

Cultural Anthropology-Sustainable Citizenship
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***Ethnographic research on Chilean ecosystems regeneration
and Poly-faces projects toward life sustaining society***



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Picture's caption: Edo's reforestation project

I would like to thank my supervisor Fabiola Jara Gomez for her support and trust in uncertain times when I was on the ground doing fieldwork in the southern hemisphere and later on back in the northern one when I was trying to articulate and make sense of it. I truly don't know what would have happened without her. To the best supervisor and researcher, I am truly grateful.

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Introduction

“Quien no conoce el bosque chileno, no conoce este planeta” Pablo Neruda.

At the confluence between atmosphere, biosphere, lithosphere, hydrosphere, pedosphere (McClintock, 2015, 71) lay diverse, rich and complex multi-layered ecosystems in central Chile, amongst them, the sclerophyll native forest. In these ecosystems, an astonishing and unusual high biodiversity as well as rare endemism of different life forms are to be found (Donoso and Donoso, 2007). Following the words of the poet, “the one who does not know the Chilean native forest, does not know the world” we went to the encounter of people dedicated to projects aiming at restoring these endangered eco-systems. *Situated at the nexus between nature and society* (Weng, 2015, 135) this ethnographic research proposes to investigate how actors, through their poly-faces projects in central Chile, feel, think and strategically act according to their values while navigating through the ruins of our modern world, in a time of advanced disaster capitalism and collapse of ecosystems. The investigation aimed at *a socially articulated and historically contingent ethnographic account* (McClintock, 2015, 72) of ecosystem regeneration narratives deployed in the context of two poly-faces projects, one being Pio Pio Cultural Center For Sustainability, the other one being Eduardo Caceres’ reforestation project. It is true to say that “*soil is a manifestation of social history, an embodiment of social dynamics* (Swidlers, 2009, 7) as are their recent intent to regenerate it. But next to values, imaginaries and beliefs lay strategies and tactics that are developed in order to concretize those poly-faces projects. My research questions will thus try to consider and look into one of their means of action (power leverage) which consists in framing and activating narratives on ecosystem regeneration. *How do environmental practitioners in ecosystem regeneration in Chile frame their ecological restoration narratives and practices and to what ends? (2) What values, beliefs, human/extra human beings/nature justifications sustain those narratives?*

Through this micro-focus ethnographic analysis, we will progressively come to better understand the discourses and practices of three main actors I have had the chance to encounter. Caro is the founder of Pio Pio Cultural Center for Sustainability. She is dedicated to eco-literacy and regeneration of the soil/native forest through peri-urban agroecology practices while Edo is setting a threefold project consisting in a plant-based cosmetic company, a foundation dedicated to native forest regeneration/protection and finally a local farming cooperative in the valley where his project takes place. Last but not least is Andres, the Chilean agronomist bridging the two projects. The spatial foci and scales of the research will encompass the two different projects in the Valparaiso province. Pio Pio's location is Reñaca in the northern part of the Valparaiso province while Edo's project is situated near Navidad, in the south next to the Rio Rapel. The geographic region is particularly interesting to investigate from an anthropological and political ecology prism.

Indeed, historically Chile has been the first country to implement neoliberal economic policies designed by Milton Friedman, during the Pinochet dictatorship (1973-1990). More than the first neo-liberal laboratory and its related symbolic impact effect, it still has a lot of consequences on the current biomass and ecosystems, socio-cultural and political institutions nowadays. Equally as mentioned previously, central Chile is also special for its endangered meta-ecosystem of native forest (Sclerophyll forest) and related biodiversity loss. The timing is quite relevant because the United-Nation IPBES report (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) was released during the fieldwork, pointing to the dramatic global loss of species as an even threatening anthropogenic catastrophe as climate change issue. Finally, the two bottom-up, self-initiated citizens' projects were in direct contact with detrimental neo-extractivist forms, be it extensive monoculture of eucalyptus/avocado or threaten by growing urbanization. Nevertheless, every social actor met in those poly-faces projects was embodying concrete alternatives towards sound ecological farming practices, reforestation and/or circular economy. But more than that, they were grounded intents of meaning making in Anthropocene areas trying to respond by deed, to the question of how to restore endangered ecosystems while working towards life sustaining society and systems as well as how to create alternatives to mainstream economy through circular economy aiming at more resilience and environmental adequation. This is even more relevant in their case because Chilean native forests currently are at a breaking point. So far, these unique and hyper complex metabolisms have been actively destroyed, due to anthropogenic causes, up

to their 83% original surface which is relatively faster than the Amazonian forest (Salazar et al., 2015, 106).

Chapter 1: Disaster capitalism in the web of life

A) the means and the ends to apprehend the dead end

The bad news is that we find ourselves at the tipping point of multiple thresholds in the modern world-system, including the destabilization of biospheric conditions that have sustained humanity since the dawn of the Holocene some 12,000 years ago (Moore, 2014, 40). Well, the second bad news is that there is no going back to the Holocene (Lahikainen, 2018, 70).

