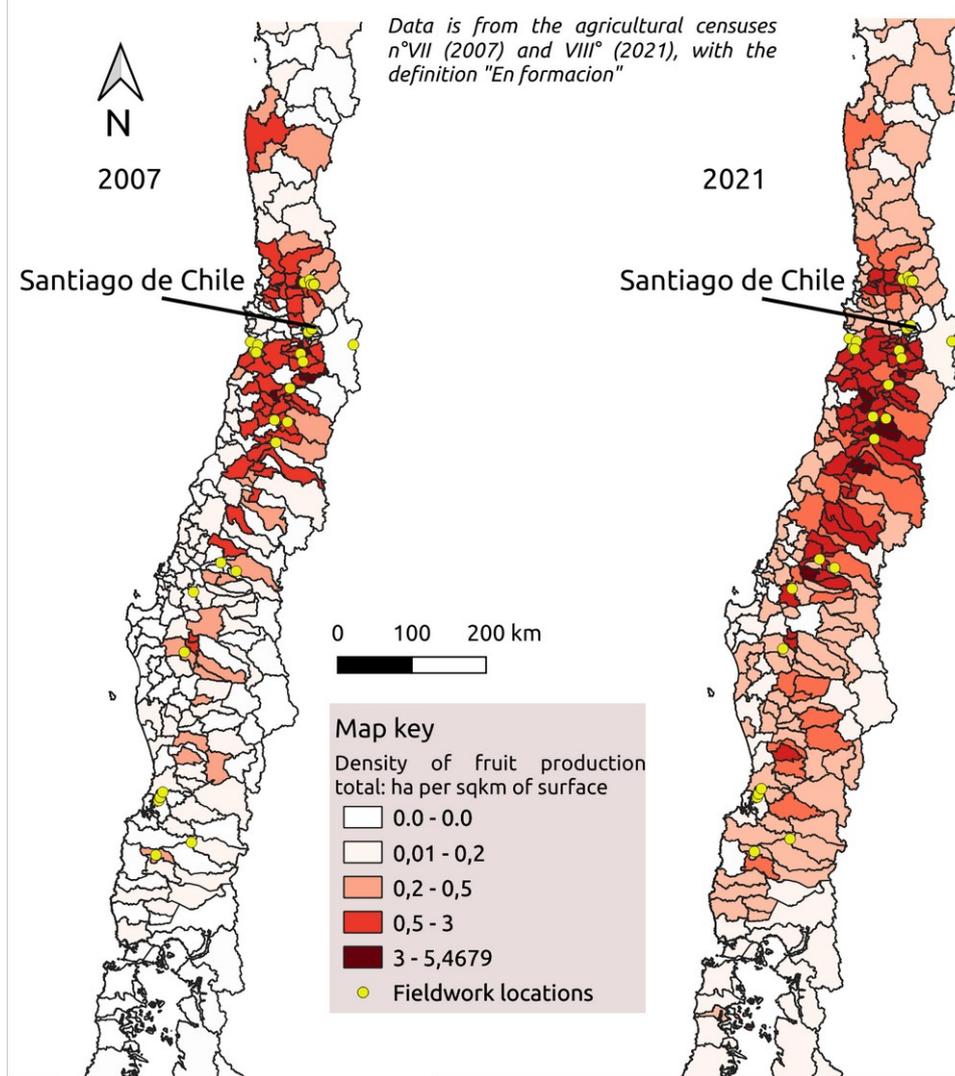


Figure 13: New fruit plantations (density at the municipal level) 2007 and 2021 (Maps by author)

In Figure 13 the density of new fruit plantations (those being built but which not yet entered in production) is shown for the two census years. This map indicates an acceleration of the transformation but probably also the general growth of the fruit sector. New plantations are quite evenly distributed, but are more present in the areas already most densely dedicated to fruit production. The map for 2021 also shows that there are now significantly more surfaces in the South transformed into fruit plantations than in 2007 – but, as there is also some increase in the North this does not seem to be a straightforward move to the South but rather a stronger expansion there, in a context of generalised growth.

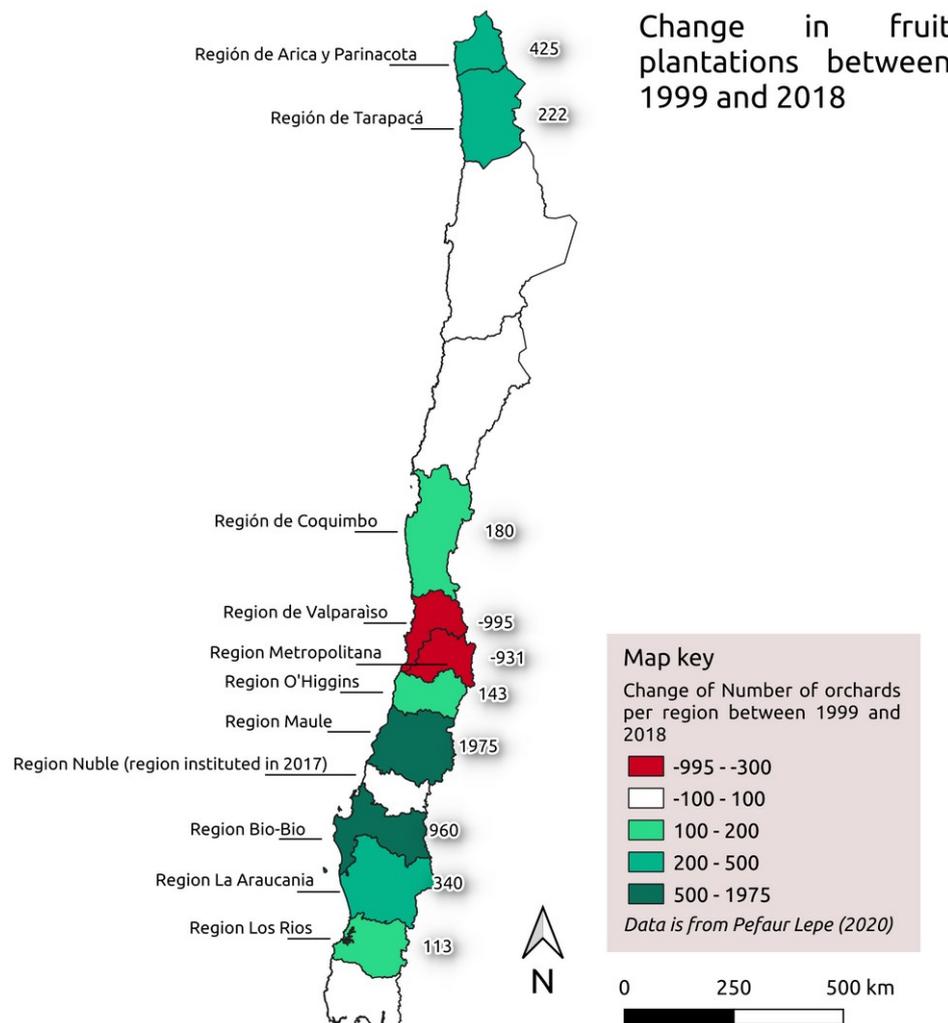


Figure 14: Change in fruit plantations between 1999 and 2018 (Map by author)

While the evolution of the densities of fruit plantations between the two agricultural censuses of 2007 and 2021 (Figure 12) do not hint to any significant change in the geographical distribution of fruit production, at the regional level, the data shown in Figure 13 and in Figure 14 hints to a geographical tendency. To be clearer in Figure 14 only those regions are shown in which the change was larger than 100 plantations. The tendency is not totally clear at a first glance: there is growth not only southwards but also in the extreme north of Chile. But in the northernmost regions the total numbers are much lower – in 2018 together they total only 647 orchards, which altogether cover little more than 1000 hectares (Pefaur Lepe 2020). The most significant change has occurred in the area that represents the majority of fruit production, between the regions of Valparaiso and Maule. In the Valparaiso and the Metropolitan regions, probably in relation to the drought (cfr. Paragraph 6.3.2), a strong decrease in orchards can be observed, while in Maule there is a significant growth, which to some degree extends also

further south, to La Araucania and Los Rios – in line with a trend to move southwards that several interviewees described (cfr. Paragraph 6.4.6). Also Boza et al. (2020) evidenced that the strongest growth of fruit exports has been experienced in the centre-south, especially in the region of Los Rios.

6.2 Field Observations from the Chilean Fruit Industry and its Global Commodity Geography

This chapter summarises the results of my fieldwork in Chile, focusing on visits and interviews that I conducted in what can be defined as the ‘mainstream’ or classical model of the Chilean export oriented fruit industry: the places, people, products and companies portrayed in this chapter largely correspond to general accounts on the industry that can be found in academic and grey literature (see chapter 6.1) and in general accounts of interviewees and correspond closely to the general picture of the commodity chain drafted in the chapter above. Of course this does not exclude some degree of specific variation from the “model”.

Figure 15 shows the fieldwork locations in Chile (also those of alternative practices I will focus on in chapter 6.5) in relation to the overall geographical distribution of fruit production and Table 2 lists these locations (while in Figure 4 you find a complete list of interviews). These locations cover a range of different sites across the extension of central Chile’s fruit producing region (but still only a numerically small part of the thousands of sites which are part of this commodity geography). Many are located in the most important regions for fruit production like O’Higgins and Valparaiso, others are located further south where production is progressively moving to. Many of these locations are sites of production (which I will turn to in paragraphs 6.2.1, 6.2.2 and 6.2.3), several are export companies and their processing plants (paragraph 6.2.4), while the part of transport and import (paragraph 6.2.5), covered only through interviews, is located outside this map, towards and in Europe. The final paragraph summarises the question of why and how Chile produces fruit for export.

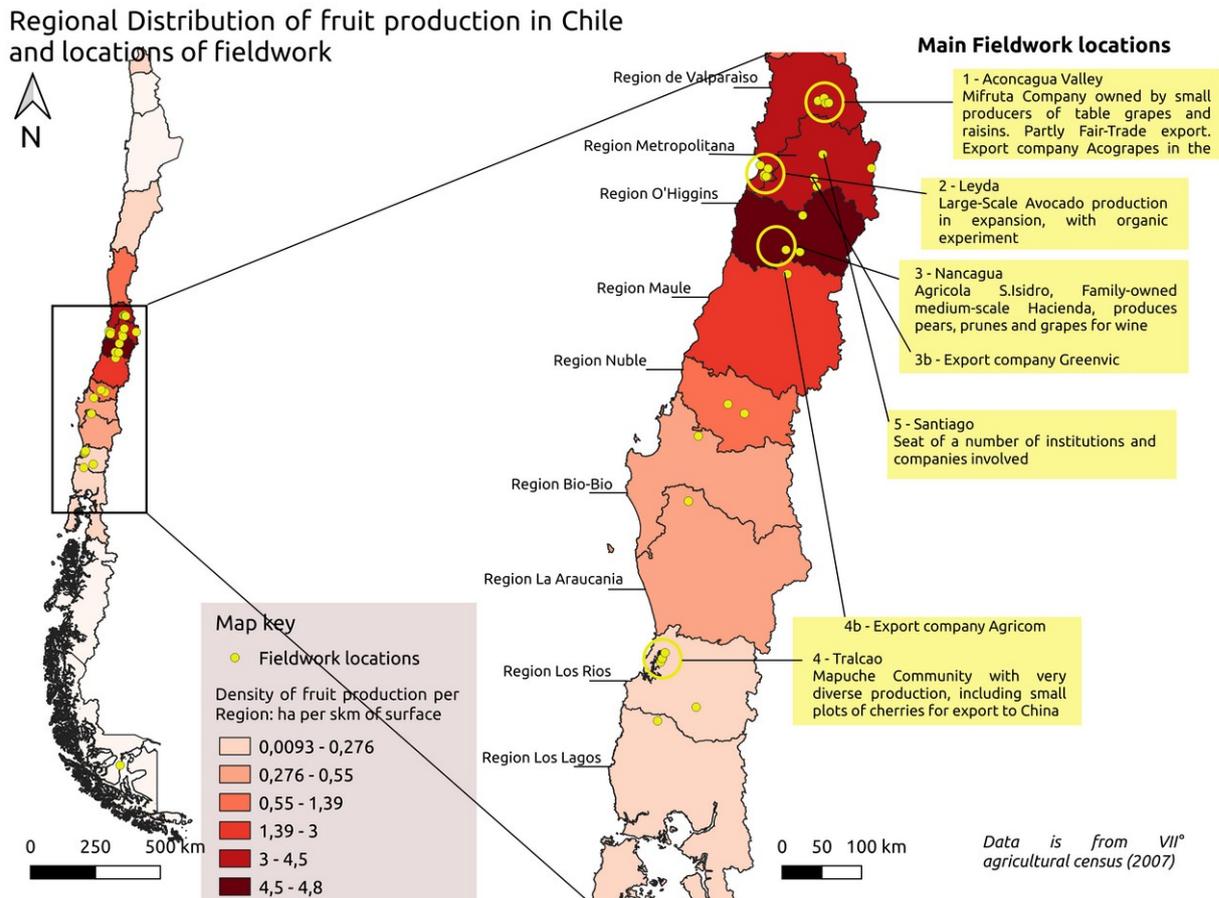


Figure 15: Map of Regional Distribution of Fruit Production and Main Fieldwork Locations (Map by author)

In this chapter, I focus on direct impressions and interviews directly connected to the cases, while in the following chapters (6.3 and 6.4) I will interpret these results in relation to the wider literature, other interviews, statistics and grey literature. Afterwards, I'll report on my fieldwork in relation to cases which are in different ways 'alternative' to this mainstream model (chapter 6.5).

6.2.1 Prunes from Nancagua. "Don't raise dust: Fruit for export"

At the beginning it has not been an easy endeavour to gain access to this place (cfr. Section 5 on Methodology). I wanted to explore the commodity geography of Chile's global fruit industry – but where to start from? On a farm, of course, but which one? There are thousands. After failing to get there contacting export firms, through personal contacts I arrived at *Agricola San Isidro* in Nancagua, Gabriel

Edwards⁵⁶ farm. It would be absurd to affirm that I selected Don Gabriel’s farm on the ground of objective and predefined reasons, but, the case appears as sufficiently representative of what I wanted to investigate – at least not less representative than some other farm could have been.

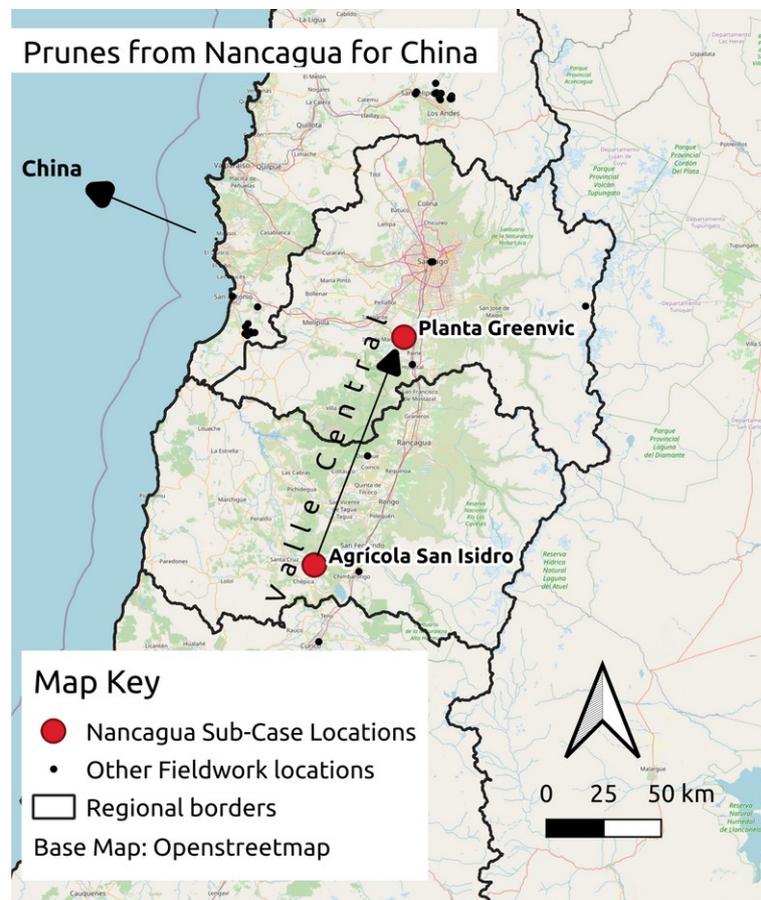


Figure 16: Map of Sub-case: Prunes from Nancagua to China (Map by author)

Hierarchies

Agrícola San Isidro is situated in the midst of a wide valley in the O’Higgins region, part of a section of Chile’s Central Valley, between Santiago and Temuco in which every inch is a fruit tree if it is not a house, a highway, or a fruit export company. The farm has 42ha – much smaller than the large properties that existed before agrarian reform but average-sized for the fruit farms that produce for export (Interview to Jorge Phillips). Gabriel’s family bought it some decades ago from farmers who had had it in the process of agrarian reform, without the means to cultivate it – very much like Robles and Kay (2018) tell the story of the “new

56 The uncle of my PhD colleague Juan Pablo Edwards.

agrarian bourgeoisie” after agrarian reform and counterreform (paragraph 6.1.1). Like in Robles’ and Kay’s account of Chile’s transformation into agrarian capitalism, it is a productive and intensively cultivated farm, oriented at the export economy.



Figure 17: Gabriel Edwards in his office (Photo by author)

All the same, something of what might be associated to an ‘old landowning class’ persists in *San Isidro*. Gabriel and his family live on the land (differently from the family that owns the much larger avocado plantations in Leyda, in the following paragraph). And Gabriel is present in the everyday work of the farm. I spent a lot of time between his office and the orchard, during the week I stayed on the farm. The house lies just next to the office and is surrounded by the plantations. It has little to share with European concepts of a farmhouse, directly integrated into production and it rather looks like a wealthy family’s country house, surrounded by a park. There was a very sensible difference of class between the villa and the small and simple wooden house in which I was hosted by the ‘guardian’ Rodrigo and his mother Yolanda. Rodrigo and Yolanda come from a nearby village; the

geographical space of their lives extends between that village and the farm. Don Gabriel's family instead is well-travelled, they often go to Europe and the US.

I had a similar impression of class difference in the relation between Gabriel and his other farmworkers: he treated them with respect and gently – but surely he was the boss and the respectful 'Don' in calling him, or talking about him, expressed this. I wrote in my fieldnotes (21/12/21):

They justify their class privilege (...) on the basis of their competences, their knowledge, and their efforts. They talked about the work they did when they arrived on the farm. And they talk about Chile's constituent assembly as made up of illiterates. Thus, in their view, it is their class that guarantees Chile's development. On a clear, linear, undebatable trajectory of development. (...) Gabriel's wife, indeed, talked about Chile like 50 years 'behind' Europe. And like Europe, thus, one must become.

Then, to be sure, hierarchies are more complex: there are the workers in the lowest place (except nature), then the employees, like Juan and the general manager, Angel Sandoval. And while Don Gabriel occupies the highest position in this hierarchy, finally also he depends on the export company.



Figure 18: In the plantations of Agricola San Isidro (to the left the prune variety to be harvested with reflecting plastic extended on the ground to improve the fruit's colour) (Photo by author)

Beyond house and garden, Gabriel's farm is entirely covered in fruit: grapes, prunes and pears. The grapes are sold to another company to make wine, while pears and prunes are grown to be exported as fresh fruit. Pears are collected unripe in January, they are moved to large fridges, which may be in other countries like Colombia, closer to markets, and then sold when the market requires them, months after, until September or October, in Europe, China, the USA. Several species and varieties have been planted for economic diversification: it helps to reduce economic risks and to organise and distribute work more effectively across the year (Interviews to Gabriel Edwards and Angel Sandoval). But this is no ecological diversification that in any way might help to reduce the use of pesticides etc. (Interview to Angel Sandoval).

Control of Nature

“Control of Nature” (Fieldnotes, 15/12/21) is what came to my mind, walking across the plantation and learning about the many steps of work necessary to make the fruit ready for export. Controlling nature is part of any agrarian process, but what seems to be crucial for this agro-industrial process is to control nature not simply to a sufficient level to achieve a good harvest, but rather to control it as much as possible, so as to achieve a product that is as much as possible free of variation. Variation and irregularity are the enemies (beyond plagues and direct damages of the fruit). The fruit is supposed to come out of the process as homogeneous as possible and the field has to resemble this image with well-ordered rows of fruit trees, the absence of undesired plants, animals, insects, eliminated by hand and with chemicals – even though these need to be applied with care, as excessive amount of residuals would make certain markets inaccessible (Interview to Angel Sandoval). But even so, this control never could be perfect, a prune tree remains a living organism. This discrepancy, between a supermarket’s (and a whole commodity chain’s) ambition of perfect homogeneity and the variability of life, makes for a lot of the work on the farm, like the selection of everything out of standard during harvest first, and during packing, later. Control of nature is exerted on different levels. By the ownership and the management of the farm who oversee everything. By the hands of the farmworkers who select and harvest, spread chemicals and cut the trees. By the export company which oversees the production process. By the certifiers who further control the process. By the state, through the *Servicio Agrícola y Ganadero* (SAG), which controls in particular the absence of plagues (Interview to Gabriel Edwards), which can risk to contaminate other natures and thus Chile’s reputation as a safe country to import fruit from – with the risk of markets being closed to the fruit (Interview to Angel Sandoval). This form of control of nature is the mechanism on the ground to comply with the logics of standardisation required by faraway supermarkets: with the specialisation and monoculture this is related to, lies one of the elements that define this model of production and export as extractivist, the territory of production as subsumed to externally dictated rules (cfr. Chapter 6.4).

Differently from many other sub-cases (see chapter 6.3), water is not a big issue for Don Gabriel, as he possesses enough water rights (Interviews to Gabriel Edwards and to Angel Sandoval) and there still is a consistent supply of water thanks to a glacier in the Andes (Interview to Angel Sandoval). Indeed, on Gabriel’s farm, irrigation is still done by ‘surco’, i.e. floating the ground between the trees, not with more efficient technified methods. More worried about the water were plantation workers, as the absence of water could menace the continuity of their work.

A Prune Harvest

One prune variety, Sapphire, was harvested while I stayed on the farm. Deciding about the right day in which to start harvesting took repeated meetings between Gabriel, his farm manager Angelo, and Juan who coordinates the farm workers, trips to the orchard to evaluate the ripeness of the fruit on the trees and visits of Jorge Philips, the agrarian technician of export firm *Greenvic*, and “after all it seems to be him who decides when to pick the fruit” (Fieldnotes, 14/12/21). The care about details in this process was impressive.



Figure 19: Check of fruit corresponding to criteria during harvest (Photo by author)

Gabriel's fruit is linked to all the world: Peru, China, USA, Canada, Scandinavian Countries. According to the variety, the moment of harvest, the movements of the markets, the export company decides about the destination. Before the fruit leaves, it needs to be certified by GlobalGAP. The prunes were bound for China and the fruit had to respect very precise criteria: large size, very coloured (and thus ripe),

with enough sugar (thus be quite ripe, again), but at the same time hard enough (and thus, not be too ripe) to survive the 35 to 40 days long trip. The requirements of long distance transport are one of the mechanisms determining how production is organised on the ground (cfr. Paragraph 6.4.1). To anticipate ripeness and to ensure colour, reflecting plastic (which cannot be reused) had been spread between rows of prune trees, which is worth the cost only for early ripening fruit: the sooner the fruit arrives, the higher the prices. Not red enough fruit is rejected. One day the fruit may be not ripe enough, ripe the day after, rotten one day later. Gabriel observed many single prunes with affection and remembered to tell harvest workers to handle this delicate and precious fruit carefully.



*Figure 20: "Don't raise dust. Fruit for Export."
(Photo by author)*

A signpost reminded drivers to avoid raising dust (Figure 20). Not because it is fruit that is grown here. Because it is fruit *for export*. In the mornings, Juan instructed the workers about which fruit to pick, which to leave on the tree, which too ripe and to throw away (or to eat: they were delicious).

But this level of precision and care could not be taken up with during harvest. While every fruit was hand selected, this had to be done with a speed that did not allow to be as careful. In this form of production for export there is a continuous tension between precision and control on one side and speed and cost reduction on the other. The job is not exactly well-paid: 20 'lucas' for a day's work, from 7am to 1pm (that means 20 thousand Chilean pesos, about 23€ at the time I was there). Workers told me it was a normal pay, somebody affirmed that they could pay better, but still, it was normal; one said that this work was a "sacrifice" (Fieldnotes, 17/12/21). All were professional harvest workers, mostly with stable contracts which pay approximately 400€ a month. Around fifteen work on the farm all year long, up to sixty in the most intensive periods (Interview to Gabriel Edwards). In other harvests, like cherries or pears, you earn more, up to 1000€ a month, but they are more stressful, as they pay by the number of boxes. With living costs in Chile resembling those of Southern Europe, 20 *lucas* surely may not be motivation enough for the utmost precision.

I participated in the harvest a couple of days and the rhythm of the work was relatively relaxed, there was time to chat or to take a small break. Music was played and the atmosphere was friendly. This didn't exclude complaints about the pay, the hard life as a harvest worker or political change. The dozen of workers were both Chilean and foreigners, like a couple from Venezuela, who had flown, like many in Chile, from "communism". Harvesting itself involved wearing a strap to hold a plastic box, carrying around a heavy aluminium ladder, positioning the ladder, choosing fruit by fruit which to pick. Each box is carried to a small truck where one worker did a superficial visual selection. Too small fruit rots on the ground: it would be too complicated to move to another market; smaller fruit must be harvested separately. Gabriel and Angelo coordinated the process, awaiting Juan's report from the field and Jorge's feedback from the packing plant, where the fruit was brought to every afternoon, to adjust the harvest.

Gabriel's and Angelo's biggest concern was what to do with the large number of prunes which were in perfect conditions but too small to be exported to China. The year before they had exported to the USA where the required minimum size was much smaller, but in 2021 the United States had temporarily blocked the import of prunes from Chile, due to phytosanitary concerns. They hoped in an opportunity in Canada but these attempts (they contacted different export companies) did not succeed (also due to issues with the certification). The only remaining option was to sell them at a lower price on the national market. To China they could export only 50% of the harvest, while it arrives at 80 or 90% when the US market is open to prunes (Interview to Jorge Phillips).

The Relation to Export Companies

The national market being too small and prices too low, are the main motivations to export (Interviews to Don Gabriel and Angel Sandoval). As there is practically no national market for them, prunes have been planted for export (Interview to Angel Sandoval). On the relation of the national with the export market, Gabriel commented: “we [in Chile] care much all that is going to be exported, but not so much what we eat in the country” and “all fruit is traceable, quality is controlled all the time, in the Chilean markets this is not the case” (Interview to Gabriel Edwards).

Gabriel Edwards considers the organisation of the Chilean fruit industry in general, and the relation to the export firm in particular, quite positively, stable and based on trust, “the export company is going to pay, and you have this security and tranquillity” (Interview to Gabriel Edwards). But also *Agricola San Isidro* is a relatively small player in this industry.

Transaction costs, logistics, maritime transport: recently, they’ve become very expansive, and thus the export company makes less profit, which is reflected in the prices the producer receives. It even is possible that the final result is negative, that you remain in debt with the company (...). The risk is mine, one depends on what they tell me and the fine print of the contract. (Interview to Gabriel Edwards)

The relation with the export company in many regards is one of cooperation: they visit four times a month and help with information and consultancy (Interview to Angel Sandoval). All the same, even though necessary, the relation to the export companies is fraught with an unbalanced power relation (cfr. Paragraph 6.4.4):

[they] are those who profit. Let’s say that they get out with little work and obtain good earnings. The producer is who stays with all the headaches, a lot of spending (...) to produce fruit (Interview to Angel Sandoval).

Markets are volatile: “for years prices were high in the USA. Then, somewhere they find some trace of pesticides and the market crumbles” and “the Chinese continuously change preferences”; “for China, fruit must be 70% coloured, they like it sweet, for Canada and the USA it can be greener, they are afraid of sugar” (Fieldnotes, 14 and 16/12/21). While often there is an advance payment of up to 50%, the full payment for last year’s pears arrived just in time to pay the workers for the prune harvest (Interview to Gabriel Edwards). Sometimes, bank credits are needed to assure liquidity (Interview to Angel Sandoval). The price of final sale in the destination market determines how much Gabriel receives for the fruit.

Gabriel Edward's farm with all its specificities appears as a typical medium-sized fruit farm of the Central Valley, part of the large fruit monoculture this region is characterized by. This account shows how the export relations shape territories of production through multiple and often problematic mechanisms, which I will discuss in detail in chapters 6.3 and 6.4.

6.2.2 Avocados from Leyda⁵⁷

Avocados are probably the most conflict-laden fruit species in Chile due to its high water needs in areas particularly affected by the drought. The case of Petorca, a municipality north of Santiago, in which the large-scale cultivation of avocado has led to water shortages for the local population, has become (in)famous internationally and is an often-debated issue in Chilean politics (cfr. Paragraph 6.3.2). At the same time, avocados are the one fruit grown large-scale in Chile for which the national market plays an important role: in the precedent season the majority of the production had been consumed in the national market – also, avocados are imported to Chile when they are unavailable locally (Interview to Juan Manuel Roa). But it is only a recent phenomenon that avocados are consumed widely in Chile. It evolved over the last five years as its production has increased and Chileans have more money to buy it; in part, said Juan Manuel, its consumption substituted that of ham (Interview to Juan Manuel Roa).

57 The visit to the avocado plantations has been interrupted as I got infected by Covid-19. For this reason the number of interviewees here is lower than in other sub-cases.

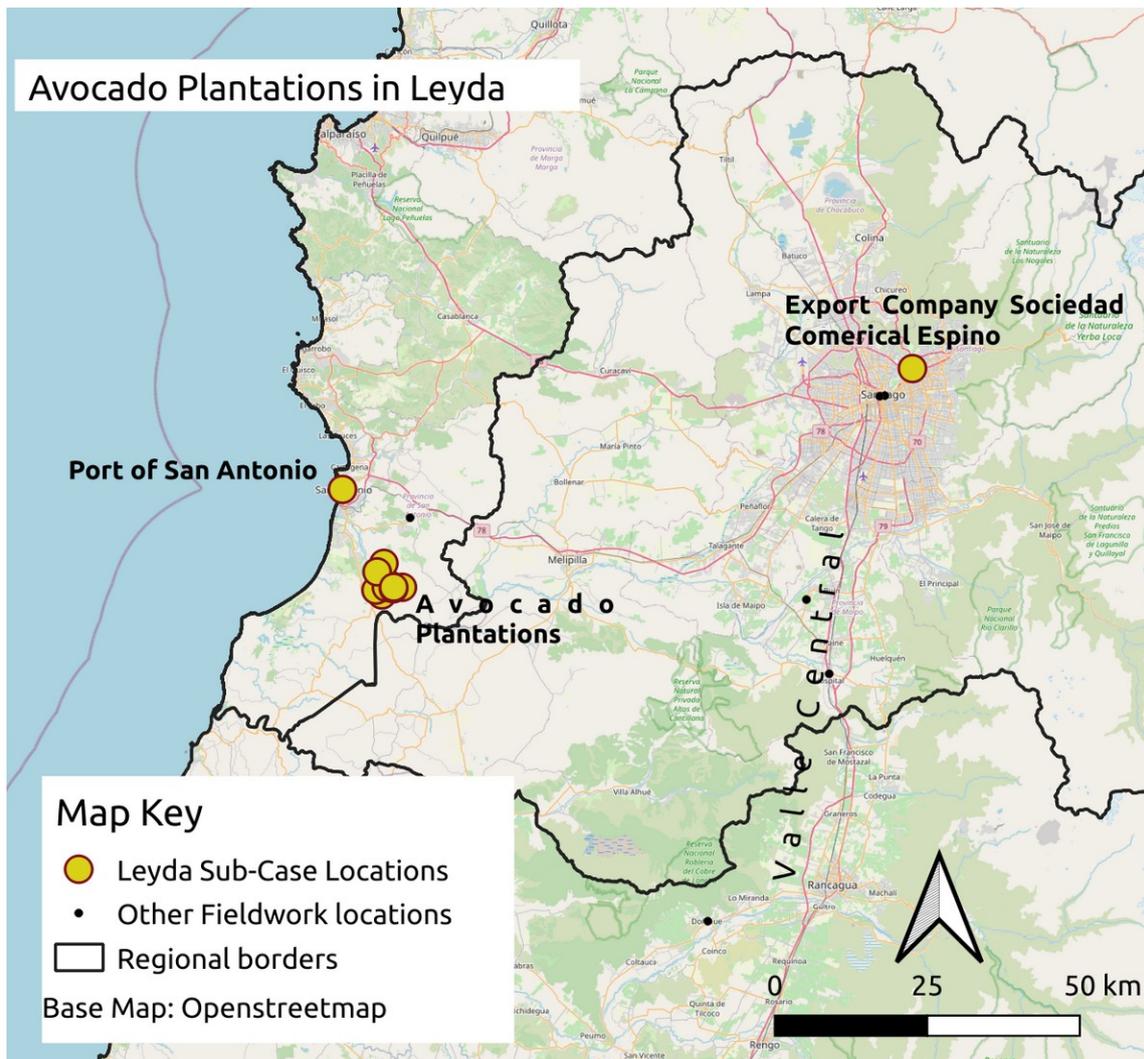


Figure 21: Map of Leyda Sub-Case (Map by author)

I visited a group of avocado plantations located in Leyda, between Santiago de Chile and San Antonio. Arriving by bus from Santiago, the buildings of the metropolis only slowly gave way to the green patches of agriculture; those close to Santiago dedicated to corn and tomatoes for the local market, then slowly the first plantations for export appeared, many of them avocados climbing the hills around the valley (Fieldnotes, 21/02/22). I gained access to these plantations through personal contacts that led me to the plantation manager, Juan Manuel Roa. The properties managed by Juan Manuel extend over 900ha, of which currently 300ha are planted with avocado – a number that will rise to 500ha in the future. All avocado trees are of the same variety: Hass, as this is the variety the market requires. The family owns around 1000 – 1200ha of avocados in the area, a hilly terrain around the Maipo river (and other businesses elsewhere). It is a rolling territory largely modified by economic activities: forestry, agriculture, sheep pasture, even though with a low population density. The tendency of land use

transformation is towards avocados which have been introduced in the area over the last 30 years, as the first fruit species cultivated in the area by this family – considered an insane investment at the time (interview to Juan Manuel Roa).



Figure 22: New plantation in construction 1 (Photo by author)

The transformation of land into an avocado plantation is heavy work that I could observe in one of the three properties, currently ‘under construction’: heavy machines eliminate every pre-existing vegetation except a few larger native trees which disturb farming but are protected by Chilean law. The land surface is totally transformed, it is shaped into a wavy surface of narrow and long parallel ‘hills’ and trenches oriented downhill (see Figure 23), in order to favour drainage as avocado trees are delicate: they need a lot of water but if the soil is too humid, their roots are damaged (Fieldnotes, 21/02/22).



Figure 23: New plantation in construction 2 (Photo by author)

It is an impressive and profound transformation of the landscape at a large-scale, of its form and its ecology; one of the most eloquent images I have encountered of how agroindustrial production (for both export and the local market) can shape territories of production, impacting on water, biodiversity, land use (cfr. Chapters 6.3; 6.4). Certainly there is a question of scale: it is, in itself, nothing new that human beings transform landscapes through agriculture and many of these landscapes are nowadays protected for their beauty as much as their ecological value.

Agrarian capitalism is the concept I would invent here if it didn't exist already. 'Field under construction' seemed a very fitting expression. The place really seemed more of a construction site than an agricultural project. (...) Juan Manuel himself speaks of "industrial management". Is it naive to criticize this? (...) Is this landscape still an agrarian landscape? (...) Nature is always present, as much as human labour – so it is a landscape in this sense. And for sure its use is agricultural (...). But: probably it is the sheer scale and monotony which are of such great impact – visually, for sure, but also, I suppose, in ecological terms. (...) territory (as much as possible) reduced to a mere physical support, simple localisation of production – but which, underneath, retains its possibility to reclaim an active role when, for instance, the availability of water ends, making production impossible (Fieldnotes, 21/02/2022).

Another element that reinforces the impression of agrarian capitalism: nobody lives here, human presence is reduced to work – only a sad group of white containers for offices dominates the highest hill.



Figure 24: An office building of Agricola El Jardin, one of the avocado properties in Leyda (Photo by author)

Water and Perspectives of Growth

In this area, transformation has been rapid, in the last 30 years thousands of hectares have been transformed into avocado plantations – for the owners, to put all efforts in avocados is a good market choice as, on one hand, national and international prices for avocados are high and demand is rising, and, on the other hand because further north, e.g. in the area of Petorca and from the Aconcagua Valley (cfr. Paragraph 6.5.3), plantations cease production due to the drought. Leyda is where part of that production has been moving, as so far water here is plentiful enough. Also, due to the cooler climate next to the coast, the trees' water consumption is lower (Fieldnotes, 21/02/22).

But water is an issue also here: the transformation in the area has been favoured also by the fact that annual field crops like peas and wheat that used to be grown in the region have become economically unviable: they were grown with rainfall only but rainfall has diminished – irrigation with the water pumped with a costly system 100m up from the Maipo river would have been too costly for these crops, while it is profitable for avocados (Fieldnotes, 21/02/22). Ten to twenty years in the

future, water might become a critical issue also for the avocados (Interviews to Juan Manuel Roa and Manuel Gonzalez). Producers prepare for the future organising irrigation with a lot of technology: water is pumped up from the river, large tanks to store water are built and drip irrigation systems have been installed to use water efficiently. Also, requests are made to state institutions to avoid that water of the river is ‘lost’ to the sea and instead used for human and agricultural use. The construction of dams and artificial lakes to store water is another request made by farmers here, like elsewhere in Chile. Juan Manuel argued that there is a lack of political interventions, and producers themselves, he said, have agreed to prioritize direct human consumption of water (interview to Juan Manuel Roa). But how far can technology and efficiency go? The degrowth critique of sustainable development argues that often efficiency leads to rebound effects (cfr. Chapter 2.1) and also in the debate on water in Chile, this seems to be an issue, as activists and professionals note (cfr. Paragraph 6.3.2).



Figure 25: One of the plantation's water tanks (Photo by author)

According to Juan Manuel, there is potential for growth in the area, but only for avocados, as other fruit species do not grow well in the coastal climate or are economically unattractive. At the same time, he conceives the idea of limits to growth, in particular in relation to water. He explains that “the first I must do when I create a project here, for a new area of avocado, is to look at how much water is available in the area and how many hectares I can plant with that.” The state

should say “here you can plant that and that much hectares”, otherwise people will continue to plant without stopping and the result would be that the water runs out and things go bad (also economically), “like in the North” – the reference being to the area of Petorca. Is monoculture an issue, I asked him:

No. (...) [T]he climate [here] favours monoculture. There is no contamination with pollen (...). You don't have problems with diseases etc. On the contrary, (...) if we are more in the area, have bigger volumes, we have a greater potential for negotiation, we can have a logistical centre (...) [and] reduce transport costs (Interview to Juan Manuel Roa).

Here like in other conversations it emerged that economic diversification and diversity of crops in the field can coincide but often they do not. Economic diversification here (also another employee I talked to had the same position) is mostly intended as a diversification of markets – of different external markets and to sell also to the national market is seen as an element of diversification (Fieldnotes 22/02/22) (cfr. Paragraph 6.4.5).

In relation to biodiversity, Juan Manuel refers to the legislation which he points out they respect. It is illegal to cut forests, the areas where plantations are ‘built’ in the area were sheep pasture, they were “clean” fields, without “formed vegetation”, as opposed to “dirty” fields with natural vegetation which cannot simply be removed. The respect of these norms is rarely controlled directly (both Juan Manuel and another employee pointed this out); indirectly this type of control occurs when asking for subsidies, in particular for irrigation, which is heavily subsidised by the Chilean state (up to 90%). To obtain these subsidies from the CNR (Comision Nacional de Riego), one must present a certification by CONAF, the national forest agency, that no native forest has been destroyed (Interview to Juan Manuel Roa). This means specifically that no larger trees are cut – but it is not very clear what the criteria are to define which trees must be left standing. According to Maria Elena Rozas from Red Accion Plaguicidas though, already leaving some of these trees standing is very uncommon in Chile. Indeed, I saw many avocado plantations on the hills without any traces of spontaneous vegetation left (Fieldnotes, 24/02/22). Even so, compared to the large-scale avocado monoculture in Leyda, Agricola San Isidro in Nancagua, appeared to be a heaven of biodiversity (Fieldnotes, 22/02/22).

Beyond state legislation, these plantations are certified by GlobalGAP and Rainforest Alliance. These certifications are, according to Juan Manuel, together



Figure 26: An area of environmental conservation amid destruction for the new plantation (Photo by author)

with “conscience”, the main reason to implement environmental standards. He has observed a change in the last 10 years approximately towards a real respect of environmental norms. Most of the norms of these certifications are oriented towards the management and limitation of chemical residues. In areas of the plantation with young plants, spontaneously growing herbs are sprayed with herbicide one by one or eliminated mechanically while larger trees need less intervention as they cover the soil with their leaves impeding the growth of herbs. The main reason to eliminate these spontaneous plants is that they disturb the irrigation system. Indeed they are left standing in other places. While GlobalGAP has become a sort of Chilean bottom-line (cfr. Paragraph 6.4.2), Rainforest Alliance is somewhat more rigid and beyond residues looks at biodiversity: fauna and flora in the area must be identified to be protected and, e.g., there must be areas left untouched – in the specific case of this hilly terrain, these are the small valleys along the small creeks which criss-cross the plantation (see Figure 26).

In relation to the export company, this avocado producer is relatively powerful, being a large plantation with volumes attractive for the buyer (Interview to Juan Manuel Roa). Juan Manuel regularly compares prices and conditions between different export companies and chooses flexibly the company that offers the best

conditions. Also, they have established contractual conditions which guarantee them best prices to be paid: if two export companies for fruit exported in the same week to the same market, with the same calibre, pay differently, the one that paid less has to pay the difference. A very considerable difference in the power relation between producer and export company, as compared to smaller producers which have far less power of negotiation (cfr. Paragraph 6.4.4).

Even though of the overall Chilean avocado production most is for the internal market, from these plantations in Leyda, last year 80% of the production was exported to achieve better prices. While the fields are very close to the port of San Antonio, the fruits are carried first to a processing plant in San Felipe and brought back to the port afterwards as there is not yet a processing plant installed in the area (Fieldnotes, 21/02/22).

An Organic Avocado Plantation

A smaller avocado plantation in the area has been set up over the last three years by Manuel Gonzalez, member of the same family, to experiment with organic production. His intention is to eliminate everything “harmful for the human being”, chemicals in particular. But the form of the plantation remains the same. It still is a monoculture, of approx. 30ha of avocado. But the variety of spontaneous plants growing between avocado trees is visibly higher than in the conventional plantations. Undesired plants are now eliminated by hand but the plan is, in future, to reduce the workforce and use sheep (Interview to Manuel Gonzalez).

All the same, the “construction” of this field has been no less violent than the one I could observe in the process: before being planted with avocados it was covered by a mix of spontaneous vegetation and sheep pasture like on the surrounding hills (Fieldnotes, 22/02/22).



Figure 27: The organic avocado plantation

While driven by a certain degree of idealism, this is an economic project, an experiment in the context of the family business “because the market goes there”, Manuel Gonzalez said. There is no price bonus for organic avocados (Interview to Juan Manuel), but the market for organic avocado is growing faster than the market for avocado in general – outside Chile. This project is 100% export oriented, for two reasons: because half of the investment has been afforded by an export company and because higher prices can be achieved internationally (Interview to Manuel Gonzalez). When I asked about the reason to plant only avocado, Manuel’s answer was simple: “money”. Avocados are what pays best, and he has no experience with other fruits. Even so they have been discussing planting part of the remaining area with other fruit species, in the logic of an organic production that is supported by biodiversity, facilitating the management of insects.

The question of water is of course equally important in this case. Beyond the technical aspects already discussed above, which change little in the case of the organic plantation, for Manuel Gonzalez water is a question of social and political value. Because of the bad experiences of Petorca, who plants avocado today is considered badly in Chilean society, he argues. Not anymore somebody who provides work but rather someone who steals water. Water, for Manuel Gonzalez, is to an important degree a social-political issue and challenge, connected also to

the *Estallido Social*⁵⁸. A challenge he also connects to a dignified treatment of workers, for example, he underlined this example, building nice toilets with good conditions. A Bolivian worker on the plantation I had the occasion to talk to, evidenced, on the other hand, that his job there, organised through a *contratista* was not particularly well paid, he receives around 24000 Chilean Pesos for a nine-hours day of work (approx. 27€). The *contratista* keeps around 40% of what the company pays. The good thing is, for him: the job is close to where he lives and the rhythm of work is relaxed. But certainly it is a job that he does out of necessity; very differently from my job as a researcher who earns a lot in his perspective (Fieldnotes 22/02/22).

These avocado plantations in Leyda appear as a radical version of extractivist fruit production for export. Their treatment of the territory is that of an as much as possible passive surface of production, profoundly transformed for that goal, with capital coming from outside (Santiago), with an often migrant workforce and most of the production bound for export, reminding of Moore's (2000) analysis of the historical role in the development of capitalism of sugar plantations that disruptively and radically transformed the natural ecological order. The organic version of this production is only partly able to change things: there is certainly more biodiversity in the field but the relation to the landscape changes very little. Even so, nature – the nature transformed by human action – sets limits, that of water in particular.

6.2.3 Other Places of Production: Cherries Moving South and the Return of Kiwis

Even if more superficially, I visited a few more plantations in Chile. Writing shortly about them helps to complete the picture of Chilean fruit production for export, both in relation to the differences and the commonalities that these cases present.

Cherries at Lago Ranco

During my stay in Tralcao (cfr. Paragraph 6.5.4), Pedro Guerra took me to visit Pedro Ossa whom he knows for Ossa's work with the export company Agricom

58 A long series of protests and revolts in Chile against inequalities and all kinds of injustices which culminated in the ongoing process of writing a new constitution.