This point resonates with acuity with Caro's saying who is the heart and brain behind Pio Pio's project: *it's a matter of "do we want to survive or not?" and "do we want to die because it's gonna be for a huge part our fault". Or do we want to live more responsibly and respectfully with everything around us because, in my opinion, we are all this one organism, we are all one body. So you know, a human body the brains and... we all fight against each-other but we are all part, we are all attached to each-other (Caro's interview, 20 April 2019).*

If the Holocene era has come to an end, we have thus entered a new era. Scientists and more precisely Paul Crutzen and Eugene Stoermer coined around the year 2000 the term *Anthropocene* to this new biosphere and geological time triggered and sustained by human activity (Moore in Altvater et al., 2016, 3). It appears that since the 19th century and correlated Industrial Revolution, Earth has endured enough anthropogenic changes up to disclose on a large scale significant stratigraphic mark, distinctive from the previous one (attributable to the Holocene), therefore encompassing novel biotic, sedimentary, and geochemical change (Zalasiewicz et al., 2008, 4). Although, it is hardly a deniable fact, if not impossible, that human actions are the cause of geological and recent global warming changes (therefore framed as human-induced), there is much more debate around the periodization of the Anthropocene. Indeed, for some it goes back to the mega-fauna extinctions at the dawn of the Holocene, for others to the origins of agriculture, c. 11,000 B.P; or maybe it started 2,000 years B.P or even

as a post-1945/1960 period (Moore, Part I, 2017, 1). But the more dominant view identifies the embryo of the Anthropocene during the Industrial revolution in England, around the dawn of the nineteenth century (Moore, Part I, 2017, 3). It would be thus summarized as this: “*Human action*” plus “*Nature*” equals “*planetary crisis*” (Chakrabarty 2009; e.g., Steffen et al. 2007 in Moore, Part I, 2017, 3).

Nevertheless, apart from the earth-system science strictly emphasizing on atmospheric change and its proximate drivers, the Anthropocene concept is also coined in its main acceptance as a periodization tool (or let’s say an historical argument) therefore encompassing a new way to apprehend the present and understand the past which is not without blind spots or shortcuts (Moore in Altvater et al., 2016, 82). Moore will go as far as saying in the same passage that it might even consist in an *easy new meta-narrative profoundly misleading*. Because once we look at the assumption underlying this new concept, what can we find: behind the driving forces in charge of the motive force (coal and steam) triggering the industrial revolution (in England around 1800) arises Anthropos, it is to say Humanity, as an undifferentiated, abstract and homogenous acting whole/unit. This construction of humanity as a collective actor proceeds of *historical-geographical patterns of differentiation and coherence* abandon, distortion and erasure *in the interests of simplicity narrative* (Moore, Part I, 2017, 1). I agree with Paul Farmer when he says that “*erasure or distortion of history is part of the process of desocialization necessary for the emergence of hegemonic accounts of what happened and why* (Farmer, 2004, 308) *and is perhaps the most common explanatory sleight-of-hand relied upon by the architects of structural violence* (Farmer, 2004, 308).

Equally, in echo and to go back to Caro’s view on human-nature relationships and the fact that she wishes us all “*to live more responsibly and respectfully with everything around us because (...) we are all this one organism, we are all one body*” (Caro’s interview, 20 April 2019) it seems to endorse a last critique of the underlying premises of the Anthropocene. It goes directly to the heart of the philosophical position behind the Anthropocene and its arithmetic resultant “*human activity+ biospheric changes= the Anthropocene*”: Cartesian dualism (Moore, 2017, 10). In this order of things humans are separated from nature, consequentially both, *society (humans without nature) and nature (environments without humans), interact rather than interpenetrate* (Moore in Altvater et al., 2016, 83), as industrial revolution seems to be *acting upon, rather than developing through nature* (Moore, 2017, 34). Nevertheless, to me and what

this thesis will try to demonstrate, is that nature ought to be seen as anything but as a passive substrate. Because *nature is not substrate; it is the field within which all life unfolds. And all of that life is actively, creatively, incessantly engaged in environment-making* (Levins and Lewontin, 1985; Moore, 2013a in Moore, 2014, 4).

This research thus articulates itself in the contemporary debate and scientific framework of the Anthropocene. While distancing itself from the Anthropocene concept for the reasons hereabove mentioned, I prefer to tie theoretically this ethnographic account to the Capitalocene concept, the “age of capital., credible alternative to the Anthropocene, the “Age of Man” (Moore, 2017, 17). Capitalocene here signifies capitalism as a way of organizing nature—as a multispecies, situated, capitalist world-ecology (Moore 2014, 2). I also appreciate and join Haraway in her idea to see the *Anthropocene as an invitation to rethink our relations between humans, nonhumans, and nature* (Haraway 2015 in Hertog and Turnhout, 2018, 1226). It seems rather more than welcome. But without an *historically deep and geographically broad analysis* on one hand, (...), *we risk seeing only the residue of meaning* (Farmer, 2004, 309), and on the other hand, since the Chilean native forest started to be exploited (or destructed) at the arrival of European settlers back in the 16th century, it seemed like a good entry point to get to know better our fieldwork.