(again, personal contacts have been fundamental). This gave me access to one of the most technology-intensive fruit plantations I visited, which relates to three of the large current trends in Chilean fruit production: the increased use of technology, the expansion of cherry production and the move of fruit production southwards to adapt to rising temperatures and falling precipitations. Pedro Ossa's is a plantation of 20 hectares of cherries (Regina variety), situated next to Lago Ranco. Not a huge plantation compared to the cases of Nancagua and Leyda. But a close to perfect monoculture. It has been planted on family land which before had been used as a pasture for milk cows (for the national market), which still is the dominant agricultural use in the area. While the plantation itself is a family business, it was not simply a decision to plant cherries on available land, it was a carefully planned and costly investment, supported by the capital of export company Agricom (Interview to Pedro Ossa).



Figure 28: In Pedro Ossa's cherry plantation during harvest (Photo by author)

They took into consideration the generally good market for cherries (the fruit species with the largest expansion in recent years in Chile; mostly bound for the Chinese market; cfr. Figure 9). In climatic terms it was important that climate change on one hand has led to a long-standing drought in central-northern Chile, with plantations being abandoned due to the lack of water (cfr. Paragraph 6.3.2) but on the other hand made average temperatures rise and precipitations lower also further south, creating a climate apt for the cultivation of cherries. In the particular case of Ossa's plantation, they took advantage of a specific microclimate due to lower-lying land. Lack of water here is no issue, it flows abundantly in the

river next to the plantation. Access to water though is problematic also for Pedro Ossa: the water rights of the river are owned by the electricity company ENEL Chile, thus he cannot take the water from the river but must extract it from the ground.



Figure 29: Pedro Ossa's cherry plantation in the context of the surrounding landscape

Observing the plantation in its regional context speaks against easy dualisms. While in theory it could be seen as an element of diversification in a landscape largely shaped by pastures and forestry plantations – it is indeed very different from the landscapes dominated by fruit plantations around Nancagua or those dominated by the avocado monoculture of Leyda – the plantation also has a notable impact in the landscape, at least in aesthetic terms (see Figure 29). And the use of plastic and of chemical fertilizers and pesticides (if more or less than in the surrounding forest plantations is another question), certainly corresponds to an ecological impact.

The location further south, together with the choice of the variety, also helped to gain the market advantage to be able to collect cherries later in the year than the rest of the country (Interview to Pedro Ossa). Like others, this plantation has been planned from the beginning as part of an export economy (ibid.), as the internal market is unable to absorb this production, argued Ossa. The plantation is characterised by very densely planted trees, trimmed to a low height. Everything is

efficiently organised. A plastic roof covers the trees to protect them from rain damage: something not needed further north which makes the initial investment more expensive (Interview to Pedro Ossa). Producing for export, for Ossa, is a question of certifications, like GlobalGAP, and of quality: only good quality makes it viable and economically profitable to export fruit over such long distances and thus the production must be organised accordingly, with

technology, irrigation, treatments, post-harvest control, fertilization (...) Here I have a plantation with only big fruit, that is what you gain with technology. This is export. This is what the markets want nowadays: firm fruit, big fruit (Interview to Pedro Ossa).

While the size of Pedro Ossa's plantation is closer to Gabriel Edwards', the organisation of the investment, the relation to a larger company and the absence of a classical farm structure, both physically (no living spaces on the grounds) and organisationally (Ossa delegates the plantation's administration while working for Agricom), makes it resemble rather the agrarian capitalist model of the avocado plantations in Leyda and it testifies the importance that technologies and specialisation have in the production of fruit for export (cfr. Paragraphs 6.4.2 and 6.4.3).

Kiwis in Chimbarongo

The production of kiwis in Chile has declined a lot over the last decades, losing market to New Zealand, which managed to provide better quality (Interview to Cristian Moretti) and has the advantage of not needing irrigation, added Roberto Bressi. At the same time, now that the production has been reduced, there is new potential for kiwis (Interview to Roberto Bressi), prices are high again (Interview to Jorge Phillips).

In Chimbarongo, not far from Nancagua, I visited the plantation of Roberto Bressi, who works in collaboration with the Italian company Agrintesa (cfr. Paragraph 6.2.5), through the company Jingold which works with club varieties of yellow and red kiwis. Employing these particular varieties is an easier way to compete with New Zealand, as there is in general less production of these varieties, while to compete with classic green kiwis, the quality would need to be excellent (Interview to Roberto Bressi). Jingold came to Chile, around 2005/2006 in order to produce fruit for the Italian/European summer, when local production is not available or of lower quality – even though the demand for kiwis is lower in summer, it is important to be in the supermarket with your own brand all year round, argued Bressi. Now they are discussing the idea of moving the production of kiwis

southwards, considering the availability of water, in adaptation to climate change and because the disease damaging the plantation in Chimbarongo is absent; the limiting factor though is the availability of labour (Fieldnotes, 17/02/22).

6.2.4 Notes from Processing and Export

Processing the fruit is a fundamental step for export. This includes in particular selection and packing. In Chile, I have visited two major packing plants of two of the large Chilean export companies (Greenvic in Maipo and Agricom⁵⁹ in Curicó), a couple of smaller packing plants in the area of San Felipe (working for Mi Fruta, cfr. Paragraph 6.5.3) and interviewed people working in four export firms in total (Greenvic, Agricom, Acograpes and Sociedad Comercial Espino). The first two are major players in the Chilean fruit industry, the other two are recently founded, small and specialised enterprises. Furthermore, I interviewed Sergio Maureira from the export companies' association ASOEX.

Before getting to the plants, the fruit must be transported and internal logistics in Chile in the past has been problematic (Robles 2010), by now it has been much improved: roads are good and Chile with its long coast has the advantage of orchards being close to ports (Interview to Octavio Sotomayor). Also according to Arboleda (2020b), the improvement of logistics, in particular of ports, has been crucial for Chile's export boom; logistics has assumed a central role in global capitalism and the food sector in particular.

Export companies have a particularly powerful role in the whole business, but a process of diversification has occurred and over the last thirty years the number of export companies has increased, while their average size has decreased (Interview to Mario Marin Valdebenito). Indeed they compete for producers, in particular in relation to the more profitable species like cherries (Interview to Jorge Phillips).

Both Greenvic and Agricom also have their own plantations which serve to balance and better plan production (Interviews to Pedro Ossa and Jorge Philips), but they cover only a small part of the volumes: in the case of Agricom 20%, while 80% come from other producers – which is also an advantage in terms of flexibility (Interview to Pedro Ossa). This model of vertical integration has become the dominant model over recent years in Chile, with both large producers starting to export directly (Interview to Octavio Sotomayor) and export companies starting to produce own fruit, in order to not depend totally on external producers who can easily change export company when somebody else offers better conditions (Interview to Sergio Maureira).

⁵⁹ According to Pedro Ossa the largest Chilean export company measured by the number of exported boxes.

In this competitive market, many export companies have closed down over recent recent years (Interview to Pedro Ossa), other, new ones, have opened. Cristobal Matte is co-founder of the *Sociedad Comercial Espino*. This export company is deeply rooted in the family business of avocado production (he is a relative of the avocado producers in Leyda; cfr. Paragraph 6.2.2). Beyond avocados, they export citrus fruits all around the world. Born as a university project, it is grounded in the fact that his family had always managed production and packing but not export and the impression that existing export companies were too big, costly and intransparent: a sort of vertical integration at the family level.

Acograpes instead, is a small export company founded in 2014 in the Aconcagua Valley specialised in grapes and mandarines that works only with local producers like Mi Fruta (cfr. Paragraph 6.5.3). Founder Cristian Ferriere argued that offering transparency to their producers is a crucial aspect of their business model, together with their territorial specialisation and their ability to see and control everything first hand. As opposed to the practice of larger export companies to pool the prices of different producers, they track the result of each load of fruit from each producer. This is related to a business that has become more competitive over the years: “We think that in the 80s, 90s, when the business was burgeoning, there was the possibility that the good producers subsidised the bad ones, but nowadays, the business has become very tight” (Interview to Cristian Ferriere). Also their export company itself depends on a very tight cost structure, he argued.



Figure 30: The entrance of Agricom's processing plant in Curicó, set on Chile's central highway, with a sign inviting to apply for temporary work (Photo by author)

Greenvic is a company that has grown a lot over the last decades and the challenge nowadays is to grow more, Jorge Phillips told me. The Greenvic processing plant in Maipo (and I could describe with similar words Agricom's plant in Curicó) is located at Santiago's Southern outskirts, where the built-up area of the metropolis starts to dissolve in the midst of fruit plantations. Next to Chile's central highway, this area could be located in any periphery of any big city. Around 400 people work in the plant, while the commercial sector is located in Santiago with around 20 employees (Interview to Jorge Phillips). The atmosphere inside the plant is that of a factory:

cold, without beauty, efficiently organised, with fast, hasty rhythms of work, maybe not totally inhuman, but certainly determined by machines and organisation, not by people. Here, more clearly, emerges the industrialised character of this business even though organised around the organic object fruit: on the field, while as much domesticated as possible, the living plant plays a fundamental role, and must inevitably be respected as a living being (Fieldnotes, 04/02/22).

Agricom's processing plant in Curicó is fairly similar. Industrial efficiency follows similar structures.



Figure 31: The place of the first sample control at the entrance of the packing plant of a large export company

A Scheme of Selection and Processing

The main functions of the export company can be summarised in selection and quality control, packaging and the organisation of international logistics. This scheme is based on my visit at the Greenvic packing plant in Maipo:

1. Control in the field

The export firm sends technicians to producers' fields to control quality, decide on the right moment to harvest, advise on treatments to apply etc.⁶⁰

2. Harvest

The moment of harvest is decided together by producer and export company; the latter informs about which size and degree of ripeness of the fruit the producer is supposed to harvest in order to correspond to market demands.

3. Transport to processing plant

Organised by the producer with own or rented trucks.

4. Arrival at processing plant

- fruit is weighed
- a sample is taken for first quality control
- feedback about quality control is passed to the producer

⁶⁰ in this context I got to know Jorge Philips on Don Gabriel's plantation.

- the sample also serves to plan packing material and processing lines
- trucks are discharged
- fruit enters the cool chain which continues uninterrupted until the supermarket

5. *Fruit processing*

- takes place production lot by production lot: a lot corresponds to one variety from one producer
- fruit boxes are emptied into semi-automatic production lines (in larger plants and for fruit species for which this is possible: e.g. prunes, apples, pears etc. – not for grapes)
- pre-selection by hand: leaves and bad fruits are taken out
- some fruits are washed and/or polished: this depends on species and client requirements
- some are treated with chlorine for disinfection
- every fruit is weighed by an automatic line: weight determines calibre (= n° of fruits/box)
- according to calibre, fruit falls into ‘sub-lines’ of processing
- in them, another manual fruit selection occurs
- some fruit (apples and kiwi in particular) before being packed into small boxes, can be stored in cool chambers also for 12 months, awaiting market demand
- finally, by hand, fruits are packed into different boxes, according to clients’ requirements (e.g. cardboard boxes for the USA, small plastic boxes for Canada and Brazil); boxes for China get an additional plastic envelope (for fear of plant diseases)

6. *Boxes are stored on pallets in cool chambers*

7. *Control by SAG (the Chilean Service for food safety) and eventually the USDA (US department for agriculture) which have to give a permit for the export*

8. *Trucks (rented) are loaded which bring fruit to the ports (e.g. Valparaiso, San Antonio) or directly to consumer countries like Brazil*

9. *Big boxes for harvest are washed before going back to producers*

This, of course, is the ‘technical’ process, which at many points integrates with the economic process of organising the sale and the money flows (cfr. Paragraphs 6.1.3; 6.2.5). Processing evidently varies depending on the varieties of fruit, some species are more robust, cheaper and easier to manage (e.g. apples), others are more fragile (e.g. cherries) and receive higher prices and thus require a very complex process of handling:

[C]herries are pampered. At Greenex, a smaller firm, a \$3.2m intelligent processing machine began work last month. It washes the fruit, then guides it into individual channels, where the stems are plucked out. The machine can sort by colour, form, weight and defects, explains Luis Dalidet, the young

technician minding it. It discards around 15% of the fruit as inferior. That goes for sale in the local market. The machine will be used for only six weeks or so per year.⁶¹



Figure 32: The machinery of the packing plant of a large export company along which the selection occurs (here for apples and similar fruit) (Photo by author)

Observing this process, it is notable how much attention is paid to the quality of fruit and through how many hands the fruit goes. There are about four steps of selection of fruit before export: on the tree by the worker harvesting; directly after harvest by workers who discard some fruit (cfr. Paragraph 6.2.1) and in two steps in the processing plant (cfr. above). This selection occurs to a large degree according to aesthetic criteria: size and colour. Ripeness is controlled by samples of which the fruit pressure is tested. Control of nature, standardisation, are logics that returns in this step of production (cfr. Paragraph 6.4.3). In a fight for homogeneity where nature produces variety:

every tree is different but in the packing process you try to homogenise these parameters (...). You try to leave a product that is so consistent in the box that it nearly seems artificial. (...) every person opening the product should meet a characteristic quality, perhaps not the best nor the worst but consistent, always

61 <https://www.economist.com/the-americas/2019/01/19/a-cheery-tale-of-chilean-cherries> (Last access: July 2021)

the same apple in the same package, so that it is easier to repeat the buy. Like every other product (...), this helps you to sell a lot. (Interview to Pablo Badilla).

This control is realised through quality requirements and certifications (cfr. Paragraph 6.4.2) which the export companies have the task to communicate to producers and guarantee in relation to buyers. There is a tension between homogeneity and variety in the process. On one hand, homogeneity of a product is a major goal, on the other hand though, there is a constant request for new and different products: new varieties for instance (cfr. Interviews to Jorge Philips, Pablo Badilla, Sergio Maureira, cfr. Paragraph 6.4.6).

Furthermore, it emerges how the production on the farm is entangled with the work of the export company, which closely follows what happens in the plantations in dialogue with the producer and in often long-time relations, interrupted only for important reasons, such as notably better prices offered by a competing export company (cfr. Paragraph 6.2.1, Interview to Jorge Philips). To build a relationship of trust with producers is important and hard work (Interviews to Jorge Philipps, Pablo Badilla). For Pedro Ossa to work with external producers is important also to stay competitive: companies which mainly export their own fruit, he argues, do not know how to treat other producers and easily incur into problems in these relationships.

The Relation between Export and Import

The export companies gain between 6 and 8% of the fruit's final price (Interviews with Jorge Philips, Pedro Ossa, Cristian Ferriere, written communication with Leonardo Valenzuela). To maximise what the producers earn "really is the export companies job" (Interview to Pablo Badilla), which they act out comparing different destination markets around the globe: who pays better gets more volume (ibid.). The Sociedad Commercial Espino mainly trades with import companies; only in the US with supermarket chains directly (Interview to Cristobal Matte). Trade fairs and contacts through the government agency ProChile have been important ways to establish trade relations for this new company (ibid.). The clients of Greenvic are mainly (80%) supermarket chains directly, located around the world. China, the USA, Europe, but also Mexico are important markets, in different proportions according to the type of fruit. For Agricom, it depends on the destination: Asia and Latin America are dominated by wholesale markets, in the USA and Europe, supermarkets are more important. Supermarkets require more attention on certifications and other quality-related aspects, which makes it more difficult to trade with them (Interview to Pablo Badilla). Also, they are not

interested in a single container but a program extending over the whole production season, on the other hand, they may pay better prices (Interview to Cristobal Matte). Also these relations often are stable in time and can extend over twenty or thirty years – trust is important (sales agreements are often made with informal short messages) and can easily be lost (Interview to Pablo Badilla).

Processing is the part of the fruit commodity geography in which variety is finally eliminated through selection; or better, variety is transformed from the endless variations of nature to standardised forms of variety which are handleable by machines and by a global market, possible to program over months and adjustable at the last moment. Export companies play a fundamental role in connecting producers to the global market and in this they are very powerful actors: but their power varies a lot in relation to the size of the producer they interact with and is limited by the buyers, in particular when they are large supermarket companies (cfr. Paragraph 6.4.4).

6.2.5 Notes from Transport, Import and Sale

During the first half of the 20th century, the main problem for Chile's fruit export business was transport (Robles 2010). It was difficult inside the country with limited refrigerated rail cars and no refrigerated storage facilities, but especially export was difficult: "The critical issue was not freight rates, but the more basic one of making steamship companies accept to ship the, presumably not very large, fruit cargoes at all." (Robles 2010, 115). Until WWI port facilities were poor, ships were few without refrigeration – while many expected the USA to be a good market, taking advantage of Chile's counterseasonality. While the war made things worse, afterwards more and refrigerated ships, able to cross the new Panama Canal, contributed to a first phase of growth of Chilean fruit exports (Robles 2010). Today things are better organised, but logistics remains a central necessity for international trade and the last years have demonstrated its fragility (the effects of Covid-19 and the Chinese Covid policies, the blockage of the Suez channel).

A shortcoming of this research has been the exclusion of logistics and transport from the empirical work due to time constraints. I have described above in detail the part of the chain from the field to the packing plant. There, the fruit is loaded into containers fixed on trucks without leaving the building and without interrupting the cool chain. Trucks which in some occasions travel directly to Chilean markets and supermarkets (mostly with fruit unfit for export), or to South American importing countries. In most occasions though, the fruit is directed to the seaports – the major ones being Valparaiso and San Antonio. Only in a few

occasions – when prices are very high – fruit is transported by airplane (cfr. Paragraph 6.5.1) with a much higher carbon footprint (cfr. Paragraph 6.3.3).



Figure 33: The port of San Antonio (Photo by author)

From there, the fruit travels for weeks across the sea until reaching Asian, North American or European ports. This trip, as I showed while writing about production, has a big influence on the whole process of the fruit: this influence is both in material as in value terms.

In respect to the fruit's materiality, it must be prepared for the trip: fruit must be harvested at the right moment – if it is too ripe, it will rot. Fruit must be thoroughly selected – if one fruit in a box starts to rot, it is more likely that the rest will do so. In many cases fruit must be chemically treated, with gases and other substances, according to the specific species and destination, in order to interrupt or slow down the processes of ripening. Most important is the cool chain, which should never be interrupted from the packing plant until reaching a faraway supermarket. To guarantee this, every container is tracked and controlled over distance (Interviews to representatives of a naval logistics company and a freight forwarder at the Macfrut Trade Fair).

But this trip is fundamental also in value terms: while travelling, the fruit acquires value. To cross the equator, into the opposite season of the year, is a fundamental of Chile's fruit business model, possible thanks to the invention of the cool chain. Before, Chile could only export dried fruit over shorter distances, in far lower

volumes. The price of the fruit is not yet fixed (only a partial payment has been made, in most cases), while it is travelling: fruit starts to travel based on gentleman agreements and only once arrived at the destination country it is definitively sold, according to the current market prices (Interviews to Cristian Moretti). And indeed, the responsibility for the fruit, until arriving at the port of arrival, lies in the hands of the producers.

Costs of logistics have been rising in the aftermath of the pandemic (which had led shipping companies to take many ships out of their fleet due to low demand and high costs – ships that cannot be easily reactivated) (Interview to a representative of a global naval company at Macfrut). The rise of transportation costs have been mentioned by many interviewees as a threat to the Chilean fruit industries profitability⁶² (e.g. Interview to Gabriel Edwards). For Cristian Ferriere from export company Acograpes, logistics have been a particularly difficult aspect in these years; the shipping companies are “gigantic” and in times of limited cargo capacity, Acograpes needed to collaborate with other export companies to assure having cargo space. Restrictions in port capacities, related also to the Covid pandemic, have delayed ships, and have made it necessary to use other, more far away ports, and thus led to delays in road transport. Thus, the costs have risen and the fruit takes longer to arrive, problematic for a fresh product. Accordingly, insurance companies do not currently insure damages deriving from delays like before. Also the packing materials have been subject to delays, too, as most of them arrive from abroad.

The Role of Import Companies

At the harbour of destination, the import company takes over. Import companies and supermarket chains in Italy import fruit to have specific fruit species all year round (Interview to Manuela Ferrero from specialised intermediary Battaglio). Cooperatives of fruit producers in Italy act as import companies, motivated by the supermarket chains’ requests for constant quality and supply: supplementing their production with imports, they can guarantee the same fruit species all year round (Interviews to representative of Italian fruit producer cooperative at Macfrut and to Cristian Moretti). This ‘need’ to have the same fruit all year round goes back to the 1990s in Italy (Interview to Cristian Moretti). A representative from an Italian supermarket chain at Macfrut argued that generally they preferred Italian produce but that varying availability across seasons required them to buy also imported fruit. A person working for a German import company specified that it is in

62 see also <https://www.emol.com/noticias/Economia/2021/12/20/1041521/fruticolas-flestes-rentabilidad-cultivos.html> (last access January 2022)

particular about some species of fruit which form a sort of baseline in the offer of any supermarket. According to him, in Europe, it is less about cherries at Christmas, like in China (a luxury product), but rather about apples in summer: about the ordinary everyday product which clients (supposedly) expect to find all year round in the supermarket. Over the last decades, the import season has been reduced: different varieties and better storage facilities have extended the period of time during which local fruit is available (Interviews to person working at German import company and to Cristian Moretti). Not necessarily this reduces ecological impacts, considering the energy necessary to store the fruit over months – seasonality and regionalism are not the same thing (Interview to person working at German import company).

Import companies generally work with many different species of fruit from many different origins, in order to be attractive for their clients (supermarket chains or wholesale markets). This, but most importantly the need to plan ahead and to provide stable quantities and constant qualities, makes it complicated for them, as all import company representatives I interviewed confirmed (Battaglio, Agrintesa, the German import company), even when they are cooperatives of small producers themselves, with the exception of a Fair Trade organisation (see below), to work with small producers or export companies. Only if in Chile there were large cooperative organisations, like in Italy, things could change (Interview to Cristian Moretti). The supermarkets' desire for stability of provision and in order to not need to interact with too many different providers, is also a reason for the existence of import companies which bundle produce from different countries so as to be able to provide fruit throughout the year – this is hard to do for export companies, especially smaller ones (Interview to Cristian Ferriere).

The relations that import companies establish with their producers or the export companies they work with, are, like in other steps of the chain, often long term relationships (interviewees from different actors and countries at Macfrut, interview to Cristian Ferriere), coherently with the long times of fruit production, in which according to the species it can take years to set up a new production (e.g. of a new variety). Knowing each other personally and personal trust are important factors in a trade which on one hand tries to plan how much to grow, trade, export and import, season by season, trying to control nature, but, on the other hand, needs to continuously adapt to the inevitable variations of nature, of weather, of fruit quality, but also to the variability of markets, to delays and other problems in the logistics chain. These variations appear to be at the basis of the fact that actual sales contracts are concluded when the fruit already has arrived at destination, send on the ground of some text messages (Fieldnotes, 04/02/22).

How are these relation of trust established? Much passes through personal contacts, interviewees have told me. An important role to establish new contacts, is also played by government institutions working in the promotion of exports (e.g. ProChile), but also embassies (Interview to Catalina Cuevas and Yolanda Pizarro, interviews at Macfrut). These entities look for both buyers and vendors and try to connect them, they organise meetings to promote their country's exports in potential buyer countries and they participate in trade fairs like Macfrut, which are important meeting points between these actors, both to establish new and maintain old contacts.

But these relations also include a level of control. A control of documentation relative to the different steps of production (Interview to Manuel Ferrero) and relative to certifications. Battaglio for some species of fruit, for which the control of the chain had been difficult, has also started its own plantations (Interview to Manuela Ferrero). And also Agrintesa has had a direct project of organising the production of kiwi in Chile (Interview to Roberto Bressi).

The logistics after the port of arrival is the import company's responsibility. The fruit is brought to warehouses to be further stored (Interviews to Cristian Moretti, Manuela Ferrero). The quality of the fruit is further controlled (Interview to Manuela Ferrero). In some cases the fruit is send to the supermarket as it arrives, in other cases it is repacked into different containers, some fruit, like pineapples or avocados is even further ripened in special facilities (Interview to Manuela Ferrero). Then, finally, when needed and required, the fruit is distributed to the shelves of supermarkets or at wholesale markets to arrive at smaller shops or street markets.

The last step, is the sale of fruit in supermarkets or other channels of distribution. Even though I have not collected a lot of direct evidence, it is relevant to note here that this final step has much influence on the rest of the chain. Supermarket chains appear as a particularly powerful actor, as many interviewees have mentioned. They set much of the quality requirements with which the rest of the chain has to comply (cfr. paragraph 6.4.2). In terms of prices, while they must to some degree pay market prices – if not, there are alternatives, like wholesale markets or restaurants – the power of supermarkets is considerable (Interview to Cristian Moretti).

Global transport is a crucial mechanism in the commodity geography, its requirements influence many other aspects (cfr. Paragraph 6.4.1). Then, as imported fruit has to compete with many alternatives – supermarket chains have access to products from a global market, there are seasonal fruits with which to compete – it has to respect the standards that this final actor, in interaction with the institutions of the importing states, real or imagined consumer preferences, sets. Notwithstanding the many hands through which fruit can pass to arrive from

a plantation in Chile to a supermarket shelf in Europe, or elsewhere, the rules of this last step of the chain have a very direct influence on how production is organised.

6.2.6 Export: Why ?

We have 40 years of history with the message that export is the solution of all problems.

(Interview to anonymous ODEPA officer)

In this chapter, I have discussed, based on my fieldwork and my interviews, how the process of fruit production works; how it is organised from the plantation until the supermarket. Before proceeding to interpret this mainstream model of the Chilean fruit industry through critical voices and perspectives, I here want to shortly give some of the answers to the question of why to produce for export. I repeatedly asked producers, NGOs and government institutions at the Macfrut fair (from different countries) as well as in Chile this basic question: What motivates producers to export (instead of selling to the local market)? Why is it attractive to them? The main answer to this question is banal: selling on global markets allows producers to sell larger volumes and to achieve higher prices or at least, this is the expectation. There have been variations to this answer. Many in Chile, but also a person working for the Guatemala government and the representative of a producer cooperative from the Dominican Republic, argued that their countries produced a surplus – more than the local market could absorb. Of course these tend to be surpluses (certainly this is the case for Chile) in certain fields of agricultural production, not in general. In other cases (e.g. interview to representatives of small Colombian banana producer cooperative), a local market simply does not exist: these producers argued that due to export subsidies given by other countries' governments, in Colombia imported fruit is cheaper than their own. The reasons why higher prices are possible or expected to be obtained are related to extended or opposed seasons, making fruits available in periods of the year when they don't grow in Europe or simply fruit species that cannot be grown in Europe, e.g. pineapples, bananas.

But there is another aspect: in many cases demand has shaped the kind of cultivation done and as a consequence, obviously, local markets cannot absorb all

the production. One interpretation of this has been provided by Cristian Ferriere, from export company Acograpes:

My vision is that if somebody produces cheaper than myself, I prefer to buy from them. (...) If we are more efficient in producing table grapes, the logical thing is that we export. (...) If you want to consume grapes twelve months of the year, or mandarines or apples, or whatever it is, the logical thing is that those who are more efficient produce it (Interview to Cristian Ferriere).

But of course, this view assumes as normal to consume grapes all the year and obscures that a major 'efficiency' in production is nothing naturally given. As we have seen, the economic model of Chile's fruit production for export has been actively constructed by Chilean politics over decade, if not centuries (cfr. Paragraphs 6.1.1 and 6.1.2). The goal being to establish Chile as a globally strong player in this sector, as a "food power".

As smooth as this organisation may appear, it produces contradictions and conflicts, as already has come out in the accounts of this chapter. In the following chapter I will concentrate on them, focusing in particular on environmental sustainability and water. Afterwards, in chapter 6.4, I will turn to more systematically approach the question of how the organisation of a production for global trade shapes territories of production, considering both the commodity chain and the impacts it produces beyond its smooth and linear appearance.

6.3 Socio-Ecological Debates and Conflicts around Fruit Production in Chile

So far I have summarised the linear commodity chain of fruit between orchard and supermarket. But – it has already come through in this story – this is not only a linear chain of fruit produced, packed, transported and sold. Rather, this chain is part of a complex geography, in which many other actors come into play. These actors are manifold (cfr. Figure 6) and they define the context in which the commodity chain, explored in chapter 6.2, is situated. While in chapter 6.1 I have focused on a general description of the socio-economic, political and institutional context, in the present chapter, I focus on socio-ecological conflicts produced by or related to the commodity chain of fruit production for export in Chile: identified, through literature and interviews, in debates and conflicts around environmental sustainability and water but also land, labour, pesticides, climate and food sovereignty. Far from exceptional, these conflicts appear as typical in relation to

extractive industries, comprising, as in Valz Gris' (2021, 58) research on Lithium extraction in northern Chile, “[l]ike many other struggles, (...) three main issues: land, labour and water”.

This attempt to give a broad perspective of ongoing socio-ecological conflicts on the downside does not allow to go as deep into the single issues, as it would have been possible choosing a more specific focus. Again, the choice has been to give, on the one hand, a complex as possible picture of the entanglements of Chilean fruit production for export. On the other hand, the point is not so much to clarify exhaustively all aspects of one of these single conflicts, but rather to carve out, in relation to the overarching theoretical framework (cfr. Section 4), which are the implications of a global commodity geography on a territory of production. In this sense, the present chapter serves to prepare the ground for the meta-level discussion in the following chapter 6.4 on how and through which mechanisms such a commodity geography impacts on a territory.

Around these socio-ecological conflicts it is possible to analyse and illustrate the role and interplay of the different human actors – the fruit industry itself and its lobby organisations, the state in its diverse declinations and institutions, associations and social movements⁶³ – between each other and with non-human actors, such as land, water, climate, ecology. In this interplay the state gives the rules, provides support, limits and so forth, according to different policies executed through diverse specific institutions. The other actors in many cases try to influence the state’s agency and actions. Here I do not go into the details of how they try to do this, but focus on the different perspectives these actors have on the Chilean fruit industry, its relation to the Chilean territory, and how it should change according to them. Furthermore, I focus on the conflicts occurring in Chile, as much as in some cases there is an important interplay with actors across the oceans (e.g. when free trade agreements between states change the rules of international trade).

63 Further actors, who are not studied here but play roles in reality, are: banks that finance investments, companies that produce technical equipment and machinery for the different parts of the chain, as well as research institutions which study methods of pest management, new fruit varieties and so forth.

6.3.1 The Debate on Sustainability

The most influential tendency (...) is how they produce it, more than what they produce. Nowadays, they may ask you if your fruit is good or very good and stuff like that...Ok, but: “go and look at the carbon footprint” (...) for the consumer (...) if [the fruit] is going to be bad for the planet has become a very important factor.

Interview to Sergio Maureira, secretary general of Export Companies' association ASOEX

Sustainability has become an important factor for the Chilean fruit industry. But why is it worth to dedicate a separate paragraph to “sustainability” in general? Why not treat it simply in its declinations, in relation to water, climate, pesticides, social and economic aspects? During the research it came out that the framing of sustainability has been often used in very specific contexts, often by state institutions and industry organisations and consultants. It has very frequently been related, like in the citation opening this paragraph, to the will of an hypothetical global consumer. And this has probably much to do with global debates on sustainability. Indeed, two interviewees who particularly insisted on the importance of sustainability as an important theme (Catalina Cuevas from ProChile and Isabel Quiroz from iqonsulting) have very international jobs. In other words, discourses about sustainability in general appear to be promoted in many cases by different actors than those opposing specific threats to sustainability, as they are discussed in the following paragraphs.

Beyond the price, elements of quality and the respect of standards of social and ecological sustainability have acquired a central role for a new generation of “active consumers” (Interview to Catalina Cuevas and Yolanda Pizarro from ProChile). Even so, this evolution has not been linear. Up to the economic crisis of 2008/2010 there were many requests to calculate the fruit's carbon and water footprints but with the crisis these requirements disappeared (Interview to Mario Marin Valdebenito).

In their study of the Washington world apple, Jarosz and Qazi (2000), point at the difficulty of adaptations to sustainability standards, as “growers just barely brake even” (p.10). Even so, at the time, sustainability oriented changes in the agricultural techniques were discussed, in particular with the goal of reducing the use of pesticides. Finally though, in the authors view, such a move seems to be of interest mainly in relation to the goal to gain a competitive advantage and to be able to sell the apple more successfully as a green and healthy fruit on the world

market. This parallels Le Heron and Roche's (1996) argument on abstract sustainability requirements imposed from outside on New Zealand producers, from the consumption side, together with other quality standards. Together these requirements in their case study seemed to have paradoxical consequences, as at the same time the diversity of apple varieties (which might be considered as another indicator of sustainability), has strongly decreased, in order to guarantee homogeneous quality.

Similarly, the request of "sustainable" products comes to Chile through supermarket chains (Interview to Cristian Moretti), European ones in the first place, also American ones sometimes (while in China, the third main market, this is not yet a big topic); they are, in turn, stimulated to provide sustainable products by their consumers who otherwise may rather choose local products (Interviews to Sergio Maureira, Kurt Neuling). Who does not include considerations about the environment, about how they treat their workers, remains excluded from the market (Interviews to Sergio Maureira, Cristian Moretti). Even if one exports to a market less attentive to sustainability like China, one tends to respect the more restrictive standard, as otherwise "many doors close" (Interview to Isabel Quiroz). These requests of sustainability are executed through standards and certifications (Interview to Cristian Moretti, cfr. Paragraph 6.4.2); a wide range of certifications and standards which, beyond the carbon footprint may include certifications on the treatment of native forests (Interview to Sergio Maureira). A certification like GlobalGAP increasingly considers sustainability criteria, in particular in relation to pesticides (Interview to Yolanda Fernández). Around these "a kind of market has evolved (...) consultants, companies, certifications" (Interview to Sergio Maureira). That at least the idea or image of environmental sustainability has become central in the business, has been evident also browsing the Macfrut trade fair – claims about the environmental sustainability of products were omnipresent and more often than not uncritically combined with the most 'industrial' practices of agricultural production and trade: large-scale production, plastic and cartoon packaging, supermarket chains as main channels of commercialisation. "I believe that the producer has no other choice: or they get on this train of sustainability and a good agronomic management or they die trying" (Interview to Yolanda Fernández). Environmental sustainability, in these general terms appears as a consumer-driven issue, very differently from the socio-ecological conflicts around water, pesticides and labour, discussed in the following paragraphs, which are instead closely related to local debates in Chile.

A different question is how effective all these measures are in the context of a growth-oriented model of fruit production for export. This form of sustainability has not done much to overcome an instrumental use of the territory where fruit is produced. Sustainability is mostly intended as complying with standards externally

defined (Interview to anonymous ODEPA officer). There is instead very little of a systematic and complex view on sustainability, little effort to relate it to the needs of local communities; even though, at the level of discourse at least, something appears to be moving (Interview to anonymous ODEPA officer).

In the region of Valparaiso, a regional strategic programme for sustainability in fruit production, PERFRUTS, has been built in the last years, in collaboration of public institutions, fruit producers and their organisations and their universities.

“They try to diffuse this knowledge [on sustainability requirements] to small producers (...) for common certification and traceability. (...) These are the mechanisms: to collaborate between different small producers and get support through these common public-private engagements.” (Interview to Catalina Cuevas and Yolanda Pizarro from ProChile).

The strategic axes do not point exclusively on questions of environmental sustainability, rather they also try to identify and open new niches on the global markets, for fruit from the region, fruit which is generally considered ‘sustainable’. Indeed, increasing the quantity of exported fruit is one of the goals, thanks to more efficiency (Interview to Kurt Neuling). Or as the website puts it: “The goal: potentiate the product to get to markets that give more value”⁶⁴. According to the programme manager, Kurt Neuling, it is the international requests for sustainability which drive the need to implement such a programme, from which, as a consequence, also the production for the local market can benefit. The programme focuses its analysis of sustainability on the part of the process reaching from orchard to port; they are unable to include the rest of the chain in their evaluations (Interview to Kurt Neuling).

At the national level, in 2021, a sustainability strategy for Chilean agriculture has been elaborated, in a participative process guided by the office of studies of the Ministry of Agriculture, ODEPA (ODEPA 2021). The document can be characterised as typical for sustainable development strategies: no structural change is proposed, no debate about limits to production or limits to the use of water. Rather a focus on technical measures for the efficiency in the use of water, for instance. Many good intentions, like the development of local markets for family agriculture and ecological sustainability are affirmed but no analysis is made of the concrete compatibility of one goal with another. Also here, a main argument for the sustainability strategy is the improvement of the competitiveness of Chilean agriculture on global markets (ODEPA 2021, Interview to anonymous ODEPA officer). And indeed the strategy has been developed in response to commercial pressures; while this may be part of a discourse that has improved, practices have

64 <https://fruticulturasustentable.cl/> (Last access: October 2022)

changed little, so far (Interview to anonymous ODEPA officer). The strategy, furthermore, differently from the Valparaiso region's strategic programme, has no own funding (Interview to anonymous ODEPA officer). The character of the contents, shortly summarised, has to do with the political background of the right-wing government under which it has been elaborated, with a fruit producer as minister for agriculture and a believe in the self-regulation of markets (Interview to anonymous ODEPA officer).

I believe that this [export] historically has made it a more intensive productive system, more industrial. In general there are no agroecological fruit production systems, instead they are focused on productivity, fruit size and the compliance with the requirements of the export markets, and that has a negative impact on sustainability. But, on the other hand, the market requirements which ask for sustainability certifications or indicators, carbon footprints, water footprints, have also made the industry move and start to include these better practices – in order to comply with what the market asks for (Interview to anonymous ODEPA officer).

For a systematic evaluation of efforts in the Chilean fruit industry towards environmental sustainability, other types of data and instruments are needed and are partly provided in the following paragraphs. But a few points can be made already at this stage:

- The implementation of sustainability measures in Chile (for good and for bad) is driven by international markets.
- This has the positive potential of implementing more sustainable agricultural practices in Chile.
- On the other hand, it risks being a trap, as structural social and ecological issues hardly can be tackled in this way, as it is the very structure of export-oriented fruit production that drives at least part of these issues.
- Also, sustainability tends to be narrowly defined in relation to externally defined standards and certifications.
- And finally, strategies and policies tend to appear as 'sustainability fixes' (While, Jonas, and Gibbs 2004): one must be sustainable in order to maintain or increase market shares.

6.3.2 The Conflict on Water

Without water, no fruit production. It's hard to imagine the plants producing
without water.

Interview to Pablo Badilla from export company Agricom

The growth of fresh fruit production in Chile is meeting its socio-ecological limits as water resources are overexploited, argue Panez, Roose, and Faúndez (2020). The debate around water is one of the main conflicts in contemporary Chile. It is, for instance, widely debated in the context of the process for the new Chilean constitution. The water question extends far beyond the fruit industry and involves the question of water use by other industries, like mining and forestry and the question of rights of direct human water use. At the same time the fruit production in Chile is involved in many ways in this conflict.

According to the last agricultural census, 96% of the surface of fruit plantation was artificially irrigated in the season 2020-2021 (INE - Instituto Nacional de Estadísticas 2021). Indeed, a large majority of interviewees agreed on the fact that water is a critical issue for Chile's fruit industry. Most also agree on three factors which appear as central in the debate (e.g. Octavio Sotomayor, Juan Manuel Roa, Marco Pfeiffer, Pedro Ossa, Carlos Gutierrez, Mauricio Ponce, Cristian Lepe, Martina Soto, Eduardo Hernández) accordingly with documents and literature:

(1) the long drought afflicting Chile (Garreaud et al. 2020; 2017) in connection with climate change;

(2) the current governance of water in Chile that is based on the neoliberal principle of private ownership of water, separated from land ownership as defined by the current constitution, approved under the Pinochet dictatorship;

(3) the insufficient study, planning and control of the availability and use of water in each water basin.

While the identification of these factors was quite consensual among interviewees, an important division appeared among who saw the fruit industry mainly as a victim of the water crisis and that mostly technical measures should be taken to approach it (most interviewees in the fruit industry and related lobby organisations argues in this way, e.g. Mario Marin Valdebenito) and who instead considered the fruit industry as at least partly responsible for the crisis and, as a consequence argued for normative changes and limits (activists, some small producers, experts, e.g. Mauricio Ponce). To consultant Mauricio Ponce the fruit industry is more a cause of the water crisis than a victim – victims rather being small producers and the (rural) population remaining without sufficient water access (Interview to Mauricio Ponce).

Separating Water and Land: the Legislation

After the incorporation of agriculture into capitalist relations as a consequence of the agrarian counter-reform under Pinochet, neoliberal policies have re-regulated agriculture towards an agribusiness model (cfr. Paragraphs 6.1.1 and 6.1.2). Part of this were the reforms to privatise land and water, affirmed in the constitution (Panez, Roose, and Faúndez 2020). In this context of neoliberal reform, the 1981 water code separated water rights from land rights and made water a private good, freely tradeable, independently from land (Arboleda 2020a). In theory, was the underlying argument, this should support a rational and efficient resource allocation on the market. In practice though, in most occasions water rights have never been traded on the market but have rather directly been conceded to large companies, prioritising industrial over other uses and in many occasions water shortages have been the result: for drinking water as well as for small-scale agriculture⁶⁵. In some cases, people own water rights without land and then resell them at higher prices to farmers (Interview to Juan Ferreira).

This separation of land and water rights has produced two problematic outcomes: in some occasions, who owns land is unable to cultivate it because they do not possess water rights. At the same time, water rights have become a tradeable good, separated from land, leading to sometimes paradoxical situations of land criss-crossed by rivers but without water rights to irrigate it; thus, the separation of land ownership and water rights is a situation to overcome (Interview to Mauricio Ponce). While water is not in theory private, water use rights are assigned permanently under the current system (and traded between privates) only exceeding quantities have been available to rural communities in many cases but these exceeding quantities have been strongly reduced by the “very aggressive expansion of fruit production” (Interview to Marco Pfeiffer). The reform of the water law approved at the beginning of 2022 limits the validity of water rights to a 30 year period (and their use can be limited in occasions of limited water availability) but maintains the transferability⁶⁶.

Water rights are constituted as proportions of the flow of a river, for instance, thus if the flow of the river decreases this, in principle, affects everybody but

If I start to buy from those people and accumulate more water rights, sure I don't worry and I don't worry because I have more water and I impose my right

65 In some occasions, economic “experts” who promoted this and other reforms, later benefited from its outcomes, working in private enterprises. All the same, for Arboleda at least, this process should not be interpreted as a moral problem of individual behaviour but rather as a systemic trait of state action under capitalism.

66 <https://www.bcn.cl/leychile/navegar?idNorma=1174443&tipoVersion=0> (Last access: September 2022)

to extract more water (...), distorting the system (...) reducing everything to a question of price and costs. (Interview to Mauricio Ponce).

The Drought

While the fact that there is in general a more than a decade long water scarcity is clear to more or less everyone I spoke to and confirmed by data⁶⁷, it is less obvious to affirm how the situation is in specific water basins. Many lament the lack of studies and data on the water availability and demand in specific basins (e.g. Interview to Kurt Neuling) or in general the lack of an integrated management of water basins (Interview to Mauricio Ponce).

Central Chile's drought since 2010 has been characterised as a “mega drought” by climate scientists (Garreaud et al. 2020) due to its peculiar characteristics: not so much the extremely low rainfall (short droughts are typical for Mediterranean climates; *ibid.*) but in the continuity of an annual precipitation deficit of 20 to 40% over a nine-year period (2010-2018, the time period analysed in the cited study). This is the longest drought “event on record and with few analogues in the last millennia” (Garreaud et al. 2020, 421). Cause of the mega drought is a basis of natural variability but its extent and force is explainable only by human-made climate change – thus the future evolution of precipitation levels in central Chile will depend on the success of global climate policies and a complete recovery appears unlikely (Garreaud et al. 2020). Increased evapotranspiration due to a warming local climate worsens the drought's impacts, while projections on the impacts of climate change point at a future with a generalised reduction of precipitation and air temperature increases (Garreaud et al. 2017).

Direct consequences of the combined effect of the drought and increased temperatures are reduced water availability in streams and an impact on vegetation: the impact on vegetation though appears to have been stronger (at the time of the cited study) for natural vegetation than for forest plantations and cropland, most likely due to the irrigation, also with groundwater depots, the sustainability of which remains to be evaluated, according to Garreaud et al. (2017). Groundwater levels in the central regions have been falling in the last years (Interview to Mauricio Ponce). More immediate effects have been found in the rise of expenditure for water delivery by trucks to rural communities (Garreaud et al. 2017) – in many cases de-prioritised as water consumers in respect to agriculture or mining, due to the private management of water access rights (see above), with the most extreme case being Petorca (see below).

67 e.g. <https://www.cr2.cl/las-consecuencias-de-10-anos-de-sequia-en-chile-desafio-tierra/> (Last access: July 2022)

Beyond the numbers of the drought over the last decade and the projections for the closer future, there is also the question of how Chile adapts to the drought. Not always the priorities seem to be coherent with the scenarios. One aspect is the prioritisation of the fruit production for export (see below). But not always is the agriculture the main problem: in the metropolitan region of Santiago, city consumption is the most important part and no efforts are done to limit it, protecting the production of vegetables in the region which produces the majority of vegetables for the country – but in small farms with little political voice (Interview to Marco Pfeiffer).

Avocados in Petorca, a Critical Case?

What happens when ecological conditions are not respected is illustrated by the case of Petorca⁶⁸ in the region of Valparaíso. Here, Avocados – a tree that needs warm climate but also a lot of water – have been planted in a very arid area. The consequent excessive use of water in the context of the current drought in Chile, has brought catastrophic ecological, social and economic consequences, in the most extreme case of the problematic connection between fruit production and water use, with the river falling completely dry (Interview to Marco Pfeiffer). Most of the plantations had to be abandoned (interview to Mario Marin Valdebenito). This case has drawn much attention in Chile and outside⁶⁹ and Petorca has been a frequent reference-point for my interviewees – both as an example for the problematic impacts of large-scale fruit production for export by critical observers and activists (e.g. Interview to Carlos Gutierrez, Modatima), while many others were keen to frame it as the exception from a generally good practice of fruit cultivation (e.g. Mario Marin Valdebenito).

It is precisely in Petorca that a strong social movement contesting the Chilean water governance evolved, around the organisation MODATIMA (Movimiento por la Defensa al Acceso al Agua, la Tierra y la Protección al Medio Ambiente)⁷⁰, with the slogan “*no es sequía, es saqueo*” (It’s not the drought, it’s plundering) (Interview to Carlos Gutierrez, co-coordinator of a MODATIMA group in the Región Metropolitana and agronomist). This slogan clearly hints to a political vision of the water problem:

So there [in Petorca] everything starts, from the contradiction between seeing green avocados in front of you, in your province, in front of your house and not

68 <https://www.youtube.com/watch?v=nLbBg8Q-CBQ> (Last access: July 2021)

69 <https://cl.boell.org/es/2018/07/26/el-impacto-socio-ambiental-de-la-industria-de-paltas-en-la-provincia-de-petorca> (Last access: July 2022)

70 <https://modatima.cl/> (Last access: August 2022)

having access to water to drink or to wash and with the river drying out. So that was such a strong contradiction, like [Rodrigo] Mundaca [MODATIMA's founder and now governor of the Valparaíso region] always says. They started late, as all the business already was already installed when they started to oppose it. (Interview to Carlos Gutierrez)

According to Mundaca⁷¹, 400 thousand people in the region depend on water brought by trucks; but there is no water for small agriculture and livestock breeding.

The drought is a problem also beyond this extreme case and the quantity and quality of production has been affected which even risks to menace the country's external reputation as a fruit producer. Reputation also affected by the case of Petorca in the sense that it does give an idea of unsustainability of Chilean fruit production (Interview to Catalina Cuevas and Yolanda Pizzaro from ProChile). Furthermore, the expansion of new fruit plantation continues to occur in areas with limited availability of water where it shouldn't (Interview to Marco Pfeiffer).

Water and Soil or Where to Plant Fruit?

The question of water cannot be separated from the question of soil. Even interviewees from industry organisations admitted that planting fruit on hills and slopes may be problematic and more care should be taken in this regard (e.g. Interview to Sergio Maureira). To Marco Pfeiffer, a researcher working on water and soil, the expansion of fruit production on hilly slopes is the most worrying aspect, as those are "very fragile soils, because [these plantations] are in very steep slopes or because there is native vegetation in those places" (Interview to Marco Pfeiffer). Most of this happens in the areas of Mediterranean climate of central Chile (i.e. for instance in the areas of Petorca but also Leyda; cfr. Paragraph 6.2.2) in which in recent years much native vegetation has been substituted by fruit plantations, in combination with an excessive extraction of water (Interview to Marco Pfeiffer). There is a general lack of planning and limiting the where and how much of fruit plantation (Interview to Eduardo Hernández).

Not always these new plantations are legal and in particular the wells that some producers dig to irrigate these plantations often are illegal. According to some confidential comments, the problem is that, when controlled, producers need to pay a fine which is too low as to substantially affect their profitability. A type of critique also shared by Carlos Gutierrez. So that they simply include them in their

71 <https://cooperativa.cl/noticias/pais/region-de-valparaiso/gobernador-de-valparaiso-la-situacion-hidrica-de-la-region-es/2021-08-11/074527.html> (Last access: August 2022)

economic plans. Indeed many interviewees have evidenced a lack of controls and of resources to control and asked for stronger controls (e.g. Interviews to Kurt Neuling, Leonardo Valenzuela, Carlos Gutierrez, Mauricio Ponce, Eduardo Hernández).

In the north of Chile, you see hills planted with avocados and this is not regulated by the state. I don't know if they steal the water, but independently from that, there was a lack of state regulation as you cannot use that water, you cannot plant on that hill. But as an individual [in a liberal state] you want to maximise your profits (Interview to Martin Barros, INDAP).

Furthermore, in some areas orchards have been planted according to certain data of average rainfall, but afterwards the average rainfall has strongly decreased (Interview to Kurt Neuling).

Is Technology the Solution?

Talking to fruit producers, water was more or less always an issue. But most seemed to perceive the drought as an external threat, not as a phenomenon to which they themselves contributed. To many interviewees working in the fruit industry (e.g. Pablo Badilla, Mario Marin Valdebenito, Juan Manuela Roa, Cristobal Matte, Pedro Guerra), the solution to water scarcity lies in the “technification” of irrigation to improve the efficiency of water use. Or, in other words, in a quest for increased efficiency. This certainly means the improvement of irrigation technology in the field and the construction of tanks to store water but includes also the request to the state to invest more in larger hydraulic works like dams; projects to desalinize sea water and to reuse water after human use are other proposals (Interview to Kurt Neuling). Others also argued against the “loss” of water to the sea through rivers, which should be stopped by state interventions to make water usable by plantations (Interview to Juan Manuel Roa). As an industry consultant argued:

[May water, with other aspects, be a limitation to the future development of Chile's fruit export industry?] No, because I am super enthusiastic about technology and I believe that technology will give us an answer in relation to water. (...) Already producers have made a relevant introduction of technology to increase the efficiency of water use. Ten years ago you irrigated a ha of grapevine with 12000m³ of water (...) already we arrived at 6000m³ (...) [this] is the minimum in an extreme efficiency to obtain quality and quantity and this is half of what was used six years ago. This has happened with avocado, citrus fruit, everything. The point has been the introduction of a lot of technology. Now it is necessary to go on the other side, the supply, the technology of

desalinization and the distribution of water and other technologies will allow us to have more water and maintain fruit production but also the general production of food in Chile (Interview to Isabel Quiroz).

According to Kurt Neuling:

First, it is necessary to continue to improve efficiency, certainly it is not endless but you can do it better. Second, look for new water sources, and third, until some time ago it was debated how to store water, how to build artificial lakes, but nowadays in many places there is not even the water to fill those lakes, and the other is (...) water sources and reuse. Why don't we make a circular economy of water? (...) and we are not afraid of desalinization (...) you can also do it sustainably.

The question in these scenarios certainly is how far efficiency can go, in particular in combination with growth of production and when the general availability of water decreases.

In other cases, like Nancagua, for fruit producers, the question of water is often limited to saying: we have the water rights, so we are ok – hardly is there an effort to relate to the needs of local communities, and if, it is easily be limited to maybe in some cases helpful but “paternalistic” and technical solutions, like financing wells for community consumption (Interview to anonymous ODEPA officer).

For Mario Marin Valdebenito from Fedefruta there are three strategies to be enacted: greater technological innovation (including artificial intelligence) and efficiency, the introduction of new varieties and a move of agriculture southwards. In the north, on the other hand, plantations are abandoned due to the lack of water, e.g. Avocado and Clementines (Interview to Pablo Badilla), something that I could observe in the area of San Felipe, where several orchards without sufficient access to water rights were abandoned to the drought (while newly planted avocado plantations on the slopes of the surrounding hills were shining in bright green) (cfr. Paragraph 6.5.3).

The producer organisation Fedefruta urges the government to act on climate change⁷². While recognising that producers might need to evaluate what to produce where (see Avocados), they mainly propose to desalinate sea water. Similarly the Sociedad Nacional de Agricultura (another producer organisation) argues for technical solutions:

carry water from the South northwards, they have done that in all the world. In big canals that don't present ecological issues. You desalinate the water, you

72 <https://cooperativa.cl/noticias/pais/desastres-naturales/sequia/fedefruta-la-crisis-hidrica-tiene-al-mundo-agricola-en-estado-de-shock/2021-08-13/105543.html> (Last access: July 2022)

build more artificial lakes. All this would lead to a strong reduction of the degradation of ecosystems and the soils,

argued their president, Cristián Allendes, in a newspaper article⁷³.

Not only large producers, also Pedro Guerra, president of small producer organisation Fedafruc and Mapuche cherry producer (cfr. Paragraph 6.5.4), argued for desalinization to solve the water crisis. Juan Lazcano, small producer of Mi Fruta (cfr. Paragraph 6.5.3), liked the idea of the construction of the mega project of a 'water highway' from Chile's south to bring water up north and, while lamenting a lack of attention of the Chilean government to the consequences of climate change, illustrated well the political conflict that can surround also technological solutions for the water crisis:

Now with all those environmental groups, with so much space for ecological topics, I believe that the water highway will never be built. (...) So, I don't know where we will get with agriculture and export (Interview to Juan Lazcano).

In the plantations, much of the efficiency improvements pass through the 'technification' of irrigation, usually meaning to pass from an irrigation 'a surco' (letting the water freely flow on the earth between fruit trees) to an irrigation 'a goteo' (by drop) (e.g. Interview to Cristian Ferriere). The investments to enact these transformations are subsidised by the state, through the National Irrigation Commissions (CNR) in which farmers (small, medium and large farmers separately) compete with their project to obtain these subsidies (Interview to Mauricio Ponce). The potential and limits of these projects are well illustrated by a consultant for such projects, which can also include new water captures, for instance from groundwater, if this extraction has not been prohibited in the specific area and it can include the extension of irrigated surface, thus:

If I technify and increase the efficiency of water use, by drop for instance, more or less I should use half of the water (...) [or one third]. So finally, of the same water I have at my disposition I will use less because I will use the water more efficiently. (...) So in theory with the same water they can irrigate the same surface three times (Interview to Mauricio Ponce).

But if this can include an extension of surfaces, this might lead to a typical rebound effect of an efficiency measure, not reducing overall water consumption (cfr. Parrique et al. 2019):

When you make an irrigation system more efficient, what you do is that the person using this irrigation system will end up expanding more water because you can expand your cultivated areas, being more efficient. So finally in the

73 <https://www.cooperativa.cl/noticias/pais/desastres-naturales/sequia/deficit-hidrico-gremio-agricultor-critico-medidas-estatales-para-paliar/2021-08-27/093118.html> (Last access: July 2022)

manner that they expand, they will consume more water and the law on irrigation what it will do is developing the agro-export sector but its other scope is in theory protecting the water resources, how it's called (Interview to Carlos Gutierrez).

Indeed there is no overall planning of the overall availability of water in a given area – the irrigation commissions approving these projects does not dialogue on this respect with the general direction of waters (DGA - Dirección General del Agua), which might (at least in theory) have some information on this regard, rather it is enough to prove to possess sufficient water rights – which excludes the question of illegal wells many have constructed (Interview to Mauricio Ponce). As water rights correspond to proportions of water flows, in many cases water rights, maybe provided a long time ago, may not any more correspond to real water availabilities in the context of a decade-long drought.

There may be some potential to apply further technologies to save water, Mauricio Ponce argues, for instance reusing grey waters, and of course efficiency in the use of water is important, but in general

I believe that there is a lack of vision (...), seeing water not as an exclusively technical issue, trying to get out the last drop to produce a couple of cherries more, a couple of grapes more. But I believe this is what they will try to do, moving the water, think about those super water highways, I don't see this as a very technical issue (...). I see that this a very powerful economic issue, it's moving for economic reasons. (...) We take water to irrigate sand and get something out of it. But all the environmental question doesn't enter the equation. This, I believe, can be a big cost for the future (Interview to Mauricio Ponce).

Another problem of this technical approach is that it maintains the logic of focusing the Chilean agriculture on the production of fruit for export instead of concentrating on food security or sovereignty – at the same time though, in themselves, technologies can help to guarantee high levels of productivity (Interview to Marco Pfeiffer). The point also here seems to be that technologies can help to use water (and soil) efficiently, but in a context of continued growth efficiency gains remain insufficient (cfr. Chapter 1.2). Thus, the question of water use also becomes a political one.

Is Political Change Necessary?

One interviewee explained the sustainability issues of the Chilean fruit industry with the cultural problem that Chileans have historically been so used to abundant

and apparently inexhaustible natural resources, that they needed to arrive at the experience of concrete limitations, e.g. in relation to water availability, to realise that limits exist; as a consequence, a strong state regulation is needed, they argued (Interview to Person working in Ministry of Agriculture).

The limits of the technical solutions discussed above, imply the necessity to discuss political change. How much and what kind of political change is necessary to solve the challenge of water has been controversial among my interviewees. Some saw the solution exclusively in technical measures (see above), some pointed mainly to the necessity of more controls and argued it would be much more effective to really implement existing laws, rather than create new ones (Interview to Leonardo Valenzuela).

Among those who argued for political change, Kurt Neuling called for a long-sighted strategic approach, based on studies and data and investing into technical solutions, arguing that if Chile wants to be a “food power”, it must tackle this issue. A very different kind of political change instead is asked for by social movements active around the water question. As mentioned above, MODATIMA’s critique has been fundamentally oriented towards the governance of water. While of course they recognise that the drought is an issue and that climate change is worsening the situation, they evidence that water governance, be it in the excessive use of water for agriculture but also in a profit-oriented operation of the companies providing drinking water to cities, is a crucial part of the problem – with the agricultural production for export being the biggest consumer of water (Interview to Carlos Gutierrez). There is a question of differentiated responsibilities: while there are appeals to households to save water, they actually consume only around 5% of it⁷⁴ (Interview to Carlos Gutierrez). Of course, there are different situations, Carlos argued, especially between small and big producers, with the state subsidising more the large than the small producers with irrigation projects. Indeed small producers were among the initiators of MODATIMA. The impacts of water shortages are different for small and large producers and companies:

Who will survive? Those that have deep wells, those that are prepared for this change. And those will be the large ones because they have more financial backing. And this is where we need to join and do things in common (Interview to Cristian Ferriere).

MODATIMA employs the terms of extractivism (“an extractive economy simply takes all you have and send it outside in change for money”), and monoculture, strictly linked to it, to criticise the current state of things (Interview to Carlos

74 MODATIMA’s critique to an anti-drought plan of the former government focused on human use <http://modatima.cl/2021/09/05/plan-de-sequia-del-gobierno-el-pueblo-tiene-que-reparar-los-danos-hechos-por-los-saqueadores-amigos-del-presidente/>

Gutierrez). Instead, they “actually want to change the idea of the resource and call it public good” (Interview to Carlos Gutierrez). A strong theme of the water movements is the priority of direct human use of water, in particular for poor rural communities which are the most affected (Petorca but not only) (Interview to Carlos Gutierrez) – the fruit industry in theory accepts this priority of human use (e.g. Interview to Mario Marin Valdebenito). Carlos Gutierrez defined this as greenwashing or even more simply

they probably understand that the vision of the business changed, but the mission many times is the same, or not even the mission, the goal, which in the end is business, so the business itself will always have its own goal which is surviving.

So for Carlos Gutierrez, very much like Arboleda (2020a) argues, the point is not that the people in the industry are evil but rather that they act in a legal context which allows them to act in this way. Hence, the fundamental necessity of political change, in the perspective of which they had posed much hope in the new constitution (rejected by referendum). MODATIMA’s proposal is to fundamentally reformulate the problem in terms of cooperation instead of competition. Also promoting a form of “economic deceleration”, not meaning degrowth but mainly an attentive evaluation of the consequences and an active citizen participation before the instalment of big economic projects (Interview to Carlos Gutierrez).

Water and Limits

The conflict about water in relation to the fruit industry can appear as a terrain in which two antithetical visions are opposed to each other: a pro-growth position, defended by (especially medium and large) producers and export companies, which recognises the water crisis but considers it mainly as a technical challenge to be solved with technical measures which finally must allow further growth of fruit production and export, which remains the number one priority. And a second, pro-rights position, aware of limits to growth, given by the availability of water in general and the needs of direct human water use in particular, defended by some small producers, activists and some experts and scientists, a position which points at legal reforms and takes the limits of water use as an argument for limitations to fruit production.

But one must be aware that, as much as these positions do exist, there are many grey tones in between and the opposition could be actually less radical than it seems. The real cut may be between who recognises that *there are limits* (and also some people in the industry do that) and thus the debate must be about

establishing them precisely through studies on the carrying capacities of single water basins. Inside this context, technological solutions may be accepted to different degrees but also some regulatory measures are usually deemed necessary (the question being if concentrated on improving controls or rather actual legal reforms). And, then, who argues as if *there were no limits* or as if they were too far to be operationally relevant, if not in a few specific cases like Petorca, impossible to deny. Technical solutions in this perspective are the only relevant answer to the water problem and all discussion about limits is framed as just an enemy of Chile's development. This second group does not appear as completely representative of the whole fruit industry. Certainly though it appears to be the publicly loud voice, according to my interviews and public statements in the media.

6.3.3 Other Conflicts: Climate, Land, Labour, Pesticides, Nutrition and Food Sovereignty

Climate

Climate and Climate Change is an issue in relation to Chile's fruit production in two ways. First, in relation to the water question discussed in the precedent paragraph, through which fruit production is directly affected by the consequences of climate change. Second, because fruit production and export itself contributes to the climate crisis through emissions (like basically every human activity). But how and how much?

While some interviewees claimed that there are many studies about the lifecycle footprint of Chile's fruit, there seem to be relatively few systematic and substantial studies. The most comprehensive and most cited study has been published by the state research institutes FIA and INIA in 2010⁷⁵ (FIA and INIA 2010). Without going into the details of this study, particular relevant here are two aspects. First, there appears to be a considerable variation in terms of emissions estimated according to the different fruit species and according to the means of transport. Second, when export occurs, as in most cases, by sea freight, international transport appears as a minor component in overall emissions (approx. 10%), the most relevant impact rather derives from post-harvest treatments, i.e. packaging and cool chain (in the case of frozen fruit this appears particular relevant: López Sepúlveda and Villalobos Mateluna 2013). But when fruit is exported by air (this

75 Available here: <https://bibliotecadigital.fia.cl/handle/20.500.11944/144764> (Last access: October 2022)

regards in particular berries which are most relevant for small producers and agroecological productions, cfr. Paragraph 6.5.1), then transport is the most important of all sources of emissions: for a kilogram of blueberries, for instance, with sea freight, emissions are estimated to be between 1,05 and 1,70 kg, with air freight instead they are estimated between 6,05 and 7,46 kg (FIA and INIA 2010), i.e. increased by factor six approximately.

According to a more recent peer-reviewed study though (Iriarte et al. 2021) ocean freight was responsible for 39% of the total emissions of apples produced in Chile and transported to the UK: but the total result of carbon footprint in this study was lower: 0,54kgCO₂eq/kg of apples, as compared to between 1,13 and 2,00kg of emissions in (FIA and INIA 2010) for apples shipped to the EU by ship. The value of emissions of the transport phase itself were measured in 0,14kg (FIA and INIA 2010) and 0,211kg (Iriarte et al. 2021). More in detail, the older study has attributed much higher levels of emission to the packaging process than the more recent study.

Ten years after the publication of this study a controversy arose concerning the claim of the association of avocado producers that theirs was the only production that absorbs more carbon than it contributes to emit⁷⁶. This was based on an estimate of FIA and INIA (2010) that suggested that avocado trees could absorb more carbon than the original xerofil vegetation on the hills where avocado plantations are typically established; the same study recognised that the methodology should be perfected and this specific claim would need to be further investigated, but the producer organisation took this result for granted, while several researchers⁷⁷ noted that the study did not take into sufficient account the large amount of carbon released during the process of land use change (cfr. Figure 22 and Figure 23). Also another study though, on organic blueberry production in Chile, estimated land use change from annual crops to a permanent crop like blueberries as resulting in carbon absorption rather than carbon emissions (Cordes, Iriarte, and Villalobos 2016). The already cited study on Chilean apples excluded land use change from calculations, as most Chilean apple plantations have long been planted (Iriarte et al. 2021). This shows the complexity of estimating correctly the impact of land use change in relation to fruit production and that results depend very much on the specific situation (what is planted and what is substituted). Certainly though, a transformation of fruit plantations to urban land, as occurring for instance in the area in San Felipe leads to more emissions (see below and paragraph 6.5.3). And most likely, there is a difference of

76 <https://www.fastcheck.cl/2020/09/07/asociacion-gremial-de-palteros-somos-el-unico-cultivo-carbono-positivo-en-chile-fake/> (Last access: October 2022)

77 <https://www.fastcheck.cl/2020/09/07/asociacion-gremial-de-palteros-somos-el-unico-cultivo-carbono-positivo-en-chile-fake/> (Last access: October 2022)

emissions between plantations that keep barren land between fruit trees and others that allow vegetation to grow (and absorb carbon) between trees.

Beyond this controversy, this data on the Chilean case appears to be in line with recent researches on global food-related GHG emissions. Crippa et al. (2021)⁷⁸ compare food-related GHG emissions on a global scale: First, food in general is responsible for approximately one third (34%) of overall global emissions. Second, vegetal products, like fruit, are much less carbon intensive than animal-based food (red meat in particular), which is responsible for 83% of global food related emissions. Third, transport appears as a slowly growing but still minor source of food-related emissions; in particular more efficient sea transport makes for only 0.17% of the emissions of the global food system (this makes for approx. 0,06% of total global GHG emissions); much more comes from trucks for local and regional transport (3.9% of food system emissions) – at the same time though, for fruit, such as apples, grapes and berries, transport emissions become relatively more relevant, regarding between 15 and 20% of total emissions (Poore and Nemecek 2018); this is because their overall emissions are much lower compared to animal based food – when a fruit or vegetable is transported by air freight, the proportion is totally different and transport becomes by far the most important source of emissions: but this happens only for very few products at the global scale⁷⁹ (for instance for some berries in Chile; cfr. Paragraph 6.5.1). Fourth, a more important source of emissions in the food system comes from packaging (5.5%). Sixth, the most important sources of emissions in the food system are agricultural production itself (39% of food system emissions; related in particular to machinery and fertilizers - and other emissions not relevant in fruit production, like methane from animals) and land use change (32%) - but land use change appears as responsible of only 6% of emissions in apples and 1.6% in grapes and berries (Poore and Nemecek 2018). Seventh, losses and waste are responsible for about one quarter of food-related GHG emissions, almost two-thirds of this due to losses in the supply chain (Poore and Nemecek 2018). Eighth, emissions related to transport, packaging and retail are those sources of emissions that showed the strongest relative growth during the period covered by the study (1990-2015) (Crippa et al. 2021). The same dataset shows an increase of food-related emissions for Chile of 57.5% between 1990 and 2018, while global food-related ghg emissions

78 Data is accessible here: <https://ourworldindata.org/environmental-impacts-of-food#breakdown-of-where-food-system-emissions-come-from> and here: https://edgar.jrc.ec.europa.eu/edgar_food (Last access: November 2022)

79 One example calculation for asparagus produced in Peru and sold in the UK shows that asparagus per kg has a carbon footprint of 0.4 kgCO₂eq, which rises to 0.67 kgCO₂eq when transported by sea freight but up to 12 kgCO₂eq when transported by air, see: <https://ourworldindata.org/environmental-impacts-of-food> (Last access: November 2022).

grew by 15.3% over the same period⁸⁰. Chile's global share of food-related emissions grew from 0.16% to 0.22% (this data is production-based).

This data hints to a few important considerations in relations to a globalised commodity geography like Chile's fruit: generally, fruit has relatively low carbon footprints (typically for plant-based food) when compared to animal-based food. The question of the impacts related to the transported distance is complex; while for the global food system transportation emissions appear as a secondary issue, in the context of plant-based food though (precisely due to their lower overall emissions) transport emissions are not irrelevant – air freight, of course, appears as particularly unsustainable from a footprint perspective – and for Chilean apples they have been estimated to be the main source of emissions. It should furthermore be considered that transport is closely related to other types of emissions, in particular packaging (cfr. Paragraphs 6.2.4 and 6.2.5): emissions associated to packaging are a relevant component of food-related emissions. But this is only scarcely related to the *distance* of transport, also relatively short distances may require packaging. Really short-distance distribution may help to radically reduce packaging – but if consumers drive to buy (local) food this can lead to much higher carbon footprints (Wakeland, Cholette, and Venkat 2012). Still, fruit overall results to be a low-carbon footprint food even if transported over long distances (by sea).

Agricultural production itself and land use change are relevant factors of emission: and of course these emissions are very relevant when looking at an expanding industrial food production system like in the case of Chile. Again, these emissions may in part be associated to Chile's export-oriented model, not because of the physical distances, but because of the industrialised and growth-oriented model of production (cfr. Chapters 6.2 and 6.4). Emissions due to land use change, as already discussed, are complex to estimate and depend very much on the specific case. When fruit production expands on formerly non-used land with spontaneous vegetation, also impacts on biodiversity should be considered.

Furthermore, the data indicates that the increase of complexity and the use of technologies employed in food/fruit commodity chains tends to cause more emissions: packaging, transport, freezing, heated greenhouses for instance. This can also lead to trade-offs: Frankowska et al. (2019) report, for instance, that the use of heated greenhouses makes domestic strawberries in the UK as impactful as imported ones. And it should be noted that distances travelled by private car to buy (local) food may lead to higher carbon footprints per unit of consumed food than

80 Own calculation based on Crippa et al. 2021.

(relatively more efficient) long-distance transport (Coley, Howard, and Winter 2009).

Finally, it is not only about distance and transport. Low-carbon diets are guaranteed by a predominance of plant-based food in the first place. If this is combined with a low use of technologies and attentions to how land is used and changed for food production even better. In this perspective though, one argument for fruit export (and that of plant-based food in general) could be that having access to a varied and high-quality offer of plant-based food might help the choice for more sustainable diets, in particular in climates in which the local year-round production of fruit is reduced.

Land

Land, who owns it, who uses it and how, has been debated in relation to Chilean fruit production in at least two perspectives. The first one is the historical question of land reform, already discussed in paragraph 6.1.1.

The second, more contemporary aspect, can be summarised by the term of land use regulation. In Chile, land use plans only apply to urban areas, not to rural ones, which leads to two problematic aspects in relation to fruit production. On one hand, there are very little limitations to the transformation of land into fruit plantations (national parks are one, but they are concentrated in the Andes, where fruit production in any case is not an issue): consider the case study on avocados in Leyda (paragraph 6.2.2), but the topic has been defined as a problem also in relation to Southern Chile, where hazelnut production, in particular for Ferrero, is rapidly expanding, and there is no land use regulation that could in any way limit this growth, relating it, for example to a mid-term evaluation of water availability (Interview to anonymous ODEPA officer). Indeed, as discussed in paragraph 6.3.2, the expansion of fruit plantations due to a lack of land use regulation, easily becomes an issue also in relation to the excessive use of water. An interviewee argued:

The intensive fruit production (...) is localised in the best soils of Chile. (...) How can we consider this agriculture regenerative? (...) They change varieties, they eliminate the older ones and continue to occupy the soil. Where could we see that this fruit production is sustainable? I cannot see it. Perhaps the only characteristic of sustainability it presents is that it is intensive, concentrating a large amount of production in a limited space. Perhaps there I could find an element of sustainability but in the rest, nothing: it extracts water, occupies soil, it's eternal (...) They never stop unless they sell the land to build houses. This happens a lot. (Interview to Bernardo Riquelme Opazo).

But then also areas dedicated to production of are menaced by another tendency: the transformation of rural areas into isolated houses, due to the lack of land use regulation, a very problematic transformation of use of the little available agricultural land in Chile (Interview to Marco Pfeiffer) – a transformation which can also be related to the fact that younger people choose to abandon agriculture and move to the city (Interview to Pedro Lucero). In this context it can be intriguing to accept high value offers to sell land (Interview to Luis Melendez). Many farmers for instance in the area of San Felipe constantly receive offers to sell their land to people who want to build houses (Interview to Marco Orosio) and a similar tendency is occurring in Tralcao, where people from Valdivia move to leave the city (Interview to Eduardo Hernández).

Even though land and land use regulation have been discussed in relation to these perspectives by my interviewees, it did not take such a central role as one might have expected. Certainly, this may have to do with the questions asked and with how certain problems are framed. If the regulation of the expansion of fruit production, as much as of urbanisation; the power imbalances between small and large producers; the use of water in relation to land; monocultures and food sovereignty are issues, then also the question of land use regulation is crucial. Even though it is not often explicitly nominated, it emerges from these issues as an important but underestimated tool to change things.

Labour

Work in this [neoliberal] system has no value. It has value if you transform into a machine, that is the value, the *pesos* which you as a machine will make, but not you as a person.

(Interview to Alicia Muñoz)

The availability of abundant and cheap labour is a fundamental factor for the Chilean fruit industry to be competitive on global markets; indeed in the Chilean debate about immigration, the fruit producer organisations often position themselves as in favour of immigration, as many immigrants work in the plantations. Furthermore, the fact that producing fruit provides a lot of labour, often serves as an argument in favour of this economic model. I have not done systematic empirical research on labour conditions in the Chilean fruit industry, beyond some conversations with workers in the plantations, but labour conditions

have been the focus of much research on fruit commodity geographies in Chile and elsewhere and often they appear to be precarious.

Jarosz and Qazi, in their study about apple production in Washington State (2000), write about the seasonal labour demand of the orchards, which is supported by immigrant Latino labour force, only seasonally employed. This is related to various social issues: a large proportion of people living under the poverty line in these communities; precarious housing conditions, with many workers living in slum-like situations; and gender issues, in that women workers are employed for lower paid jobs than men. Labour organization had not been successful up to the moment of their study. Similarly, the study by Alford and Phillips (2018) on the political economy and governance of South Africa's fruit export industry argues that the state has deregulated the South African fruit industry after the end of the Apartheid regime, seeking to regulate, at the same time, working conditions. This regulation though has encountered limits in insufficient enforcement, which was rather done by private entities enforcing requirements by the supermarket/consumer side. Together with increasing levels of seasonal employment with lower wages (even if above minimum wages), this led in 2012/2013 to a large wave of strikes and other forms of protest. The driving force the authors identify behind this dynamic, is a GVC/GPN driven by the buyers, supermarkets in the UK and the EU, requiring high quality fruit at ever lower costs, pressuring South African producers to reduce their costs; a structural characteristic – combined with state action facilitating these global networks. The South African government planned in response to govern these dynamics differently, keeping more value in the country. At the moment of the research though with little concrete implications. The authors conclude that

the challenges for governance are not simply the sourcing practices of firms, but rather the foundational logic of GVCs/GPNs – the mobilization of vast market, political and social power asymmetries in the interests of creating and capturing profit (Alford and Phillips 2018, 114).

These accounts from the USA and South Africa parallel the situation in Chile in many ways. Also in Chile, a central issue is the precarious employment of temporary workers in the orchards and in packaging plants, with more than 60% of workers in agriculture being temporary workers (in the years 2007 and 2011), with increasing tendency (Baquero and Klein 2012, 149):

The condition of temporary workers fluctuates between regularity (of forms and cycles) and irregularity (in relation to the instability of the duration of the work relation), between social inclusion and exclusion. (...) people do not choose to be temporary workers, but they find it as the only option. People do not work according to their competences but their availability for a lot of unqualified work, of the lowest social category. It's the option of those without options.

Two elderly Chilean workers I encountered in my fieldwork in central Chile, who have been working for fifteen years in their plantation alternating periods of employment with unemployment, said:

It's to survive, nothing more. (...) It's the only thing we are able to do. (...) There is no opportunity to do anything else. (...) Who studies has more opportunities, someone who did not study has to survive in this way (Interview to plantation workers).

The same study (Baquero and Klein 2012) argues that temporary work is an effect of agricultural modernization and its consequent precarisation and is mainly related to export oriented productions. Furthermore, temporary work and the employment of women is related: with more temporary work, more women are employed in the sector – while approx. 1/4 to 1/3 of workers are women (43% in the fruit sector according to Censo 2007) – 50% according to another source⁸¹ – only approximately 10% of the permanent workplaces are occupied by women. Indeed, an important advocacy organisation for the right of temporary workers in the fruit sector is ANAMURI (*Asociación Nacional de Mujeres Rurales e Indígenas*)⁸², the association of rural and indigenous *women* (but nowadays they also work for men; Interview to ANAMURI cofounder Alicia Muñoz).

The geographical distribution of these workers is related to the distribution of the orchards: In 2009, close to half of temporary agricultural workers were located in the regions of Maule and o'Higgins (Baquero and Klein 2012); around half come from urban areas (more in the case of women), around 50% of men, 77% of women work in the same municipalities they live in.

There are different profiles of temporary workers: some who are really seasonally employed (only during the most intensive summer months of harvest and packing) – women with children, students; some employed for a longer season (approx. 6-7 months), doing other agricultural work and who are obliged to periods of “non-work” during winter, and “false temporary workers”, employed for 11 months and then 11 months again, with a corresponding negation of the social security benefits of long-term contracts (pp.153-154). In other words:

temporary workers are a heterogenous group, dispersed and, most of all, very mobile, which makes them individuals with complex identities, without organisation and social participation and therefore, with many cultural, social and economic problems⁸³.

Working conditions often are problematic – beginning with its instability. Beyond this, there have been reports about the exposition to pesticides, the lack of clean

81 <http://base.d-p-h.info/en/fiches/dph/fiche-dph-6627.html> (2005) (Last access: May 2021)

82 <https://www.anamuri.cl/> (Last access: July 2022)

83 <http://base.d-p-h.info/en/fiches/dph/fiche-dph-6627.html> (2005) (Last access: May 2021)

toilets and places to eat, and the risk of accidents (Interview to Alicia Muñoz). Contracts are often regulated informally and through sub-contractors⁸⁴ (a “positive” description of this system comes from an industry news blog: according to this article, most workers get their work through intermediaries (*contratistas*) even though they take up to 20% of the salary, because these intermediaries help to find always the best paid work among the different types and places of work⁸⁵ (cfr. Paragraph 6.2.2). There is no regulation for such *contratistas* who often receive the workers’ salary and in some cases take a larger part of it than they were supposed to – or even disappear with the money (Interview to Alicia Muñoz). Furthermore, it is difficult for these workers to form unions due to the temporary character of the work: who protests is not employed again in the following season (Interview to Alicia Muñoz). And in general producers contrast the formation of labour unions which exist only in few cases (Interview to Ingrid Allende). While at the beginning of the 21st century new legislation had been approved to contrast these phenomena, in 2005 these kind of labour conditions persisted, as temporary workers accept unlawful working conditions out of necessity⁸⁶ – and my conversations with temporary workers, as well as my interview with Alicia Muñoz, confirm these conditions for 2022. Not always, according to my conversations in several fruit orchards, these workers want a contract, as workers themselves argued and producers confirmed (see interviews to Carlos Leiva, small grape producer linked to Mi Fruta, cfr. Paragraph 6.5.3 and to Eva Hagwall and Ricardo Eller, organic blueberry producers, cfr. Paragraph 6.5.1). In some occasions they refuse contracts offered them because a contract means getting less money; a part being put aside for pension funds and social insurance systems, as also Alicia Muñoz confirms. Alicia Muñoz mentioned as a main achievement of ANAMURI’s work the inclusion of the agricultural workers in the public health system FONASA. But the trust in this system is low and people wonder: “what do they do with my money?” (Interview to Alicia Muñoz). This doubt is linked to the private management of pension funds in Chile, which makes that who manages them, can make money with the workers’ money. Even so, ANAMURI advises workers to accept contracts, in order to be guaranteed in the future and in case of disease or accident (the Chilean health system is private and you need insurance to access it) (Interview to Alicia Muñoz). Mobilising workers is not easy as the younger ones tend to be happy about the money they earn and tend to think that the labour conditions are simply those you need to accept (indeed several workers I chatted

84 <http://base.d-p-h.info/en/fiches/dph/fiche-dph-6627.html> (2005) (Last access: May 2021)

85 <https://www.redagricola.com/cl/situacion-la-mano-obra-agricola-chile-perspectivas-futuro/> (Last access: May 2021)

86 <http://base.d-p-h.info/en/fiches/dph/fiche-dph-6627.html> (2005) (Last access: May 2021)

with made similar arguments) – and apparently there are also companies which discourage workers to organise (Interview to Alicia Muñoz).

Temporary work in the orchards is related to poverty: higher poverty rates exist under temporary agricultural workers than in average population – lower in the case of women (as they often have a second income), lower for workers living in rural than in urban contexts (Baquero and Klein 2012).

There is, moreover, a strong link between temporary work in plantations and immigration. I have met immigrants from Venezuela and Bolivia in the plantations of Nancagua and Leyda for whom this was an accessible and acceptable job: a possibility to live better than in their countries of origin and to be able support their families. The seasonal character of the work allows some to go back to their families in the Chilean winter, as a Bolivian worker in Leyda told me. The fruit industry thus takes advantage of the conditions of migrants who have arrived in Chile in recent years. Up to a certain point theirs might be seen as compatible interests. But often migrant workforces are exposed to worse forms of exploitation. For instance, it happens that employers discount pension fund contributions from their salary even though they are not part of a pension fund (Interview to Alicia Muñoz). In some occasions, for large groups of migrant temporary workers, the *contratistas* do not only organise work:

they also have a food shop. (...) The *contratista* comes here, he has a station wagon and pays the workers. He gives them the money and they have a booklet. And in this booklet they write all the provisions you needed in the month: if you needed gas, flour, bread etc. and there is a shop and you go directly and leave your money there. It's a chain of exploitation. (...) A round business, here I give you the money, over there you leave it to me (Interview to Alicia Muñoz).

While there are certainly differences between more and less exploitative companies, admits Alicia Muñoz, a crucial problem is the difficulty to be heard: sometimes there are meetings between ANAMURI, Fedefruta, Asoex, and the government to discuss improvements in labour conditions, but what happens in the reality of the plantations is very different from what is agreed in such meetings, the companies often do not respect the agreements made (Interview to Alicia Muñoz).

Another side of this issues is that plantation workers often work for small-medium companies which themselves have to stay with market conditions defined by the larger industries to sell to, which reduces their individual possibility to improve labour conditions, as Alicia Muñoz argued. This is coherent with what I learned in my fieldwork with small plantations. Small-medium companies which all the same continue to consider export as their salvation, therefore “also the small ones don't

ask for us, they unite with big companies and are one with them” (Interview to Alicia Muñoz).

Not always is the relation between export and local labour conditions only negative. In a personal testimony, a temporary worker in fruit packing argued that in recent years improvements in labour security have occurred, bathrooms have been introduced etc., due to the certification for quality standards required for export⁸⁷. Or even, as two workers argued: “If you would stop producing for export, we would lose our jobs and the rural life. (...) If nobody wants to buy, nobody wants to produce (...). This would not be good for the country” (Interview to plantation workers). Also, some of the temporary workers I had the opportunity to chat with during my fieldwork were fine with their salary (others were not). In the fruit sector “they pay better than in many other sectors” (Interview to Person working in Ministry of Agriculture). More than how much workers can earn, the precariousness of the labour conditions seems to be the problem in Chilean fruit orchards.

Even so, in this context of precarious working conditions and poverty in the context of temporary work in the fruit sector, it is of little surprise that workers look for alternatives, when possible. An article⁸⁸ in a specialised news blog from 2017 argued that labour moves to other sectors which pay better (mining) or are less physically demanding (commerce) and where bosses treat them better. The high cost of labour force – due to the lack of workers – has become an important factor for the change of Chilean fruit cultivation, disincentivising labour-intensive cultivations with low revenues on export markets, among which apples. To solve this issue, the authors propose various strategies: improving labour conditions, favouring immigration, diversifying fruit species to make work more stable and improve labour productivity, mechanizing orchards, planting species with lower labour requirements. Also many producers I interviewed commented the difficulty of finding workers (e.g. Interviews to Roberto Bressi, Gabriel Edwards, Ricardo Eller and Eva Hagwall). This competition for workforce may in some case help to improve work condition, on the other side it can benefit larger producers when they are able to provide more continuity of work, instead of having high labour demand only in a short period of the year when maybe also many other producers demand for it (this has been reported as a difficulty for instance for the small cherry producers in Tralcao, who somehow cope with family workforce and personal contacts; cfr. Paragraph 6.5.4 and as well for the small producers of Mi Fruta; cfr. Paragraph 6.5.3).

87 <https://www.memoriasdelsigloxx.cl/601/w3-propertyvalue-28260.html> (Last access: May 2021)

88 <https://www.redagricola.com/cl/situacion-la-mano-obra-agricola-chile-perspectivas-futuro/> (Last access: May 2021)

Like in Alford and Philips (2018) account from South Africa, working conditions in Chilean fruit plantations are dependent, to a large degree, on the dependencies along the commodity chain: workers depend on their employers who depend on buyers. Workers here are evidently the weakest part of the chain and their conditions are influenced by global market conditions and a competition between different producer countries. Conditions in which a single producer, a small producer in particular, who is the workers' direct contact may have little possibilities to improve working conditions. Even so, there is an ambiguous relation of working conditions with export. It seems (but it would be useful to deepen this point with more empirical data) that even precarious work for fruit export may have slightly better conditions than in non export sectors. Certainly many workers currently depend on these jobs as their only or one of the few opportunities to work; be it because they live in the countryside or because they are migrants. Migrants are an essential part of the workforce in Chilean fruit plantations and are necessary for the industry survive. This notwithstanding producers complain about a lack of workforce. This might be an occasion to increase the so far very low of workers' organisation to achieve improvements in the working conditions.

Pesticides

You could say that in Latin America, specifically in countries that export agricultural products, there is a massive and indiscriminate use of pesticides, with heavy impacts on the health of children and farm workers.

Interview to Maria Elena Rozas

Pesticides and other chemical products are an important instrument to guarantee the kind of homogenous and aesthetically perfect production (Interview to Maria Elena Rozas) in large volumes necessary to be exported to all the world, for the 'control of nature' to reduce variability and guarantee homogenous products, already mentioned. "In Chile to produce fruit for export, it is necessary to use a lot of chemical products, beginning with hormonal products (...) that allow a blossoming in a determined moment" (Interview to Bernardo Riquelme Opazo). It is particularly important, not only for the single producer but also for Chile as a fruit exporting country, to guarantee that exported fruit is free from diseases that could lead to import blocks in other countries (cfr. Paragraph 6.2.1), which is why the SAG prefers to close an eye on the use of pesticides (Interview to Maria Elena

Rozas), while every load of fresh fruit to be exported is checked by the SAG at the export company (cfr. Paragraph 6.2.4).

To be sure, the use of pesticides is regulated by protocols and by certifications like GlobalGAP (cfr. Paragraph 6.4.2) which is supposed to guarantee the respect of low levels residues. When to apply how much pesticides is usually precisely accorded between producers and export companies (cfr. Chapter 6.2). But all this does not guarantee that no harmful pesticides are used and that quantities are sufficiently low to safeguard people and the environment. In many occasions agronomists and export companies propose abundant standard programs of pesticide use to avoid any risk of diseases, thus employing them without verifying the actual presence of a certain disease in the plantation (Interview to Leonardo Valenzuela). According to Maria Elena Rozas, activist and journalist of the *Red Accion Plaguicidas* (Pesticide Action Network), pesticides are used extensively in Chilean agriculture, most of all, Glyphosat. A basic problem is that their risk is evaluated only in relation to their acute effect, while chronic effects are not considered (Interview to Maria Elena Rozas). Several interviewees from the fruit industry argued that in recent years certifications and standards helped to reduce the use of pesticides (e.g. Interview to Yolanda Fernández). And also critical voices have recognised that some efforts have been done in recent years (Interview to Bernardo Riquelme Opazo).

But not necessarily regulations help: what can happen is that they require low levels of residues but they are achieved through the time during which the fruit travels across the world, during which pesticides decompose, so that they respect European standards, while tests done in Chile, before shipping, reveal high levels of residues, and also, in some cases, the use of pesticides forbidden in Europe (Interview to Maria Elena Rozas). Or, more simply, the reality sometimes does not correspond to the certification (Interview to Alicia Muñoz). Also an Italian importer argued that still very harmful pesticides are used in Chile (Interview to Cristian Moretti). European companies like Syngenta export harmful pesticides to countries like Chile (Interview to Agustín Infante), e.g. paraquat, the use of which is forbidden in Europe (Interview to Maria Elena Rozas). But the import of the fruit produced in this way is legal (Interview to Cristian Moretti, Interview to Agustín Infante).

Furthermore, controls at different levels appear to be superficial: the SAG apparently simply accepts what the companies tell they use, without objecting to the use of harmful pesticides or verifying if the declared use corresponds to the reality (Interview to Maria Elena Rozas). “In Chile we absolutely lack a managed phitosanitary system; there is absolutely no control by the institutions who should (...) do the controls. I speak about the SAG” (Interview to Bernardo Riquelme Opazo). Also a certification scheme like GlobalGAP mainly controls documentation

rather than making effective controls in the field and the required pesticide residue tests are made by producers themselves (cfr. Paragraph 6.4.2).

Negative health effects of pesticides have been documented for children and for farm workers, who usually do not denounce an incorrect use of pesticides as they are afraid of being fired (during fieldwork, I have observed the application of pesticides without protective clothing), for children of farmworkers and of communities living close to fruit plantations (Interview to Maria Elena Rozas). Impacts that can be interpreted as an externalisation of costs (ibid.).

But also for fruit production itself pesticides can become a problem: fruit trees need pollination but pesticides also kill bees which do not live any more in the areas of most intensive fruit production of central-southern Chile (Interview to Roberto Bressi). There are, in other words “ecosystemic damages” (Interview to Bernardo Riquelme Opazo) produced by pesticides which in some way backfire. Thus fruit producers pay beekeepers to come to their plantations (Interview to Roberto Bressi). But also they have difficulties operating in a context of high pesticide use as the bees suffer from it; so a possible but time-intensive and thus costly alternative, is artificial mechanical pollination (Interview to Roberto Bressi). Bernardo Riquelme Opazo⁸⁹, an agroecological beekeeper, does not rent his bees to fruit producers as the excessive pesticide use would harm his bees and leave traces of pesticides in the honey:

If I talk about this to people who live close to fruit plantations (...) they can't any more keep their bees because of the use of chemical products (...). In Curicó, the centre of fruit production in Chile, only people from outside come with their hives and then leave. But if they lived there, they [the bees] would die. In Curicó it's very difficult that bees exist (Interview to Bernardo Riquelme Opazo).

Organic agriculture could be an alternative, also on large extensions, but the political will is missing, argues Maria Elena Rozas. Also simply stopping the use of pesticides in a conventional plantation has had the effect of regaining an ecological equilibrium in the insect population, was the experience of Roberto Bressi (Interview to Roberto Bressi).

89 He had personally problems with the forest company Arauco (cfr. also paragraph 6.5.4) plantations of which surround his land. In these extensive monocultures, pesticides are massively used when trees are young. The SAG did not effectively respond to his requests of control; finally he achieved compensation for his damages from Arauco, but only after building public pressure through the media and prospecting them to inform the certification companies that are needed also to export wood and cellulose (Interview to Bernardo Riquelme Opazo).