B) a matter of time scaling and spatially situating the native forest and Chilean ecosystems embedded in the long (capitalism) and short (neoliberalism) term history

The erasure of history is subtle, incremental and depends upon the erasure of links across time and space (Farmer, 2004, 308). I met Edo during my second fieldwork. He was the one who first introduced and encouraged me to connect the dots of the scattered pieces of Chilean history in relation with its natural environment. As he told me *“from the 70th in Chile, the neoliberalist economic model was implemented and later in it was copy-pasted to the rest of the world. It was a laboratory but on a biological level, it was also a laboratory”* (Edo’s interview 28 April 2019).

I like to think about the Chilean native forest as a hyper-complex metabolism co-produced by natural/soil processes and social processes. Metabolism, in urban political ecology, is *a dynamic process by which new socio-spatial formations (...) emerge and present themselves as created through human processes* (Heyen, 2004, 599 in McClintock, 2015, 72) and natural ones. It exposes the circulatory processes at the base of the modification of nature into commodities such as food, energy, or in our case fire and construction wood/ extensive monoculture (Ganary, 2004). Those circulatory processes are essential to the *dialectical co-evolution of social relations and biophysical processes* (McClintock, 2015, 72). The social and ecological processes highlight that any separation between the two is artificial (Fabinyi, Evans and Faole, 2014, 2) implying a statement regarding the ontological human-nature binary as false. *Recognition of the role of humans in influencing nature's trajectory serves as an alternative to the dualistic thinking of human-nature relationship* (Golster and Hull 2000; Friedereci 2006; Egan and al 2011; Hobbs and al 2013 in Weng, 2015, 134).

Native forests in central Chile are a co-production of nature and humans. I know it sounds odd. I am still trying to figure out this paradoxical assumption. Nature does not need humans (but we are part of nature, aren't we? And what is nature?), quite the opposite and considering that human induced actions almost have extinguished these rich and unique ecosystems, it might appear like counter-intuitive. It is quite true, but to some extent. I wished I could *capture the depth, scope, duration, or intensity of the damage* I intend to apprehend (Luke, 1996, 112), but unfortunately, I cannot. Or at least it will only consist in a pale copy of the thriving and incommensurable reality(ies) of these webs of life and ecological history processes, an articulation of factual numbers derived from scientific literature, embodied literary and informed by a short-term grounded experience. At a very personal level, I am at the same time astonished by and feel connected to such complex, beautiful and multiple forms of lives (under threat) I have been witness of, while at the same time, being still wondering how to transcribe in literary terms the issues around the experience I have lived without distorting them (too much). One way I have found is to relate to these realities through specific words while I would prefer to avoid others. I must admit I cannot more agree with Lahikainen when he says that it is important to avoid the terms problem and catastrophe while approaching certain issues. First, far from being a managerial problem, it seems completely inappropriate regarding those humans, non-humans and ecosystems, harmed, at risk or already dead. Second talking about a catastrophe would entail that no one is responsible or to blame for it, that it would be akin to a

natural disaster. As he states, the words we use connect us in many ways to the reality we try to look at, it is to say our own way to see the outside world. Indeed, human-induced massive destruction of native forest can be seen, despite its multiple's factors, as an "*orchestrated large-scale atrocity*" (Lahikainen, 2018, 104). Since the beginning the arrival of European colonialists back in 1536 in Chile (or the current country as we know it even if it is an anachronism), 83% of central Chile native forest has been actively destroyed, although at different paces (Salazar et al., 2015, 106). *It requires thus our attention to various processes unfolding at different temporal and spatial scales* in the Chilean matorral (McClintock, 2015, 82).

Embedded in long term capitalism and more recently under its neoliberal shape, Chilean society and (inter)national market(s) are *structured in ways that, through actions of individuals, collectives, and institutions, produce* (Lahikainen, 2018, 41) large scale deforestation of native forest in a *longue durée* pattern but at a current extreme accelerated rhythm. Hence, I would still try to refer to historical processes in order to contextualize, situate and be as accurate as possible for this thesis and the interpretation I draw from the fieldwork.

Before European settlement, native populations were already interacting and transforming their natural environment, at various levels, through multiple and complex technics notably through agriculture. Agricultural mosaics could be found in many regions (Heilmayr et al., 2016, 71). Although the original extent of Chilean native forest may have approached 30 million hectares (Bryan, Nielsen and Tanglely, 1997 in Heilmayr et al., 2016, 71) which is an approximation, today some archaeological researches point toward the fact that indigenous populations might have converted up to 891 000 hectares of native forests principally in central and southern Chile into agriculture mosaics (Lara et al., 2012 in Heilmayr et al., 2016, 71).

In the long-term history of the vast but weak capitalism in Chile, we can start looking at the period after the arrival of European colonizers. After a time of native forest increase due to the extermination of native populations (Heilmayr et al., 2016, 71), deforestation has *intensified, especially after the country's independence, where extensive loss of forests occurred due to a massive demand of timber extraction for mining, agriculture and cattle grazing* (Armesto et al., 2010). Modernity is that time can be seen as a "*code and control*" project according to Moore. It encompassed *quantifying and categorizing procedures associated with knowledges and practices oriented towards identifying, securing, and regulating human and extra-human*

natures in the service of accumulation through mapping, quantifying, and rationalizing of human and extra-human natures in service to capital accumulation (Moore, 2014, 8), consequently producing *recurrent waves of socio-ecological exhaustion*. A is thus way of organizing nature through the transgression of successive commodity frontiers of prior non commodified resources (Schindler and Kanai, 2018, 1).

At shorter time scale, from the 1970s and the birth of neoliberalism on the new dictatorial foundation, the Pinochet military junta has fostered a vigorous forestry (privatized) sector based on non-native tree farms large-scale production (Cubbage et al., 2007; Gonzáles, 2008 in Manushevich, 2016, 22). Since 1975 non-native tree plantations increased exponentially from approximately 330,000 ha in 1973 to almost 2.3 million ha in 2012 (Camus, 2006; Infor, 2011 in Manushevich, 2016, 21). Those financial supports impacted heavily the *sclerophyllous and temperate forests of central and southern Chile* (Echeverria et al., 2006, 2008) creating homogenous landscapes. During the same period, a substantial proportion of forests was converted into a savanna dominated by the invasive species such as Acacia, which is now the most common tree in Central Chile (Schulz et al., 2010; Van de Wouw et al., 2011). Equally, economic concentration of capital and power is doing well in contemporary Chilean society. Today, three private companies (Arauco, CMPC, and to a lesser extent, Masisa) own over half of the country's artificial tree plantations (which are made up of 57% radiata pine and 35% eucalyptus stands), resulting in an extremely high industry concentration. Planted forests represent 2.4 million hectares grouped mainly in three provinces in the centre of the country (European Forest Institute webpage). Even if planted forests produce 99% of the wood extracted in Chile (cellulose production and wood for construction) according to the European forest institute, the sector represents 8.7% of exports, 1.4% of jobs and 2% of the country's GDP.

Chapter 2: More than words, radical hopes in acts; embodying positive change beyond bare critiques

A) context of the situated projects.

It was already getting dark. After three weeks spent at Pio Pio cultural center for sustainability, I was heading to Edo's place and its reforestation project. I got off the last of my third bus at the *media luna* de San Enrique, backpack on my shoulder and a tent hanging loosely. From there, I had to walk six kilometers before arriving at destination. I knew I had to hurry. The window of visibility shrinking down to nothing at dusk here. Once the small village is behind me, I could still run a while before seeing any light, person or car at the horizon. So I started walking. Remembering the last journey, we did with Andres (Pio Pio's agronomist) and Sven (digital nomad volunteering at Pio Pio) to come to Edo's place. Ten days ago, they came to catch us for the week-end at the same *media Luna* and we climbed on the back of their pick-up. I could still vividly remember how bright was our open-air shared ceiling. The countless stars were astonishingly shining like I had never seen it before, coupled with a strong, cold and refreshing wind, not to speak about the smell I can hardly describe. A sense of euphoria knocked on the door; amazed I told myself I was definitively well arrived in the Chilean *campo* [countryside].

Coming back from my daydream, putting one foot before the other, I can today better appreciate the landscapes for it is still daylight. But to my surprise, most of the surroundings are as dark as the night about to come. The forests recently burnt. I will later learn that due to a pest plague not refunded by insurance 's companies, people set intentionally their properties in fire causing huge, uncontrollable wildfires in the region. After a while I attained the first bifurcation. I knew I had to turn left and climb a winding road to the plateau, then take a second left and finally go for a dirt road into the woods. Once arrived at the plateau, I could not see my own feet anymore, the sun had left for good. I took my brand-new flashlight I bought at Santiago 's station but it only worked to shed a hesitant light onto my feet. Although I was carrying a tent "just in case", I was not ready to sleep on the roadside on this really freezing mid-May night amidst southern hemisphere winter season. I finally took the first right dirt road, entering the native forest a little bit reluctantly having no visual point of reference in the valley to orientate myself or phone to call (only a written number in my fieldwork notebook). I kept going for a while, up to a wooden dome structure. At that point I knew I was in the wrong direction but fortunately enough, some light shed through the windows of the building in-construction. I called for someone and a nice couple came out, thinking they were dreaming of hearing some voices because "normally there

is absolutely no one here” as they told me. I explained them my situation and they proposed me very nicely to call Edo and drive me to his place.