Nutrition and Food Sovereignty

The question of food sovereignty is another debated issue in relation to the process leading to Chile's new constitution. In many ways, this is related to Chile's export oriented agriculture, and, in contrast, the limited offer and bad organisation of Chile's internal fresh fruit and vegetable market.

Indeed, coming from Italy in particular (and Europe in general), the impression is that of a quite limited variety of fruit and vegetables in Chilean shops and their low average quality (see also interview to Person working at Italian Pro Trade State Agency). Certainly it is not the same everywhere, the situation on the central market in Santiago is better and interviewees told me that in wealthier neighbourhoods the offer is better and there are projects that try to bring better quality produce to consumers (e.g. *Campochange*, paragraph 6.5.2). Outside the capital though, the offer of fresh fruits and vegetables is sometimes very reduced. In the South (Magallanes Region) in particular, which could be framed as a sort of 'internal export destination', in the sense that even if it is the same country, distances are very large and the local possibilities to produce fruit and vegetables are, due to the climate, extremely limited, both the quantity and quality of the products 'imported' from central Chile appeared to be very low. While the distances might in theory require the same attention in organising the commodity chain like for actual export markets, it appears to be different in practice: in supermarkets, grocery stores, fruit shops between Puerto Natales, Punta Arenas and Puerto Williams, more often than not I found half empty shelves with half perished fruit and vegetable. And beyond the aesthetic qualities, also the variety and quality of the offer was low.

These personal impressions are supported both by fieldwork (on Don Gabriel farms it was clear that selling on the less lucrative local market could only be the last option) and interviews. Many interviewees were clear about the fact that in Chile it is "what is discarded from export is sold" (Interview to Pablo Badilla): because the market is too small and prices are too low (with the exception of avocados). But not all agree on this perspective: according to Eduardo Hernández, while what is sold in Chile is what cannot be exported, he argued that there is an availability of good fruit; rather its presentation is bad (Interview to Eduardo Hernández).

Probably the main problem is a lack of organisation and infrastructure to provide a national market with products of high quality, most existing structures work for export, while products for the local market are all transported to Santiago and distributed from there all around the country, in spite of the large distances (Interview to Person working at Italian Pro Trade State Agency). Ricardo Eller and Eva Hagwall noted that while the infrastructure to export fruit from Chile is

excellent, the internal logistics are much worse; with the paradox, for instance, that fruit sold at the market in Chillán, has passed before through Santiago's wholesale market Valledor, where national fruit (and vegetable) logistics are centred (Fieldnotes, 14/02/2022). This centralised organisation of the internal market contributes to excessively long times for fruits and vegetables to get to final clients and thus to a loss of quality (Interview to Martina Soto; Fieldnotes, 14/02/2022). Often, furthermore, the vegetables produced for the national market are highly contaminated by an excessive use of pesticides, much less controlled than in the export market (Interview to Luis Melendez).

There is also a political debate focusing on this topic, related to the process of writing of the new constitution, focusing on the concept of food sovereignty. The question can be framed in a wider perspective, connecting the use of water and soil to the scope of fruit production for export:

What is the goal of the Chilean agrarian export model? What do you try to achieve? Do you only want economic growth? Do you only want to increase the tonnes we export because this generated an economic benefit? (Interview to Marco Pfeiffer)

Certainly it does generate economic benefit, Pfeiffer argues, but an equilibrium is needed, and, the question of excessive water use connects to food security. While Chile once exported wheat, it now imports it, together with corn etc.:

We are not caring about the soils to produce food that give calories to the population, we are importing more than 70% of the calories we consume. So the day when we'll have climate crisis or catastrophic climatic events that will impede us to import rice, wheat, corn, soy, which is what we eat every day (...), we won't be able to self-sustain us (Interview to Marco Pfeiffer).

As a consequence, Pfeiffer argues for a change of paradigm which does not mean to stop all fruit export but to overcome the "monothematic" focus of the Chilean fruit export model, rather diversifying production and looking at how to feed the population. This in a context of a limited availability of soil, with only 3% of the national surface being good soils for agriculture and a limited availability of water (Interview to Marco Pfeiffer). What is needed, Pfeiffer argues, is a new capacity of the state to plan agricultural production for the needs of the population in the context of limits to growth, like soil and water, protecting biodiversity (e.g. in wetlands) from the expansion of fruit plantations, protecting agricultural lands from being urbanised and orienting production beyond the continuous search of short time profit.

At the same time, an industry consultant argued:

If we look at nutrition, like for example at what berries contribute, which is very relevant, we (as Chile) bring a quantity of nutrition to the world which probably in other places is missing and we, on the other hand also import things we cannot produce, like bananas, coffee and tea. There is a more balanced nutrition (Interview to Isabel Quiroz).

This hints again to to the paradoxical and contradictory relation between globalisation and diversity. As Harvey noted about beer in England (XXXXXX), global relations impose in many ways a process of unification, homogenisation and concentration that reduces overall diversity of production. At the same time though, it cannot be denied that in many single places of the world, consumers (at least those who can afford it) have gained access to a larger diversity of foodstuff than before the process started. And many of these have been closely integrated into local cultures, even though their origin is far beyond local (e.g. tea in England, coffee in Italy: Interview to Isabel Quiroz).

In general and unsurprisingly, representatives of the fruit industry reacted quite allergically to the debate on food sovereignty. To Sergio Maureira from ASOEX, the proposal is “too extreme” and he referred to the example of the failure of Argentina’s isolationist policies to underline the economic risk related to its implementation. For Mario Marin Valdebenito from fruit producer organisation Fedefruta:

This vision [of food sovereignty] is of some who are in the process for the new constitution and they say ‘why do we export so much’, they are ignorant because the fruit or agricultural sector is one of the major absorbers of labour in Chile. A large number, or the majority, or well, I don’t know, I couldn’t tell you the quantity in this moment, but an important part of the workforce in Chile is dedicated to the agrarian and food sector and there is value not only in the production but also up to the export company (...) So if we said that (...) this chain would break and so much people remain without work, it’s a super irresponsible vision, in many cases, and very ideological (Interview to Mario Marin Valdebenito).

Another position is to admit the possibility of increasing local production but considering carefully what can be sustainably grown in specific areas (Interview to Kurt Neuling). Neuling argues, for instance, that in the centre-north table grapes have been grown for more than 50 years and they are well-adapted to the local climate, while it would be too dry to grow other extensive produce for local consumption, like beans and wheat.

According to an anonymous ODEPA officer, the question of nutrition and food sovereignty, has gained limited political attention also due to a fragmentation of political responsibilities.

Without going into the details of this ongoing political debate, it is striking how a country that produces fruit for the world market, has difficulties in guaranteeing a good nutrition for its own population. Also, due to the high levels of inequality in Chile, not everybody has the possibility to buy premium products (Interview to anonymous ODEPA officer). There is no issue of hunger; calories are available in a sufficient, even excessive quantity. But, a good equilibrated nutrition seems not easy to be achieved. Evidently, export comes first, it is the driving force of much of Chile's agriculture and the policies supporting it, the leftovers are for the local market. Not that it is a bad thing, in itself, to 'eat up' everything. This is no argument to only eat the most beautiful fruit and throw the rest away. And of course there also is a cultural component, the habits of what people choose to buy and what they prefer to eat. Certainly though the reduced availability of high quality fruit and vegetables in Chile seems to be a relevant factor to limit the possibilities of a good nutrition.

6.4 The Mechanisms of Global Trade that Shape Territories of Production

So I say that problem is not at the source: it's at the end. If the consumers at the end will ask that this [ecological damage, human rights violations etc.] does not happen any more, they will decide to change policies, surely not the producers who are certainly the weakest part of the chain.

Interview to Valeria Bigliuzzi from Italian fair trade import cooperative Chico Mendes.

One of the basic research questions was if and how the choice to produce for international trade shapes agricultural and organisational practices in the place of production and how, as a consequence, the export economy is related to the conflictual issues of sustainability, water, land, labour and so forth, discussed in chapter 6.3. *That* producing for export changes territories of production has probably already come out clearly throughout the preceding chapters. "Given that Chile is so exposed to international markets, the pressure to be competitive, with

high productivity, is very strong” (Interview to Mario Marin Valdebenito). The point that this chapter attempts to approach through the results of the empirical research is to better understand *how* this happens; through which mechanisms. In relation to their case study on apples, Jarosz and Qazi (2000) show the complexity of such interactions:

Through this case study of the social geography of Washington's world apple, we argue that the local is global. Local landscapes are invariably situated within global processes in this case study. Thus, the conceptual boundaries and divisions between the local and the global as oppositional or as cause-effect relations are artificial and false. Our examination of the social and spatial relations of the fresh apple commodity chain reveal that the global does not exist externally to the local, but the global is realized locally through social structures and agency as it unfolds within and is shaped by particular landscapes. (p.10)

Often there is the hope by promoters of the participation in export markets that this inclusion in global markets has positive effects locally, in the places of production. For example in Chile at the beginning of the 20th century, at the beginning of the modern fruit export industry, high hopes were associated with the process of agricultural modernisation functional for fruit export; it was thought to be able to modernise and improve the social conditions of Chile's rural territories making ignorant peasants become intrepid and skilled small-scale fruit growers (Robles 2010; cfr. Chapter 6.1). This process of agricultural modernization was part of a movement in many regions around the globe towards the intensive monocultural production of high-value crops like fruit, in reaction to falling prices for cereals, in that period, as Robles (2010) remarks. In sum, this industry has been promoted with the expectation that it would lead to a process of social and economic development. A development that also has had its downsides – consider the social and ecological conflicts discussed in chapter 6.3 and Murray's (2002) discussion of the process of de-peasantization in Chile in relation to the modernisation for export (see paragraph 6.1.4). Today these hopes persist and at the Macfrut fair, I have met a series of representatives from government institutions, embassies, NGOs, export companies, from Colombia to Guatemala, from Cuba to Togo, who hoped that in one way or another integrating producers in international markets will help to improve their situation and 'develop' regions (or at least balance the import deficit in the Cuban case). Much literature (cfr. Section 3) is very critical about the effects these transformation have – and for good reasons, but I will also argue, here and with the second part of the case study in chapter 6.5, that how these transformations exactly take place depends very much on the specific conditions and relations. It is not obvious *which* impacts the participation in export markets has on territories of production. But before coming

to these differentiations (in chapter 6.5), let us look closer at the mechanisms through which the mainstream form of international trade changes territories of production. In my case study, I have identified the following mechanisms through which export shapes territories of production in Chile:

- transport over long distances requires organisation, selection, technology & packaging (Paragraph 6.4.1)
- certifications and quality requirements require an adaptation of agricultural as well as organisational practices (Paragraph 6.4.2)
- the respect of these quality requirements also requires the use of specific technologies to control nature which is closely connected to very specialised forms of knowledge (Paragraph 6.4.3)
- export opens markets but also makes producers dependent on export companies and world market prices creating unequal relations of power (Paragraph 6.4.4)
- all this requires an adaptation of organisational practices and tends to favour specialisation and monoculture, while other forces favour diversification which not necessarily though corresponds to biodiversity (Paragraph 6.4.5)
- production for export is conceived as a model of growth. Growth is promoted by a number of strategies and requires constant changes (e.g. of varieties) but meets, at the same time a series of social and ecological obstacles and limits (Paragraph 6.4.6).

6.4.1 The Implications of Global Transport

The transport over long distances is an essential characteristic of global trade. Even though I have not investigated in detail how transport is organised, the implications of producing fresh fruit apt for long distance transport were present all across the commodity geography. Adaptation to transport is driven by three aspects: first, it is the time span of weeks on the ship that the fruit must survive in good shape – a sufficiently good shape to respect the quality requirements discussed on the following paragraph. Secondly, the whole organisation of the logistics chain that is required to make the fruit arrive in a quality high enough to achieve prices that make the whole process profitable. Finally, the economic cost of transport.

To respond to these dynamics, in the first place, the moment of harvest must be planned in detail, in order to harvest fruit which on one side is ripe enough to be attractive and on the other side is unripe enough to survive the long trip (cfr. Paragraph 6.2.1).

Another crucial mechanism is a careful selection process performed before export. As discussed in chapter 6.2, this selection is carried out in at least four different steps between field and fruit packing plant, requiring a large amount of human work, as much as technology. Under this respect, thus, international trade (but not exclusively international trade: intensive selection and packaging is also performed for inner Italian supermarket trade (Macfrut) – but not for farmer's markets) is a reason to invest in a whole series of machinery and organisational steps.

This selection does not only regard the exclusion of too ripe fruit which risks to make a whole box rot, but also to control those variations of nature which are incompatible with the criteria of homogenous and consistent fruit (cfr. Interview to Pablo Badilla). This leads to the fact that the aesthetically best fruit from Chile is exported, while less perfect fruit is sold locally. This control of nature is furthermore exerted on the field through the use of chemicals and pest controls. Finally, transport requires to employ large amounts of packaging to protect the fruit from being damaged (Interviews to producer of packaging at Macfrut and Pablo Badilla).

Underlying these logics are not only the times of transport and the quality of fruit itself, material aspects so to speak, but also an economic reason: global transport is expensive and to justify the cost, production, selection and logistics must be organised in a way that only such fruit which likely will achieve a sufficiently high price to pay everything back and make a profit is exported. One cannot simply try and see what happens, instead, to export, a detailed knowledge about the markets is required and sufficient personal contacts are needed to be informed (cfr. Chapter 6.2). This requirement of knowledge makes complex forms of organisation a necessity and favours to some degree larger organisations over smaller ones (cfr. Paragraphs 6.4.3 and 6.5.5).

6.4.2 Quality Requirements, Certifications, Standardisation

If you are ready to accept a fruit that has experienced this kind of stress and this kind of environmental impact, it means that you also want certain quality and other criteria to be respected.

Interview to Cristian Moretti

A particularly strong impact on production practices comes from different forms of quality requirements set, most of the times, by importing countries and

companies. This aspect has been evidenced by most interviewees. One interviewee argued that buyers today want an “iPhone in fruit, that is more than premium quality” (Interview to Nelson Gallardo). Quality requirements are usually set by importing countries and companies, who produces has to adapt and has a hard time to change it (Interview to Agustín Infante). Differently in the context of fair trade, in which there is a dialogue between buyers and producers to define common standards (cfr. Paragraph 6.5.3). According to Mario Marin Valdebenito, from Chilean producer association Fedefruta, Chilean producers are nowadays so used to different and changing requirements set, e.g., by European supermarket chains, that they are no longer a problem for them; they are equipped to adapt: a process of adaptation that had initially been supported by government subsidies as well as with expertise provided by Fedefruta. At the same time, this interviewee argued, social and environmental requirements are new aspects that require new investments. There is nowadays a number of certifications required by different markets, with export companies having “walls full of certifications” (Interview to Sergio Maureira).

With the term of quality requirements I summarise a whole set of standards, rules and regulations to which, in one form or another, producers have to conform to. They can be classified as follows:

- phytosanitary requirements (absence of plant diseases)
- transportability requirements (robustness)
- aesthetic and final product quality requirements (size, form, colour, taste)
- innocuousness requirements (absence of pesticide residues on the final product)
- environmental standards
- labour standards.

Furthermore, these requirements can be differentiated according to the way in which they are exercised. There are

- requirements by public institutions (the EU or national authorities)
- requirements by market actors, such as supermarkets (in particular constant and homogenous quality)
- requirements defined by certification schemes, such as GlobalGAP, Rainforest Alliance, organic and fair trade, which again the supermarkets or other buyers require.

Those standards required by public institutions of course have to be respected by all producers who want to export to a certain market, while the others depend on the specific trade partner – even though GlobalGAP has become a certification required by practically all buyers of Chilean fruit (Interview to Jorge Phillips) – and some, fair trade standards in particular, may even be actively sought for by producers (cfr. Paragraph 6.5.3).

These criteria, certifications etc. have a very concrete impact on production and determine in many ways how fruit is produced in Chile (cfr. Chapters 6.2 and 6.3), even if it is not always clear if they keep what they promise, in particular in ecological and social terms (Cfr. Chapter 6.3). Beyond this, they have become a criteria of competitiveness and commercial selection. In Europe, for instance, to respect certain sustainability standards has become a basic requirement to enter the market (cfr. Paragraph 6.3.1). But also the quality and the aesthetics of the final product is fundamental: for instance Chile has lost a lot of market share in kiwis to New Zealand during the last decades, as New Zealand had been more successful in guaranteeing the fruit's quality (Interview to Cristian Moretti). Fruit of low quality has little possibilities to compete on the global market nowadays (ibid.).

It is not enough to “come and export (...). You must comply with many certifications to arrive at a market that requires more, which are the markets that offer better returns” (Interview to Pedro Ossa). To organise to adapt to these standards can be difficult and costly. Ossa says that they do not favour larger producers but “everybody”, but he acknowledges that for small producers the costs are an issue⁹⁰ (Interviews to Pedro Ossa and Pedro Guerra), as they have lower resources – but if they do not certify they are not able to sell their fruit, at least not at good prices.

In the literature, an example about how external quality requirements affect local production and organisation that is very close to the research results in Chile, is provided by Le Heron's and Roche's (1996) research on export-oriented apple orcharding in New Zealand, that shows how the international trends of globalisation and sustainability have reshaped the NZ apple industry in a moment of crisis: a food regime centred on agricultural industrialisation, meat and durable food has been evolving into a food regime of "freshness" and "naturalness", leading to the "refashioning of nature into new commodity forms" (p.420) through, e.g. the physical cool chain allowing to transport fresh produce over long distances. Valuing "natural" qualities increases the vulnerability of production on the field, i.e. the risk that harvested fruit is below quality standards – a risk that is assumed by producers while brand marketing overrides “regional specificity and vulnerability of natural qualities to the fortunes of individual farmers by presenting food corporations with the option of multiple sourcing and blending” (p.420). US import requirements have strongly shaped the organisation in the NZ apple industry. Thus, international (globalisation) consumption side requirements (sustainability) have impacted on the internal organisation of NZ apple industry in

90 Also otherwise “progressive” certifications like organic can exclude smaller producers if they have not the support of a cooperative or other people like more literate adult children to cope with the documentation as a person working at a German Fairtrade Importer told me.

shaping the response to local issues such as pests and hail storms, as well as the general NZ quality management (ibid.).

At the Macfrut trade fair, people agreed that this integration into global trade led to a transformation of their agricultural and organisational practices, in particular through the requirements of standards and certifications, be it if they were defined by fair trade and organic labels or by laws and regulations of the EU or other countries or directly by supermarkets. A man working for an Indonesian export company evidenced EU&UK standards, like the absence of GMO. A man working for a German government agency helping African and Latin American producers to export to the EU, asserted that it was a complex challenge for Non-EU producers to comply with EU standards like certification, quality and packaging. A woman working for the Bolivian government argued the same and highlighted that now the request for organic products complicated the process as it makes new certifications necessary. Representatives of Colombian banana producer cooperative lamented that actually they produce organically but mostly without being certified and that it has become harder to sell non certified produce. A woman working for a Colombian municipality evidenced that adapting to quality requirements, standards and certifications asks producers to be more “precise” and careful but that this adaptation also requires investments in technology. A woman working for the government of Guatemala argued that while required standards transform practices, this could not be seen as an external imposition as finally it led to positive change in the country, as it “raises the level” of agricultural practices. While international producers and institutions highlighted in particular the requirements by EU authorities and specific certification schemes, representatives of a few Italian producer cooperatives I talked to at Macfrut evidenced in particular the requests by supermarket chains. I suppose that this difference in weighing the influences has to do with the relative distance between these actors but perhaps only with how I posed different questions. In any case, Italian producers at Macfrut argued that supermarkets ask for high quality and speed but in particular they want homogenous and always constant quality.

The number of required standards and certifications is continuously increasing (Interview to Pedro Ossa).

There are many quality requirements, especially in relation to the form of production. Nowadays, it becomes an always bigger issue of certifications that regulate the use of pesticides, fungicides etc., to be less toxic. The use of water, social impacts along all the production process, and afterwards you have all the topic of quality, in which in large part with quality you refer to the fruit’s appearance and truth is, from day to day they require more. Perhaps, I believe, that they [the buyers] exceed the limits of what somebody should require. I

don't see why it has to be the most perfect and beautiful fruit, the fruit that people will eat, with an enormous waste of fruit (Interview to Cristobal Matte).

Matte quantifies this waste in around 10%, which is not totally lost, but sold in different channels (such as the Chilean market).

Looking at what specific impacts have the different types of quality requirements at the beginning of this paragraph, I have discussed in Paragraph 6.2.4 how phytosanitary requirements are controlled in detail before export by the SAG. In paragraph 6.4.1 I have reminded the importance of respecting the requirements for the transportability of fruit.

Crucial importance in producing fruit for global markets have, in the first place, aesthetic and final product quality requirements. These are, very simply those characteristics of fruit that final consumers can directly experience, i.e. size, form, colour, taste). These requirements are defined, in the first place, on a market level: if the fruit does not respect them, it won't be sold. In chapter 6.2 I have already illustrated in detail how the respect of these standards occupies a large amount of workforce in fruit production throughout a long series of steps (see in particular paragraphs 6.2.1 and 6.2.4). Often these criteria are literally superficial, in the sense that they concern colour, form, and size, not necessarily related to more 'substantial' qualities of the fruit (taste and nutritional content) and they are often influenced by fashions in space (different preferences of different markets) and time (change of preferred varieties over time): "In Chile much fruit remains due to sunburn damage, there is only a little spot and the European or Chinese consumers don't eat this fruit and the fruit remains here." (Interview to Mario Marin Valdebenito).

Quality requirements are very detailed for instance in relation to residues of pesticides that are allowed on imported fruit – innocuousness requirements (cfr. Paragraph 6.3.3): these requirements vary between different countries, in which the EU takes a leading role with more rigid standards, "when one respects European standards, one tends to respect nearly all standards (...) Europe requires more, you know, in the good sense" (Interview to Cristian Ferriere). Even so, others argue that the standards on pesticides are insufficient to avoid the damages of pesticides (Interviews to Maria Elena Rozas and Agustín Infante) and that these should be reinforced, while on the other hand reducing aesthetic quality requirements: this could make agroecological productions more competitive (Interview to Agustín Infante). Even so, existing standards for export already ensure that exported fruit is much more controlled in terms of pesticide use than

what is produced from the national market (Interviews to Agustín Infante and Luis Melendez).

Environmental and labour standards have particularly complex implications for the production of fruit. In chapter 6.3. I have already discussed this from the perspective of the debates on socio-ecological issues related to fruit production in Chile. Here I focus on how these standards are played out across the space of the global commodity geography of Chile's fruit.

The new "Farm to Fork" strategy by the European Union has been mentioned as a driver of adaptation: as the strategy aims at a control and to set standards across all steps of the global commodity chain, including orcharding and logistics, it can have an impact on how Chile produces fruit, if producers want to avoid that the requirements become a commercial barrier (Interview to Catalina Cuevas and Yolanda Pizarro from ProChile); Chile's physical distance and the consequently high carbon footprint could become an issue, as well as the ecological issues related to water consumption due to fruit production (*ibid.*). But also the traceability itself is a challenge; it is specifically the small producers for whom it can be more difficult to conform to these standards. Might this European strategy, that has sustainability as a core goal, to a certain degree, favour large producers? In Chile there are initiatives to support small producers to adapt; in particular to collaborate and aggregate more in cooperatives could be a response (*ibid.*). But what about other countries, with weaker institutions? Also the German supply chain law, made as an instrument of protection for communities and environments in producer countries (*cfr.* Chapter 3.4), could become a challenge for producers (Interview to Catalina Cuevas and Yolanda Pizarro from ProChile).

GlobalGAP is the most important certification scheme. It is the basis "to sell the fruit internationally (...) who wants to export fruit, vegetables or whatever, needs to respect all the requirements of GlobalGAP" (Interview to Yolanda Fernández, owner of consulting company Soluciones Agropecuarias Ltda). Due to the implementation of this certification, producers needed to adapt to sell their fruit: "once we produced like things went, now we have to adapt to quite specific criteria of our clients" (Interview to Yolanda Fernández).

"I believe that this is positive, because they needed to worry about hygiene, innocuousness, having a cleaner world, reduce the use of pesticides, improve the topic of the presence of beneficial insects. (...) The certification and the implementation of good agricultural practices makes that one shows that they do things well" (Interview to Yolanda Fernández).

Looking at the criteria of evaluation adopted by GlobalGAP, most of the criteria reflect obligations of documentation rather than data collected in the field. Part of this documentation the producer has to provide are "tests on the residues of

pesticides, (...) analyses of the water, of irrigation, (...) analyses of leaves, of the soil, etc.” (Interview to Yolanda Fernández). But there is also a visual control on the field, for instance that “workers correctly wash their hands” (Interview to Yolanda Fernández). An announced control is done on the field once a year plus occasional controls on short notice (48 hours) (Interview to Yolanda Fernández). The certification process is paid by the producer (Interview to Yolanda Fernández). The main focus of GlobalGAP is the quality of the fruit for consumers (innocuousness in the first place) and it is noteworthy that other norms “are called add-on and can be in relation to water use, social norms etc.”

Sometimes different certifications may contradict each other, e.g. GlobalGAP and the organic certification in relation to the presence of animals in the plantation:

The organic [certification] allows that animals go around the field without any restriction, because they are part of biodiversity (...) It happened to me that in a field there was a water tank (...) where they had ducks and for the organic certification the ducks were lucky in the water and for GlobalGAP it's not allowed that there are ducks in the water because the faeces contaminate⁹¹ (...) In the organic [certification] if there are animal faeces in the field, better, because they are part of the natural fertilization (Interview to Yolanda Fernández).

The conception of sustainability in GlobalGAP is an eminently technical one, concentrated on few aspects like the use of pesticides. “They are worried more about the impacts of production than favouring biodiversity (...) GlobalGAP (...) is very technical, very productivist” (Interview to Yolanda Fernández). In this sense, GlobalGAP, the most used certifications in the fruit industry, is a certification that may gradually improve some practices. It is a crucial instrument to guarantee the kind of quality requirements and homogeneity that are so crucial for the international fruit export to work. Certainly though it is no instrument able to produce structural change when structural change is required by structural social and ecological issues (cfr. Chapter 6.3).

What transpires in the first place from this discussion on quality requirements and certifications, is that they require an adaptation in the organisation of agriculture. If everything must conform to certain standards, products must be traceable, they must be selected and controlled, packed and transported in a certain way. Quality requirements are nowadays essential to the functioning of the global export market in which Chilean fruit production is inserted. They guarantee access to markets to producers and certain levels of quality and health standards to the

91 A producer told me a similar story about goose he keeps as a natural way to control diseases in the field but due to the certification with GlobalGAP he has to hide them when certifiers come.

consumer. In many cases, specific certifications presumably guarantee the respect of social and ecological standards in production. But there are downsides. The effectiveness of these standards and quality requirements can be disputable. Not so much because they are disregarded. Rather because the approach of mainstream certifications like GlobalGAP and Rainforest Alliance tends to be rather business as usual. Also, the different standards and requirements can be contradictory among each other, for example when quality requirements of export markets on one hand ask for an ecologically sustainable production but at the same time, want to maintain a perfect, homogeneous fruit. This can lead to a view of sustainability that can be defined as “let’s do things a little better but in the logic of what has already been defined by the market” (Interview to anonymous ODEPA officer). Changes are thus adopted in a quest for competitiveness. Quality requirements and certifications may be able to improve some aspects of agricultural production but they have hard times to solve structural issues, like general levels of low pay and bad working conditions or an extensive transformation of territories in fruit monocultures. Standards and certifications can hardly substitute effective local governance. Also, they have an economic cost which can weigh heavy for small producers in particular.

6.4.3 Technology, Knowledge and the Control of Nature

For the fruit to respect the quality requirements of the market, to survive the consequences of far distance transport and to counteract the ecological disequilibrium introduced by monocultures, it is necessary to employ a large quantity of knowledge and technology. Already when California, before Chile, started to build its fruit export industry, universities and their research played an important role; and when Chile started to build up its fruit export sector it did so with the help of professional knowledge from California (Robles 2010); cfr. Paragraph 6.1.1). This includes both the use of technology in the strict sense, i.e. of machinery and other instruments, and the knowledge of how to organise a plantation and structure the whole business:

The successful cases are those which are planned, evaluated in the right way, audited and which then constitute themselves as a project of fruit production, like an industry in which the tree is an instrument of production (Interview to Nelson Gallardo).

Browsing the Macfrut trade fair, I was impressed by the large amount of technology presented there. Technology for protection of plants during cultivation.

Technology for fruit selection. Technology for packaging. The fruit, the plant itself, seemed to be at the same time at the centre and eluded. Or better: the underlying desire seemed to be to eliminate all the uncertainties of life and living beings; a technical fight against natural variability, the ‘control of nature’ in Nancagua (cfr. Paragraph 6.2.1). One interviewee (a consultant, certainly not against the use of technologies) even said that fruit plantations resemble “a prison, where the trees are cloned, an army” (Interview to Nelson Gallardo).

In their study on apple production in the US state of Washington, Jarosz and Qazi (2000) evidence that the widespread cultivation of the apples oriented at export markets has required the construction of infrastructure, such as railroads and irrigation systems. The structure of apple cultivation had evolved over the decades preceding their study. On one side, there had been agri-technical evolutions, in particular large, free-standing trees have been increasingly substituted by closely planted, short cut trees which allow for a higher productivity but produce a very different landscape than the one that continues to be depicted by marketing materials. Similarly, The Economist argued in relation to the recent Chilean cherry export boom:

Seizing the opportunity of the Chinese market has required innovation. There are new varieties, and better farming practices such as high-density planting. Garcés Fruit uses giant fans to warm the trees in winter and, after heavy rains, draughts of air from a helicopter to dry the cherries, since damp can cause them to split. The biggest changes were in logistics. To pack his product Mr Garcés brought plastic bags from the United States that regulate the air inside them (they are now made in Chile). Ships ply the route from Chile to China in 22 days, compared with 40 in the recent past.⁹²

For Robles (2010) limited storage and packing methods and facilities affected quality and acceptance of Chilean fruit on the markets at the beginning of the 20th century. Thus, in those first decades of the 20th centuries, technical and regulatory improvements were introduced as a fundamental step towards setting up the Chilean fruit export industry. Interrogated about the use of technology, interviewees at Macfrut told me (both producers of packaging and selection machines and people working for Italian producer cooperatives) that using these technologies was fundamental to respond to the expectations of the supermarket chains of homogenous and stable quality (cfr. Paragraph 6.4.2). Climate change makes the weather more unstable and makes it more attractive to protect cultivations with plastic sheets from hail storm (cfr. Paragraph 6.2.3); taking out damaged fruit is an aesthetic operation but it also helps to prolong shelf-life and

⁹² <https://www.economist.com/the-americas/2019/01/19/a-cheery-tale-of-chilean-cherries> (Last access: July 2021)

the probability that fruit survives transport over long distances. These were the arguments advanced for the widespread use of technology at Macfrut. Plus the argument that the consumers ask for constant and homogeneous quality. Certainly though this widespread use of technology has at least two further implications: it requires further investment to be able to participate in the trade and it adds ecological impacts to production, at least in some cases⁹³. Mario Marin Valdebenito in our interview argued:

Unfortunately, fruit is considered to be a good with low aggregate value, which is a misunderstanding as to produce fruit, high levels of technology are required. The problem is that nobody has seen it, the people who are not linked to the sector do not know it. For instance, to eat a Chilean grape, you need years of research and development and, afterwards, applied technology to allow the fruit to travel.

A further driver of the use of technology can be the labour costs and the difficulties to find enough people willing to work in the plantations. Thus, a future tendency could be a process of automatization and even robotization in large plantations (Interview to Nelson Gallardo).

The different types of technology and knowledge applied in the process of fruit production can be summarised as follows (a most likely incomplete list):

- On the plantation
 - planning of the plantation: planting at certain distances with certain patterns
 - directly plant-related technology: new varieties
 - chemical treatments to support the plant: fertilizers, pesticides, hormones, etc.
 - physical enhancements to improve production: e.g. sun-reflecting plastic sheets
 - irrigation technologies (and relative infrastructures)
 - physical protection of the fruit: e.g. rain protection
 - machines supporting harvest
- After Harvest
 - means of transport and relative infrastructures

⁹³ A producer of plastic packaging I talked to at Macfrut even argued that finally their packaging had a positive impact on the environment as it increases shelf life and reduces loss of produce by consumers selecting only the most beautiful fruit. Thus, he said, packaging helps to avoid food waste and the production of fruit and vegetable itself is more impactful than the production of packaging. While the latter point is true according to data on the GHG impacts related to fruit production (cfr. Paragraph 6.3.3), I would argue that this is, at least, a very limited perspective on potential alternatives to avoid food waste. Maybe without producing plastic waste instead.

- machines for washing, selection, packaging
- packaging materials
- fridges, cool chambers, cool chain
- Organisation-related
 - organisation of production-harvest-trade-transport
 - certification
 - control

The need of technology makes investments in fruit production for export costly, making it more difficult for smaller producers to participate in it (unless they cooperate, cfr. Chapter 6.5– see also Kay’s and Robles’ (2018) discussion on how many small farmers lost their land after the end of land reform due to the lack of capital). Smaller producers have to provide the same level of (standardised) quality as large producers but the technologies necessary to achieve this have a cost that is not always sustainable for them and the same is true for certifications (cfr. Interview to Pedro Ossa). Even a wealthy family like Pedro Ossa’s needed an agreement with an export company to finance the investments into their new high technology cherry plantation (cfr. Paragraph 6.2.3). A lot of technology is concentrated in the large packing plants of larger export companies (cfr. Paragraph 6.2.4) – but not necessarily does packing involve a lot of technology. When automatisation is impossible, like in the case of grapes, much smaller packing plants, based on manual labour, are employed (cfr. Paragraph 6.5.3). Also Nelson Gallardo evidenced, while speaking about the technologies used in fruit production, a tendency towards large and multinational companies; in relation to the costs of these technologies and the economies of scale they can realise but also to the multinational exchange of knowledge between companies, professionals, research institutes and universities, in the context of a common and standardised global market with global requirements (Interview to Nelson Gallardo). Again this resonates with the differentiated possibilities of smaller producers to engage in these networks of knowledge (cfr. Paragraph 6.5.5). Thus, the question of technology and knowledge is strongly interrelated with those of standardisation, specialisation and unequal power relations.

6.4.4 From Local to Global: Unequal Relations between Producers and Buyers

When producers decide to export, they need to sell at world market prices and, as a consequence, they become dependent on the oscillations of these prices. But first, the trade relations must be actively constructed. Especially for (small) producers it does not seem straightforward to find clients. Not only producers themselves but also NGOs supporting them and government institutions like embassies or export promotion agencies (like ProChile) come, for example, to a fair like Macfrut, to look for buyers. There is no neutral platform on which simply the price decides. Rather, personal relations play an important role. Presumably this can be justified, beyond a general expectation of reliance on who is already known, by the widely variable nature of fruit, which can be of very different quality. As these trade relations are not easy to establish, in many cases also small producers actively search to establish such connections: both to export in the first place and to change their export partners and export directly (representative of an Italian foundation working to support pineapple farmers from Togo to organise fair trade export to Italy, the direct importer of fair trade pineapple from Costa Rica, the representatives of Colombian banana cooperatives, all interviewed at Macfrut; Cristian Lepe from Mi Fruta). Once established, trade relations seem to be quite stable, many interviewees argued. Knowing people makes you know if they are reliant, they argued. Such commercial relations can last decades, some said.

The relation between producers, export companies first and between them and supermarkets or import companies then, is central for a global fruit commodity geography. I have already discussed the evidence from my interviews in chapter 6.2. What can be drawn from this evidence?

In the first place it is fundamental to distinguish between producers of different sizes. It is evident that larger producers tend to be better equipped in this relation. Partly because they have a stronger role in negotiating conditions. Partly because they have more resilience and economic robustness when the export one year goes bad. And because it is easier for larger producers to establish personal relations and to access knowledge (cfr. Paragraph 6.5.5). I wrote the relation between producer and export company is a dialogue (cfr. Paragraph 6.2.4), certainly though it is a dialogue between partners which are not equal but in different positions of power: export companies generally are much larger in size and they have much more market information than producers, small producers in particular. The Mapuche cherry producers from Tralcao, for instance, (cfr. paragraph 6.5.4), have

had many issues with export companies that did not pay or were not transparent about their prices and as a consequence they changed export company several times. In the cherry market, as the fruit during some time was very highly valued in China, frauds occurred and buyers indeed disappeared overnight (Interview to Sergio Maureira). The small producers of Mi Fruta (cfr. Paragraph 6.5.3), organised collectively to improve their position in relation to buyers. Hardly by coincidence, the medium and large producers I interviewed (cfr. Paragraphs 6.2.1, 6.2.2), had a much more positive opinion about export companies.

Pablo Badilla from export company Agricom argued that they work with producers that have between one thousand and two or three hectares and that for them every producer is a client: “we consider the producer like an individual, we try to build tailored models that fit every single producer. (...) We don’t discriminate by size or anything, every client is a different client, nothing else” (Interview to Pablo Badilla). Or even: “My producers are my bosses” (Interview to Pedro Ossa). “The relation with producers is always the same, be they large, small, medium sized, it doesn’t matter. If there is good fruit, be they big or small, the fruit commands.” (Interview to Jorge Phillips). But there is a minimum of around 3 to 4 ha to produce enough to be an interesting producer for a company like Greenvic, otherwise they should associate (ibid.) While Sergio Maureira, Jorge Phillips and Pablo Badilla argued that for them the relation with the producer did not depend on the producer’s production volume, Pedro Ossa (who also works for Agricom) admitted that it can be more practical to buy from larger producers; it is a question of time he argued. But where larger producers are not available, you need to talk to “ten or fifteen small producers (...). But anyway, it’s more practical to talk to only one” (Interview to Pedro Ossa). Still, half of Agricom’s producers are small – to capture a big one is harder for an export company because there are less (ibid.). Therefore larger producers have a better position in agreeing prices and costs with the export company (ibid.). Also Cristian Ferriere, from export company Acograpes argued: “The big producers, due to economies of scale, can survive and arrange with other scales of sales or trade but for a medium-sized or small producer it is harder to be competitive, due to the costs they have” (Interview to Cristian Ferriere). Also small organic producers feel that they have less power than larger ones (Interview to Eva Hagwall and Ricardo Eller).

Smaller producers can achieve more power when they organise collectively (Interviews to Sergio Maureira, Pedro Ossa, see also the case of Mi Fruta in the next chapter), as the fifteen cherry producers who created the Cericoop cooperative that works with Agricom. According to Pedro Ossa:

they united because they know, and this is reality, that they can get better conditions with export companies and obtain special conditions. Because,

obviously, a large producer can tell me 'I give you all my fruit but instead 8% of commission, I pay you 7%, you pay half of the transport costs...'

Also INDAP supports the establishment of cooperatives and producer associations:

The point is to improve the relation, historically sometimes abusive, which is something that does not occur only in Chile but in all the world. If you have a company that has a lot of power, differently from those who are smaller... they always strangle them, they pay them late etc. and here the same happens and with these alliances [between small producers and larger buyers, supported by INDAP] we try to collaborate to face this (Interview to Martin Barros).

Export companies not always like to work with small producers as they are afraid that they might not be reliable and spontaneously sell to somebody else (Interview to Sergio Maureira). For Jorge Philipps from Greenvic, this simply is a normal search for a reliable partner for export. If an export company does not behave well, as a producer you can search for another one; there is competition among export companies for producers (Interviews to Ángel Sandoval, Mario Marin Valdebenito).

Nowadays, I would say, we go out to conquer new producers, and we maybe manage to get one per year, as they are used to work with other companies and we, who want that producer, have to go visit them, show them who we are, show the prices to conquer them and we tell them: 'don't sell us everything, sell us a part of it to get to know us', and getting to know us they will send more fruit. Some producers immediately change their whole production to us, others sell us 50% and the next year hundred per cent. Or nothing. (Interview to Jorge Phillips)

The level of competition depends on the type of fruit: it is hardest with cherries, and with kiwis, the most expensive fruits currently exported from Chile (Interview to Jorge Phillips). Furthermore, it depends on the fruit species with which size a producer is sufficiently big to work with export and to have returns (Interview to Sergio Maureira).

In the literature similar arguments are made. Often, according to Gwynne's (2003) study of Chilean grape production, transnational companies are the strongest in the commodity chain. He found that 50% of the distribution of Chilean fruit was controlled by transnational companies – two (Dole and Chiquita) focusing mostly on distribution, two (UTC-Del Monte and Unifrutti) with important levels of vertical integration into production. Gwynne explains how smaller Chilean export companies often restrict their operation to European and North American markets – which are highly competitive, while large companies like Dole are able to

differentiate operations also to Latin American countries. This ability to differentiate their markets, gives large companies an advantage as they are able to export high quality fruit to Europe and to sell lower quality fruit in Latin America. Transnational corporations in this sector have been further favoured by very market-oriented legislation in Chile and the definition of fruit quality standards. Ospina Peralta et al.'s (2015) research compares the role of extraterritorial in Latin American sectors of resource extraction and agriculture in three regions, among which the fruit growing region of O'Higgins in Chile. For them the involvement of multinational corporations (an involvement with a long history but growing over the last decades) is often associated to unsustainable land use practices and ecological conflicts. The authors argue that it is important in this context to distinguish between actors regulating the access to and institutions dedicated to the management of natural resources. States in the Latin American context tend to favour extraterritorial investments in natural resources. According to their analysis it is difficult for (effective) institutions for the management of resources emerge in the presence of extraterritorial actors because of their asymmetrically strong power position in relation to local actors – the more the latter are involved though, the harder is collective action against problematic activities. Gwynne, on the other hand emphasises the linkage between transnational export companies and small farmers: in this relation, based usually on annual contracts, the prices paid to farmers (paid only if the fruit matches quality standards and is accepted) depend upon the final prices of sale, the distributor obtains from the marketing end (e.g. a supermarket chain). “[I]n this arrangement the risks of international trade in fruit are effectively passed on to the farmer.” (Gwynne 2003, 314).

This model, according to my interviewees, in Chile has evolved to some degree: nowadays, there are many more export companies active in Chile and there is much competition between them (cfr. Paragraph 6.2.4). Also, there are guaranteed minimum prices, even if they receive the money months after selling the product (cfr. Paragraph 6.1.3) and others have responded to this model reorganising and exporting directly. But in the consignment system of payment it can also happen that final prices result lower than advance payments and producers remain indebted cfr. Chapter 6.2). The farmer, furthermore, does not have the ability to control final prices and needs to follow precise instructions on cultivation by the company. Furthermore credit is often offered to the farmer and accepted as other opportunities to finance expenditures are missing.

Gwynne (2003) traces this relation in the case of grape production in the Norte Chico region, coming to results very similar to Murray's (2002) observations: in a first phase of boom, with high prices and expanding markets, farmers had a relatively good bargaining position in relation to transnational distribution companies, but in a second phase, when a monoculture of grapes had been

established and international competition had grown, this position weakened substantially in front of worse conditions offered by transnational corporations, keen to guarantee their profitability. Similar to the difficulties of small farmers depicted by Jarosz and Qazi (2000), also for Gwynne, smaller farms became indebted and often lost their land to the transnational companies pointing at vertical integration (Murray's (2002) proletarianisation). Larger farmers instead had a stronger position. The situation was also better for those smaller farms who moved to grape production first and those that didn't move and remained with traditional crops. This regards in particular "micro-scale" farmers, too small to be considered by large distribution companies. They have managed to survive and prosper with a combination of own horticultural production for local markets and (seasonal) wage labour, e.g. harvesting on larger farms, i.e. a strategy of diversification. For Gwynne this evolution shows that the behaviour of transnational companies (and one might add the evolution of the whole market) can have strong impacts on local places and agricultural systems, transforming them. He also points out that the centres for decision-making of the companies are distant – in global headquarters or at most in national offices (usually in Santiago), countering strategies of 'local development' on the basis of grape/fruit production for export:

[t]heories of dependency rather than theories of market liberalism still seem to have greater relevance in explaining the realities of local development in Chile and Latin America, even when associated with rapid growth in export production (Gwynne 2003, 320).

Large companies focused on the global distribution of fruit, according to Arboleda (2020b), together with supermarket chains asking for low prices (also in Chile itself), are the large players in this game, the most powerful actors of Chile's global fruit geographies. That export companies are in a position of power in relation to the often small producers seems to be a common trait in Chile and beyond, from Colombia to Guatemala. But the power of export companies is not endless also because it depends on the evolution of markets and their partners which import to other countries. Export companies are only the direct contact producers have, but they are not the only and not necessarily the most powerful actor in the chain: "who has the power are the supermarket chains (for the big volumes)" (Interview to Isabel Quiroz). Supermarket chains are in most cases the principal final (company) buyers and they are particularly interested in having a constant supply of a constant product (cfr. Chapter 6.2). Thus, "it is not enough to have the best product but to have this product in a regular way during a long period of time" in the year (Interview to Isabel Quiroz). There are different ways to approach this requirement of supermarket chains, as we have seen: one possibility is the role of

import companies which collect fruit from different sources, another possibility is for local producers to additionally buy imported fruit to be an attractive supplier for supermarkets (cfr. Paragraph 6.2.5). Another possibility is that of vertical integration with some big multinational companies integrating production, packing and shipping globally in different countries to be able to offer a constant, year-round supply of fruit (Interview to Isabel Quiroz). This form of trade relations refers to a unified global market in which “everyone competes with everyone” (Interview to Isabel Quiroz). Alongside this market though smaller and more specialised markets exist:

they are much more connected with the consumer of a certain neighbourhood and there I exit the world of supermarket chains. These small businesses connect and know the tastes of the consumers in their neighbourhood and so they can canalise local products, organic and sustainable products. Sometimes these sell also in big supermarkets but both forms coexist (Interview to Isabel Quiroz).

Very much like the coexistence of different types of markets described by Murdoch and Miele (2004).