Once the new team (equipped with a car and a phone) was ready, we hit the dirt road again. But even as well prepared as we were, it took us thirty minutes to locate and meet Edo that was coming to meet us half way. It finally worked out. To my surprise, a very interesting conversation started between Edo and the couple. New neighbors met for the first time. The conversation was warm and they seemed both mutually interested. After explaining his project, some anecdotes and history of the valley, Edo shared his enthusiasm for the architecture of the dome in construction that he saw once due to “one his many hikes in the region”. The couple was very surprised he had heard of it because of the remoteness of their building. Exchanges were shared about the preciousness of the pristine nature and biodiversity. Very diplomatically and subtlety, Edo introduced the topic of the illegal logging that took place recently in the valley to clear a road through the native forest. Second surprise for the newest inhabitants of the valley. The conversation kept going for a while, and finally Edo proposed them to organize a tour, a walk around to explore the valley, its biodiversity and its species. The proposition was welcomed with enthusiasm. After some goodbyes and thanks, everyone went away. While we were walking to his place, Edo told me “*you know it was a protected area, you cannot build there, a road has been cut illegally through the forest destroying more than 200 trees there that were almost 1000 years old. It’s a sanctuary. I called the cops, the municipality, took pictures*” (Fieldwork notes, 20 April 2019) but just before to add “*I have always wanted to meet those neighbors it’s good to have allies, I am gonna invite them here*” (Fieldwork notes, 20 April 2019). This is how by inadvertently loosing myself in the native forest at night while trying to get to my second fieldwork, a set of unexpected circumstances has reunited for the first time the three neighbors.



(Edo's place view from space -google map- South Valparaiso's Province, central Chile)

B) ethnographic methods, reflexivity and epistemic framework

A micro-focused analysis has been chosen to investigate social interactions and human plus nature dynamics of co-influences in the Chilean native forest ecosystems as a local context. The all informed by and problematized in a broader (Paul Farmer influence), long term history (Moore influence). My intention was to try my best to comprehend social and nature interactions at play in a specific site/environment but keeping in mind the wider processes of globalization. I goes without saying that I tapped into hyper-complex systems in constant

changing dynamics. This work wants before all to appear as very humble in front of those very-complex social and natural relations articulated around ecosystems regeneration projects. Very humble but nonetheless rigorous. Beside all the multiple bias and constraints, I aimed at a “disciplined subjectivity” (LeCompte, 1987) in this research work. Were used principally participation observation, triangulation, semi-directed interviews (that were recorded and transcribed ad verbatim).

Because of the time I spent on fieldwork in Chile at Pio Pio and then with Edo going from 1th April to 29 April 2019 (even if full immersion), which was an inordinate short period of investigation as normally expected from an anthropologist (indeed I first investigated three weeks in a total institution called Unicam-suri in Argentina, then a week in a workshop of bioconstruction in casa Ochoa, Chile), I choose to centralize my attention and focus for this research on the interactions and discourses of the few people at the core of the two projects. Due to the time constraint, added to the fact that it was a multi-situated fieldwork, I could, to some extent, only approach the endogenous actors, consequently I could less easily investigate the different social groups and actors gravitating around those projects, eventually not participating or expressing contradictory opinions (like neighbors/farmers/older and younger generations living in the valley, political actors at the municipality, supporting institutions...broadly assigned as exogenous actors). I am thus well aware of the potential social dynamics that might not be found in this thesis but might have occurred on the ground (such as potential frictions, contested meaning of ecosystem regeneration practices, diverging interests, interpretation and ways to relate (and value) to the environment according to various actors). Reinforced by the fact that I found myself in two *in progress/in research and development phase* projects, they were themselves experimenting, connecting and building trust with other people and institutions while being under constant scrutiny which implied from my part some reserve. But one side-effect, consequence of this short term period was its intensity. Beside the normal six hours work as a volunteer (at Pio pio but in Edo's place it was more flexible), I was constantly interacting and doing my best to remember every interaction and discussion I have had the chance to participate in or be witness of. The days were quite intense, physically challenging and mentally demanding but definitively interesting.

Regarding the epistemic framework and theories/concepts used for this work, I drawn my attention non only on humans but also on **non-human multispecies and ecosystems**

interactions. I would like to tend toward a *relational view of humanity-in-nature and nature-in-humanity* (Moore in Altvater et al., 2016, 4). Trying to grasp “*their ideas of nature and perceived role of humans in restoration* (Weng, 2015, 139) as to start to see *human organization as something more-than-human and less-than-social* (Moore in Altvater et al., 2016, 5). **Political ecology** which asks the question of *how power is manifested in the nexus human—society-environment/nature relations in a power-laden environment rather than politically inert one* while rejecting any meta-narrative/grand coherent theory (Biersack, 2006, 5 in Khan, 2013, 460). Within the political ecology framework, **post-structural social theory** seems to be very relevant in analyzing the ways *in which representations, narratives, and discourses shape how people perceive and behave in relation to the environment* (Fabinyi, Evans and Foale, 2014, 6). The three authors explain very well, a couple lines further, how *practical struggles are always simultaneously struggles for “truth” and meaning—struggles that happen in imagination and representation at the same time as they are conducted in the material world*. So in the human/society/nature nexus of interactions, the roles of narratives and politics of the presentation of facts are investigated (Khan, 2013, 463). Nevertheless, one shortcut of post-structural approach is that it might de-emphasize the material elements/factors of the fieldwork. That is why, to balance this shortcoming, a broader context and history, in which the ethnographic study unfolds, has been developed to better ground the analysis (see chapter 1, §B).