In sum, in the relation to buyers, producers tend to have the weakest position. They depend on the honesty of the export companies and their ability to find buyers in importing countries,. The export companies themselves can only operate in the limits of the conditions of global markets which depend partly on the general offer of fruit, partly on consumer preferences which are probably also quite flexible as potentially there are many alternatives to a specific fruit from a specific country. Also are these consumer preferences influenced by the promotion of (new) products and what supermarkets choose to propose. Supermarket chains in consumer countries in general appear to have a particularly strong role; in many ways they define the rules of the game through their market force and they are easily able to find alternatives to a certain kind of fruit from a certain kind of origin. Small producers, of course, are in particularly weak positions in this context, in particular when they act as individuals. In phases of high demand for their product they may have no problems to sell their products, while in phases of low demand they may easily overlooked by export companies, which becomes problematic especially when they depend on only one product. For small producers in particular there is also the question of access to knowledge about markets (cfr. Paragraph 6.5.5); their position then is particularly weak, as they have no direct contact with the finally most powerful actors – supermarket chains – but only with export companies which pass on, with more or less honesty, the conditions of supermarkets to producers.

6.4.5 Specialisation and Monoculture or Diversification?

Export is like that. In one moment it can be very good, the next very bad.

Interview to Marco Orosio, grape producer with Mi Fruta.

Production for export requires large volumes and constant quality. This favours specialisation. Specialisation favours monocultures which has both ecological and economic downsides. At the same time many pursue forms of diversification: but it is important to differentiate between economic and ecological diversification, as much as they may be interconnected.

In this paragraph I try to approach these complex of questions in detail, starting from the one if production for export favours specialisation and economic and agrarian monocultures. This answer is less straightforward than it may seem at a first glance. In paragraph 3.3.3 I have illustrated that much literature on agricultural commodity geographies points to an issue of specialisation and both agrarian and economic monocultures in these geographies. But certainly most case studies in that literature referred to traditional export cash-crops: coffee, soy beans etc. and makes think of the vast extensions of plantations in Brazil or Argentina. Is this also the case for high-value commodity like fresh fruit? The answer depends of course on how precisely you define monoculture, but fundamentally the answer is positive. In this chapter we have already seen the link between quality requirements and the relation of producers with export markets. These are, without doubt, drivers for specialisation and indeed many interviewees confirmed the fact that specialisation is necessary.

Let's look at this question with greater detail in the case of Chile. Robles (2010) identified, in the early period of Chilean industrial fruit production, limitations to its global competitiveness at the farm level: in the first place the mixed cultivation of different fruit species and varieties, often together with other crops like cereals and vegetables (which in part might have also increased fruit quality), hindered a competitive level of productivity and quality. Standardization and specialisation would have been necessary to be more successful on world markets. Other issues were techniques of pruning and weed control, carried out not systematically. Pest control, on the other hand, as well as picking (highly gendered; carried out by separated men and women gangs of seasonal workers) seems to have been more effective. For the case of New Zealand, Le Heron and Roche (1996) tell that in the late 1950s farmers have been encouraged first to reduce number of apple varieties (from 139 to 15, the most productive) and then to introduce newly developed

varieties (Breaburn and Gala). These varieties are vulnerable to diseases, a problem overcome through orchard management.

At a wider level, for Chile, authors speak of commodity-regions (Daher 2003; Bustos-Gallardo and Prieto 2019), meaning that whole regions are economically dominated by the extraction or production and export of one specific commodity, among which fruit production in a couple of regions. Indeed, when speaking about large monocultures in relation to fruit production for Chile, only partly I refer to large single plantations like the avocados in Leyda (Paragraph 6.2.2), more often instead it is a sort of regional monoculture of fruit production like in Chile's central valley (Paragraph 6.2.1) or in the area of San Felipe (Paragraph 6.5.3).

On one hand it is precisely the degree of competence and knowledge needed to produce for global export markets that favours specialisation. On the other hand, many producers and organisation supporting them are aware of the risk of excessive specialisation and try to diversify in one way or another (growing different varieties and species (e.g. Don Garbiel in Nancagua), transforming products, adding other economic activities like tourism (e.g. the Mapuche community of Tralcao, cfr. Paragraph 6.5.4). Producing one product for one market is an economic risk for small farmers, as they easily get in trouble when prices go down. Many interviewees have told me about this risk, talking about their plans to diversify (products, adding transformed products, markets). Indeed export – and in particular to export to different markets – for producers in Tralcao is a form of diversification. Also, many interviewees at Macfrut underlined that in their cases you cannot speak of outright large-scale monocultures, as often several species are grown; if not all for export then for self-consumption.

It is easier to grow fruit in monocultures, it is cheaper and it allows to follow market trends, it can be a risk for whole regions, argues Cristian Moretti. Moretti furthermore observed that specialisation and large volumes, necessary to compete in global markets, can also occur later in the chain, before exporting, instead of the level of production (which is more similar to how his cooperative works in Italy: small producers with several products, collected by Agrintesa to be sold to supermarkets nationally as well as international clients), spreading the risk over different products and markets.

Specialisation and monoculture are in dialogue with market trends and fashions: several interviewees critically observed how the current rapid expansion of cherry plantations, transforming many other plantations into cherry plantations, due to high prices paid in China was a great economic risk, in particular because largely dependent on one single market (e.g. Interview to Cristian Moretti). Thirty years ago there were a lot of apples and now many have been cut down, a similar process happened with kiwis (*ibid.*).

According to Jorge Phillips from export company Greenvic, variety can be a competitive advantage: it is positive if a farm grows more varieties as “more variety we have, better it is to show the client that we have different things.” (Interview to Jorge Phillips). Even though, as he later specified, what he means are mostly new varieties, in relation to which there is constant innovation and change. Around every 10 to 15 years, a plantation is changed to a new species or variety – not because the tree could not produce any more but because it’s new varieties the clients ask for (Interview to Jorge Phillips). New varieties are developed continuously to gain competitive advantages: on one hand markets get “tired” of established varieties, on the other hand, new varieties may improve in some characteristics (taste, size, colour, conservability, production volume) – at least these are the promises of who promotes new varieties to the producers (Interview to Roberto Bressi). Furthermore, new varieties can be protected, in different ways, in order to ensure that only a certain number of producers and/or who is certified, pays the licence and respects certain quality requirements, is allowed to produce such a variety, which allows to reduce competition (Interview to Roberto Bressi).

A certain degree of specialisation is without doubt necessary to produce fruit for export; to respect the necessary quality requirements, to be able to produce sufficient volumes and to be able to employ technologies. Easily this leads to economic and agrarian monocultures. An hypothesis could be that the degree of specialisation and monoculture is related to the degree of “maturity” of a fruit producing region. In Chile, regions which are involved in fruit production for a long time (e.g. Valparaiso, O’Higgins, Maule) tend to have more monotonous fruit producing landscapes than other regions, in which fruit production has begun more recently and may appear as a form of diversification in landscapes so far dominated by pastures and forest plantations (e.g. Los Rios, Los Lagos). The massive transformation of territories, organisational practice and employment of technologies remind of Brenner’s and Katsikis’ (2020) movement from “formal to real subsumption” of hinterlands. The question is: must all places that produce fruit for export follow this path of growth?

A tension towards diversification remains in most interviewees, but for many producers diversification is foremost a diversification of (export) markets. It must thus be well-understood what diversification in any single case specifically means. To diversify production, sufficient surfaces are necessary, which in theory could make it even more difficult to diversify for small producers. Even so, in some cases, small producers have developed intelligent strategies for diversification (cfr. Chapter 6.5) and it were small producers’ plantations where I found most agrarian and economic diversity in Chile.

6.4.6 A Model of Growth? Strategies for and Limits to Growth

Does the Chilean fruit export industry need to grow and if yes, how, with which strategies and instruments do actors want to achieve this growth? Or are there, on the other hand, limits to growth?

To produce for export, opens the access to new markets, allowing, potentially to sell larger quantities and at higher prices: it is thus in itself a strategy of growth. This point is one of the basic motivations for export and the most immediate connection of global commodity geographies to the question of growth/degrowth. Many interviewees said that they wanted to export as local production exceeded the demand of local markets. Obviously, accessing other markets opens new possibilities of commercialisation. This logic can be problematic in two senses, when it is set in the context of unlimited growth. On one side, it requires, a growing world economy. On the other side, it implies a potentially devastating transformation of territories of production.

Growth at All Costs?

Not necessarily all initiatives for the growth and development of a certain export relation are oriented towards endless growth. Some interviewees seemed conscious of the necessity of limits. But others were rather oriented towards growth at all costs:

I believe that Chile should hold a much more radical position in relation to the development of the agrarian production and the food processing sector. It should consider this a more powerful industry, like the Koreans saw a great opportunity in technology: they decided to build computers and microchips. After all, Chile should concentrate on an industry with a lot of force and the way to do this is to industrialise its agriculture. We have the best climates in the world to do this, so I don't see why we shouldn't do it (Interview to Mario Marin Valdebenito from producer organisation Fedefruta).

Valdebenito was not the only Chilean interviewee with a very much growth-oriented position. According to Gabriel Edwards, the tendency is to use more technology and less labour (workers being harder to find), to improve the irrigation technology and to change the technique of planting, including the experimentation of new varieties and species. In these improvements, rather than in an extension in surfaces, he sees a potential of growth in the sector (Interview to Gabriel Edwards). An industry consultant argued that there is more potential of growth "if and when the problem number 1 is solved: water. I believe that we can

arrive to be a 100% sustainable country” (Interview to Isabel Quiroz) – again the expectation of growth as closely linked to strategies of sustainability (cfr. Paragraph 6.3.1). In some cases, a pro-growth attitude was linked to a dismissal of critiques to the practices of the Chilean fruit industry as exaggerated. For instance, Cristobal Matte, interrogated about the concept of extractivism:

I believe this is pure politics which I don't like, because I believe it is against economic well-being. It's very serious. They don't look beyond the present day when they make all those criticisms of production, when Chile is a country in which, after mining, agriculture is the second most important economic sector. (Interview to Cristobal Matte)

In other words, speaking about Chilean fruit production as extractive is “a tremendous disinformation” (Interview to Isabel Quiroz); fruit production in Chile usually is not extractive, due to this interviewee, as the quality of soil remains intact and is regenerated and in many plantations production is ongoing for decades, up to a century (Interview to Isabel Quiroz). Another interviewee instead, also working as a consultant argued that “the industry (...) is very extractivist” (Interview to Nelson Gallardo), in the sense that the establishment of monocultures for fruit production strongly alters ecological equilibriums; he argued that this disequilibrium is something manageable with available knowledge and technology but only in the short term.

In many cases these positions were explicitly related by my interviewees to the current political process of transformation that Chile is undergoing, with the positions taken by social movements, for example in relation to the use of water, by forces in the constitutional assembly (that proposed a proposal for a constitution which afterwards was rejected in a referendum) and by the recently elected government of Gabriel Boric, described as anti-economic and harmful for the sector. Also small producers took pro-growth positions. For instance, arguing for the construction of cross-country irrigation projects, Mi Fruta producer Juan Lazcano argued:

In Spain in 1970 they said that Murcia was Spain's heart to be able to feed everybody in Spain and in other places, too. (...) But why couldn't we see this in Chile? (Interview to Juan Lazcano).

The reference to Murcia is one to a high-technology, industrialised model of agriculture with massive impacts on the environment (due to the excessive use of water, unresolved by a long water pipeline) and workers, also known as the ‘sea of plastic’⁹⁴.

94 <https://www.theguardian.com/environment/2021/nov/16/farmers-are-digging-their-own-graves-true-cost-of-growing-food-in-spains-arid-south> and <https://www.theguardian.com/global->

To be sure, the growth-orientation is not exclusive to agriculture or to fruit export in Chile – as Martin Barros argued, the point also is the general goal of a state’s economic policy, which in Chile is liberal and “what is [every farmer’s] goal in a free market model? To maximise their income and their profit. What do they do? They sell their product and grow as they can” (Interview to Martin Barros). If export pays better, you export but this model does not pay much attention to social issues, like food sovereignty or ecological issues like water (Interview to Martin Barros; cfr. Chapter 6.3).

Another interviewee instead argued that “more than growth we need consolidation” and an improvement of the economic model, but “improvement without killing it” (Interview to Person working in Ministry of Agriculture). Or, in a different perspective, there is the challenge to maintain existing positions, “to be defended until the end”, such as the one as the biggest fresh fruit producer of the southern hemisphere (Interview to Sergio Maureira).

Strategies for Growth: Diversification and Adaptation

Which are the strategies adopted for growth in the Chilean fruit industry? Growth in surfaces on which fruit is grown, according to Sergio Maureira, is no option for Chile, as there is no more space – even so, as data shows (Paragraph 6.1.4) some expansion is occurring, mostly as an expansion southwards, as we will discuss below. For Maureira though, rather, in the quest to grow, or to at least defend existing positions, according to Sergio Maureira, the major challenge is to diversify markets (again diversification as an economic strategy), to reach markets not yet reached due to reasons of organisation and logistics, for instance in Asia. And in particular to diversify markets for those fruit species which have a very concentrated market, like cherries, at 90% sold to China, which is a very fragile situation when for any reason that specific market brakes down (Interview to Sergio Maureira).

Furthermore, the strategy nowadays is to grow in productivity and profitability: productivity can be raised changing varieties and agricultural techniques (increasing plant density, for instance), profitability can be increased substituting less profitable species with more profitable species. So I believe that we are aiming at maintaining fruit of a better quality, selling more produce, more kilos per hectare, rather than having more hectares (Interview to Sergio Maureira).

development/2020/sep/20/we-pick-your-food-migrant-workers-speak-out-from-spains-plastic-sea
(Last access: January 2023)

Jorge Philips made the same argument: usually after fifteen years, plantations are substituted with more profitable species and varieties. A process and discussion that has been very visible for instance in the case of Mi Fruta (cfr. Paragraph 6.5.3). Thus, a continuous adaptation to the evolution of markets is crucial, for instance investing in new varieties, requested by markets (Interviews to Sergio Maureira, Mario Marin Valdebenito and Jorge Philips), or changing fruit species: apples and grapes, for example, have lost importance over the last decades, while the role of cherries has become much more important (Interview to Sergio Maureira).

An example is the kiwi, for many years the kiwi was a super product, than a disease hit it; finally there was very little kiwi in Chile, until a few years ago they started again to plant kiwi in Chile because there is little kiwi in the world (Interview to Mario Marin Valdebenito).

In the case of grapes specifically, I believe that the producer who does not go for new varieties, doesn't substitute and does not understand what the market wants (and not the producer) will disappear, independently from being a small, medium-sized or big producer (Interview to Cristian Ferriere).

Of course though, larger producers have more possibilities to be informed about the changes of the market and can more easily afford the capital required to plant new varieties (cfr. Paragraph 6.5.3).

The important Chinese clients in particular appear as "fashion-driven" and it might as well be possible that from requiring cherries today, they might want kiwi in the close future, which producers might accept doing; so in alternative one might rather change and diversify markets (Interview to Person working in Ministry of Agriculture). Even though these fashions make the business difficult, costly and complicated, some have benefited from it and for example with cherries

there are farmers who turned out millionaires. See Garcés Fruit, they were small and they were who started with cherries and to export to China and now they are a mega industry (Interview to Mario Marin Valdebenito).

This can work only for a few and so there is a logic of 'adapt or perish', as there are no systematic subsidies to keep rural areas alive (Interview to Mario Marin Valdebenito).

Following these fashions and continuously changing fruit species is also seen critically by some; considering for instance that cherries already do not receive the prices paid at the beginning of the boom. It may be a risk to change trees every ten years; in particular excessively high prices in a certain moment may induce wrong investments, with little efficiency or beyond quantities that will be effectively absorbed by markets (Interview to Pamela Olivares).

Regionally, in Chile, an important strategy to grow or, to, at least maintain production is the tendency to move fruit production southwards – or, perhaps more precisely, to expand southwards (see data analysed in Paragraph 6.1.4), in response to the effects of climate change and its effects on the availability on water (cfr. Paragraphs 6.2.3 and 6.3.2). To Octavio Sotomayor, this trend is not only a response to climate change and the availability of water but attractive also as it enlarges the season during which Chile can export specific types of fruit, taking advantage of the climatic variability along its longitudinal expansion. This is a development that may signify a transformation of territories that have been so far less commodified (or differently commodified, by forest companies for instance). An aspect of the move southwards is that further south, on average, there are smaller farms; as a consequence the participation of smaller producers in the fruit export business could be tendentially growing (Interview to Martin Barros).

This move southwards though is not simply a substitution of hectares cultivated in the north because of a lower availability of water, it also involves a change in fruit species: grapes is what is traditionally grown in the North, in the desert, but costs are relatively high and there is more competition nowadays, with Peru having entered the market. In the south instead, it is possible to grow cherries which have a better market (Interview to Sergio Maureira). Examples for this trend are the cherry plantation of Pedro Ossa at Lago Ranco and the cherry cooperative near Osorno I have visited (cfr. Paragraph 6.2.3). Substituted by these new fruit plantations are pastures for milk and fields for cereals, which themselves have lost competitiveness due to climate change (Interview to Martin Barros).

But this strategy of growth in the move southwards also has its limits which again are climatic. At least up to now, south of Purranque there are too many hail storms and it freezes too often to produce fruit, even though water is available in abundance (Interview to Pedro Ossa). According to Pedro Ossa, this move may continue, but in a slow pace: cherries have been planted in so many places that the expansion will probably slow down; blueberries are not that competitive any more. While this move southwards in itself is an expansion, finally it may result in nothing more than a substitution of plantations located in the ever drier north which are progressively abandoned due to the lack of water (Interview to Pedro Ossa), as I could observe in the Aconcagua Valley (cfr. Paragraph 6.5.3).

Among this move southwards, hazelnuts are the most rapidly expanding production, with the problem that they are completely for the use of only one company: the Italian producer of sweets, Ferrero (Interview to Pedro Ossa)⁹⁵.

95 Hazelnuts for Ferrero as another (together with Avocados in Petorca) are another case of conflict related to fruit production in Chile. There are problems in relation to monoculture and toxic pesticides: <https://www.resumenlatinoamericano.org/2017/11/23/chile-nutella-para-italianos-y-toxicidad-para-campesinas-chilenas/>,

Ferrero is planting hazelnuts like crazy. Shortly ago they announced a new investment in a new plant to process hazelnuts. There is great potential in the sector that yet is not taken advantage of to its maximum possibilities. There are many hectares that could start production. (Mario Marin Valdebenito, Fedefruta).

Valdebenito welcomes this move southwards and in this context asks for a massive state involvement:

This implies a strong state policy for development, something that has been lost as they think that the work has already be done. We know this is not true, as in the south there is still a lot of surface to work on and with their efficiency to be improved. We need a state that is available to “put all its powers” in this [fruit] industry which beyond being very profitable, generates a lot of employment. (Mario Marin Valdebenito, Fedefruta).

Also export companies, like Greenvic, have grown over the last decades and want to grow more. A potential growth that includes the use of more technologies but centrally bets on the expansion of surfaces, in particular southwards (Interview to Jorge Phillips). Agricom instead does not plan to grow much (Interview to Pedro Ossa), but generally, the Chilean fruit production has potential of growth, in particular in its move southwards, according to the same interviewee.

Another aspect of adaptation to international markets (the European one in particular) is a general orientation towards sustainability, at least at the level of certification, communication and marketing, with the ambivalent characteristics of a strategy implemented with the scope of maintaining market positions and that, at the same time, has at least some concrete impacts (cfr. Paragraph 6.3.1). In this sense, sustainability strategies can become strategies of growth.

To Mario Marin Valdebenito, the economic model of fruit orcharding for export has been an overwhelmingly positive model for Chile. Positive for many actors as the numbers of people employed in the industry is very high and that these employees often come from economically less privileged contexts (but work in mostly precarious conditions, cfr. Paragraph 6.3.3).

<https://www.glistatigenerali.com/agroalimentare/industria-nocciola-ferrero-nutella/>,
<http://www.corriereortofrutticolo.it/2016/12/05/nocciole-ferrero-vuole-espandersi-cile/>,
<https://www.ferrerosustainability.com/int/en/our-approach/source-ingredients-responsibly>,
<http://blog.investchile.gob.cl/ferrero-group-to-install-a-new-hazelnut-processing-plant-in-chile>
(Last access: September 2021).

Towards Limits to Growth?

Opposed to these growth-oriented positions and strategies common among the Chilean fruit industry, are the socio-ecological debates and conflicts discussed in chapter 6.3. The questions of the overall sustainability of the model, and its impacts specifically on the questions of water, land use, labour conditions and food sovereignty speak against an idealisation of the model and for an, at least, critical position in front of perspectives of unlimited growth.

The most obvious limit to growth of Chilean fruit production is the availability of water (Panez, Roose, and Faúndez 2020; cfr. Paragraph 6.3.2). It requires state intervention to decide how much to grow where (Interview to Juan Manuel Roa).

As Mauricio Ponce summarises it, very clearly:

I believe that the limit should be when all national water demand has been satisfied, not only at the level of agriculture but also establishing quota so that there will be no water missing in schools for example (...). I would say that these are the limits (...) If then, beyond this, it is possible to produce something more: fantastic (Interview to Mauricio Ponce).

In the reality of Chile, the massive use of water for the export agriculture, in particular in spectacular cases like Petorca, has shown the limits of a growth-oriented export model model. But also in the less extreme case of the Aconcagua Valley and Mi Fruta (cfr. Paragraph 6.5.3), water has become a relevant limiting factor. But of course, limits are not fixed and the industry (together with the state) tries to move these limits through technologies and specialisation (Interview to Pamela Olivares; cfr. Paragraph 6.3.2).

Chile's fruit export industry has been growth-oriented from its beginning. The question is if this wants to be growth with a limit or without. Some interviewees indeed expressed positions conscious of limits to growth (at Macfrut, a representative of an Italian initiative working to support small farmers in Togo to export pineapples to Italy, a man from a small Italian import company that imports organic fair trade pineapples from Costa Rica). Catalina Cuevas from ProChile shared the view that having built an economy of fruit export around a perspective of unlimited growth has been a fundamental problem, leading to a shortsighted strategy, unconscious of natural limits and cycles. It would be necessary to take planetary boundaries into consideration. This on the supply side. At the same time, she argued, at the demand side, the problem has been a "hyper globalised" world that created the false need to have abundant fresh fruit out of season. The (so far unsuccessful but ongoing) process for the new Chilean constitution in which the role of indigenous communities is strong and water and sustainability in general

are important themes, could potentially lead to change, this interviewee argued. Also consultant Nelson Gallardo criticised the fruit industry's unconditional growth orientation, driven by global demand, defining it as "very unsolidary with future generations", but he expressed hope that precisely these younger generations have started to oppose the predatory logic of the industry, posing more attention to the ecological context in which fruit production is situated (Interview to Nelson Gallardo).

A certain trend in consumers' attitudes towards regional and seasonal fruit has also been made out as a potential future challenge for international fruit trade (Interviews with person working at German import company, to Cristian Moretti and Catalina Cuevas). For an Italian fruit producer cooperative like Agrintesa this might appear as a positive tendency but it also poses an organisational challenge: the current fact of offering the same kind of fruit twelve months a year helps to use the company's structures homogeneously all year round (Interview to Cristian Moretti).

Visions of change exposed by interviewees were variegated. Octavio Sotomayor, generally in favour of Chile's model of fruit production for export, argued that a problem is the limited consideration and implementation of agroecological principles. To be sure, he prefers a weak interpretation of agroecology, referring to the FAO concept of agriculture as adaptation to nature as far as possible. But he argues for more use of principles such as the reduction of chemical products in agriculture, planting other species between rows of fruit trees etc. In his view, current limitations for these approaches is not the production for the world market but limited spending by government institutions for research and implementation support, combined with a politically conservative position of most farmers in Chile. This vision of course does speak for a larger biodiversity in the orchards in support of one main cultivated species, not so much for diversification of the fruit species cultivated. Catalina Cuevas from ProChile argued that there should be a country-wide agreement, including all actors from the state level to private actors, to "really change business model", in order to see sustainability not simply as a cost but an "element of competitiveness". In this sense, she proposes to change paradigm and the common sense in the business, operating through instruments like information transfer, economic incentives but also the exclusion of producers which do not operate according to standards. Like others (e.g. Roberto Bressi), they proposed a greater role of cooperatives.

Cristian Lepe, manager of the cooperative fruit company Mi Fruta (cfr. Paragraph 6.5.3) exposed a differentiated perspective for the future: to abandon the perspective of unfettered growth perpetuated by the model of Chile as a "food power" but do it gradually, establishing a more sustainable model of production

made of improved, drought-resistant genetics, different fertilizers and other products, technified irrigation, and restraint from planting the hills (Fieldnotes, 07/02/2022).

Activist groups employ the concept of extractivism as a political term to criticise how the fruit industry in Chile operates and its strategies of growth. For instance, for Alicia Muñoz, extractivism is a good term to describe how the companies “destroy the environment, how they destroy the hills, how they destroy the rivers to put hydroelectric plants, how they destroy everything”, most of all the avocado plantations. For her, the export agriculture “has come to stay and they will squeeze everything until they will be exhausted, like it happened with other things” (minerals, for instance) (Interview to Alicia Muñoz). Carlos Gutierrez from MODATIMA made similar arguments.

Final Considerations

Summing up, many in the Chilean fruit industry argue for further growth, to be enacted through the following strategies:

- State support
- Diversification of markets
- Adaptation to market requirements
- Intensification of the use of technologies, in particular the change of fruit species and varieties
- Southward move/expansion
- Sustainability strategies for growth

On the other hand, critical voices, often employing the term extractivism, call for limits to growth or at least a reorganisation of the model, in particular arguing that the existing mainstream model of fruit production and export contributes to:

- an excessive use of water
- the impact of pesticides
- precarious working conditions
- the unfair treatment of small producers
- the impact of monocultures
- an insufficient consideration for food diversity, security and sovereignty

From a degrowth perspective, i.e. for social justice and environmental sustainability, there are many problematic aspects in the current, growth-oriented globally dominant model of fruit production and export. Smallholders are easily dispossessed and overpowered by multinational export companies, quality requirements are imposed by governments, importers and supermarket chains in

the global north, massive investments are made in technology and plastics with its related ecological impacts, and finally specialisation and monocultures lead to fragile economic models with an evident impact on landscapes and ecologies, simplifying them and subsuming them as infrastructures of production for global markets.

At the same time, there have been positive aspects. Chile, in a perspective of social justice, with more redistribution, could probably fare relatively well with its regionally specialised but nationally variegated export oriented model. The ecological sustainability of a model pointing mainly at export may be structurally more dubious. But for many producers in other countries, access to export markets seems essential for decent economic conditions.

Quality requirements themselves, it seems, have an ambiguous impact – they can be barriers in particular for small producers, they can favour processes of standardisation. But as well they can be instruments to introduce social and ecological minimum standards. A transversal issue is the fact that in most cases they are imposed by the demand side, without dialogue. Is this always for the worse? Thus, as outlined in section 4, inside overall limits for growth, also of international (fruit) trade, the modalities of trade need to change. As this case study has illustrated, power relations need to be balanced – regarding export companies but also product quality requirements which could become to a greater degree an object of mutual negotiation than be unilaterally imposed by the global north. Political strategies also in production countries should take into account the local and specific social and ecological limits of growth – also NGOs and government institutions from the global north should equally consider this. A moderate use of technologies and diversification at all scales, in an agroecological perspective, seems a promising strategy. In chapter 6.1 I have pointed out the strong role of the state in building and maintaining Chile's fruit industry. This strong role of the state could also allow to implement different policies. The second part of the empirical research in the following chapter will look at how alternative approaches to fruit production and trade in Chile approach the challenges raised so far. Then, in the closing section, I will take up the considerations made here and the potential these alternative practices show, to reflect on the strategies for a degrowth transformation of global commodity geographies.

6.5 A search for Alternatives in the “Food Power” Chile

I have difficulties in seeing other more sustainable models of export...

Interview to Martin Barros, INDAP

I had come to Chile to study a case of a ‘conventional’ global trade geography and to analyse it critically. But, of course, I am not the first one with a critical perspective on this system, this geography, and as I made this realisation, I started to search for alternative practices, in the vein of looking for concretely existing alternatives that point towards post-/degrowth futures (Spanier and Feola 2022). I found that there is a number of projects in Chile, which, even though small, have been trying to rethink both the modalities of food production in Chile and the role and the organisation of export. These projects have very different focuses but together they lay grounds for a different way of thinking the relation between a local and the global economy.

These projects are different from the mainstream approaches to sustainability discussed in paragraph 6.3.1 in that they search for structurally different answers to the challenges raised in the two preceding chapters (which is why I present this part of fieldwork *after* critically discussing the mainstream model of fruit production and export in Chile).

It would be wrong to consider the cases presented here as a coherent alternative model – they act on different steps of the process, none tackles all of the challenges presented earlier. Also, they are grounded in very different contexts. A couple of experiences look in different ways on how to employ different techniques of production in the field (paragraph 6.5.1 Agroecologia), others search for different ways of trade (paragraphs 6.5.2 Campochange and 6.5.3 Mi Fruta), others foster cooperation between small-scale producers (paragraphs 6.5.3 Mi Fruta and 6.5.4 Tralcao) and the case of Tralcao (paragraph 6.5.4) furthermore hints at a different understanding of how global trade can integrate into a diversified local economy.

While in these following paragraphs (from 6.5.1 to 6.5.4) I illustrate my fieldwork and interviews regarding these cases, in paragraph 6.5.5 I will more systematically discuss lessons, potential and limits of these approaches. It may make sense to anticipate that these cases point to a scenario (coherent with the idea of localism as a tendency presented in Section 4) of lower volumes of production and export, without eliminating it. In paragraph 6.5.5 finally I will reflect on how these proposals and experiments might integrate into a more coherent scenario of such a socio-ecological transformation of Chile’s fresh fruit production and export.

6.5.1 Agroecologia: Producing with Biodiversity

There is an important spiritual issue (...). From an economic starting point you won't achieve anything. They say, "sure, let's use less poison", because the guy is motivated, because they pay him more, and then all goes on with equal violence, in the end... But this is the main motivation: money.

Interview to Luis Melendez, of certification company Bioaudita.

Agroecology, according to Altieri and Toledo (2011) is science + practice + movement. It has had origin in Latin America from the valorisation of traditional, *campesino* agricultural practices and is based on the promotion of a diversity of cultivated species and varieties which contributes to stability, resilience and higher overall yields. Fundamentals are furthermore: the integration with the specificities of nature and landscape (no universal technologies but adaptation to local conditions); local relations and systems; participation and community (Altieri and Toledo 2011). In this sense, agroecology is opposed to agribusiness (like in. the mainstream model of Chilean export agriculture described in the chapters above) based on monoculture, global export relations and technocratic top-down relations. Furthermore, agroecology is allied to the project of food sovereignty (cfr. Paragraph 6.3.3) (Altieri and Toledo 2011). But there is a large diversity of specific situations with many grey tones between agroecology and agribusiness (ibid.). The "agroecological revolution" aims at a "sustainable rural society" with "diversified production, food security with market links, agroecological technology, comunitarian/cooperative organisation" (Altieri and Toledo 2011, 176).

In Chile, not necessarily agroecology has the political connotation it may have in other Latin American countries; in several occasions I encountered the term used as a synonym for organic agriculture, that is with a predominantly technical meaning, referring to a form of a agriculture practised with respect for the environment, without pesticides in particular - Luis Melendez instead argued that "organic agriculture is not more than a component of agroecology" (Interview to Luis Melendez). When intended simply as a synonym of organic, of course, "agroecological" can also refer to the cultivation of large surfaces for export-oriented production. According to Maria Elena Rozas, organic/agroecological agriculture can be done also on extended surfaces and in monoculture, as is being demonstrated by some large wine producers in Chile – which does not imply that monocultures are positive, as they tend to reduce biodiversity (Interview to Maria Elena Rozas). Brita Organicos' (see below) self-defines more as "simply" organic than as agroecological but is perhaps closer to Altieri's and Toledo's definition of

agroecology and is a reference point for Agustín Infante's students of agroecology (Interview to Eva Hagwall and Ricardo Eller).

Agroecology and Knowledge

Agustín Infante is the former president of the Chilean chapter of the SOCLA (*Sociedad Científica Latinoamericana de Agroecología – Latin American Scientific Society of Agroecology*)⁹⁶ and coordinates the CET (*Centro de Educacion y Tecnología – Centre of Education and Technlogy*) Bio Bio⁹⁷, in Yumbel in central Chile, dedicated to teach agroecological techniques to agronomists, technicians and veterinaries (Interview to Agustín Infante). These are also employees of large companies which see in a conversion to organic production an opportunity to make their enterprises more profitable (Interview to Agustín Infante). According to Infante the majority of agroecological producers doesn't have any "radical political position" but is rather interested in export and economic advantages; "a producer here in Chile may simply be a happy copy of a producer in California or in France" and perceive agroecology "as a technical instrument" (Interview to Agustín Infante). A smaller group of people has a more transformative perspective:

An agroecologist may not be interested in copying the Californian "Hippie" or the scientist/intellectual, but rather search for a more integral vision with Latin identity. (...) [T]he origin of agroecology for us is ancestral, of the *pueblos originarios*⁹⁸ (...). I don't believe that the US-American say that their agriculture is inherited from American indigenous people (Interview to Agustín Infante).

96 <https://www.soclachile.cl/historia/> (Last access: October 2022)

97 <https://www.corporacioncet.cl/> (Last access: October 2022)

98 Indigenous people, literally: original people



Figure 34: Productive diversity at the CET, Yumbel (Photo by author)

I spent a couple of days at the CET with Agustín and his students. The land on which the centre has been established since 1995 had an exhausted soil and was therefore little used piece of land. The first challenge had been to recover the soil by increasing biodiversity, with self-produced natural fertilizers, as well as with the help of the construction of small trenches along the hills' contour lines to stop erosion (an old Inka technology) (Fieldnotes, 21/01/2022). The CET is not comparable to a producing plantation – rather the area of the CET is structured into didactic units to represent different situations of agriculture in Chile – but the principles of agroecology were clearly visible. Agroecology is more than simply 'substituting inputs' (i.e. substituting chemical fertilizers with organic ones but still buying them from the outside) but means diversification, and learning how to produce own inputs and fertilizers (instead of buying them from the outside), how to treat diseases and how to improve the soil (Interview to Agustín Infante). It means to build a better ecological equilibrium. Organic agriculture is profoundly different from the conventional one: “in organic agriculture you do not try to maximise results, in the conventional agriculture you do” and organic agriculture points at “ecosystem health”; but in practice, often, organic agriculture is reduced to few technical prescriptions: substitution of inputs, isolation from external contaminations, maintenance of biodiversity are the technical minimum and most producers do no more than that (Interview to Luis Melendez). Crucial instead would be to “design the estate”, plan the whole system of cultivation – which is usually not done, also due to a lack of resources, if not by very large or wealthy

producers (Interview to Luis Melendez). All the same, the biodiversity of plants and animals is the most evident difference to conventional fruit plantations and their monocultures and makes reflect on the incompatibilities of the two models: if export agriculture is to be agroecological and viceversa, there must be profound changes – are these even possible? (Fieldnotes, 21/01/2022). Infante argued that the diversification of agroecology does not necessarily exclude a specialisation in fruit production: even if there is a dominant species planted, it is possible to surround it with a large biodiversity of flowers and living soils, something that conventional producers do not do (Interview to Agustín Infante). For Luis Melendez though, this remains monoculture (Interview to Luis Melendez). Agroecology, like fruit production for export (cfr. Paragraph 6.4.3), requires sophisticated knowledge and technology, taught in the CET, but of a type that is focused on specific ecologies and places, rather than on technical instruments.

Certification and Export

To export, more than the concept of agroecology, an organic certification is needed (there is no agroecological certification; Interview to Luis Melendez from certification company Bioaudita). The production of organically certified fruit in Chile regards only a small surface: in 2018, approximately 3,2% of fruit plantations were certified⁹⁹. Of Chile's total value of fruit exports in 2019, approximately 4% were organic¹⁰⁰, 62,5% of these went to the USA in 2018 (Eguillor Recabarren 2020). But statistics also reveal a considerable increase of organic production: the hectares of organically certified fruit production have increased from approximately 5.400 ha in 2016 to approximately 17.500 ha in 2020 (Eguillor Recabarren 2021). Differently from certifications like GlobalGAP (cfr. Paragraph 6.4.2), there is no global organic certification, rather it depends on national laws and regulations; the Chilean one is modelled on the European and US-standards, as those are the main markets of interest, more than the national one (Interview to Luis Melendez) – which lies in a curious tension with the agroecological ambition to favour food sovereignty first:

[In Chile], only few supermarkets have organic products (...). Chile is a classist country (...) and only the upper class eats organic food. So if you go to the Jumbo [a Chilean supermarket chain] in Ñuñoa, it's most likely that you don't

99 Own calculation based on data from (Eguillor Recabarren 2021) and (ODEPA 2019).

100 Own calculation based on data from (Eguillor Recabarren 2021) and (Pefaur Lepe 2020). No precise number is given as Pefaur Lepe (2020) refers only to fruit, while Eguillor Recabarren (2021) includes also non-fruit organic products – as those are only a small part of the total amount, the 4% make for a sufficiently precise estimate for the scope of this work.

find any, then you go the Jumbo in Las Condes [an upper class municipality close to Santiago], and you'll find organic food (Interview to Luis Melendez).

The motivation for most (“95%”) producers to certify organic is economic and they only stay with organic production as long as it pays (Interview to Luis Melendez). Organic production is perfectly able to produce fruit for export that respects international quality requirements (cfr. Paragraph 6.4.2); the problem is that most try to do organic agriculture with the same logic as conventional one; i.e. “a disease appears, I give this poison”, but organic production requires prevention and currently, in most cases only large producers are able to acquire good technical knowledge to plan, organise and execute this prevention (Interview to Luis Melendez). An agroecological producer was very skeptical about organic production for export, doubting that it was possible to produce effectively for export (i.e. without losing much of the production to the variations of nature which may produce imperfections incompatible to the quality requirements of export fruit) completely without chemical products (Interview to Bernardo Riquelme Opazo). Another interviewee told me about organic blueberries producers obliged to quit organic production to save their blueberries from a drosophila fly only treatable with pesticides (Interview to Isabel Quiroz), while Eva Hagwall and Riccardo Eller (see below) argued that they had no problem with the same fly thanks to the ecological balance in their plantation. Infante argued, very close to what I theorised about a degrowth politics of spatial transformation in section 4, that agroecology is compatible with export, but in a clear order of priorities:

a general policy of food sovereignty, of protection of smallholder agriculture, and of a more sustainable agriculture and, on this basis, also for export. In other words, as a consequence of these three things also export, not the other way round (Interview to Agustín Infante).

Small producers in Chile also have the possibility to self-certify as organic in groups of producers, following the same rules and under the control of the SAG (Interview to Luis Melendez). This might be a good opportunity to encourage the diversity of production, “the real wealth”, putting this in relation to local markets and other instruments – but there is a lack of organisational capacity for such projects (cfr. Paragraph 6.5.5) (Interview to Luis Melendez).

Organic Blueberries for the US: Brita Organicos

Brita Organicos is a small farm close to Chillán owned by the Chilean-Swedish-German couple Eva Hagwall and Riccardo Eller, situated in a lush green territory

next to the Andes, with small scale agriculture. On a piece of family land, where Eva's parents had before cultivated organic raspberries (a former export boom fruit), in 2003 they started to substitute the raspberries with blueberries (the boom fruit of the moment which guaranteed a better income) on one of the two hectares, while on the second one they grow other fruits and have their house, a shop and a café (Interview to Eva Hagwall and Ricardo Eller). They maintained the organic form of production of Eva's parents. The plantation is characterised by a high level of biodiversity: there is space for many flowers and even a small naturalistic area along a little stream (Fieldnotes, 14/02/2022). Furthermore, they produce their own solar energy. Water is not a particular issue for them, being located in a water rich region (Fieldnotes, 14/02/2022).



Figure 35: Biodiversity in Brita Organicos' blueberry plantation (Photo by author)

They have prioritised economic diversification: while they export 80-90% of their blueberries, this makes only for about 20-25% of their revenue and 10% of their surplus. They work with two export companies, mostly fresh fruit (and some frozen fruit) to the USA, where they get most of a bonus for being organic, but also to Europe – export is normally by ship; at the end or beginning of the season, when prices are highest, also by plane (Interview to Eva Hagwall and Ricardo Eller). While the relations to export companies are generally good, they note, like other small producers, that these companies often pay many months later, that there is a high degree of uncertainty in the process and that as a small producer they have little power of negotiation (Interview to Eva Hagwall and Ricardo Eller) – similar to the situation of other (small) producers and their difficult relation to export companies (cfr. Paragraph 6.4.4). Working together with others might improve this position but attempts to create a cooperative have failed due to the complex bureaucracy and the difficulty of collaborating with others who might not guarantee the same level of quality or, viceversa, who can earn more alone because their fruit ripens earlier, at the beginning of the season (Interview to Eva Hagwall and Ricardo Eller). Anyhow, they have close relations to their neighbours from which they buy the products they need for their productions (such as milk and eggs for cakes). The period in which the fruit ripens affects the export price: their berries ripen in the height of the season which makes for lower prices and greater difficulties in finding workers for harvest; who has fruit at the beginning of the season has an advantage; they have three fixed and up to 15 temporary employees (Interview to Eva Hagwall and Ricardo Eller).



Figure 36: The Café of Brita Organicos (Photo by author)

But export is not Eva's and Ricardo's main focus; much more important in their business model is the café (in which they sell home-made cakes) and the sale of juice and jam, mainly in Santiago (in earlier years they also exported it to fair trade companies in Germany and Sweden – but it is absurd to export jam to Europe, they say) (Interview to Eva Hagwall and Ricardo Eller). It has been a deliberate choice to diversify and to show this model also to others:

how can we create added value on a small surface, creating good jobs at the same time? (...) people can understand how many things you can do here: to grow but also to make other things with raw materials – not only export them, how you do it in developing countries like Chile, for instance with copper (...) [A]ll this is not only an economic but also a social thing, we work with three pillars: the environment, the social context and the economic feasibility of the enterprise. And we're very interested in other people being able to see that this works, also the solar panels (Interview to Eva Hagwall and Ricardo Eller).

This model has worked well – while the market price for export blueberries over the years dropped from about 10 to 3-4 USD per kilo, they depended little on it; there is demand for the jam and their café is always full, to the point that sometimes they feel “enslaved” by their business (Interview to Eva Hagwall and Ricardo Eller). They want to progressively get out of producing and exporting: “it is a much better business for us to buy fruit from others than to produce it and we could live much better with other activities here” (Interview to Eva Hagwall and Ricardo Eller). This is to escape the stressful workload and to ease organisation and because returns from production and export are not as relevant as in larger farms. They have been offered support to increase their production but they rather want to escape this pressure to grow (Fieldnotes, 14/02/2022). The key in abandoning export lies in increasing the local market for jam and juice and the tendency has been going in this direction (Interview to Eva Hagwall and Ricardo Eller).

Beyond Agroecology?

Agroecology, as defined in theory (Altieri and Toledo 2011), with its integration of social and ecological values, the promotion of communitarian links, biodiversity and locally differentiated community, appears as naturally close to degrowth values (cfr. Sections 2 and 4). In the Chilean reality though, things appear to be more complex. At least in the limited context of my research, Chilean agroecological practice appears as sometimes distant from the theoretical definitions. Rightly so, perhaps, as the point is to change the realities of agriculture and rural economies starting from where they are situated now and in Chile this is

very much linked to an export-oriented agribusiness. The agroecological experiences here do not appear as neatly distinguished from this economic model, rather, while effectively making a difference in the plantation, increasing biodiversity, they connect to parallel, if not the same, channels of trade operating with the same logics and problems (for small producers) as in the mainstream model. Paradoxically and logically, organic products can, while produced with social and ecological care, on the side of trade and consumption relate to even more disputable or damaging practices: being valued through higher prices, they relate to elite consumption and higher prices that allow, for instance, the ecologically much more harmful transport by airplane. Also, these higher prices produce the paradox that agroecological techniques, as interviewees report, are often more completely and easily adopted by large wealthy producers than those smallholder *campesinos* they were originally modelled on. These small producers also have the same difficulties in cooperation as conventional small producers have them; at least in Chile. This is not to say that organic and agroecological practices are to be refused. But it invites to widen the perspective to a systemic perspective of transformation.

6.5.2 Campochange: a Local Food Network

In Chile we export everything. From copper to peaches, everything that is food and everything that is a raw material we export in mass. (...) [W]hat we Chileans eat and our life in general is very expensive.(...) Prices here are not cheap (...) for a third world country that falls off the map.

Interview to Martina Soto, cofounder of Campochange

Campochange is a project that tries to build a local alternative food network, connecting more directly small farmers around Santiago to consumers in the capital. The case of Campochange could appear as out of focus for a study of Chile's export relations. But it is relevant in this context as a project that promotes a different orientation of Chile's agricultural and food system beyond export as a panacea, responding to many of the challenges of the mainstream model of production and export exposed in chapters 6.2, 6.3 and 6.4. As discussed in paragraph 6.3.3, Chile's strategy of an export-oriented agriculture has led to paradoxical consequences in relation to food sovereignty: while Chile produces large amounts of fresh fruit of high quality, their availability on local market is

limited, as well as national consumption, and often reduced to the lowest quality. While nobody may be starving, the quality of nutrition is low, and while much fruit is exported, many staple products like rice are imported (Interview to Martina Soto).

How can we democratize a good nutrition? Because it is not that at my corner I can buy the best asparagus or the best peach. I buy what has been refused by the export company. Thus, how do I facilitate a food security for the people and not for the economy? (Interview to Martina Soto).