A useful concept to help us think through the ways that the environment is not only a biophysical reality, but also a site of power, where *truths are made, circulated, and remade*, is **environmentality/green governmentality** (Rutherford, 2017, 1), inspired by Foucault’s concept of governmentality. According to Fletcher, governmentality is defined as a *‘general strategy of governing human action’ in the realm of the environment* (Fletcher, 2010, 171-172 in Khan, 2013, 467). Because Caro (Pio Pio) and Edo’s project are self-initiated conservation actions (Shanee, 2013, 413) locally run/private initiative emerging from individuals, it is quite interesting to approach their *‘agency-agenda-discourse’ nexus* in promoting certain environmental projects and discourses (Khan, 2013, 463). A second concept mobilized is “**radical hope** that *would entail active searching and capacity to imagine good lives in radically different circumstances*” (Lahikainen, 2018, 61).

C polyfaces projects as economic and socio-ecological laboratories

“We grew up before these things were starting to be really publicly discussed so we went to the different processes, like business as usual and things degrading, the great unravelling where we are now. But at the same time there is this birth of transformation...” (Caro’s interview, 20 April 2019).

The script is not written, although the patterns and mechanisms of business as usual are well grounded, space is being created and alternatives proposed to this (rather destructive) repetition schemes. Those alternatives, I have had the opportunity to be momentarily witness of and participate in, concretizes themselves as open-air social and ecological laboratories, without forgetting their pivotal economical aspect aiming for more autonomy.

I am prompt to see those projects as embodying radical hopes in acts. But before starting to dive into more details about each project in the next paragraphs, I first want to outline some similarities which stand out. First both projects are quite recent, starting around 2013. They are bottom up citizen initiatives resulting of progressive, personal and sometimes unexpected processes but nevertheless, they are not state or corporate nested. Both projects are still *in process* or in *research and development phase* regarding Edo’s project. Caro and Edo are actually friends and allies in the sense that they know each-other from the beginning, share the same vision about agricultural regeneration. Their projects are distinct but intertwined “sister projects” as Caro stated. Both protagonists have personal history rooted in Chile but previous significant life experience abroad Chile. Edo has grown and lived in Amsterdam, in the Netherlands because his father fled the dictatorship while Caro was growing in the US but her father also comes from Chile as the land on which Pio Pio is situated. They thus both have cultural capital embedded in their formal/self-learning education, international network, previous and current life experience as well as family abroad Chile. A very important aspect of their initiatives is that there are not unidimensional, but intentionally poly-faces projects (I will develop this aspect more in depth further in this work). Both aspire to contribute to society and a higher cause through different means but it mainly encompasses eco-literacy, soil and ecosystem regeneration (native forest), circular economy through peri-urban agroecology for

Caro, plant-based cosmetic and local cooperative for Edo. Both work on bringing forward and advancing a culture of care toward nature/the environment. They also adopt a more holistic view on human-non human beings and the broader nature surrounding them. They want to (re)create a culture a care for the environment, our health if not necessarily *by inventing new structures and trying to change old ones for their particular purposes* (Lahikainen, 2018, 127), but notably by translating theory/concepts about reforestation, regenerative agriculture, agroecology into practice, it-is-to-say into the realm of grounded reality through an error and trial process. This process might be seen as a certain kind of practical knowledge creation, eventually (wishfully) spread/shared afterwards. Between ideal and pragmatism but at the core of their central motivation driving them is to evolve up to a point from where they could inspire other people to do the same regarding soil restoration/regenerative agriculture; in other words, being a living proof that credible alternatives exist and work. Edo told me when I joined him for the first weekend *“we need to lead by example, if our model works and is profitable, others will want to copy it, let’s them do that”* (Edo’s saying, fieldnotes, 5 April 2019). When I asked Caro what does it encompass for her to inspire people/ be a model, she expresses herself in those words *“it is the deepest thing I know about this project (...) I wanted to be a good example (...) and how something is naturally not perfect (...) I mean with all the mistakes and errors along the way. I hopefully offer not only inspiration but wisdom how to make things more efficient for you and the future, or not to get into certain issues that are just not necessary for you to be in. You can learn from me and my mistakes”* (Caro’s interview, 20 April 2019)

1) farming and framing the agroecological revolution-Pio Pio



(picture's caption-the building is an outdoor sink-unit connected behind to the hydrological bio-filter basin, on the left side are to be found seeds 'bank and garden to enhance biodiversity and genetic diversity adapted to the soil and local conditions, as on the back side is the home-made yurt for meetings and workshops)

"El terreno me eligió a mi" [the land found me] (Caro, Fieldnotes, 17 April 2019)