Additionally, even if what is refused by export companies in some cases may be still good at the nutritional and quality level this tends to go to the wealthier neighbourhoods, while products of lower quality go elsewhere (Interview to Martina Soto). I followed Martina on one of her trips to talk to farmers around Santiago, part of the non-export oriented agriculture, focused on the production of vegetables for the metropolis. The land around the capital is a land of transition between urban built environment and agricultural land uses, land in many places progressively occupied by the growth of the city, highways, new houses, packaging plants and warehouses of big export companies; projected mining sites next to the cordillera are another menace for this suburban agriculture (Fieldnotes, 09/12/21). We met a couple of small farmers who experiment with agroecological models and hydroponics. Experimentations conducted at a small and individual scale, far from the professionalised organisations of the medium and large-scale producers of chapter 6.2. These producers do not export not for a choice of principle but rather due to a lack of economic opportunity for such small individual producers to export, they said. And for the difficulties of managing the process, with certifications, quality requirements etc. If there were easier ways of exporting they might consider it (Fieldnotes, 09/12/21). For these small farmers, it is difficult to find good buyers: the national Chilean food market lacks transparency, organised through many intermediaries, and they lack knowledge about how to set their prices (Interview to Martina Soto). Thus, one of the elements of the model of Campochange is to help farmers to calculate their costs and thus define a together a price of sale (this cost-based price calculation is similar to the fair trade approach; cfr. Paragraph 6.5.3). The second step is to connect these producers to interested buyers like restaurants or small neighbourhood shops (around 400 currently) which establish relations of trust and affection to the produce of specific producers which remain visible (Interview to Martina Soto). This local principle of course implies overcoming the idea of a year round availability of specific fruits and vegetables like tomatoes (ibid).

Much of the work of Campochange is to establish relations of trust with the small producers, coming repeatedly to visit and sharing information with them

(Interview to Martina Soto). First contacts have been established through INDAP which has supported the project (Interview to Martina Soto), part of a tendency that in recent years, state support of agriculture has gone away from exclusively focusing on export; by now there are more efforts to support the cooperation of small producers and the establishment of local markets for local quality products¹⁰¹; even though this is quantitatively still marginal compared to the support given to individual producers (Interview to Martin Barros).

6.5.3 Mi Fruta: Small Producer Cooperation and Fair Trade in Chile

It's not easy to work in a group as there are different visions (.). Mi Fruta (...) achieved something that is not easy: to unite a group of producers and work with a common vision. Here in Chile this is not easy.

Cristian Ferriere of export company Acograpes that works with Mi Fruta

How can small producers compete with large farms and resist in the difficult relation with export companies (cfr. Paragraph 6.4.4)? The answer of cooperation may seem obvious but is relatively uncommon in contemporary Chile and encounters a number of difficulties (Interviews to Cristian Moretti, Roberto Bressi, Agustín Infante, Eva Hagwall and Ricardo Eller). According to many interviewees this has to do with the destruction of the cooperative system under the Pinochet dictatorship (e.g. Interview to Ingrid Allende) but also with cooperatives that have been badly organised and used to the personal advantage of their leaders. Also the current Chilean law makes cooperatives unattractive, many argued.

An example of cooperation that works can be found in Mi Fruta¹⁰². Mi Fruta formally is a company but is organised and operates as a collective project of approximately 20 small producers of table grapes, raisins and some nuts in the area of San Felipe and Los Andes, two towns in the Aconcagua valley north of Santiago de Chile. The region is one of an arid climate with mostly brown hills and mountains with little vegetation in the midst of which the valley, full of green fruit plantations, makes a stark contrast. Most plantations are of grapes, from just recently planted to decades old, mixed with a few walnut plantations and an expanding urbanisation. On some of the slopes of the brown hills one can note the

101 Another project in this logic I had the opportunity to shortly visit thanks to Sofia Boza, was to organise the cooperation and the valorisation of traditional types of wine in the O'Higgins region: <https://vinateroscampesinos.cl/> (Last access: January 2023).

102 See also their website: <https://MiFruta.cl/> (Last access: January 2023).

almost artificially bright green of recent avocado plantations, which are the most recent boom fruit also in this area (cfr. Paragraphs 6.2.2 and 6.3.2).

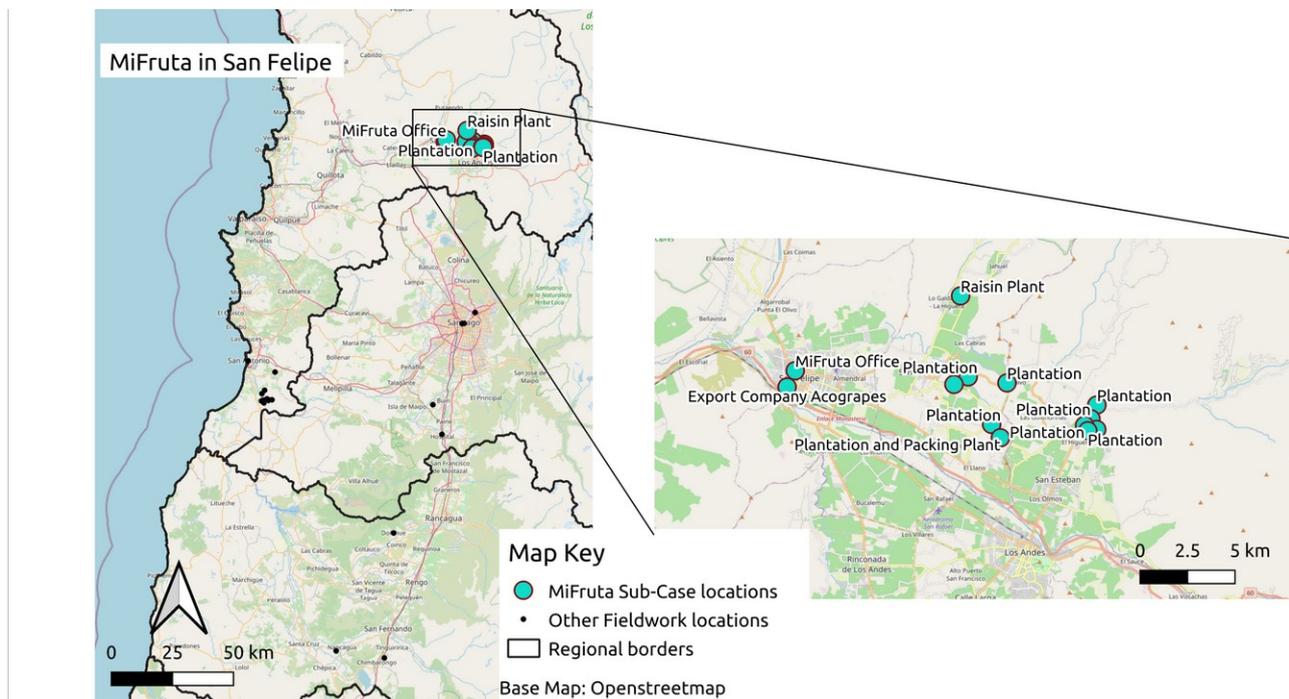


Figure 37: Map of Mi Fruta Sub-Case (Map by author)

I visited Mi Fruta for five days in february 2022, in the midst of the grape harvest. I had heard about Mi Fruta as one of the few examples of working cooperative projects of farmers in Chile¹⁰³. Leonardo Valenzuela, the agronomic technician – but also a sort of operative manager of the company, drove me around the plantations and helped me to make contacts with the producers and other figures related to Mi Fruta (exporters, importers etc.), and is responsible for much of the information I report from the fieldnotes. He had a very detailed and punctual knowledge about every single producer and had to mediate a large amount of information between all the different actors in and around Mi Fruta.

The area cultivated by the producers of Mi Fruta covers about 120 hectares and is composed of parcels of between five and ten hectares which resulted from the socialist agrarian reform (cfr. Paragraph 6.1.1).

103 Thanks to Sofia Boza.



Figure 38: A plantation of Mi Fruta in the landscape of the Aconcagua Valley (Photo by author)

The most important production of Mi Fruta are raisins which are exported around the globe. Even though they pay less than fresh grapes their advantage is that their production is easier and more stable, as less perfect grapes unfit for export as fresh fruit can be transformed into raisins (Interview to Hector Vera). Raisins need less pesticides, as aesthetics are less important and have much lower requirements in terms of storage and transport (Fieldnotes, 9/2/2022, Interview to Juan Lazcano). Less important is the export of fresh table grapes as with Mi Fruta's small volumes any defect in the grapes' quality leads to a reduction in the prices paid in the consignment market creating problems for the company and their producers (Interview to Cristian Lepe, director of Mi Fruta).

The Organisation of Mi Fruta

Mi Fruta is a company that works like a cooperative – this model has been chosen at Mi Fruta's setup in 2009 as it was easier in this way to obtain funding (Interview to Pedro Lucero, Mi Fruta president). They started with around 100 members but many did not trust in the project and left it (Interview to Juan Ferreira). Nowadays, around 20 producers participate actively (Interviews to Pedro Lucero, Juan Ferreira).

This association was created to be able to compete with the larger farms. Grouping small producers, the idea was to have greater volumes with the contributions of the different producers that formed the company and to

obtain, in this manner, good prices, both selling the produce and buying inputs. They consider us more important than when we act as individual producers (Interview to Pedro Lucero).

A strategy that has been successful for Mi Fruta's members (Interviews to Pedro Lucero, Juan Ferreira, Hector Vera). In the internal organisation an annual assembly in which each producer has one vote is crucial: during this assembly members collectively organise the annual production and discuss the state and the strategy of the company (Interview to Pedro Lucero). Also for Mi Fruta, the Chilean market would be too small, thus export is the main business – currently though, there are attempts to diversify and sell more to the national market, the hope being that the surge of interest for healthy food can help to sell raisins in Chile (Interviews to Cristian Lepe, Pedro Lucero). They are also thinking about organising a village feast to create local markets (Interview to Pedro Lucero).

State support is important to Mi Fruta and has been overall very positive – the main challenge being to learn how to get the information about and access the subsidies (Interviews to Cristian Lepe, Pedro Lucero); “state support is very important for a small producer, as they never have the capital to invest” (Interview to Juan Lazcano).. Being part of Mi Fruta helps to access state subsidies, for example for irrigation (Interview to Carlos Leiva). And Mi Fruta itself has provided support, for instance at the technical level, or to access new grape varieties (Interview to Juan Lazcano). The state has supported a lot with irrigation projects through the CNR and the INDAP (Interview to Juan Lazcano). A problem is that INDAP's support is linked to being a small producer but small is defined through a producer's economic wealth and thus the worth of their land which can rise independently from the economic success:

My status [as a small producer] is questioned as the fiscal evaluation of my land has risen (...). In 2019 I lost a lot of land [due to the drought] (...), my production was close to zero (Interview to Juan Lazcano).

Possibly, this rise in land values is related to the real estate speculation in the area.

Producers of Mi Fruta

Carlos Leiva produces grapes on 5 hectares. This is land rented from an elderly person who received it during the land reform. Before planting grapes, vegetables were grown on the land but nowadays they do not give enough revenue – and even before it was an area of wheat production and then of cannabis. Grapes have paid better in particular at the beginning, by now prices have decreased – only the best

and largest grapes nowadays are of interest to buyers (Interview to Carlos Leiva). Planting grapes was the obvious choice at the time – before, peaches had been an important production but the prices of peaches went down. Planting grapes was not cheap and required a lot of work. They had to wait a couple of years for the first harvest (Interview to Carlos Leiva). Currently, with his brothers, he thinks about planting some peaches for the national market, to diversify production. Working with Mi Fruta has given Carlos the opportunity to widen his geography: he had the possibility to travel together to England to see where their grapes and raisins are sold (Interview to Carlos Leiva).

“Everything here is grapes, only grapes, everything for export”, Marco Orosio told me, who cultivates 3.2 hectares. Also this piece of land resulted from the agrarian reform and had first been cultivated by a cooperative which broke down, then it passed to Marco’s father and now to him, resuming the tradition of cooperation with the participation in Mi Fruta. Over the years, they experimented with apricots and peaches but finally those were not profitable and they returned to grapes. Finally it is better to focus, there is a need of specialisation in relation to the specific know-how:

other products are not profitable, everything like wheat is not profitable, it’s a lot of work, it’s expensive. Well, this [the grapes] it’s expensive, too, doing it for export but the people know how to work with it. So, if I put something different, who will work with it? (Interview to Marco Orosio).

To work collectively is important to bring together sufficient volumes of product, to be able to reach other markets, for the reliability of payments and for the possibility to use the grapes unfit for export as fresh fruit as raisins. Marco is not an active participant in Mi Fruta, he only gives his fruit and has no time to participate in the meetings (Interview to Marco Orosio).

Juan Ferreira’s 6.5 hectares come from his family, bought with money his father earned in Chile’s state copper company, Codelco. They started anew in agriculture about twenty years ago. Juan is one of the founders of Mi Fruta, which for him plays an important role, in particular the fairtrade production is useful, he says, even though too small. Beyond grapes he also produces some peaches and nuts. To export to him is not only a question of market size and price but also motivated by the unreliability of Chilean buyers.

Hector Vera is another founding member of Mi Fruta. Also his land comes from the agrarian reform, cultivated exclusively with grapes. He is generally happy with the work of Mi Fruta. The biggest problem for him is the availability of water. Many of his plants are old, he says, and he wants to experiment with new varieties, following what the market requires.

Production, Export and their Interplay

Mi Fruta focuses on grapes and raisins which is also the main product of the valley – while single plantations are relatively small, this leads to a relatively monotonous landscape dominated by an agrarian monoculture, even though distributed in many small patches, not very different from what I described in relation to Nancagua (paragraph 6.2.1). Grapes adapt well to region's arid climate, but more importantly this monoculture is related to the beginning of the Chilean fresh fruit export boom in the 1980s and '90s which started in this region with grapes (Interview to Cristian Lepe; Murray 2002). According to Pedro Lucero, there are even 70 years of history of grape production in the valley. For producers in the Aconcagua valley, choosing to produce grapes has been positive, according to Cristian Lepe, with quite stable results over time (while Murray (2002), based on fieldwork a bit further north, argued that abandoning a mixed orchard production for grapes, connected with indebtedness led peasants back to conditions of dependence). In the case of Mi Fruta, diversification has mainly meant the diversification of markets (Interview to Cristian Lepe). This has also been linked to certifications: for raisins Mi Fruta has obtained a *halal* certification to export, obtaining good prices, to niche markets in Islamic countries. Some of the producers have been diversifying their production to some degree: planting nuts, peaches, watermelons, melons and potatoes. Also to open a packing plant has worked as a form of economic diversification for Juan Lazcano, who lost much of his grape production to the drought (Interview to Juan Lazcano). In another project of diversification, supported by INDAP, Pedro Lucero and his wife breed goats and produce goat cheese (Fieldnotes, 10/02/2022).

Pesticides are used in Mi Fruta's plantations. But Leonardo told me that working with fair trade has influenced how they work and obliged them to develop more sustainable techniques, reducing the use of agrochemicals and working for a living soil, rich of microorganisms, using compost for instance. Also artificial fertilization has been reduced and recently in fair trade the use of glyphosat has been prohibited and they have started to think about more natural ways to treat their plants (Interview to Leonardo Valenzuela). It is more difficult though to eliminate the use of chemicals in the export of fresh grapes, as these risk to be affect by fungal diseases during their long transport on ships. Thus they are treated with fungicides – but also here they are experimenting with natural alternatives (Interview to Leonardo Valenzuela).

A particular challenge is the introduction of new grape varieties demanded by the market – new varieties that, for instance, are more resistant to the stress of transport (Interview to Cristian Lepe) or which in general correspond to quality

requirements set in the market (Interview to Hector Vera). But there are limits of controlling nature through genetics:

The genetics they are doing now is to make [the grapes] more resistant, and with less work for everybody. (...) But you don't arrive at 100%, it's a myth. (...) They wanted to, but nature doesn't cooperate. (...) They want that all is homogeneous but we didn't get there, because the climate plays a role. Everything plays a role so that you don't get there (Interview to Hector Vera).

Older varieties can be competitive, too, as the market more than requiring specific varieties, requires certain qualities, in terms of size, colour and taste, but they may be more labour-intensive to grow and thus more expensive to produce (Interview to Leonardo Valenzuela). But anyhow the market for old varieties get smaller and prices decrease – in the case of Mi Fruta, they managed to keep using an old variety, *Flame*, to produce raisins, while for table grapes there is no market any more (Interview to Pedro Lucero). Investing in a new variety though is a complicated choice, too, in particular for small producers (Interviews to Carlos Leiva and Pedro Lucero): there are considerable costs and only after two or three years one knows if in the specific conditions a new variety works well. There are around 100 varieties to choose from of which many are restricted or club varieties to which one needs to apply for access and or pay royalties (Interview to Pedro Lucero). As Mi Fruta is small they can be at maximum in one club (Interview to Leonardo Valenzuela). Due to the high costs there are no single small producers who are able to plant new varieties, Pedro Lucero says. The cooperation in Mi Fruta has allowed them to experiment more professionally with new varieties, using small test blocks. Also export company Acograpes experiments with new varieties (Interview to Cristian Ferriere). Mi Fruta has invested in particular in the royalty-based variety *Maylen* developed by the Chilean state research institute INIA (Fieldnotes, 09/02/2022).

Processing and Export

The small packing plants that work for the fresh grapes of Mi Fruta are organized in a much simpler way than the big ones by Greenvic and Agricom I have described in paragraph 6.2.4. The main reason is that grapes cannot be treated (due to their form) by automated packing plants. The degree of manual work is far greater, which allows to pack in smaller, less technology- and capital-intensive plants without losing competitiveness. To work with own small packing plants is also an advantage due to the proximity to plantations. Acograpes does not have its own infrastructure but is the subject that pays the work in the packing plants and

uses them also for fruit from other producers (Interview to Juan Lazcano). These plants are owned by Mi Fruta members Cristian Lepe and Juan Lazcano and existed before Mi Fruta already. They are used only for fresh grapes and thus intensively from January to May (Interview to Juan Lazcano), due to the short period in which grapes ripen and the absence of a cooling system in the plants. To guarantee the freshness of the grapes and to not reduce their post-harvest life, they must be packed and arrive at the export company as fast possible, where the cool chain begins. While during summer holidays there are more workers available (university students, mothers of school children), this availability is reduced in other periods of the season, making it hard to respect the schedules set by labour legislation (Interview to Juan Lazcano). The schedule has led also to discussions with the temporary workers in the packing plants (Fieldnotes, 07/02/2022).

Notwithstanding the different physical structure of these packing plants, the structure of the process, as well as the commercial structure are very similar to what I described in chapter 6.2 (except the fairtrade compartment). In the packing plant the fruit is already 'sold', in the consignment model, and packed into boxes with the logos of the export company or even the distributor in the US. Chemicals to stop processes of putrescence during the trip are added to the boxes (Fieldnotes, 07/02/2022). Grapes are harvested in the morning, then moved to the packing plants, where they are distributed along parallel lines of production in which a second selection takes place (after the first selection in the orchard).



Figure 39: In one of the packing plants used by Mi Fruta (Photo by author)

Then grapes are packed into plastic boxes or bags and then into cardboard boxes. At the end of the day (at 2 or 3 am in the morning), these are transported to the fridges rented by the export company. During the work in the packing plant,

people of the export company control the process to guarantee homogenous quality – the last and thus very important step of quality control. The aesthetics of the grapes is very important for the final price, thus they instruct the workers on which are the desired colours, forms, dimensions of the bunches (Fieldnotes, 07/02/2022).

To export fresh fruit, Mi Fruta works with export company Acograpes, specialised in grapes and mandarines from the Aconcagua valley, located in San Felipe. To save on fixed costs they have no own facilities but rent office spaces and fridges from other companies (Interview to Cristian Ferriere). They are fair trade certified (to sell fair trade products the whole chain must be certified). The main market for fresh fair trade grapes are the United States, in particular the supermarket chain Wholefoods that is looking to extend their sale of fair trade products, while in Europe it has been harder to find clients (Interview to Cristian Ferriere). Export destinations for non-fair trade products of Mi Fruta are, nowadays, globally distributed: Denmark, Spain, Indonesia, China, Netherlands, Germany, USA, Lebanon, Jordan – the state agency ProChile helped establishing these contacts which afterwards remained stable (Fieldnotes, 07/02/2022), also fairtrade helps to find contacts; but notwithstanding these supports, for small producers it is difficult to establish contacts to buyers and having more would be better (Fieldnotes, 09/02/2022). Ferriere defended the importance of dividing work along the chain according to one's specific expertise. Mi Fruta, in Ferriere's opinion is a very special, if not unique case in Chile, something not easy to achieve (as many experiments go wrong) and of great relevance, considering that some of the producers are very small and in this way they are able to sell effectively and survive: for Acograpes, Mi Fruta is like one single producer.

Mi Fruta's raisins are mostly dried in the plantations in the sun (the result are black raisins). Others are dried in the ovens of an external company (light-coloured raisins) – the fair trade system prefers sun-dried raisins due to the lower energy use (Fieldnotes, 10/02/2022). The final processing of the raisins occurs in an external company's plant: they are sorted by size, washed, controlled automatically and manually to clean them from remaining pieces of earth and small stones, and then packed into 10kg boxes, while final packaging is done in importing countries (Fieldnotes, 10/02/2022). But Mi Fruta is planning to install a processing plant to do the final packaging themselves (Interview to Cristian Lepe). The export of raisins is organised directly by Mi Fruta (Fieldnotes, 09/02/2022).



Figure 40: Cristian Lepe with boxes of Mi Fruta's raisins ready for export to Jordan (Photo by author)

Already before setting up Mi Fruta, the single producers sold their grapes and raisins to export companies. Thus, they had already adapted to the international standards that need to be respected for export (Interview to Cristian Lepe). To Pedro Lucero, standards and certifications like GlobalGAP were not a problem but something to which one has to and can adapt. But for sure the way in which international quality requirements are organised, influences the way producers of Mi Fruta work, it regards logistics, packaging, the organisation of the times of harvest and processing in relation to the export company and, importantly, which and how pesticides are employed, as international clients require low residues

(Interview to Leonardo Valenzuela). Producing for fair trade in particular has implied the adaptation to environmental and labour standards (Interview to Cristian Lepe). Even so, it has been complicated to arrive at common standards producing together for Mi Fruta (Interview to Cristian Lepe). The creation of the collective enterprise required obviously some degree of homogenization between the producers, to be able to sell a common product like the raisins with homogeneous qualities (Interview to Leonardo Valenzuela).

The relation to clients, also in the non-fair trade business, is generally good, the “majority is honest” (Interviews to Cristian Lepe, Pedro Lucero). Relations have improved after changing from large export companies to the small specialised company Acograpes: relations are more human, payments arrive earlier and, importantly they provide more transparent information about the market and prices (Interview to Hector Vera). Also in the case of Mi Fruta, the importance of knowledge and the access to it returns (cfr. Paragraph 6.4.3). Knowledge is important, Cristian Lepe argues, in order to know what competing export companies offer and to recognise when something “incorrect” is request by the clients. Acting collectively allows them to have transparency about the prices, while as individuals they didn’t have access to this information and numbers (Interview to Pedro Lucero). Before founding Mi Fruta, when producers sold individually the situation was more complicated:

We didn’t have power in buying and selling. (...) Now we can analyse if a client really is convenient for us or not. We can obtain higher prices and we have obtained them. If we had acted individually, like in the beginning, many producers would have disappeared because it is a lot of effort to fight alone. (Interview to Pedro Lucero, cfr. also interview to Carlos Leiva)

Also in terms of knowing to deal with technology, knowledge is important – and the state (INDAP) should do more to promote knowledge, Maro Orosio argues. But one also needs the time to learn: time that the small producers in the area in many occasions do not have, due to too much work (Interview to Marco Orosio). Furthermore, cooperation has allowed them to employ Leonardo as a technician.

Working for Mi Fruta

Also the small producers of Mi Fruta, even though they do a lot of work first hand (differently from the larger farms of chapter 6.2), need help from temporary workers, in particular in the more labour intensive periods of the year like the harvest season; both for the harvest itself as well as packaging (see above). Finding who does this work has become more difficult in recent years, as many of the

younger people have moved to the city and by now workers go where they are paid better – they are being substituted by migrant workers from Haiti, Bolivia and Peru (Interview to Carlos Leiva). The availability of labour has been reduced and become more expensive, also due to the introduction of social subsidies by the state (Interview to Leonardo Valenzuela). This issue can be seen as an example for the difficulty of getting workers in particular for smaller producers who cannot offer more stable contracts, while on the other hand, positively, the scarcity of workers can be an element for them to achieve better conditions (cfr. Paragraph 6.3.3).

Also Hector Vera employs temporary workers – most of the times the same people – who earn between 20-25 thousand pesos a day and between 40 and 60 thousands by day for activities paid by piecework. In one of the fields, a temporary worker told me that the labour conditions did not improve over the last 12 years that she has been doing the job. She prefers when she is paid by piece work ('a trato') as this allows her to earn more. Also, she prefers to work without a contract, avoiding to pay for the pension funds. Before, she travelled around following harvests around the country but she got annoyed by the travelling and prefers to work in the area where she lives (Fieldnotes, 07/02/2022).

In Carlos Leiva's plantation I helped for some hours in harvest of white grapes of the variety Thompson. The soil between the grapevines is covered with plant material to improve the soil and reduce evaporation. The rhythm of work is relaxed, while monotonous, and under the grapes the shade is quite pleasant (as compared to the burning heat when noon approached in the prune plantation of Nancagua; paragraph 6.2.1).



Figure 41: Harvest in Carlos Leiva's plantation (Photo by author)

Thompson grapes have a peculiar characteristic: their level of ripeness cannot be perfectly appreciated by eyesight. Thus every single bunch of grapes is not only evaluated by sight but also by taste. Workers here are paid 20 thousand pesos a day. Those I talk to, have made the experience of travelling around from harvest to harvest but now prefer to stay close to where they live. There is no large social gap between the harvest workers like in the cases of Nancagua or the great avocado plantations: Carlos and his wife work together with them, doing the same labour.

The other important place of work in Mi Fruta are the packing plants. Their smaller size leads to a somewhat less factory-like atmosphere than in the large companies, with music playing and an easiness of having a chat while doing the work. But it does not mean that precision is not important and still, also here, as far as possible, a standardization of processes is sought for. Also here, temporary labour is fundamental to make things work. I talked to two young male workers who were curious about my presence; one of them told me that he uses the money to finance his studies in Architecture. They were quite happy with the job: they do different parts of the job, one is paid by fixed salary, the other by piecework but both earn more or less 800-900 thousand *lucos* a month (approximately 900-1000€). The hard part of the job, they argue, is the schedule: from 1pm until late at night, sometimes until 1, 2, 3 am in the morning.

Water

For Cristian Lepe, the main challenge in the area is water, with water availability being reduced in recent years, due to the 20 years of drought in the area (Interview to Pedro Lucero) but also in relation to the separation of water rights and the property of land, leading to excessive water use by some (see also interviews to Carlos Leiva, Marco Orosio). Moreover, in the valley there has been an expansion of avocado plantations which need a lot of water and are planted on the hills, mostly by large companies (cfr. Paragraph 6.2.2) – this contributed to a lot of water extraction from the ground, both legally and illegally, and to the groundwater levels being lowered, negatively affecting other forms of production (Interviews to Pedro Lucero and Leonardo Valenzuela). Another important competitor for the use of water are the mining companies up in the mountains (Interview to Hector Vera). Indeed, driving around the valley I could note the importance of irrigation in the valley: abandoned plantations, no longer irrigated, were completely dried out. (Fieldnotes, 09/02/2022; cfr. Figure 42).



Figure 42: A dead grape plantation in the Aconcagua Valley (Photo by author)

Juan Lazcano lost one third of his nine hectares of grapes to the drought as their irrigation was not technified, then invested into a deep well with his neighbours and has now planted again. For many plantations the water availability is at its limits (Carlos Leiva, Juan Ferreira and Hector Vera all made similar arguments), with plants stopping to produce or even dying. According to Carlos Leiva, “who

does not have money [to buy water rights] is in trouble” (Interview to Carlos Leiva – Marco Orosio made a similar argument). In some cases then, even having sufficient water rights, the water may not arrive when the overall availability is insufficient and other users are being advantaged (Interview to Juan Ferreira) – water rights are proportional to overall availability and are not guaranteed in absolute quantities (Fieldnotes, 09/02/2022; cfr. Paragraph 6.3.2). The small producers of Mi Fruta certainly appear as the weaker subjects in the competition for water in their region:

I think that so far perhaps our producers have been damaged by the unreasonable and insensible use of water by the mineral industry or by the extensive or intensive agricultural industry of the avocado plantations, who steal their part of water (Interview to Valeria Bigliuzzi).

Mi Fruta has motivated their producers in recent years to improve irrigation technologies; i.e. with the installation of drip irrigation and building water tanks – in principle it is possible to produce grapes with less water than they use currently but to this end still there must be water availability when needed, which makes tanks very important (Interview to Leonardo Valenzuela).

*Mi Fruta and Fair Trade in Chile*¹⁰⁴

Even though only about 15% of Mi Fruta’s export is sold through fair trade channels, the role of fair trade is important for the work for Mi Fruta at many levels, from production to export. The experience of Mi Fruta as an organisation has started exporting to fair trade clients (Interviews to Pedro Lucero and Cristian Lepe). According to Juan Lazcano, a first English fair trade client offering to buy raisins for double the price paid at the time in Chile had been a fundamental impulse:

He gave a new view of enthusiasm to the producers (...). But sure, that year the company bought us 200 thousand kilos, but then it went down to 80, then to 40 and then they stopped buying, but those 200 thousand changed our lives (...). [W]e continued to insist on fair trade, be it with fresh grapes, or with raisins. For us fair trade was a fresh wind (...) that gave us an impulse to work as a group (Interview to Juan Lazcano).

Then Mi Fruta had to look for conventional clients too, as the demand for fair trade raisins in UK (the first main market), also due to Brexit (Fieldnotes, 07/02/2022), and Europe declined (Interview to Cristian Lepe). Fair trade remains important as it guarantees somewhat higher and, importantly, stable prices that don’t follow the

104 See also the general discussion on fair trade in the literature in chapter 3.4.

ups and downs of the global market (Interview to Cristian Lepe). The basic idea in fair trade is to guarantee a fixed price calculated on the costs of production plus a fair trade bonus for social scopes (Interview to Ingrid Allende) which is about 10% of the price (Interview to Valeria Bigliuzzi)¹⁰⁵. About the use of the fair trade bonuses, Mi Fruta decides democratically (Fieldnotes, 09/02/2022). It is partly dedicated to producers in difficulties, partly donated to social projects in the area (Interview to Pedro Lucero) – it is an exceptional choice to dedicate fair trade bonuses to external projects, most organisations dedicate them to internal projects (Interview to Valeria Bigliuzzi). Cristian Ferriere argues that fair trade benefits small producers, also because there is little offer of fair trade products; “if everything was fair trade, it would be a commodity, but if you have specialised certifications, you have safer and stabler value chains” (Interview to Cristian Ferriere). Also the supermarket has its interest: “Obviously, because it is marketing, to them it’s convenient to put a fair trade sign to sell their products, and that’s nothing bad, because everybody earns in the chain” (Interview to Cristian Ferriere).

It is not surprising that Mi Fruta has hard times finding more fair trade clients: Chile is a marginal fair trade producer, due to its products, as the “stars of the fair trade system are bananas, cacao and coffee” (Interview to Ingrid Allende, Chilean officer of the Latina American Network of fair trade producers, CLAC¹⁰⁶) - reminding of traditional ideas of fair trade as associated to ‘exotic products’, to the othering of Southern producers as needy of assistance (Braun and Gröne 2021). As a consequence, it is hard to find clients for fair trade products from Chile and being fair trade itself a niche market, this is “the niche of the niche”, in which fruits are an even more marginal product and wine and honey the more important ones (Interview to Ingrid Allende). Globally, there may be around 1% of fair trade products (Interview to Ingrid Allende). As already fair trade certified producers in Chile manage to sell only part of their production as fair trade, it would make little sense to open up to more producers (Interview to Ingrid Allende) – making fair trade in Chile a sort of involuntarily exclusive club. For Ingrid Allende fair trade in Chile can help to revive the cooperative model which has suffered a lot the Pinochet era, through the criteria of internal democracy of producer organisations – and indeed this had been a reason for the producers of Mi Fruta to organise

105 With Valeria Bigliuzzi I discussed the perspectives of growth of fair trade productions. While certainly nowadays fair trade is marginal, might not the production of fair trade products in an hypothesis of becoming the new normal and thus much larger quantities of production and surfaces occupied contribute to the same socio-ecological problems in territories of production? Maybe not, she argued, as the certification criteria for fair trade pay attention to problematic developments in the territories of production and flexibly adapt to avoid to contribute to such problems (Interview to Valeria Bigliuzzi).

106 <https://clac-comerciojusto.org/> (Last access: September 2022)

collectively. To help small producers to be able to remain in agriculture is a central goal of fair trade (Interview to Marco Coscione). Moreover, through the social bonus in particular, there can be a contribution to rural development (Interview to Ingrid Allende). Both Allende and Bigliuzzi argued that while Chile is a country that on average is wealthy and thus atypical as a country of origin of fair trade products, there are high level of social inequality and in Chile's urban and rural peripheries living standards are often very low (Interviews to Ingrid Allende and Valeria Bigliuzzi). The generally high level of wealth though makes it difficult to collaborate and develop projects with NGOs (Interview to Valeria Bigliuzzi). Which products specifically it makes sense to export and import must be the subject of case by case evaluations, in relation to offer and demand of respective markets¹⁰⁷ (Interview to Marco Coscione).

Allende argued that fair trade in Chile originated in relation to honey and grapes for wine: in honey it was demand-driven, as the German fair trade company Gepa looked for more honey to buy and encountered a large Chilean cooperative. In grapes for wine, a fair trade project was set up to counter unjust trade relations in the Chilean wine market, due to the quasi-monopolistic power of the largest producer, Concha y Toro (owner of the fruit export company Greenvic we encountered in paragraph 6.2.4), that often led to prices for grapes below the costs of production. Changing the power relations between actors along the value chain is crucial to fair trade, which, while it was first launched from the buyer-side, "starts with thinking about the empowerment of the producer, their support, to try to equilibrate a bit the conditions of negotiation" – even though – "I believe that many actors are not here for the correct reasons but more for the market opportunities or because a supermarket asked them to introduce a new line of products that might be more successful" (Interview to Ingrid Allende).

[T]he fair trade movement tries to bring together the different players in the supply chain on the same social, environmental and economic themes, on human rights, etc. But unfortunately some actors privilege economic interests over other dimensions of sustainability. It's a constant fight of the movement to convince economic players of a different vision of international trade. If this convergence of players has success is not very clear, in some countries yes, in others no (...), in moments of crisis no, when things are going well yes. So finally it's an up and down of opportunities, to try to arrive at convergences between players of global supply chains (Interview to Marco Coscione).

107 Coscione is currently conducting a research for the EU on opportunities for fair trade relations between Chile and Europe: in this context he argues that, for instance, interesting Chilean products for Italy are honey (as the local production is insufficient for the demand), fresh fruit in counter-season, potentially algae, while wine is not interesting for Italy (where enough wine is produced locally), but potentially for Nordic countries.

In this, commercial actors play an important role; while political regulation is relevant, according to Coscione, finally commercial players can also go around them – fair trade has certainly started from the commercial side, arriving then at political goals, more than the other way round – in some occasions, like bananas in some English supermarket chains, this has led to an exclusive presence of fair trade produce (Interview to Marco Coscione).

Fundamental to fair trade is the certification process. Differently from other certifications, producers play an active role also in deciding about the criteria of certification: this takes place when general reforms of certification are conducted – but also producer organisations have the possibility to focus more or less on specific objectives when they get certified, i.e. while respecting basic criteria in relation to their structure (e.g. a legal structure, internal democracy), to production (e.g. labour conditions), environmental (e.g. a justified use of pesticides and fertilizers), social (e.g. the administration of the social bonus) and commercial aspects (e.g. the respect of contracts, not mixing fair trade with non-fair trade products) is obligatory, they can establish in dialogue with the fair trade organisation if to focus more on, for instance, gender equality or rather ecological goals, as so-called “development criteria” (Interview to Ingrid Allende). Alicia Muñoz from ANAMURI supported a model of collaborative and trust-based certification and argued that in general the fair trade certification is much more serious than others like GlobalGAP. In fair trade, furthermore, certification criteria change between small producers, large producers (for which the respect of standards for contracted labour is central) and traders (Interview to Ingrid Allende). There is criticism that in some occasions, e.g. Colombia, fair trade may actually benefit rich and large producers (Interview to person working at German import company). While the fair trade organisation supports producers technically to respect the criteria, a separate entity (but owned by fair trade), conducts the controls, which are normally once a year and pre-announced, but may be on short notice (less than 48 hours) if the organisation is at risk and violations of the criteria have been denounced (Interview to Ingrid Allende).

Fair Trade and the Tension between Export and Local Markets

Export has always been central to fair trade, but in recent years a discussion has started about establishing local markets and south-south trade relations to reduce the dependency on the European and US-American markets (Interview to Ingrid Allende). In a relatively wealthy country like Chile the role of fair trade could thus be that of creating a system of fair trade with neighbouring countries in Latin America which produce different kinds of products (Interview to Marco Coscione).

In terms of logistics, for sea transport, fair trade depends on the same large multinational companies like everybody else (Interviews to Valeria Bigliuzzi and person working at German fair trade importer), which can be problematic but is hard to change. The environmental impacts of logistics so far have been insufficiently taken into account by fair trade, which has started with long distance trade which remains central (Interview to Marco Coscione). At the same time though, there is a tendency to combine imported fair trade products (e.g. in fair trade shops in Italy) with local organic products from local cooperatives, thinking different international trade relations together, rather than in contrast with, the promotion of local food networks – also on the production side there are examples (Coscione cited a cacao cooperative in Bolivia) in which fair trade projects finally support a relocalisation of production and consumption, reducing, while not eliminating, international trade (Interview to Marco Coscione). A strategy close to the degrowth strategies hypothesised in Section 4. But putting this ‘relocalisation of fair trade’ into practice in Chile has been difficult so far (Interview to Ingrid Allende). One of the issues here is that, according to a market survey they have conducted, in Chile, who might be the commercial target of fair trade products would be again a niche consumer (a bit like in the case of agroecological products, cfr. Paragraph 6.5.1),

a woman between 35 and 55 years, who practices yoga, who is worried [about her social, environmental context], more likely also vegetarian...so the niche of the niche, too, and also, of course, who has a certain financial power, as this product is necessarily more expensive than a normal product, in Chile, at least (Interview to Ingrid Allende).

Thus, the same niche (and elite) dynamics (Interview to Marco Coscione) of Europe are reproduced.

It is important to have rapid and good quality data and information to take the right commercial decisions, also in the context of fair trade – in one case in Chile a group of producers certified for fair trade following an interested buyer and at the end of the certification process the buyer ceased to be interested (Interview to Ingrid Allende). For small producer organisations it is often difficult to have enough resources to search for and organise commercial contacts (Interview to Marco Coscione). Fair trade commercial relations should be stable and long term, but not always they are, as also the case of Mi Fruta shows, with their initial English client which then ceased to buy (Interview to Ingrid Allende).

Being Chilean products niche products in the fair trade market, also the importers they work with tend to be small companies, rather than large supermarket chains, like in the case of the main fair trade products (Interview to Marco Coscione). One of them is Chico Mendes. While the contacts to the importing companies through

fresh grapes pass through export company Acograpes, Chico Mendes¹⁰⁸, an Italian cooperative that imports fair trade raisins from Mi Fruta, cares to

know personally each organisation we work with and all the producers we work for. We participate (...) at their assemblies (...), every year we go to visit (...) at least a part of them (Interview to Valeria Bigliuzzi from Chico Mendes).

Indeed, Valeria had a detailed knowledge about Mi Fruta, their ways of organising, agricultural and social practices. Every season, at the beginning of harvest, they sign a contract and give an advance payment of between 30 and 50%. Step by step, with the arrival of the containers in Italy, the product is paid. They have been working together for twelve years: “when you work for fair trade it’s a permanent relation, I always say that it’s like a wedding. (...) There is no occasional relation but a stable relation based on trust” – even if problems occur, they try to solve it together: also in case the demand might go down in Italy or production would decline in the country of origin they would search for solutions that avoid a sudden interruption of the trade relation or price speculations (Interview to Valeria Bigliuzzi). Mi Fruta’s raisins arrive at the port of Livorno. Until there the transport is Mi Fruta’s responsibility and is then organised by Chico Mendes to their warehouse in Modena and then to the plant where they are packed into small bags; these are sold mostly in supermarkets, to organised groups of consumers¹⁰⁹, and pastry shops (Interview to Valeria Bigliuzzi). But why should Chico Mendes import raisins to Italy where raisins are produced, too? Bigliuzzi argued that Mi Fruta’s quality is particularly high: in terms of size but also due to the fact that their raisins are not treated with sulfates like the Italian ones (sulfates are prohibited by fair trade), leading to a high consumer interest (Interview to Valeria Bigliuzzi). Similar is the argument for nuts, another product they import from Chile. Furthermore, they consider it a sustainable product, due to the ways it is cultivated, and transport by ship, Bigliuzzi argues, has a reduced impact (Interview to Valeria Bigliuzzi; see also data in paragraph 6.3.3 which tends to confirm this argument). The final price (3€ per kg), is low, even though it is a high quality product and has particular appeal to their clients who are

clients from the middle class, educated, with medium high consideration for health and nutrition (...) it is not, well, a product for the working class but for people educated towards a quality nutrition but also young sportive people who eat dried fruits (Interview to Valeria Bigliuzzi).

Bigliuzzi identifies the problem of the exclusivity of fair trade in Italy mainly in a lack of consumer awareness, “people do not look at those things [quality, social

108 See their website: www.chicomendes.it (Last access: September 2022)

109 So called GAS: Gruppi di acquisto solidale, literally ‘solidary buying groups’.

justice], they only look at the price” and thus accept to buy, saving little, products of low quality based on exploitative trade relations from large multinational companies (Interview to Valeria Bigliuzzi). A lack of awareness also due to a lack of information to consumers which could be widely increased, potentially allowing for a considerable growth of the fair trade market in Italy (Interview to Valeria Bigliuzzi).

The Benefits of Cooperation and of Reducing Power Imbalances

The story of Mi Fruta is characterised by commonalities and differences with the model of ‘mainstream’ fruit production and export portrayed in chapters 6.2, 6.3 and 6.4. Like in that model, export is their main business, it relates to a monoculture at the agrarian and the economic level, not only regarding Mi Fruta itself but the whole Aconcagua valley. Furthermore, the quality requirements of markets determines in many ways how the production is organised, depending on standardization, pesticides, precarious work. The relations of small producers to export markets are not easy. Water is a crucial challenge here, like in other cases.

At the same time, there are fundamental differences. The benefits of cooperating as small producers emerge very clearly: cooperation has given them the power to negotiate with clients to obtain better prices and it has made it easier for them to access state subsidies and new markets – with the help of fair trade or certifying as halal to access middle eastern markets. Working with fair trade then, even though it regards a minor part of Mi Fruta’s export volumes, has helped in many ways: it has given them a stable and reliable basis of income, it has supported them to organise their collaboration as small producers, and it has initiated positive changes in terms of ecological and social sustainability.

Furthermore, like in the story of Tralcao below, knowledge is an important component to which cooperation contributes: the knowledge about prices, clients, subsidies, the market in general, new varieties etc. But also (and this again parallels the case of Tralcao) together the producers of Mi Fruta have had the possibility to travel and to get to know how fruit production and water management are organised in Peru and in the South of Spain (Interviews to Carlos Leiva, Juan Lazcano), widening their geography in a way that is untypical for their social class in Chile. Also Acograpes has supported small producers travelling (Interview to Cristian Ferriere). This may sound banal, but indeed in a globalised market like the one of fresh fruit in which personal connections are very important, it is certainly relevant to have the opportunity to gain direct knowledge and experience of how others operate. Also the possibility to stably employ an

agronomist (Leonardo Valenzuela) is a way in which the cooperation in Mi Fruta helps to ensure the availability of knowledge.

Fair Trade then, shows clear benefits in this case, allowing to establish somewhat fairer commercial relations with less power imbalances. The limits of fair trade rather lie on the consuming side; in the socio-economic context in which it operates it always risks remaining an elite product with all the contradictions this implies. Fair trade does not though appear here – as in some critiques (cfr. Braun and Gröne 2021 and chapter 3.4) – as a paternalistic instrument that mainly aims to alleviate the consciousness of Northern consumers but rather as a practice actively sought for by empowered Southern producers.

What are the future perspectives of Mi Fruta? Land and Water are factors that limit further growth of fruit production in the region, Cristian Lepe argued and Cristian Ferriere agreed. The land also in the sense that the price of the land in the area is too high, due to the competition with the real estate market. At the same time, an idea of growth for Mi Fruta remains, for instances getting to more clients for raisins, fair trade raisins in particular, as finding clients is always difficult for small producers, even though fair trade helps in this (Interview to Cristian Lepe). There are projects for the diversification of production and to increase local markets and there are hopes that the quota of fair trade export increases. All this is not the illustration of a perfect alternative but it proves the potential of the collaboration of small producers and of changing the power balances in global trade relations.

6.5.4 Mapuche Cherries for China to Diversify a Local Economy

The Mapuche are strongly linked to the land. It's the priority, because the land gives everything. (...) It needs to be respected as much as possible.

Interview to José, Viviana and Diego Huechante

Tralcao is a small peasant community a few kilometres north of the city of Valdivia in the region of Los Ríos – one of the regions in which the recent move southwards of Chile's fruit production is taking place (cfr. Paragraphs 6.1.4; 6.4.6). Many in Tralcao consider themselves as Mapuche, the largest indigenous community in Chile. The Mapuche successfully resisted Spanish colonialism and only the Chilean national state in the 19th century, with the help of European settlers, Germans and others, managed to violently¹¹⁰ break their resistance and expropriate most of their

110 In Tralcao they defined this a genocide.

lands (Sagredo Baeza 2014). This history is still an important part of their identity (also politically¹¹¹) and their relation to the territory in which they live (Fieldnotes, 11/01/2022). The village is situated a few kilometres off the main road in the lush green environment of the meanders of the Río Cruces. I arrived there curious about the story of a Mapuche community exporting cherries to China. A project initiated by producer Pedro Guerra Huechante, also president of the national small fruit producer organisation FEDAFRUC¹¹², who has been a fundamental support¹¹³ in the week of research in Tralcao.