I arrived at Pio Pio the first of April in synchronization with another girl from France, Raphaele. She was taking a year gap before continuing her studies (probably resource and land management). Caro, the heart and soul of Pio Pio, welcomed us with an immense smile and warmly started explaining us the idea and project of Pio Pio: *"Compartimos y aprendemos juntos, cada uno es estudiante y profesor"* [We share and learn together, everyone is student and teacher] (Fieldnotes, 1 April 2019). I was amazed, she was rephrasing the famous Brazilian pedagogue Paulo Freire *No one educates anyone - no one educates himself -, men educate one another through the mediation of the world* although unintentionally, I later asked her out of curiosity. She continued *"we try to come back to ecosystems, without waste, cyclical, and in*

Pio Pio everyone is more than welcomed, all religions, classes, colors, thoughts but one needs to respect his fellow men and women” [originally in Spanish] (fieldnotes, 1 April 2019). Equally, she explained us that the goal of Pio Pio was to “*encourage environmental education, conscientization of nature, healthy food, and regenerative business as well as circular economy*” [originally in Spanish] (Carol, fieldnotes, 1 April 2019). After the short but insightful and promising introduction, she introduced us to another volunteer, Sven. He was in his second-year worldwide travel as a digital nomad coming originally from the Netherlands. When I asked him what drove him to come here, he responded “*to learn how to live in nature*” (Fieldnotes, 1 April 2019), and incidentally because he was running out of money (Fieldnotes, 3 April 2019). The team for the weeks to come was completed once Aurianne and Renaud (a couple from Belgium) will join us, a week later, accompanied by a German guy, Kilian.

Last but not least was Andres, Pio Pio’s agronomist. Andres is quite a personality. Always smiling, very knowledgeable but humble and curious. He currently works in parallel three different projects. Pio Pio, Edo’s project of native forest regeneration and he also runs his own company Milpa, doing agroecological project, design and environmental education (Milpa is a reference to native crop-growing system from central America). Talking about his company a couple days later he will say :“*People have been asking quality green spaces in urban centers for almost ten years. I create them, but there are not only beautiful, they are spaces where environmental education and organic green production can take place* [originally from Spanish] (Andres, fieldnotes, 8 April 2019). I must honestly say I appreciated his open-mindedness, meaning process-making and (at least it made a lot of sense to me) minimalist lifestyle as he told me that, back in the time, young Chilean used to migrate to the USA (“*hacerse la America*”) and nowadays Australia was the new destination (“*hacerse la Australia*”) but was himself not interested as he felt pretty privileged to have been born here in central Chile. (...). *I feel I am useful here. I feel I have a purpose. I feel comfortable. I could have worked in a big company making a lot of money but I don’t want my time to be bought and it’s meaningless. I have everything, good friends, interesting projects. My basic needs are covered. I eat good food, do interesting projects. I gain a lot of freedom I can dedicate myself to what I think it’s important. I work a lot, make little money and I am really happy about that.* (Andres, fieldnotes, 7 April 2019).

After meeting with Andres, I started exploring the place. Pio Pio is quite an interesting place to discover and experience. The main shared space is the common kitchen room made of adobe, where a big French window is embedded. Inside, everything is made of local wood or mud which creates a very particular and warm atmosphere. Furthermore, the shelves are filled with agroecological books, philosophy one as well as three huge wooden carved turtles (from Rapanoui Island/Eastern Island) used to store fruits and vegetables. Outside, on both sides of the glass door, are designed three-dimensional mud sculptures on the wall. On the right side of it, a hummingbird, symbol of Pio Pio is represented. It is also in reference of the countless birds flying and pollinating the young eucalyptus flowers next to the building. On the left side, a sculpted in three dimensions flower exposes the four elements, phases of the moon and values of Pio Pio, the all painted. If I continue walking ten meters on the left, I would come to encounter the “incubator” for young plants and Andres’ cactuses, dry species collection which have amazing potential according to Andres: “*if you can make a corridor with these plants, it stops wildfire because it keeps water*”(Andres, Fieldnotes, 4 April 2019). Behind that, can be found on a trail, a huge compost pile “*which is alive, breath, regenerate itself, create heat and finally die* [originally in Spanish] (Andres, fieldnotes, 2 April 2019), next to a large whole, foundation for a future pond and water retention basin. If I come back to the kitchen but take right this time and go down, I will find on my left the open-air seed bank made of dozens of plants colors and shapes.” *It is not cultivated for eating or sell it but what we want is the most diversity possible, we keep and save the seeds that has then adapted to this particular soil and have gene/genetic diversity*” [originally in Spanish] (Andres, Fieldnotes, 15 April 2019). The garden is surrounded by small wooden fences weaved with branches. On the opposite side of the small curvy pathway, are first the open air sink and the adjoining bio-philter water basin below. It does look more like a pond with various species of reeds around it, the all quite green, rather than wastewater treatment lagoon. I started to better understand Caro when she spoke about recreating natural and virtuous ecological cycles, be actively part of nature surrounding us without having a detrimental effect.