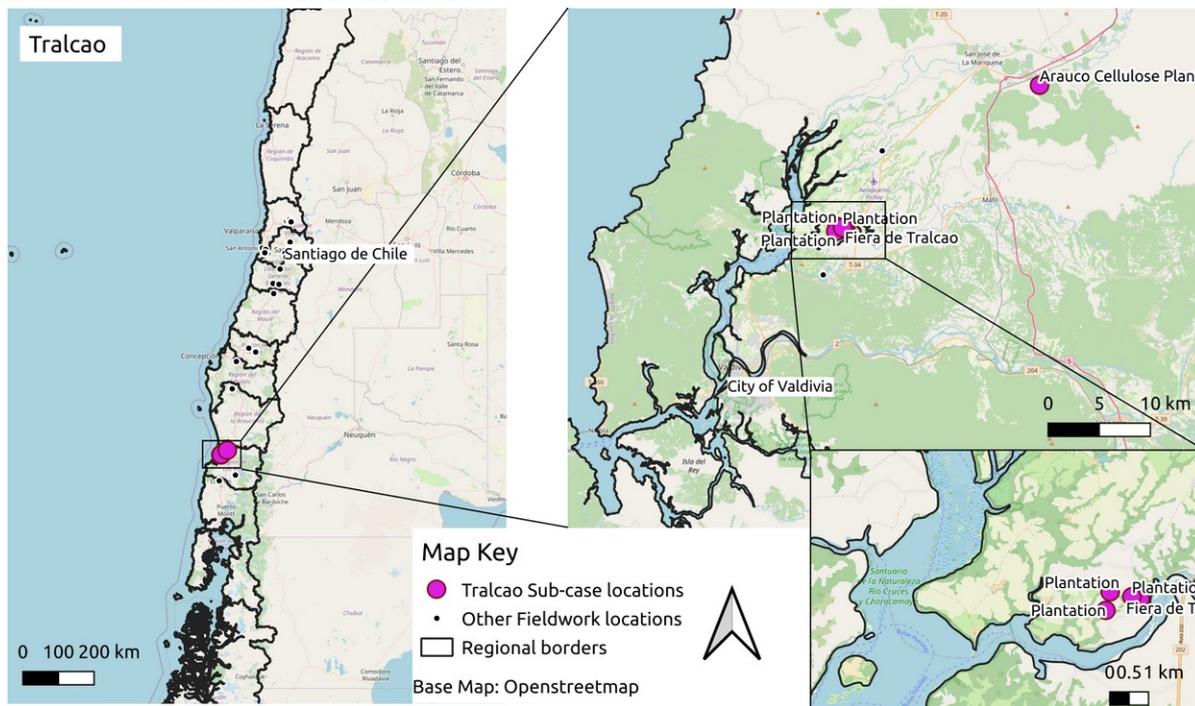


Figure 43: Tralcao sub-case map (Map by author)

The first impression coming to Tralcao was of a sort of ‘intact rurality’ – an impression certainly determined by stereotypical ideas and prejudices of mine about what ‘rural’ means. I wrote in my fieldnotes (January 12, 2022):

Tralcao’s landscape is very different from the central valley’s. Very green, slightly rolling. But, most of all, very diverse: the structure of small landownership and of the diversity of production is mirrored in its aesthetic appearance. (...) In the landscape, like in the economy, the production of

111 The Mapuche community has been playing an important role in the social movements of the *Estallido Social* and the process for the new Chilean constitution. The Mapuche flag was a very present sign on the streets of Santiago. And the Mapuche identity appeared as a relevant factor against the pollution of forest and paper company Arauco (see below).

112 <https://fedafruc.cl/> (Last access: August 2022)

113 I am aware that having accessed the contacts in Tralcao through his guidance, might potentially bias my analysis. But the point here is not to evaluate Pedro’s personal role but rather a model and a collective experience which I have explored through many different voices (also critical voices) and aspects.

cherries for China is integrated as a relevant but in no way dominant component. It is a factor among others, like it is in the economy of people. In Nancagua it was the dominant factor. That was an agroindustrial production, here it is a peasant economy. Both export to China. But there the goal of everything was to export, here it is a surplus of the territory. An option, an income more.

Tralcao is not a compact village, the community centre with the school and the area for the yearly village feast, is situated amidst fields and trees. This is also the location for the meeting of local Mapuche chiefs, called *Tragun*. In occasion of one of these meetings I had the opportunity to speak to many community members.



Figure 44: Landscape in Tralcao (Photo by author)

The different configuration of the production in Tralcao compared to the agroindustrial models of Nancagua or Leyda also influenced how the research was conducted: it was much less inside a company, much more across a whole territory, which led to grasp a larger complexity of connections, including many aspects beyond the production of fruits for export but which, at a closer look, appeared as closely connected (Fieldnotes, 12/01/2022), e.g. the conflict around the pollution of the river (see below). And it led to a different perception of my responsibility as a researcher: an idea of the need to give something back. Pedro in many occasions said that he hoped that I could support them in some way through my research and Graciela Oviños told me (without anger) how many researchers

and university students had passed through the community without leaving anything (Fieldnotes, 12/01/2022).



Figure 45: Landscape in Tralcao (Photo by author)

The Economy of Tralcao: not Only Cherries

Growing cherries in Tralcao has a long tradition (Interviews to Pedro Guerra Huechante and Graciela Oviños), but the current production of cherries for export started in 2003/2004 as a collective project¹¹⁴ guided by the strong personal engagement of Pedro, who had had the opportunity to study and get outside his community and Chile and wanted to give something back to his people, providing them an opportunity of “development” (Interview to Pedro Guerra Huechante). They were among the first to plant cherries in the Chilean south; cherries they chose after valuing various alternatives, considering their high prices and the cherry boom that had started in the central region (Interview to Eduardo Hernández). When they started to plant them in Tralcao, their advantages compared to central Chile was the abundance of water, and the cheap land and labour, which are not as cheap any more (Interview to Eduardo Hernández) (cfr. paragraphs 6.3.3 and 6.5.3 on the greater difficulty of small producers to find

114 See also this article about the story of cherry production in Tralcao: <https://fedafruc.cl/?p=116> (Last access: January 2022)

labour). The decision to export was based on the expectance of higher prices and bigger volumes but also of self-empowerment:

The international market (...) was an alternative for the future with the export process. Why not in Mapuche hands? Why not in the hands of peasants from the South for the whole world? It was an innovation for the South [of Chile to grow cherries] and for others it was crazy what we were doing, they told me that I was confused and crazy, that the Mapuche didn't even have the capacity to do it. I showed them that the opposite was true. (Interview to Pedro Guerra Huechante)

Making the point of the project being a form of empowerment for the Mapuche has been crucial for Pedro. José, Diego and Viviana Huechante agreed that producing cherries as Mapuche contrasts the prejudice of the Mapuche being lazy (Fieldnotes, 12/01/2022). A variety of production, not only cherries for export, has always been the goal:

All that is export or fruit, should be a part for export, another part that should continue with wheat, or in the north livestock breeding, always looking for business alternatives. It is an alternative but it's not the idea of a fruit production to export only. Also production for the national market and also production of other things (Interview to Pedro Guerra Huechante).

Variety as a guarantee to have an alternative if one business goes badly, creating a "circular economy" to survive any form of economic situation. The small size of productive units makes it impossible for Pedro as a producer to live from cherries only. While he agreed to some degree with the narrative of Chile as a "food power", a term he employed, in the sense that Chile is able to produce a lot, more than it needs and that it can help to feed the world, he seemed aware also of the limits and underlined in particular the need of diversification, strongly criticising the idea of exporting everything (Interview to Pedro Guerra Huechante). In relation to growth and limits to growth of fruit production in Chile, Eduardo Hernández argued:

Many producers have planted thousands and thousands of hectares [of cherries] without criteria; something that at a certain point should be limited. There are many problems with the increase of the fruit surface, like the use of water. (...) I believe that Chile is a privileged country to produce fruit and that it is necessary to continue to use this competitive advantage but in a geographically more ordered way and with the necessary controls. We need a mapping of what you can plant where and where not (Interview to Eduardo Hernández).

Four producers of the community are associated who have, altogether, approximately 20 hectares of cherries. The group collaborates as regards technical assistance and the relation to the export company but the sale itself is done autonomously as the qualities of the produced cherries are too different (Interview

to Pedro Guerra Huechante). It has been difficult to build a strong collective organisation also in relation to the history of the destruction of Chilean cooperativism with the coup d'état of 1973, Pedro said. The collective organisation that they had built in the first years, collapsed¹¹⁵, with only four of 25 producers remaining in the organisation (but links to those who exited persist) (Interviews to Pedro Guerra Huechante and Graciela Oviños). Some argued that things had gone wrong due to decisions that were taken to the benefit of a few, others said that “Chileans (...) are individualists” and that working together “is beneficial but not always possible” (Interview to Eduardo Hernández). Several producers mentioned the intention to return to a stronger collective organisation (e.g. Pedro Guerra Huechante, César Manuel Martín).

Planting the cherries has been supported at the time by an INDAP credit but Pedro laments that state support tends to not favour such projects for the economic autonomy of small producers but rather support their mere survival, in the dependencies of large companies. Support to small producers is limited to fixed sums, while large companies can get much more (Fieldnotes, 12/01/2022). Many in Tralcao complained that the support of INDAP is very limited and does not include support in terms of technical knowledge (Fieldnotes, 13/01/2022). Pedro also underlined that getting support in the first place would have been impossible to achieve without personal contacts due to the lack of general policies of support for projects like theirs. The critique of a lack of state support has been raised also by other small producers I encountered in Chile and appears to be generally common (Sofia Boza et al. 2020). A concrete example of what more the state could have done is to support the value chain after production, subsidising a processing plant for instance. Also the fact that state consultants are less informed than those available to large companies is an issue (Interview to Pedro Guerra Huechante).

Difficult Relations to the Export Companies

The relation to the export companies indeed has been and continues to be the most problematic aspect of the whole project in Tralcao (cfr. Interviews to Pedro Guerra Huechante, Eduardo Hernández). As already discussed (paragraphs 6.2.4, 6.4.4, 6.5.1) in the relation to export companies, small producers have a much weaker position, especially if they sell individually. The producers in Tralcao have changed export company several times since 2004 as they were unsatisfied with the

115 According to Pedro this was due to an intervention of INDAP that created a parallel organisation, for political reasons, which later collapsed. But I did not have the possibility to verify this claim. Other interviewees also hinted to internal disagreements, in particular about how to sell collectively and how to administrate the money.

prices paid, that at the end rarely matched the promises of high revenues made at the beginning of the season (Interview to Pedro Guerra Huechante). Some have only made the first payment and then disappeared – in any case how the export companies calculate their payments has not been transparent to the producers (Interview to Eduardo Hernández) and receiving the main part of the payments up to 10, 11 months after giving away their cherries is a problem for them (Fieldnotes, 12/01/2022). This is a very different account about the stability of relations that many export and import companies as well as larger producers have told me about (cfr. Chapter 6.2).

We have exported with five different companies. With dramatically bad results. (...) There is always a quite good year and the following year things go worse (Interview to Eduardo Hernández).

With the current export company things go a bit better, they also take interest in controlling the production in the plantations, while others just took the fruit (Interview to Eduardo Hernández). Also:

Not all the fault is of the export company, we also have our responsibilities, in relation to some aspects of quality, but the fundamental problem is the climate (Interview to Eduardo Hernández).

Eduardo Hernández noted that rainfall and frost have often damaged the cherry trees – using more technology, like protective roofs (which some in Tralcao use) though has improved results. To export to China they also need to be certified by GlobalGAP and follow a series of protocols related to plant diseases, which leads to relevant costs, also because the producers in Tralcao do not have that much technical capacity and knowledge (Interview to Eduardo Hernández). An additional difficulty for Tralcao is the lack of infrastructure: packing plants are far away, increasing the time the fruit takes to get there and into the cool chain (Fieldnotes, 15/01/2022).

At the beginning, they had considered to certify as organic but certifiers discouraged them, referring to too much technical difficulty and they have tried to work with fair trade, which, Pedro says, might be the future but they did not manage to get into the system (Interview to Pedro Guerra Huechante) – probably due to the difficulties of Chilean fair trade to find buyers (cfr. Paragraph 6.5.3).

The Village Fair

Beyond the export of cherries, the self consumption and the direct sale of agricultural products to known clients, an important factor for Tralcao's local

economy is the village fair, of which people are very proud, the *Mostra de la Cultura y la Cereza de Tralcao*. It is held every year on a couple of weekends between January and February during season of cherry harvest.



Figure 46: Tralcao's village fair (Photo by author)

A peasant feast. A central area to sit is surrounded by twenty something of booths that sell mainly food, local products and dishes (...) from cherries to sheep meat, some artisanal products. A stage where local musicians play. (...) All is local production here but there are many cars, a lot of plastic – Tralcao is far from being outside of the globalised world (Fieldnotes, 15/01/2022).

Jimena, Pedro's wife, said that the fair started approximately 15 years ago as a cherry festival in the period of abundance of cherry production. As visitors asked for something to eat, it transformed into a village fair, supporting the development of small productions, employing 26 persons, in particular women (who indeed prevail in the booths of the fair) and who gain independence thanks to this income. She is happy about the continuity and trust that visitors show, arriving even from far away (Santiago, Europe, Africa). The fair is an important channel of sale for cherries who do not respect the quality requirements for export. The diversity of production at the fair (both fresh and prepared) was compelling in relation to the general monotony of what is offered in Chilean shops, (super)markets and restaurants.

Cherry Producers in Tralcao

One of the original group of cherry producers is Eduardo Hernández. He also provides technical support to the other producers in the community. He started to grow cherries in 2003 after retiring from his work as a forest engineer and now has five hectares of cherries of three different varieties; these different varieties help to extend the period of harvest and to reduce the variability of produced quantities (Fieldnotes, 12/01/2022). Along with the cherries, diversification is an important strategy: he produces other fruits and plans to build a greenhouse for local vegetable production to “balance the bad years of cherry”, the production of which in good years makes for 80% of his total production; he aims to reduce this excessive dependence (Interview to Eduardo Hernández). Due to the presence of the Drosophila fly he applies pesticides, which is conflictual in the context of the neighbourhood, with people living next to the plantations. He experiments with organic methods, such as traps, with some success (Fieldnotes, 12/01/2022). For the harvest for export he employs temporary workers from central Chile who are more experts in the harvest of cherries, while they harvest the rest, for the local market, on a family basis (Fieldnotes, 12/01/2022).

José, Viviana and Diego Huechante on their land produce honey, potatoes, chicken and cows and since 2002 they cultivate half a hectare of cherries. Being Mapuche is very important for their idea of a balance with nature and their idea of agriculture. When they started with cherries, this did not totally reflect their cosmovision (Interview to José, Viviana and Diego Huechante) but also the sale of lands in Tralcao contrasts the balance with nature – there are nowadays few people who want to practice agriculture:

They don't want to be self-sustainable. (...) Cultivating the land also is a sacrifice. You don't earn that much money, so consumerism wins. It's easier to get the money for a piece of land than to cultivate it. This money won't arrive in one year but perhaps in ten or twenty years. This was one of the reasons why we decided to plant cherries, to earn a little bit more (Interview to José, Viviana and Diego Huechante).

Their experience has been characterized by the problematic relation to the export company, due to which they decided in the last couple of year to sell their cherries locally, through direct personal contacts (with so much success that they do not bring them to the village market, where they sell *empanadas instead*); this in the last years has been more profitable. An advantage of selling directly is that they do not have the rigid prescriptions in terms of the size of the fruit, while export companies always take only fruit within specific size limits for export and take the rest for the national market with very low prices (Interview to José, Viviana and

Diego Huechante). They were very sceptical about the possibilities of going back to cooperate with the other producers (Interview to José, Viviana and Diego Huechante). Now that they don't export, they do all the work in the plantations themselves; when they organized the harvest for an export company, due to the short time in which everything needed to be harvested, they organized help from their neighbours, but they never employed external workers (Interview to José, Viviana and Diego Huechante). The major challenges for them, nowadays, are not so much sale but production, in particular managing the damages produced by rainfall and by the drosophila fly: for the rainfall they had a roof but it broke with the years and for the fly they apply chemicals but this increases the costs and with these technical challenges of production they would appreciate to get more (state) support (Interview to José, Viviana and Diego Huechante).

César Manuel Martín's family has one hectare planted with cherries, while producing a variety of other fruits and livestock. The export at the beginning went well (one could receive 6USD per kilo instead of the ca. 2USD at the market of Valdivia) but then the relation with the export company worsened, costs rose along the long commodity chain due to the many hands through which the cherries passed and the collective organisation in Tralcao dissolved. This is why they last exported about six years ago (Interview to César Manuel Martín). But they would like to start again, for which he argues, acting collectively would be crucial. When they exported, they employed harvest workers from further north, now they only work with family and friends and sell locally, in Valdivia and at the village fair. Also César lamented a lack of state support, in particular at the technical and organisational level, for storage for instance. I asked him if he liked to export everything to China, if he could. He replied that in some way it might be good but that "if we started to produce at such a scale, we would lose the essence of being a peasant" (Interview to César Manuel Martín). César also tries to develop an ecotourism project on the river, as another form of economic diversification. The current economic situation of peasants is problematic and many have been abandoning their lands (Interview to César Manuel Martín). This leads also to the sale of lands to people who seek to move out of neighbouring Valdivia to build houses which exerts a pressure on agricultural production as land prices are on the rise (Interview to Eduardo Hernández). (Young) people sell their land because the agriculture does not give enough to live and there is a lack of support (Fieldnotes, 17/01/2022).

Graciela Oviños owns half a hectare of cherries. Things had started well for her but she has had many issues with the rain, as well as with diseases which have destroyed several harvests, so that she has not exported in recent years. With Eduardo's help in using pesticides they managed to eliminate the plague this year and if things improve, she'll try to export again, with Pedro's support, because

export pays better and because it is less work, they take everything at once, you don't need to sell bit by bit. Her trust in export companies is low, they pay too late, she affirms, and she also made the experience of the cherries being returned to her for quality issues and she argued why wouldn't they tell before taking it? In this way she had to pay for the transport. In this sense, having an alternative to sell, like the village fair, is crucial. Still, she fancies the better conditions of export and the aspiration, and the project for a better future (...) is that the cherries will go out with the logo of Tralcao. That one day, I don't know, that the cherry will arrive in China with written on the boxes, 'Cherries from Tralcao' (Interview to Graciela Oviños).

Graciela does not point everything on export, for her, too, diversification is important; she produces sheep, chicken, eggs, prunes, with her daughter she prepares juice and sweets and sells at the village fair (Interview to Graciela Oviños).

The stories of different producers in Tralcao vary but they do not present differences of class like in Nancagua. While also here others work for producers like Pedro, they are much more equal – the man working for Pedro in the orchard eats lunch at the family table, a group of local activists who help with the harvest (of what remained after the part for export had been taken), receive 50% of what they collect as their 'payment' (Fieldnotes, 12/01/2022). It is of no surprise that in this context, the positioning in relation to the political process in Chile, the new constitution and the new government has been much more positive than in Nancagua. People in Tralcao are well aware of the inequalities in Chile. Graciela told me about a trip they made up north to visit cherry plantations and there “they have 300 hectares of one type of cherry and 200 of another and we are here with our small piece and they have so much” (Interview to Graciela Oviños) and Pedro talked about the excessive power hold by a few wealthy families in Chile.

Water, Pollution and the Fight Against Arauco

Even though water is still abundant in the region of Tralcao, it is an issue also here, due to the lack of irrigation technology, bad governance in general and the large amount of water extraction and pollution by forestry plantations and wood processing company Arauco (Interview to Pedro Guerra Huechante), as well as the private and temporally unlimited ownership of water rights (Interview to Eduardo Hernández). In the case of César Manuel Martín for instance, water rights are all owned by others and they have to pay them to use the water (Interview to César Manuel Martín). Furthermore, the climate is changing with higher temperatures

and unforeseeable rains (Interview to Graciela Oviños). Also, it rains much less than before (Interview to César Manuel Martín):

I always believed that in Valdivia there would never be water problems, but by now we are starting to see a lack of water and we are in a quite complicated moment (Interview to Eduardo Hernández).

Everybody in the area has a well (Interviews to Graciela Oviños and Eduardo Hernández) but not always are these wells legal and there is a lack of control: who produces cherries for export has to demonstrate the legality of water extraction in the certification process but who moves here to build a house, often digs wells illegally, with an excessive number of wells which “at a certain point will lead to an exhaustion” (Interview to Eduardo Hernández).

Water pollution is a crucial issue in the case of Tralcao and is related to the powerful forest industry in the region, in particular the company Arauco. While the story of the opposition to Arauco’s factory may appear to be disconnected from fruit production, I realized that it could not be ignored in writing about this case. The resistance to this company has been an important fight of the community of Tralcao and other groups of the area, which has even lead to events of violence and death threats (Fieldnotes, 17/01/2022)¹¹⁶.

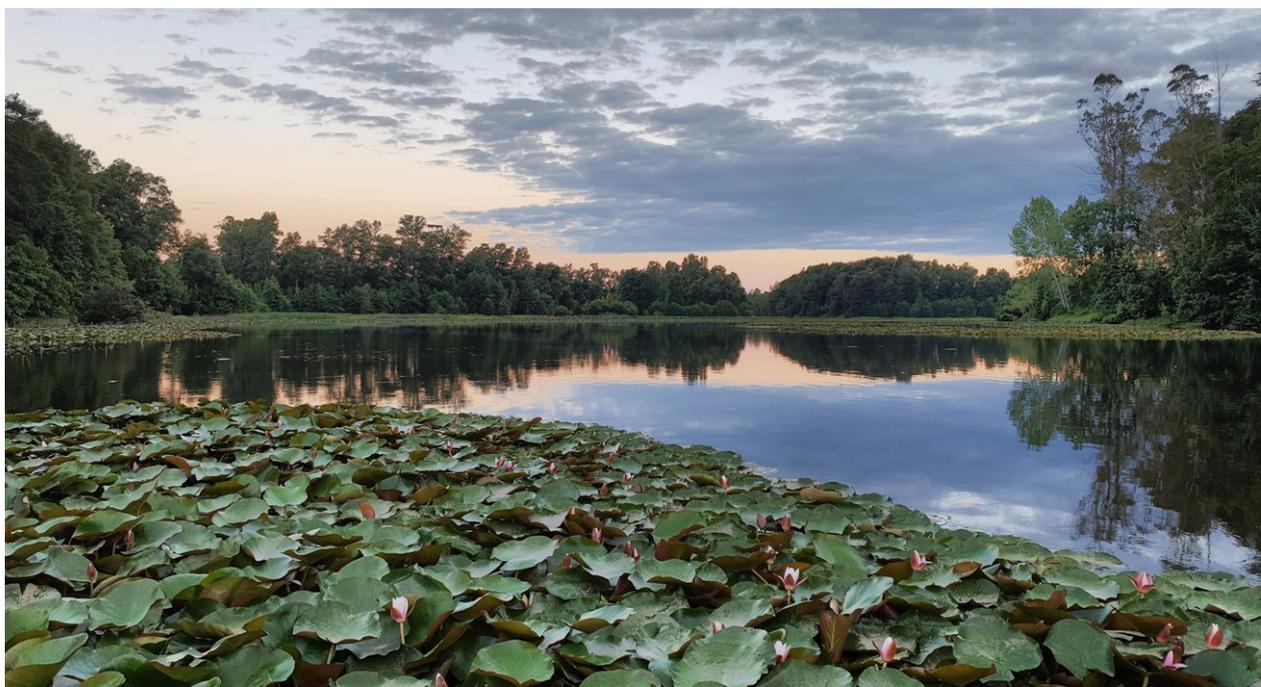


Figure 47: View of the Río Cruces close to Tralcao (Photo by author)

116 See also this short account I wrote in Italian, from which I take these lines: https://www.decrecitafelice.it/2022/02/cile_2/ (Last access: October 2022).

Tralcao is situated in the upper part of the estuary of the Rio Cruces river, branches of which surround the community's territory on two sides and to which the community feels very much connected. The area is protected as a nature reserve. Some kilometres upstream a cellulose factory of Arauco is located, the pollution of which in 2004, just after its opening (that had occurred with state support and without informing the population; Fieldnotes, 12/01/2022), has led to a mass death of birds in the estuary. César Manuel Martín also laments the disappearance of certain species of algae from the river he has been navigating for all his life. Together with many other local groups, the community of Tralcao founded the Asociación Comunidad Humedal Río Cruces¹¹⁷ (of which Pedro Guerra Huechante is the president). This association has been founded after they won a legal battle with the company (Interview to José Arraya, secretary general of the association). In the successful legal case it was shown that Arauco was responsible for the incident in 2004. Arauco in 2013 was condemned to pay a compensation to the local community (Interview to José Arraya). The cherry plantations had been relevant in this context, as the presence of the relative economic documentation helped to calculate the amount of the compensation. The money of the compensation is partly administered by the association following a strategic plan elaborated in a participative process which invests, for instance, in an ecotourism project on the river and the valorisation of local products. But the conflict with the forest industry has not been resolved with this legal battle. The tendency has always been to solve the problem (superficially) while continuing the production¹¹⁸ and there have been repeated problems with pollution afterwards (Interview to José Arraya). Beyond the pollution of the river of the factory, Arauco has contributed to conflicts between communities in the area selling land that in theory was of the nearby Mapuche community of Pon Pon (according to a land title, "título de merced", of the 19th century) but had arrived in the hands of Arauco, to another Mapuche community, who ignored this background, as Michela Bravo and Juan Antonio Naupajante of Pon Pon told me, asking me to tell about this (Fieldnotes, 12/01/2022). And the extended forest plantations, monocultures which consume large amounts of water, dominate the region between the coast and the Andes in wide stretches, altering the water system (Fieldnotes, 12/01/2022).

117 <https://www.comunidadhumedal.cl/> (Last access: October 2022).

118 The legal case stopped plans to extend the factory where it is located now but there are, not yet enacted but permitted plans, to build a conduct to discharge the factory's waste water into the sea (Interview to José Arraya).

The Importance of Knowledge

Also Tralcao's story, clearly evidences the importance of knowledge in participating in the fruit export economy and the inequalities in access to knowledge (cfr. Paragraphs 6.4.3 and 6.5.3). Pedro Guerra justifies his engagement for setting up the project of growing cherries for export in Tralcao with his possibility to study at the university and his international work experiences¹¹⁹. In the relation to the export companies, the difference of knowledge about markets and prices between them and the small producers is a crucial reason of power imbalance. An important resource for Tralcao's producers has been the possibility to travel to China with the support of ProChile. The trip allowed them to gain insights about the Chinese market where their cherries go to, becoming aware of the very high prices paid there for the fruit. Also for the technical expertise about how to grow the fruit and how to treat it in the plantation, organising knowledge has been crucial. While organising this knowledge, through the role of Pedro and in particular that of Eduardo who provides technical assistance to other community members, has been to some degree successful in the community of Tralcao, the degree of technical organisation is certainly far flung from the high technology version of growing cherries at the Lago Ranco (cfr. Paragraph 6.2.3), what is reflected in the fact that producers in Tralcao sell individually also due to the not homogeneous quality of their fruit. This is certainly a disadvantage in the context of a market that values homogeneity more than most other things (cfr. Paragraph 6.4.2). This is not to say that the members of the Mapuche community have a general lack of knowledge. On the contrary, many of them appeared much more aware, for instance, of their environmental context and of the interconnections in which they operate, which is a complex knowledge, certainly of great relevance in an age of global environmental crisis and change. But this is a kind of knowledge not targeted towards the quality requirements of international fruit market and not at all or at least far less valued in that context than homogenous quality.

Summing up

Tralcao shows something very important for the reflections about a degrowth transformation of global commodity geographies: it is in principle possible to organize a production for the global market without subordinating the economy of a whole territory to it. This is not to idealise the case. There are evident limits to

119 Also linked to years he spent in exile due to his opposition to Pinochet's regime.

the concrete experience of this community. In particular the relation to the export companies has been very problematic for them, if not traumatic in some cases. In part due to the unbalanced and unfair power relations of this system for small producers, in part due to their lack of specific knowledge about the workings of its mechanisms which apparently none of these companies, nor the state agencies, have been particularly interested in providing. A further limit is the use of pesticides and techniques of cultivation which do not include the principles of agroecology (cfr. Paragraph 6.5.3) even though Tralcao as a peasant community and with their spiritual values would seem, in theory, particularly close to this approach. Threats are the pollution of the river, as well as the abandonment of agricultural lands and the construction of houses on them. Perhaps the most important limit has been the failure of their producer cooperative which made them not only more vulnerable and weak in front of the powerful export companies but also increased internal divisions and mistrust in the community. But it did not break the community: collaboration continues to exist and remains central.

Most importantly, the community of Tralcao has succeeded in (re)structuring a dense network of local economic relations, centred around their village fair. A collective fight against the pollution in the river has strengthened bonds in the region, increased ecological awareness and the success of a legal case has helped to raise funds for a local development plan. The production of cherries for export, which persists nonetheless the many difficulties, here is a factor of income among others. Notwithstanding being a boom fruit, exported to 90% to China where it is sold at sometimes absurdly high prices¹²⁰, Tralcao has escaped the temptation of transforming its land into an extractivist model of monoculture. Sure, fruit production for export here in the South is more recent than in the centre and north and a transformation towards extractive monocultures might occur also here but the sense of community and the Mapuche cosmovision contrast this tendency, as a professor from the local university I met at the village fair argued (Fieldnotes, 15/01/2022). The awareness the people of Tralcao have as peasants and as Mapuche has contributed to the conviction that economic and biodiversity are crucial for their community to survive; an island of diversity amidst large stretches of forest monocultures in the region. Cherries for China can be one additional source of income among others, supporting the survival of this community and its complex economy, but nothing more.

120 <https://www.radioagricultura.cl/el-agro/2017/05/11/cerezas-chilenas-cuales-los-precios-pagan-los-chinos-causaron-la-queja-asiatica.html> (Last access: January 2022)

6.5.5 Questions of Scale: Challenges for Alternatives in Chile's Fruit Export Geography

The cases portrayed in this chapter show that it is possible to participate in the production and sale of fruit on the global market in different ways than the extractive mainstream model (as discussed in chapters 6.2, 6.3 and 6.4) does. At the same time, a number of limits or challenges to these alternatives becoming a new mainstream have emerged from my fieldwork and in many regards these challenges relate to questions of scale. Not the scale of the geographical distances of trade relations, but rather the scale of the actors and organisations incorporating these economic geographies. In particular so, as these alternatives do not exist in a separate world but rather are in many ways intertwined with the mainstream model of Chilean fruit production and export.

Do these diverse alternatives have the potential to be the pieces of a puzzle of an alternative food system in the degrowth framework? To answer this questions two other questions will be discussed in this paragraph: which are the limits of and the challenges for the studied alternative approaches? And: how do these approaches relate to the wider, mainstream fruit commodity geography?

Marginal and Incomplete Alternatives

The cases portrayed in this chapter are marginal in the Chilean fruit export economy: the numbers on organic production (cfr. Paragraph 6.5.1) and fair trade (cfr. Paragraph 6.5.3) show that clearly. But even more importantly, the projects analysed here are incomplete. Altogether they tackle and develop alternatives to the principal critical aspects of the mainstream extractivist model of fruit production and export in Chile, the unbalanced power relations, agrarian and economic monocultures and the de-prioritisation of local economies, ecologically unsustainable uses of land, water and pesticides. But none of the portrayed cases manages to cover all these aspects.

Agroecology in theory is a holistic approach but in Chilean practice mainly focuses on organic forms of production, which benefit ecosystems but struggle to build transformative economic systems, as organic products remain confined to elite consumption. Campochange is building a local but loosely connected and dispersed alternative food network. Mi Fruta has achieved strong and effective forms of cooperation of small producers and has changed the power balances but their production remains monoculture and fair trade, while it helps, has not enough market space and power to fully realize its potential. The community of

Tralcao, finally, has build a strong and diversified local economy and contrasted threats to their environment but the concrete cooperation for export lingers, relations to export companies are unbalanced and pesticides are used in the plantations.

To Cooperate or not to Cooperate, is this the Question?

The small size of the alternative practices portrayed in this chapter relates to a frequent debate in relation to Chilean agriculture about the importance and difficulty to cooperate between small producers. Many interviewees underlined this aspect (e.g. Interviews to Cristian Moretti, Roberto Bressi, Agustín Infante, Eva Hagwall and Ricardo Eller) and many call for the necessity to promote cooperation, e.g. Pefaur Lepe (2020). Acting together, can help small farmers to compete on global markets, having direct relations with import companies (Interviews to Cristian Moretti, Roberto Bressi) or at least to achieve better conditions with export companies (Interview to Pedro Ossa; cfr. the case of Mi Fruta in paragraph 6.5.3). Agustín Infante considered cooperation as crucial in a vision of integration between local production and export in an agroecological perspective:

A small producer could produce vegetables or wheat for the national market and at the same time have fruit for export, with a diversity following the principles of agroecology. But this producer would be associated with 50 other small producers who produce the same fruit and a company can support to put their production together and export it (Interview to Agustín Infante).

But there are few cooperatives in Chile and everybody who I asked about this topic underlined the difficulties of creating them, attributing this to Chilean individualism and/or to the history of Chilean state policies. Under the Pinochet dictatorship cooperatives (earlier promoted under socialist governments) were dissolved, which led to a “sort of fear” about creating them and “there were real limitations to freely participate in a cooperative” (Interview to Ingrid Allende). Later, after democracy returned, governments did not support cooperatives either (Interview to Roberto Bressi), or ineffectively, following the logic of an extreme neoliberal policy – “stronger than the inventors of neoliberalism thought it” (Interview to Agustín Infante); there are many limits for instance in terms of financing cooperatives (it is difficult for cooperatives to get bank credits - Interview to Valeria Bigliuzzi) and recent normative changes have made cooperatives more similar to companies (Interview to Ingrid Allende).

But evidence collected also suggests that there is certainly no anthropological impossibility to cooperation in Chile. Indeed, in Tralcao I encountered a failed cooperative but cooperation continued on an informal level. And while Mi Fruta does not have the legal form of a cooperative, it acts like one, successfully. And close to Osorno I shortly met a recently constituted cherry producer cooperative, Cericoop. Nowadays, also agrarian policies have changed to some degree and there is some promotion for new cooperatives, with growing interest and growing support by INDAP – even though still 90% of INDAP’s budget goes to individual farmers (Interview to Martin Barros). These new cooperatives, according to Martin Barros, are less linked to social themes, and rather focused on productive and commercial reasons. Cooperation, in sum, is a way to tackle the question of scale of unbalanced power relations between actors of different sizes. Certainly are producer cooperatives alone no automatic guarantee that also the instances of farm workers are guaranteed or the local environment is respected but they can help to alleviate the commercial pressures on smaller producers which make the respect of workers and the environment even harder.

The Importance of Knowledge

How important knowledge is and how much a differentiated access to knowledge is a factor of discrimination in the unequal power balances between actors across the analysed commodity geography had not been foreseen in planning and organising this research. But during fieldwork and even more so in the phase of analysis of the collected data, the relevance of this issue emerged clearly. Producing fruit for export is an activity that involves many different types of knowledges. Agronomic knowledge about how to grow fruit with the most up to date technologies (cfr. Paragraph 6.4.3) to respect external quality requirements (paragraph 6.4.2) as well as knowledge about the markets and their trends (paragraph 6.4.6). To obtain this knowledge and keep it up to date is a crucial challenge for all kinds of producers, be they small or large, part of the mainstream model or alternative approaches, as I have started to discuss in chapter 6.4. Several state organisms are involved in this (cfr. Paragraph 6.1.2), ODEPA as a research institute, INDAP to disseminate at least essential knowledge to small producers, as well as many universities. International trade fairs like Macfrut¹²¹ are importantly

121 Indeed at Macfrut many smaller producers were also present, supported by state agencies of their respective countries to be part of this knowledge exchange. But they did certainly not have the same exposure to exchanges as the larger international companies which had more visibility through larger stands and to whom it was much more difficult to talk to as their agendas were much more filled with meetings than those of smaller producers and more marginal countries.

places of knowledge exchange, also in terms of personal contacts: “it is very important, if you participate in an industry, to know who is who” (Interview to Isabel Quiroz). Knowledge can be bought from consultants like iqonsulting (Interview to Isabel Quiroz) and organisations like Fedefruta (which mostly represents medium and large producers) provide knowledge, too, which helps its associates to be informed through workshops, seminars, information documents; Fedefruta has

experts who observe the markets. They(...) go to China, to the United States, they go to wholesale markets, looking what goes on, chatting, they are part of export companies and they know perfectly where things are going, people from plant nurseries, too, are very informed about what happens with new varieties which are going well, which are not, which need to be cut down. Yes, you need to know who to talk to (Interview to Mario Marin Valdebenito from Fedefruta).

Evidently, as this quote reminds, access to information and knowledge is unequal. For small producers, especially when they are isolated, this access is much more difficult, for time and money constraints, as it can either be bought from consultants or be acquired through membership in certain associations or be acquired through personal contacts and experiences (which requires time and money), while state institutions provide some knowledge but not necessarily the more sophisticated and detailed levels of knowledge.

Indeed, in particular in relation to the case studies in Tralcao and with Mi Fruta (cfr. Paragraphs 6.5.3, 6.5.4) the importance of knowledge emerged. That is, one crucial element for the power imbalance between different actors along the chain and between producers of different sizes is their different ability to access very specific sets of knowledge – or how different aspects of knowledge are valued. The knowledge valued in the context of this global geography is knowledge about the workings of the commodity chain and access to detailed information on prices and costs, as much as to personal contacts (cfr. Paragraph 6.1.3, chapter 6.2), the way how quality requirements and technologies function and evolve (cfr. Paragraphs 6.4.2, 6.4.3) and how fruit varieties change (cfr. Paragraphs 6.4.6, 6.5.3). Indeed, in the success of alternative projects Mifrut and Tralcao, but also, of Agroecology and Campochange, the diffusion of knowledge has played a crucial role. This has occurred in many ways; through the organisation of workshops and courses, through greater transparency about market prices and costs achieved through cooperation, but also through the possibility for small producers to travel, to be

Thus even the participation to a trade fair per sé does not appear to be sufficient to participate effectively at certain levels of knowledge exchange as power imbalances are reproduced in such spaces.

directly informed about the practices of other realities or also to visit trade fairs like Macfrut like big companies and producers do.

On the other hand, simply emulating the type of knowledge that the mainstream industry has access to and values, does not seem to be a very promising strategy. Where these alternative cases have proved to be able to guarantee better results in social and ecological terms, this has been the case because they value other kinds of knowledge. In Tralcao, this is the knowledge about the value of community and its relation to the ecosystem it thrives in. In the case of Mi Fruta, the ability to cooperate effectively. In the case of Campochange, giving value to a more direct knowledge between producers and consumers. And in the context of agroecology, the profound knowledge about ecological interactions and the value of biodiversity. These are kinds of knowledge which are often context-dependent and can only partially be codified in systems such as the quality requirements and certifications of the mainstream fruit industry. Sometimes, rather, the criteria of these different types of knowledge conflict with each other: for instance when global ideals of hygiene contrast the ecologically beneficial presence of animals in fruit plantations or when the standards of uniform quality conflict with the variations of a diverse nature. As a consequence, while it is certainly important to organise in ways that also small producers have the knowledge necessary to sell their products, it is at least as important, in the medium and long term, to challenge which kinds of knowledge are valued in these global geographies.

From Monoculture to Diversity ?

As we have seen, monoculture is distinctive for the mainstream version of Chile's fruit production for export (cfr. Paragraph 6.4.5):

During a long time, the narrative was to find the products that differentiate us from other countries and dedicate ourselves to produce them. We have specialized in the monoculture of these products and this creates an economic risk when another countries starts to produce this product. Also there is an environmental risk, as monocultures are not adequate for the ecosystem. Moreover there is a social risk because some know how to do it, others don't (Interview to Agustín Infante).

Increasing diversity instead would reduce these risks, as with diversity adaptation to the increasing uncertainties of the global economy (for example related to climate change) is easier and there will always be a local market of people "who need to eat" (Interview to Agustín Infante). Much of the alternative cases reviewed

in this chapter are indeed related to aspects of agrarian and economic diversification. But certainly, as one interviewee noted:

There are various projects [of diversification], of creating value chains without a lot of success, for example, to transform raspberries in jam and export that, all these things, there are good projects but they are small and finally, the major part, where the music plays, depends on China. So I cannot simply tell China to stop buying our stuff (Interview to person working in the ministry of Agriculture).

Diversification has been considered important by many interviewees met in Chile but fieldwork also has shown that different levels and forms of diversity and diversification must be distinguished, in which agricultural and economic diversification are not the same but in many ways interact. On one level, economic diversification can occur also if the plantation is characterised by large-scale monoculture, as in the case of avocados grown in Leyda (cfr. Paragraph 6.2.2). Diversification here simply means the diversification of markets, between the national and the export market and different export destinations. In this sense, the need of diversification of markets itself can be an argument for export, as in Tralcao (cfr. paragraph 6.5.4). For Mario Marin Valdebenito from Fedefruta diversification is an “exclusively entrepreneurial decision. The Chilean model is ultraliberal and so this decision is taken by every single company and corresponds to a business strategy” (Interview to Mario Marin Valdebenito). In this perspective it makes more sense for a producer to simply cut down the trees of a fruit species that becomes unprofitable, rather than to point on a diversified production in the first place (Interview to Mario Marin Valdebenito). This of course assumes a considerable availability of capital that only relatively large producers can provide. And it excludes an idea of regionalised political strategies of economic and agrarian diversification in a perspective for an economic system rather than a single enterprise. A few interviewees argued that producing (also) for export could help to stabilise economically. Even from an agroecological perspective, this could be positive, if done with the right equilibrium (Interviews to Agustín Infante but also Eva Hagwall and Ricardo Eller). Martín Barros from INDAP argued that new fruit plantations in the move southwards (cfr. Paragraph 6.4.6) are a form of diversification in those areas, where farmers integrate some fruit surface into a diversified agricultural economy – in this sense, it is important for small farmers to not plant fruit on all their land, also due to the high initial investments. This observation reminds of the case of Tralcao.

In Nancagua, diversification was visible in the plantation: different varieties and species were grown. While this made for at least a more varied landscape, still, the agricultural techniques were that of agroindustry, including the use of pesticides,

and the single species themselves were planted in (smaller) units of monoculture. In Tralcao (paragraph 6.5.5), then, diversification pronounced both in agrarian as in economic terms, on a community level, contributes actively to a local economy, in which cherries for export are just one thing among others. But then, the export of cherries, like for most of Chile (see Figure 9), depends on only one market: China. Even though agricultural techniques there still involved chemical products, diversification, at least partly, entered the plantation, be it goose grazing freely under cherry trees or some experimentation in combining different plant species for mutual benefit.

Rather than focusing on the economical side of diversification, for agroecology, such as in the case of agroecological blueberry production close to Chillán, biodiversity is a fundamental trait of the whole agricultural and business model. Here, diversity starts in the plantation. But it has also become an economic goal, in diversifying the business through adding a café to fruit production, transforming fruit into jam and cake and looking for national clients. According to an industry consultant, more biodiversity in the plantations is an important future tendency of sustainability, which is also important to be competitive on global markets and for future growth (Interview to Isabel Quiroz).

This short discussion of the role of monoculture and diversity across the case studies illustrates the complexity of the question and that it regards both mainstream and alternative cases. Economic and biological diversity are not the same but they are interconnected in many ways. The economic monoculture of fruit export in Chile's central valley produces a monotonous landscape with a succession of monocultures of different fruit species. Even if one species is the main one cultivated it is though possible (but far from automatic) to guarantee some biodiversity between trees. Highest diversity in all terms is achieved when all factors concur: a diversity of what is grown, an attention to diversity on the field through agroecological techniques, a diversity of markets and ways of commercialisation. No case I studied has achieved this maximum level of diversity. To be sure, while such a scenario may appear ideal from a socio-ecological perspective, it is not necessarily so from an economic perspective. While it may assure long-term stability, it makes it also more difficult to achieve highest short-term profits in a global fruit market characterised by fashions and booms in terms of fruit varieties and species (e.g. cherries and avocado).

Alternatives and Mainstream: from Coexistence to Transformation?

Another question at the beginning of this paragraph was how do alternative practices relate to the mainstream fruit export business. Being incomplete

projects, they do not design completely alternative food systems, commodity chains and trade geographies. Rather they are in many ways intertwined with the mainstream version of Chile's fruit export industry. For instance in the channels of sale and export or the use of agrochemical products. Indeed, throughout this paragraph it has been difficult to discuss these alternative cases independently from fieldwork results relative to the mainstream model: the boundaries are not neat and many issues are transversal.

What the alternative cases achieve is for instance a participation of smallholders in the fruit export markets, in which they are generally underrepresented, partly overcoming the dualism of medium-large exporting firms and smallholders excluded from this market (Sofía Boza et al. 2020). A crucial question here is if this participation can be framed as a conscious participation in a problematic market, or rather tends towards a further co-optation through commodification of smallholders' activities and products. The answer must be a differentiated one. In the case of Tralcao the participation in export markets has certainly been a conscious one. Without doubt this has implied a certain degree of commodification, as in the export markets that Tralcao's cherry producers supply, their cherries appear simply as a small part of a larger amount of a commodity. At the same time though, it appears unlikely that in the equilibrium of the local community, production for export will become the dominant choice of production in the future. Thus, the commodification of a part of their production apparently does not necessarily imply a wider commodification of their community.

In the case of Mi Fruta instead the production for export is predominant – but it has been so for decades, i.e. the starting point for the project of Mi Fruta has been a very different one. Collaborating in their collective enterprise and partly working with fair trade channels, rather seems to have given smallholders the opportunity to improve their condition in the context of their participation to a commodity market, accompanied by a reinforcement of community and cooperation. This may not exactly be de-commodification but it is, at least, an alternative to the totalising logics of commodification in the mainstream model.

In the case of agroecology, it depends very much on the specific producers: Eva and Ricardo are conscious enough to stay at a critical distance to the export agribusiness and might even get out of it; others instead fare well in producing organic fruit for elitist and unsustainable consumption practices, like berries flown to the US out of season.

It is true that these alternatives, like others (cfr. Murdoch and Miele 2004), can easily coexist (Interview to Isabel Quiroz) with the mainstream version of Chile's fruit industry in the context of capitalism, especially if we consider capitalism as a set of local makeshift experiences (Latour 2014). At the same time though, there seems no necessary logic in contrary of the possibility that the structures built by

alternatives like these could be pieces of an – equally makeshift – post-capitalist, degrowth, pluriversal alternative future (if in any case it is possible to make such a binary distinction between these two scenarios). In particular, if one imagined an evolution in which the positive aspects of these cases might be tied together to more holistic practices and then scaled up.

In any case, the practices discussed in this chapter appear to be something quite different from the attempts of the mainstream fruit industry to sell their products as sustainable without any consistent change in the modes of production (cfr. Paragraph 6.3.1). These alternative practices imply a further important aspect: Without doubt, even if these models might be upscaled, total volumes produced would be much lower than in the extractive model of production, unless abandoning its transformative character – this is only coherent with the theoretical argument of a *quantitative tendency of relocalisation* in combination with a *qualitative change of global trade relations* in a degrowth transformation (cfr. Section 4). Again, a question of scale, but not simply one of the scale of geographical distance.

7. Conclusions: Global Trade in Solidary Degrowth Spaces?

This concluding section has two objectives. In the first chapter, it synthesises the analysis of the model of fruit production for export in Chile in its diverse forms and outlines, based on this analysis, perspectives for the socio-ecological transformation of this specific case. The second chapter instead drafts the contributions this research makes at the theoretical level to the scientific literature and which, in particular, can be the lessons to be drawn from this case study for a general degrowth perspective on (global) relational spaces.

7.1 Chilean Cherries for China: a Model and Some Perspectives for its Socio-Ecological Transformation

In this chapter I sum up which are the most important elements and characteristics of the Chilean model(s) of fruit production for export, which are the socio-ecological challenges it is entangled with and which may be perspectives for their socio-ecological transformation. Here I go back to succinctly answer the initial research questions (cfr. Chapter 1.1). Producing fruit for export in Chile, has been from the beginning a strategy for growth and development (cfr. Chapters 6.1 and 6.4). Under many regards this strategy has been successful: Chile has become the main producer and exporter of fruit in the Southern hemisphere, the business has grown, it now extends over large surfaces in central Chile and employs a large number of workers. At the same time though, this model is involved in a number of socio-ecological conflicts and debates (cfr. Chapter 6.3).

Characterisation of the Mainstream Model of Fruit Production and Export in Chile and the Related Socio-Ecological Conflicts

The first questions informing my empirical research were:

What is the global commodity geography of Chilean fruit made of? Which are the places, actors, nodes, relations and linkages, directly and indirectly involved? How

do actors in the geography interact? With which power relations, how does one end of the geography influence the other?

And:

What can the description of this global commodity geography imply for degrowth? In relation to the values and goals of degrowth, what could be seen as positive or problematic and why? In single nodes of the geography or in the relations between them? In terms of power geometries, ecological impact, social justice? If the commodity geography or parts of it can be criticised as extractivist, is the global scale a reason for this? And if yes, why and what does this imply?

What I have described as the “mainstream model” of fruit production and export in Chile, can be succinctly described as a complex commodity geography based on resource extraction from the environment in heavily transformed monotonous landscapes, the exploitation of a relatively cheap, often migrant workforce, carefully applied economic and agricultural knowledge and technology and relations of global trade with frequently unbalanced power relations between actors which altogether has given a relevant contribution to the development of Chile’s economy. The use of terms such as extraction and exploitation in this phrase should not be misunderstood as moral judgements, rather they are used here as analytical categories.

Formulating this description in a more narrative manner, it could sound as follows: In Chile, taking advantage of an apt climate, the availability of water, soil and labour, and its counter-seasonal location on the Southern hemisphere, from the beginning of the 20th century (building on antecedents since the 16th century) an economic model based on the cultivation and export of fresh fruit has been developed by the collaboration of the state, private Chilean and transnational enterprises, as well as universities and research institutes, inspired by the Californian example. This model has experienced a wave of strong growth starting in the 1980s and continuing until today, in line with the global growth of the fresh fruit export market (cfr. Chapter 6.1).

The organisation of this commodity geography makes it possible to deliver fresh fruit of high quality (at least as high quality is defined by global industry standards) all around the world, responding to the desires of consumers who want to eat apples and grapes all year round as a staple, to those who consider, in China, a cherry at new year an luxury adequate to honour the importance of the feast, or maybe to who lives in regions of the world where the climate does not allow any considerable local production of fruit (or vegetables). The need for fruit to survive over long distances and time spans requires a meticulously organised chain, certifications and their control and the use of a wide number of technologies and specialised knowledges (cfr. Chapters 6.2, 6.4).

This commodity geography depends on inputs derived from natural resources (soil, water, climate, biodiversity and related ecosystem services such as pollination), labour (often temporary migrant labour needed in the most labour intensive seasons of the agricultural year) and (increasingly) knowledge and technology (about how to build a plantation, which varieties to plant, how to treat them, the use of pesticides and fertilizers, systems of irrigation, knowledge about the evolution and fashions of markets). This knowledge and technology serves in many ways to 'control nature', in particular its variability, in order to obtain a product of high quality and, even more importantly, of constant homogeneity, as requested by the market. Access to this knowledge varies widely among producers of different sizes. Furthermore, fruit production and export rely on a large number of actors and the relations between them: nature (landscapes), plants, workers, producers, export and import companies, logistic companies, retailers and final consumers, but also plant nurseries, experts and consultants, insurance companies, multiple state agencies both in Chile and in importing countries (cfr. Chapters 6.1, 6.2, 6.4, 6.5).

In this chain, even though all actors depend on each other, some actors are able to exert more control and to make more easily profits than others: in particular, these appear to be large supermarket chains in the global north, multinational export and import companies, as well as large producers. In some cases they appear to benefit from the organisational and technological complexity of the business. All the same, also small and medium-sized producers, in some occasions, are able to make satisfactory business; farm workers instead are in a much weaker position (cfr. Chapters 6.2, 6.4).

In Chile, in the most important regions for fruit production in the centre and centre-south, the production of fruit has transformed large extensions of the best farm land into successions of monocultures. In a perspective of ongoing future growth, which many actors in the fruit industry envisage, these surfaces will need to expand, even though the surfaces apt for fruit production in Chile are limited. At the same time, the effects of climate change influence Chile's fruit production through rising temperatures and long droughts; this has provoked conflicts on water at the northern end of the geographical area and favoured a move – or rather an expansion – southwards of fruit production on the other end. The conflict on water has been most extreme in the case of Petorca, where both legal and illegal water extractions for avocado plantations (also for consumption in Chile) has threatened the availability of water for small local farming as well as for direct human use. It seems likely that conflicts on water will reach other areas as well, as the climate crisis continues to accelerate. While initiatives by state institutions and fruit industry have adopted strategies for sustainability to avoid conflicts, these consist mostly in technical measures oriented at increasing efficiency, often in

response to market pressures and through the application of certifications. Instead, integrated assessments of the availability of water in a certain basin are missing. While these technical solutions can lead to some positive results, they avoid questions of systemic territorial change and do not challenge the general objective of growth, which in the long term can eat up efficiency gains while these encounter technical limits. Also relevant in relation to water is the competition between producers: small producers in many cases have difficulties in having access to sufficient water. Other environmental questions have been treated in a similar technical manner, such as the question of monoculture vs. biodiversity and the use of pesticides. In many cases, the predominant motivation to engage with sustainability measures appears as a form of 'sustainability fix', i.e. the idea that if fruit is certified as 'sustainable' it may compete more effectively on global markets (cfr. Chapters 6.3, 6.4, 6.5).

Connected and interrelated with these ecological problems are social issues; indeed in many cases they are socio-ecological conflicts. This regards the already debated question of water, it regards the use of pesticides when their application harms farm workers and people living in the surroundings, and it regards the complex question of nutrition and food sovereignty: the predominant orientation of the Chilean agriculture towards the production of fruit for export influences the availability of food for the local needs. As many surfaces are dedicated to fruit production, staple foods, such as corn or beans, must be imported. And while the fruit produced for international markets is strictly controlled (e.g. in terms of pesticide residues but also in the organisation of the cool chain) what remains for the local market, is often badly conserved through the national food supply chains. Finally, there is the question of labour conditions. While the conditions I could directly observe were not extremely bad, they were certainly characterised by precarious conditions (most work is temporary, even for workers who actually work in the industry during most of the year) and low wages, with little implementation of social security instruments and very low degrees of labour organisation. Other, more detailed studies on this topic, have also testified more outright labour rights violations. Certainly though, the fruit industry takes advantage of groups of populations without alternatives; rural populations, often women, with low levels of education, and migrant workers. While for some of them, to have this work may be an improvement, it is evident that they (together with 'nature') are the weakest actors in the whole commodity geography and without their low wages, the system would hardly function, at least not in this way. Even so, the availability of labour has been declining, which is inducing reflections to increase automation or to change cultivated species to reduce labour demand; also it puts small producers in a position of difficult competition also on labour (cfr. Chapters 6.3, 6.4).

Today, the description made above of the mainstream model of Chilean fruit production for export can be summarised as extractive: export is its main goal, territories are used instrumentally as an economic good (or factor of production) and while also benefits remain, certainly there are important ecological and socio-ecological impacts. *How much is this model the fault of export, of the large-scale commodity geographies these territories of production are part of?* Answering this question is crucial to think about degrowth strategies for relations at global scales. One can put it this way: what currently (from the 1980s until today) has occurred with Chilean fruit production and related impacts was ‘harmony’ between a global capitalist, or more in general, a growth and development oriented economic model and a local (national) economic and political model with the same goals. In this sense, more than intrinsically related to global trade relations, the socio-ecological impacts of the Chilean fruit industry can be explained by a structural and ideological compatibility of the economic models and goals in consuming countries with the one in the producing country, Chile. (By the way, in this sense, Chile can hardly be interpreted as being, as a nation, victim of this economic model in a post-colonial sense – certainly its ecology and many poor rural communities can be framed as victims of this process, but not Chile overall. Even more so as the benefits have been stronger for some rich families in Chile, but not limited to them; also a large part of the population has in many ways benefited from the country’s economic development over the last decades, levels of poverty etc. have been largely reduced (Peña and Silva 2021; cfr. Chapters 6.1, 6.4).)

Of course, the development and expansion of geographies of global trade, has been in many ways strictly linked to the development of capitalism and growth. Because colonialism has been fundamental in expanding economic spaces and at the same time essential to capitalist growth (Moore 2000; Hornborg 2006). And because capitalist growth has been intertwined with technological innovation which is at the basis of Chilean’s fruit export model. From the vantage point of this case study though, I would argue that it is more the political choice to embark on neoliberal/ or more generally capitalist/ or even more generally development-oriented political strategies (and to do this in a specific manner), that has led to the establishment of an extractive agrarian economic model. The availability of markets to export to, able to absorb surplus production, has of course enabled this development and has allowed the expansion over large areas of fruit production: thus, a larger degree of specialisation has been made possible by export. The large geographical distances themselves have shaped some of the specific modes in which this production takes place and how it shapes territories of production (cfr. Chapters 6.1, 6.4): transport over long distances requires organisation, selection,

technology & packaging (Paragraph 6.4.1); certifications and quality requirements require an adaptation of agricultural as well as organisational practices (Paragraph 6.4.2); the respect of these quality requirements also requires the use of specific technologies (Paragraph 6.4.3); export opens markets but also makes producers dependent on export companies and world market prices creating unequal relations of power – unequal for smaller producers in particular (Paragraph 6.4.4); all this requires an adaptation of organisational practices and tends to favour specialisation and monoculture, while other forces favour diversification which not necessarily though corresponds to biodiversity (Paragraph 6.4.5); finally, production for export is conceived as a model of growth. Growth is promoted by a number of strategies and requires constant changes (e.g. of fruit varieties) but meets, at the same time a series of social and ecological obstacles and limits (Paragraph 6.4.6).

My argument though is that it would be too easy to blame large-distance trade only for the socio-ecological issues linked to fruit production for export in Chile. In principle – and the existence both of niches of alternative practices and the long history of trade relations show this – it is imaginable to organise production for large distance export differently and in a manner that excludes extractive practices and their socio-ecological impacts (cfr. Chapter 6.5). Obviously, this would imply much smaller quantities to be exported. And this is another way of putting it: the problem, as in many issues viewed from a degrowth perspective, is not necessarily the existence in principle of a certain production or consumption or trade but its quantity and its relation to other quantities (e.g. impacts sustainably absorbable by the environment). What remains out of this discussion, I am aware, are the impacts of logistics itself, which obviously are relevant and remain an argument to prefer local production, in many cases, over import/export relations (even though, in terms of impacts on the climate, they are marginal compared to the impacts of production itself; cfr. Paragraph 6.3.3).

The Potential of Existing Alternatives

Another task I gave to my research at its start was one of differentiation. I asked: *What are commonalities and differences between the different forms of this geography? How and why are these forms different? Can existing alternative practices of production and trade be a blueprint for a new model of global trade? And under which circumstances of economic and societal transformation?* Not all fruit production for export in Chile follows the same extractive logic just described. As explored in chapter 6.5, there is a number of existing alternative practices which, through diversified approaches, attempt to give answers to the

challenges and conflicts summarised above. These alternatives are in many ways incomplete and imperfect: none of them manages to build an alternative approach regarding all steps and aspects of production and trade and in many ways they are not, for now, able to substitute the extractive mainstream model of Chile's fruit industry. Rather, they co-exist and in many ways they are entangled with the mainstream model and its problems. Some of the small producers of these alternatives have the same problems of relating to the powerful actors in global trade relations, others continue to use pesticides in their orchards, others more depend on monocultures.

When looking at the alternatives portrayed in chapter 6.5, it seems in many occasions that it is relatively easy to make a difference in the field. But a crucial difficulty seems to be the evasive reality of (global) exchange and trade that in many ways (see also chapter 6.4) influences and determines in unsustainable and unjust ways how things are done on the ground: certainly, fair trade tries to work on precisely that (cfr. paragraph 6.5.3), but it remains (involuntarily) an elitist exception in a system that overall follows very different goals, logics, consequences.

Not only activists, *campesinos*, and small projects of agroecological production and fair trade have realised that the socio-ecological challenges of the fruit industry need to be tackled, also the industry has. As discussed in paragraph 6.3.1, there are multiple initiatives in the fruit industry to become more "sustainable", in relation to water, pesticides, labour conditions. What distinguishes these from transformative alternatives portrayed in chapter 6.5?

Certainly not always the distinction is neat, some approaches are similar and also activists recognise that the industry mechanisms of certification and quality requirements (see paragraph 6.4.2), have contributed to somewhat reduce the negative impacts of fruit production. But there are crucial differences, in particular in a degrowth perspective: first, the sustainability initiatives promoted by the fruit industry operate in a pre-eminently technical perspective; the believe is substantially the fallacious one of decoupling (Parrique et al. 2019; Hickel and Kallis 2020), i.e. that applying technical solutions can be enough and that they can allow for continued growth of fruit production and export without increasing socio-ecological impacts. Second, indeed, this industry vision favours further growth, except a few critical voices (see paragraph 6.4.6). And third, it considers sustainability measures themselves as an instrument to promote further growth, to market Chilean fruit in a world that has become more attentive to *discourses* of sustainability.

Not automatically, alternative practices escape the risk of these strategies in the long-term, the risk of co-optation is always present (cfr. for instance the use of

agroecological techniques in large scale monocultures, paragraphs 6.2.2 and 6.5.1), but at least they show the potential of more bounded, transformative, economies. With all their limitations, these alternative practices are a crucial basis to delineate some of the characteristics of a wider socio-ecological transformation of the sector in Chile. They show that many things are possible. It is possible to grow high quality fruit while favouring biodiversity in the plantations. It is possible to cooperate and change the power relations between actors of the commodity chain, also with the help of fair trade. It is possible to diversify markets, along with diversifying biodiversity, producing also for the local market. And it is possible to build strong local economies and employ fruit export as a bounded element of economic diversification, not as a panacea for limitless growth. It is possible to organise production and trade with a conception of the ‘right size’ in mind, without the need to crave the unlimited. Importantly, these realities point towards differences of scale, but not of the scale of geographical distances, but instead of the scale of actors involved in global trade geographies. Smaller actors, smaller plantations, smaller traders appear (if not automatically, at least potentially) in this case to be more able to be respectful of their context, of the environment of their communities, than larger actors. To be sure, these practices, small and marginal as they are, cannot alone transform national and global economic strategies. Rather, to achieve systemic change, they would need to be part of wider transformations, for which they can be an inspiration, as the following lines try to illustrate.

A Scenario of Socio-Ecological Transformation of Chilean Agriculture in the Context of Climate Change?

Economics, as a discipline, has helped format local forms of “market organizations” which are entirely mundane, makeshift affairs depending so much on culture, law, and geography that they should not, in any circumstances, be transformed into a “system” and especially not into a “natural” system. The word “law” in the “laws of economics” should be understood as in “civil laws”, that is as a highly revisable affair in the hands of a polity. Not as a law of a transcendent world in the hands of an invisible deity.

Bruno Latour, 2014, in a Lecture on the “Affects of Capitalism” to the Royal Danish Academy of Science and Letters¹²²

122 The lecture can be watched here:: <https://www.youtube.com/watch?v=8i-ZKfShovs> (Last access: February 2022)

As a European researcher with a limited knowledge of the Chilean context, I am in no position to prescribe how the Chilean geography of fruit production should evolve. The only thing I can do here is to provide my perspective, grounded in my few months of research in Chile and in relation to my wider knowledge about global socio-ecological challenges and perspectives of transformation, and make it available to whoever may be interested. What I do propose in the following lines are thoughts and suggestions about what a socio-ecological transformation of fruit production in Chile might mean, based on the existing practices, tendencies and their potentials I have studied in Chile and based on the contributions of my interviewees. Certainly, I cannot assign quantities to the changes I suggest or describe how exactly and where exactly such transformations should occur. Also, it is important to note that this scenario of change is uniquely based on my fieldwork in Chile, interpreted in the light of a generalist literature: a further necessary step would be to relate these proposals to scenarios of socio-ecological transformation elaborated by others.

Starting point for these ideas is that the characteristics of existing alternatives can be considered as guidelines for a more general scenario of socio-ecological transformation of this economy. The necessity of such a transformation lies in the socio-ecological challenges of Chile's fruit industry. Of which the lack of water is the most urgent issues currently, and the closely related issue of climate change will probably be a powerful driver of change in the close future, both as it will most likely exacerbate the drought in Chile and because the global political strategies and cultural changes to contrast it will potentially challenge the operations of global trade, considering the carbon intensity of agricultural production and logistics among others. In a few points, such a socio-ecological transformation of the Chilean agriculture (I write agriculture to go beyond the idea that necessarily what is fruit production today, will be fruit production tomorrow) could follow these lines:

a) *Organisation of Production*

- respect of local ecological limits (in relation to water but also land)
- more biodiversity (in the plantations, inbetween the plantations, in terms of cultivated species)
- agroecological principles (no pesticides, biodiversity instead etc.)
- economic diversity (diversity of species, diversity of markets, beyond export as a panacea)
- fair working conditions (higher salaries, worker organisations, social security, more stability)
- cooperation of small producers (changing the power balance in relation to buyers)

- more accessible and transparent knowledge and higher consideration of knowledge about local ecologies and communities
- b) *Relation to the regional and national context and landscape governance*
- governance for diversified local economies & landscapes (beyond successions of export-focused monocultures)
 - land-use planning in the respect of environmental conditions (no expansions of plantations at the expense of biodiverse landscapes or where water availability is limited, no transformation of agricultural land into houses)
 - production for local needs at the same level of priority in a perspective of food sovereignty (governance for a balance of what is produced for the local market and what for the export market)
- c) *Trade and Trade Governance*
- limitation of traded quantities
 - fair relations between producers, exporters, importers
 - solidary relations between producers and consumers in far away destination markets, achieved through both bottom-up practices and cooperative state policies

A transformation with these characteristics would of course need to be the outcome of a process of cultural and political change, in Chile but not only. The guidelines exposed here point towards structural and systemic change. Inevitably, if such perspectives of transformation would be implemented, this would imply a *quantitative tendency of (re)localisation* as only reduced volumes of export (compared to today) would be compatible with these changes. But this scenario does not require a stop of global fruit exports. As argued above, the long distance of trade relations influences in many ways how the fruit production in Chile occurs but it is not a problem *per se*. And, on the other hand, it can provide benefits: economically for the producing side, as an element of diversification, and, for the consuming side, in terms of the variety and security of food available.

Evidently there would be downsides of such a transformation and difficulties in the process of transformation, in particular of socio-economic nature: many companies (producers, exporters, logistics), workers in these companies, regions of Chile, nowadays depend economically on the production and export of fruit. To simply interrupt these economies would create a lot of economic and, as a consequence, social damage. Therefore, this is an argument for a gradual and participatory process of transformation. Indeed, such a transformation requires the involvement of a number of actors. Producers, citizens, activists, consumers, the state. As unlikely as such a transformation may appear at first sight, both

global and local socio-ecological challenges ask for them and make them more and more necessary, and likely.

The role of the state here should not be underestimated. I encountered several critical and conscious voices of people working in state institutions (Interviews to Catalina Cuevas from ProChile, to an Anonymous ODEPA officer, to a Person working at the Ministry of Agriculture). Also, the current process of political change, in relation to the process towards the new Chilean constitution (the first proposal has been rejected in a referendum but the process is ongoing) in part goes in a similar direction. And most importantly, the Chilean state has played a crucial role in the establishment of the existing mainstream model, as well as in maintaining it (cfr. Paragraph 6.1.2) and thus could as well play an important role in its transformation. One state actor I interviewed argued (responding to the idea of a scenario with quantitative limits to fruit production and a strategy of agrarian and economic diversification):

I totally agree with you. But here the only alternative is more state. (...) [I]f I define this model and give it to someone and say, 'here it is' and they pay 12000\$ and I, the state, gently ask to diversify with something more healthy and this pays 3000\$, the producer (...) will say that I am crazy. I believe that there needs to be an active role of the state in agriculture – without a revolutionary fundamentalism to change it all – but saying that 'until here you got with the law of the West, that everybody does what they prefer'. The state should say here you need to have more sustainability. (...) In Chile we have a giant water crisis (...). But you hit the nail on the top, what happens with the land? Of course, the land is nothing without water, but also the water without land is nothing. (...) I believe that we need a fruit production that is more ecological, more sustainable (...) that creates some percentage for the GDP but also some percentage for the social peace (Interview to Person working at the ministry of Agriculture).

Another group of relevant actors could potentially be faraway buyers and consumers, and importing states. In the analysis of the fruit commodity chain, this side appeared to be among the most powerful actors (cfr. chapter 6.4) in determining how this trade geography is organised and how it shapes territories of production, in particular buyers from the EU. This power is exercised through certifications, standards and quality requirements. This power also implies responsibilities. "We are not who need to be sensibilised, it seems that who needs to be sensibilised is over there [in Europe]" (Interview to Ingrid Allende)¹²³. Already existing requirements have exercised influence on the use of pesticides, for instance (cfr. Paragraphs 6.3.3, 6.4.2). But mostly these changes have remained

123 She made this point commenting an EU project to promote fair trade in Chile, while, she said, the limiting factor for fair trade is buyer interest in the global north.

superficial and oriented at consumer benefits. Possibly, there could be a potential for exercising a stronger, or differently shaped, influence. This should not be, again, the imposition of standards from elsewhere, but rather a support for transformations through a more collaborative attitude, to build real north-south alliances (cfr. Chapter 3.4), potentially learning from the model of fair trade, conscious of its limits, generalising its principles¹²⁴. To this scope – the empirical research seems to confirm what had been hypothesised at the theoretical level in chapter 3.4 – most likely the power of large companies who act as intermediators (export and import companies) and buyers (supermarket chain) would need to be limited.

One could argue that such a transformation would require overcoming capitalism. That may be. But, in line with Bruno Latour's above cited argument of capitalism as a makeshift affair, I would avoid the reification of capitalism as a coherent system. Rather, I would argue that it would be necessary to initiate socio-ecological transformations in the specific context. Then, afterwards, one can decide if that different makeshift affair which comes out of it, should still be called capitalism or something else.

Socio-Ecological Transformation & the Rejection of the New Constitution in Chile

To be sure, a shift in the cultural hegemony is needed. But, fraught with difficulties, this is something already happening in the ongoing process of political transformation in Chile, away from the values of neoliberalism, unlimited growth at all costs, towards, more consideration for social and ecological values, for the relations in the society, with an awareness about the inequalities and trying to achieve, taking up the important heritage of indigenous knowledge about it, a more balanced relation between the society and the environment.

Now, one of the central pieces of this process of political transformation, the project for a new constitution (to substitute the one in place, approved in 1980 under Pinochet's dictatorship and symbol of an antidemocratic elitist tradition of Chilean politics), which had been considered exemplar for a progressive constitution respectful of social and indigenous rights, the environment etc., has been rejected in the referendum of September 4, 2022 by a large majority (62%). The reasons for this rejection appear to be complex. There are voices of the left which have analysed how the campaign (guided by the right) has invested much more money than the campaign for approval and has furthermore, diffused fake

124 Might the legal initiatives in Europe for the responsibilities of companies for their actions in other countries (cfr. Chapter 3.4) and dialogues with Latin American fair trade associations (cfr. Paragraph 6.5.3) be steps in this direction?

news and false information about the consequences of the project of the new constitution¹²⁵. Probably though, this is not enough to explain such a strong result and there are more complex reasons. It has also been argued, for instance, that the constitutional process did not manage to provide an idea of unity in itself and for the people for which the constitution would be put in place¹²⁶. In this sense, others have also noticed that perhaps the proposal had been too radical¹²⁷ or too intellectual in some point to gain wide popular acceptance, even more considering an insufficient level of information about the constitution specifically and of civic education in general¹²⁸. Indeed also those underprivileged areas of the country for which the constitution had been conceived have overwhelmingly voted for its rejection: in rural municipalities rejection was higher than in urban areas, in poorer ones higher than in wealthier places and in municipalities with a high concentration of indigenous population rejection was very high (it also was higher in correspondence of evangelical churches and in places with less access to internet, the latter point speaking against a decisive role of internet disinformation) (Fernández and Guzmán 2022). Also in Petorca the proposal of the new constitution has been rejected, notwithstanding it proposed to make water a common good, possibly also because small farmers were afraid of losing their water rights¹²⁹.

All the same, this is not the end of this process of change: the Chilean parliament has voted for a process to elaborate a second proposal for a new constitution, to be concluded in 2023¹³⁰. Considering the wide refusal of a proposal of profound change though, most likely this new proposal will be less radical and certainly this shows the difficulties in enacting profound and rapid change, even for the essential needs of social justice and environmental sustainability.

125 <https://www.elsaltodiario.com/chile/new-left-review-rechazo-constitucion-boric> (Last access: January 2023).

126 <https://nuso.org/articulo/301-rechazo-constitucion-chilena/#footnote-7> (Last access: January 2023)

127 <https://elpais.com/chile/2022-09-05/en-chile-fracaso-el-maximalismo-progresista.html> (Last access: January 2023)

128 <https://observatorio.cl/10-razones-para-entender-el-triunfo-del-rechazo/> (Last access: January 2023)

129 <https://es.mongabay.com/2022/09/que-viene-para-el-medio-ambiente-tras-el-rechazo-de-la-propuesta-de-constitucion-en-chile/> (Last access: January 2023)

130 <https://www.dw.com/es/parlamento-chileno-aprueba-reforma-que-habilita-nuevo-proceso-constituyente/a-64357260> (Last access: January 2023)

7.2 Back to Theory

On Methodology and Positionality, Again

As a pioneer (in the sense of the connections made between literature and research traditions), this research, without doubt, suffers from a number of limitations. Not all literatures have been investigated with the same depth, and most likely that makes that some otherwise possible and useful contributions have been missed. Then, as much as a whole commodity geography has been the subject of analysis, the depth of this study has been very different across its different parts. It would be stimulating in this sense to engage in discussions with other, close conceptual contributions; to further deepen the research in relation to logistics and the consumption side, investigating, for instance, where, how and why fruit from the mainstream model or rather from the alternative practices is consumed. And it would be desirable to perform further case studies in the perspective developed here.

As far as possible, I have tried, while conducting this research and while writing it down (while, that is, creating a coherent narrative of a bunch of interconnected but very diverse sets of data), to respect a number of methodological attentions I had fixed at the beginning (also this 'beginning', to be sure, is a construction, as many, but not all of the methodological considerations in chapter 3.2 and in section 5 have been fixed temporally before doing this research but have later been modified – as I remarked precisely there, not only the linearity of a commodity chain but also the linearity of the time of research needs to be discussed). In particular, in reference to the methodological remarks I had carved out from the literature on commodity geographies (see chapter 3.2), I have tried to make as explicit and transparent as possible the choices about what I have included in and excluded from my research. I have left open the question of the spatial metaphor to employ, using the idea of the linear commodity chain as a tool for orientation but always looking into other directions, too. At the same time, I have tried to interpret carefully the interrelations of global and local dynamics, avoiding easy dualisms. And, some may say too carelessly, I have adopted an open, problem-driven methodological approach (cfr. Section 5), using, opportunistically, different kinds of sources as it seemed useful. Certainly, qualitative and semi-structured interviews have been central in this, complemented by the analysis of data, documents, grey literature and some elements of a sort of very light ethnographic fieldwork with pieces of participant and non-participant observation. In some occasions I have failed; of some of these failures I am aware of and I have reported about (e.g. the productive failure of the attempt to focus on apples only) and some

others might be discovered by who reads this. I hope in particular that writing down the empirical research I have used my materials in a both sensible and convincing way, letting the case speak, without jumping to easily to theoretical conclusions, without being excessively biased by my positionality as a researcher and activist and as a white male European (cfr. Section 5).

Lessons from Chile for a Degrowth Perspective on Relational Spaces

Going one step beyond the case study itself and the immediate implications related to it (discussed in the chapter 7.1), what are the theoretical lessons that can be taken from this work? In relation to the framework of degrowth, but also in relation to the other streams of literature I haven drawn on in Sections 2 and 3? At the beginning, I had defined the following underlying theoretical questions for my research (cfr. Chapter 1.1): *Taking up existing research and research methods on commodity geographies (cfr. Section 3), how are the metabolic flows of cities, fundamental for their existence in a relational view of space, organised? Do these research methods allow to identify different, more or less just and sustainable forms of these relations? Why are they more or less just and sustainable? How can research in the tradition of commodity geographies allow to discuss differentiated perspectives for the transformation of these geographies in a degrowth context?*

In response to these questions, in light of the literature review and the theoretical framework (sections 2, 3 and 4), the case of Chile's fruit produced for export can be interpreted in multifaceted ways, as I will show in the following fourteen points on the empirical research's theoretical implications, grouped according to the areas of theoretical debate they contribute to. This research contributes to existing literatures in multiple ways. To the research tradition of commodity geographies (as I have called it in Section 3), it adds a relatively complete case study which, differently from most case studies does not only reconstruct a general model but also proposes an attempt to compare between different versions of this model. In a similar way, it contributes to the research on planetary urbanisation and relational geographies. To both literature traditions, it adds a perspective of analysis shaped by the debate on degrowth. Vice versa, it contributes to the evolving literature on the spatial dimension of degrowth (cfr. Sections 2, 4 and Krähmer 2022), grounding it empirically, connecting it to the methodological tradition of research on commodity geographies, and, resulting from that, it provides a number of conceptual insights, related to its conceptualisation and analysis of space and scale.

A. On the Relationality and Multiplicity of Spaces of Planetary Urbanisation

First, as much as the reality of Chile's fruit industry and its related commodity geographies, in all its different versions, is based on global relations in a global societal metabolism, it is not simply the result of the localisation of an externally determined process. Rather, its socio-economic-ecological and spatial configuration is the result of complex and multiscalar processes. It is the result of the interplay of (at least) global, national and local conditions, forces, policies, strategies and actions. The local and global here are co-produced, in interaction (cfr. Paragraph 2.4.2 and Massey 2005). But in this there are many "loose ends", the analysed realities are "negotiations between conflicting tendencies" (Massey; cfr. Paragraph 2.4.2). Global market conditions have been a background for national policies (the Chilean state through its various articulations plays a crucial role in this whole commodity geography, cfr. paragraph 6.1.2 and chapter 7.1) that favoured local decisions to plant certain species of fruit in specific places – a "strategic coupling" between regional conditions of production and global commodity needs (Bridge 2008; Coe, Dicken, and Hess 2008). This shows that there are multiple scales involved – and many more actors (cfr. Section 6, in particular paragraph 6.1.3 and Figure 6). Thus, the agency in this "make-shift" reality of capitalism (Latour 2014) and of "multiform globalisation" (Jessop 2003) is multisited and (unequally) distributed, it does not emanate unilaterally from cities (Tzaninis et al. 2021 rightly warn against such reductionist analyses). In the terminology of the literature on commodity geographies (Section 3), the analysed case is one of complex webs of interdependence rather than of a linear chain, even though following the linearity of the movement of the fruit itself has been a precious methodological tool to access those complex webs.

Second, looking in the logic of Massey's (2005) politics of relationality (cfr. Paragraph 2.4.2), at the power (im)balances of the specific case, it is evident how these power relations are unequal – typically unequal for global regimes of extraction and accumulation. They are unequal, for instance, in terms of the access to land and water, but also the power relations between actors, unequal in relation to the access to information and knowledge. The places studied in Chile are collections of stories, "articulations within the wider power-geometries of space" (cfr. Paragraph 2.4.2 and Massey 2005). Even so, looking at specific sub-cases, no overall dualistic decision can be made if this case is one of 'felicitous inclusion' in the global economy or rather a vehicle of uneven development (cfr. Section 3), differentiations are necessary (see eighth, tenth and eleventh point below).

Third, the case can be interpreted in the perspective of planetary urbanisation, in which Chile's fruit producing regions appear as a global

hinterland or place of “extended urbanisation” or “operational landscapes of capitalism”. Chile’s landscape and economy in some areas has been so profoundly transformed that in many ways it fits into Brenner’s and Katsikis’ (2020) theorisation of four mutations of city-hinterland relations. In particular the third movement from “formal to real subsumption” “into configurations of large-scale territorial-ecological machinery” (p.28) (Brenner and Katsikis 2020) or, as Spanier and Feola (2022, 160) put it, the “virtually complete subjugation of the rural to the urban”, can be identified in Chile with the large-scale transformation of land – in a very physical sense in the construction of new plantations (cfr. Paragraph 6.2.2), as well as the transformation of regional economies (cfr. Chapters 6.1 and 6.4) – towards monocultures producing for the global social metabolism. And Brenner’s and Katsikis’ fourth movement about “cycles of creative destruction” resonates very much with the continuous adaptation of Chile’s fruit producing system to changing international standards and quality requirements (cfr. Chapters 6.1 and 6.4). Also in the perspective of planetary urbanisation, these dynamics can be characterised as unequal; in relation to different actors, and in terms of geographical distribution.

Fourth, fruit is maybe not an obvious part of the metabolism of planetary urbanisation in that it is a rather ephemeral object: not like minerals that remain physically part of the built up city (Valz Gris 2021). Notwithstanding this apparently lightweight nature of fruits, I have shown that through the massive quantities a growth-based capitalist economy requires of fruit, its production becomes a profoundly ecologically, socially and economically transformative factor for the landscapes of hinterlands / extended urbanisation through dynamics of growth, spatial concentration and creative destruction (i.e. the fashion- and market driven instability of its forms of production that change rapidly).

Fifth, precisely this transformative and quantitative impact is also why the mainstream version of this model can be characterised as extractive, in the tradition of the Latin American literature on extractivism, even though fruit production itself is very different from the mining industry, in relation to which this concept has originally been developed (Gago and Mezzadra 2015; Brand, Dietz, and Lang 2016; Brand 2020a).

Sixth, in the mainstream version of this model, there is a relation between the global forces of the economic model (or “capital”), that reminds of what Jessop (2003, 11) has described as a

tension between the complex, reciprocally interdependent substantive reproduction requirements of real natural, social, and cultural processes and the simplified, one-sided, monetized temporalities involved in capital’s emphasis on exchange-value.

A tension that results in the socio-ecological conflicts described in chapter 6.3 and which are certainly not completely resolved by the alternatives portrayed in chapter 6.5, but only partially addressed, coherently with them being not outside but situated inside in the same system of growth and capitalism.

B. An Invitation to Differentiate

Seventh, the specificities of the sub-cases, at the same time, invite to reflect on possibilities of differentiation. Not everything is the same. As the methodological considerations I have made in Section 3 suggested, I have looked for differences and found them. Neither have I studied a case of a commodity geography in which automatically the “tide lifts all boats” nor an inevitable “race to the bottom” (Werner 2018). Even though the alternative practices in chapter 6.5 are quantitatively marginal, they show that there are possibilities of “alter-urbanisations” (Brenner 2016), and in Massey’s sense (cfr. Paragraph 2.4.2) that the future is open and that space is the sphere of multiplicity.

We can (...) perceive the diversity of performances (...) that are shaping rural-urban space, and we start seeing that *not all* of them reproduce the material and cultural relations of power and exploitation that are dominant in capitalist society (Spanier and Feola 2022, 165).

Eighth, importantly though, these alternatives are in many ways interconnected with the mainstream model, there is no clean separation between them (cfr. Paragraph 6.5.5). At the same time, there are structural differences between these different approaches. They have to do with different ideals and different social, ecological, technical, economic principles followed (cfr. Chapter 6.5), but these differences are also a *question of scale*: not so much in relation to the geographical distances travelled by fruit (as much as these distances create a number of problematic mechanisms in the mainstream model (cfr. Chapter 6.4), alternative practices have found answers to many of them, they are no automatisms (cfr. Chapter 6.5)), but rather in relation to the scale of the actors involved in the commodity geographies; while this cannot be definitely proven here, smaller actors – in particular when they adopt cooperative forms of collective organisation – seem at least potentially more able to positively integrate with their territory (cfr. Paragraph 6.5.5). Surely this is true in the general sense that the excessive growth of one production for one scope has devastating consequences: the question of monoculture (cfr. Paragraph 6.4.5).

Ninth, the specificities of the case invite to develop differentiated perspectives also in another sense. The analysis of its driving mechanisms

(chapters 6.1, 6.3, 6.4) has shown that there is no single mechanism and dynamic that can alone explain the case. Arboleda (2020a) in analysing northern Chile as the “planetary mine” suggests the wage system to be a, if not *the* central mechanism for the unequal and exploitative system of mineral extraction for global capitalism. This research rather hints to a multiplicity of factors. In which the wage system plays a relevant role, in that the availability of sufficiently cheap labour (cfr. Chapter 6.3) is a necessary condition for the system to work, but also environmental conditions, such as the climate, are necessary, and without the role of the state (cfr. Paragraph 6.1.2) probably the whole business would not exist.

C. Lessons for Degrowth

I have argued that theoretically, a degrowth transformation of global (trade) geographies, would consist in two main dimensions (cfr. Sections 2, 4 and Krähmer 2022):

- a tendency of (re)localisation, in quantitative terms, i.e. a limitation and reduction of such (trade) relations, recognising that they are part of the general social metabolism that has its ecological and social limits (but not localism as an absolute, formal proposal).
- a rethinking of the *ways* in which these relations are organised, towards solidary and collaborative forms of (trade) relations.

The results of my empirical work on the Chilean fruit commodity geography substantiate this argument: the lines of change suggested by alternative practices in Chilean fruit production and export and the arguments deduced from there for a socio-ecological transformation of the Chilean fruit geographies (in chapter 7.1), precisely point in this direction.

Indeed, *tenth*, this case can be seen as a concrete example of that social metabolism characteristic of a growth-focused and -dependent economy and of the highly unjust north-south relations, the degrowth literature criticises for its devastating social and ecological impacts (Brand, Boos, and Brad 2017; D’Alisa, Demaria, and Kallis 2015; Escobar 2015; Sorman and Giampietro 2013).

But, *eleventh*, differentiation challenges the general idea that the socio-ecological transformation of degrowth implies rigid and general forms of (re)localisation (cfr. Section 2). The potential of existing alternative approaches (cfr. Chapter 6.5) rather confirms the idea of a *tendency* of (re)localisation as proposed in the theoretical framework (section 4), i.e. a combined qualitative and quantitative proposal of transformation, rather than the a priori assumption that the reduction to the local scale is the only possible solution. Also because there are a couple of arguments for some long-distance trade in a degrowth perspective

(arguments which might be an interesting object of future research): it can be a form of economic diversification (when it is not abused as a panacea); the impacts of (ocean) freight itself are low compared to those of production and, for some regions with hostile climates, increasing the variety of fruit and vegetable through imports can support plant-based low-carbon diets. In Massey's words, there should be a change of weights in a "negotiation between conflicting tendencies" (cfr. Paragraph 2.4.2 and Massey 2005). But there is no easy way out; rather there is the need for social, cultural, political negotiations, for which degrowth in the global north and other alternatives in other places can provide guidelines.

Twelfth, evidently this alternative scenario is not something that is already there and can simply be scaled up in a logic of best practice: rather, it must be built out of a number of context-dependent fights and practices. And the alternative practices portrayed in chapter 6.5 do not (yet) form a coherent alternative system. So far they can very well coexist with destructive forms of capitalist and extractivist economies. They can become systemic change only as part of and in dialectical relation with wider forms of socio-ecological transformation and social, cultural, political change: change which goes potentially beyond capitalism, as much as it seems preferable to understand both capitalism and its alternatives as make-shift affairs more than coherent systems (cfr. chapter 7.1).

In this, *thirteenth*, a particular role must be assigned to the question of knowledge: while the unequal access to knowledge has emerged as one of the crucial factors of unequal opportunities between actors across the commodity geography and between producers of different sizes in particular (beyond, of course, material factors like access to land, money, and so forth), improving access to knowledge is a central challenge for large-scale transformation: this can be supported in particular by cooperative forms of organisation which in many ways appear to be beneficial for the reduction of power imbalances (cfr. paragraph 6.5.3), but, at the same time, changing which forms of knowledge are valued (giving more value to context-based knowledge in relation to the local environment and community) (cfr. Paragraph 6.5.5).

Finally, *fourteenth*, the relations between a potential socio-ecological transformation of the fruit producing economy in Chile and eventual strategies of degrowth in the global north would be complex and manifold. In the first place, it could be questioned if Chile itself is not part of the global north, or at least in some semi-central position, considering that wealth and living standards, notwithstanding important social problems and, most of all, excessive inequalities, are comparable to many European countries. But Chile certainly serves in many ways as a hinterland, an operational landscape of global capitalism as its economy is dominated by the export of raw materials and agricultural products. Already in the context of fruit, the potential economic damage of sustainability-oriented

consumer choices for more local products in Europe is debated in Chile (cfr. Paragraph 6.3.1). Certainly in a perspective of post- or degrowth policies in Europe and elsewhere, there would be a tendency of falling demand, putting into crisis export-based economies (Acosta 2020). This has at least two implications in light of the framework discussed in chapter 2.5: on one side that in Chile (and other places) regional economies should point more on diversification and reinforcing local economic circuits, on the other side that a reduction of demand by the global north, due to policies of socio-ecological transformation, should not simply be left interpreted in the form of a one-side abandonment of a model but rather be structured in the form of a dialogue about the transformation, considering the potentially devastating impact on regional supply economies, if such a process of transformation remains ungoverned. Also the qualitative change of these relations should increasingly take the form of a dialogue – be it in the form of supply chain laws or of fair trade which should continue to evolve (as it seems to do) from paternalistic and elitist forms of consumption towards cooperatively governed practices (cfr. chapter 3.4). As the global is made locally, there is a “local responsibility for the global” (cfr. Paragraph 2.4.2 and Massey 2005).

In how far can these points of conclusion be lessons for a relational spatial politics of degrowth? Can they answer the fourth set of questions I asked at the beginning of this research? (*How much are the answers to these questions determined by the specific cases, their scale, the kind of product? What can this case study say in general about global metabolic relations in a degrowth perspective? Based on this research, what are the conclusions for a ‘spatial politics’ of degrowth? Is the global scale the problem of global trade relations or something else? Can global trade be compatible with a socio-ecological degrowth transformation? How and in which quantities? Why and how should the results lead to a different formulation of the ‘spatial politics’ of degrowth?*) In other words, can the points I have made here be generalised?

Certainly there are limits to the possibility of generalisation of this case:

- the character of the product followed, fruit, makes for ample possibilities of diversity between the specific configurations of production; possibilities that are probably much larger here than in the case of other products, objects, materials which require much more complex machinery and technological organisation (think of a smartphone or the extraction of a mineral like Lithium). The risk is to overestimate, based on the present case study, the possibilities of establishing different systems of production and trade across global spaces.

- the Chilean state is a relatively strong one, its role has been crucial in building the fruit export industry, and consequently it appears to be able to take a

strong role in transforming it. Other states in the global south are, without doubt, much weaker.

- in general, one should be careful to not construe an automatism: I may have shown the possibility, in principle, of alternatives. But this is something very different from the probability of them being able to be the examples of systemic change, which remains a profoundly political question; a question of power and cultural hegemony.

Notwithstanding these limits, the points exposed above can be, applied with care, a basis of a more sophisticated formulation of a spatial politics of degrowth: Having always in mind that there is no general spatial principle, the local is not always good and the global is not always good (cfr. Paragraph 2.4.2), it is possible to argue that in the current situation of global ecological crisis, it is desirable and necessary to promote a tendency of relocalisation and a qualitative change towards solidary relations in solidary spaces, being aware of the local construction of and the local responsibility for the global (Massey 2005).

For sure, all these considerations may appear as naive and simple wishful thinking. To realise any of these propositions it is necessary to engage in conflicts about power and power relations. But these fights are becoming ever more necessary as the climate and ecological crisis looms and its social consequences are becoming more evident from day to day. We may not be able to implement any perfect model of socio-ecological sustainability and justice. But at least we must try to fight for the space for tendencies of positive change in this direction.

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