Next to me stands out a huge white mongolian type yurt. On its left are situated the three plus one bed in becoming. They are all thriving with life and tons of edible veggies carving out a place for themselves in this small scale jungle. Kales, tomatoes (we will later harvest 32 kilos in 30 minutes), beans, zucchinis, peppers, a all variety of organic vegetables... I will come to see vegetables and their seeds with a renewed view thanks to Andres “*it’s good to know the all*

stories of the seeds, who planted them, in which conditions [context], how to cook it. Sometimes the seeds are detached from that the material, the knowledge, I mean the culture. It is important not to separate the seed from its culture” (Andres, fieldnotes, 7 April 2019). One quite physical activity that was awaiting us in that area was the fencing of the garden but It was without counting on the huge piece of concrete we found in the subsoil. Even five coordinated persons were incapable of making it move from an inch. That I why we needed to reduce it into pieces by hammering it. By the gardening space, was the yurt we used for Monday morning meetings, or any more organized workshop. A big blackboard was laid down in the back of the room, with the weekly schedule of activities. It was a quite enjoyable place, because of the wooden floor and structure, its good aeration/freshness and a lot of room to meet or meditate.

From that yurt looking down at the land, one could see on the left side of the lower part of the plateau two dry toilets as well as two solar showers connected to another bio-philter water basin. On the left side is, next to a small plot of native trees that have been reintroduced, an unconventional wooden house. We were having fun, joking about its similarity to Wisley’s house in Harry Potter. Actually the resemblance was striking. In that building were stored the multiple garden materials. Behind it was the camping site in the shadow of very tall eucalyptus, adjacent to an open-fire place. The floor was composed of a (comfortable) thick layer of chips cut down from the previous trees to create biomass and fertilize the soil. Living surrounded by centenarian eucalyptus was quite an experience to go through in my small tent, for the smell of the leaves, the sound of the wind in their foliage but also just their imposing and magnificent presence, although eucalyptus trees are seen as biodiversity killers, impacting negatively other species and ecosystems notably but not exclusively because they extensive needs in water.

Once the camping site is left behind my back, another space is dedicated to a big home-made oven (it must measure around three meters long for one and half meters high). Its base is done with stacked stones while the upper-part is made of mud taking the shape of a dome. We did, on several occasions, prepare pizzas, bread and did some jarring of tomato sauce which is always quite folkloric. Finally, next to the oven was the place attributed to the second compost. From there, at a 50 meters distance, Caro’s house was situated. We used to gather at her place at night to watch documentaries like “*Plantar Pobreza*” [Planting poverty] on Chilean native forest destruction or “*Syntropic Forest*” by Ernst Gosh in Brazil.

We soon started to work on various tasks. Amongst them were compost maintaining. The composts are crucial to organic farming. Pio Pio has got two of them at different states of decomposition. There is an entire science field behind it and Andres introduced us to it. I for example learn that the temperature inside the core attains on average 72 C°. We had to turn them over and humidified them so that they can decompose properly. Apart from compost related work and soil lessons, we did a lot of eucalyptus branches chopping to create biomass. We also did some harvesting among which 32 impressive tomatoes kilos yield that we prepared for conservation in glass jars. But mainly more physical work was at stake, principally digging. Indeed, we have spent almost two weeks preparing trenches for an underground electrical system installation, included in the package were also the trenches for the garden fences. To our surprise when we were excavating mud, we found a huge piece of concrete as previously said. The five of us were unable to make it move, so we started, by hand, to destroy it piece by piece. Useless to say that the work was demanding, especially since the ground was as hard as concrete and the concrete piece as heavy as a truck, however it was gratifying to see us advancing. Finally, we also did some bed-preparation and maintenance, fencing and movie night watching and discussing together really good documentaries

The activities we did in Pio Pio were quite varied which made me think of the design of the project itself, articulated as a poly-faces initiative, *a sort of organism with its different components* (Caro's interview, 20 April 2019). I mentioned earlier in this work that as Caro as Edo depict their project intentionally as multi-shapes, poly-faces alternatives, which is no coincidence. Of course, it encompasses different things for one and for the other. For Caro it also has to do with a continuous evolution process. *"First it was a social project [a cultural center] then an educative center on sustainability and finally we added the production part to get more autonomy. But Andres vision in the long term is to regenerate the soils and the native forest [initially in Spanish]* (Caro, fieldnotes, 16 April 2019). She told me that, it is with time that clarity came about the project, before she was doing it but only with a vague idea. Today her project would take three different, although distinct but complementary shapes. It would encompass Pio Pio as a foundation (legal entity of being a non-profit), Pio Pio as circular business (legal entity of being a business) and finally as a community (which is actually an informal network of friends and volunteers, not sanctioned legally). Each part would have a different focus and function. The foundation would be dedicated to teaching kids *how they can*

start to grow and have their own garden, to save seeds, recuperate ecosystems. Basically, eco-literacy and also emotional intelligence (Caro's interview, 20 April 2019). In the long-term it would imply taking this specific training into more formal schools but also welcome people and students on the spot, coming for a tour or to stay longer. There is a project for an agricultural technical institute. Regarding the business, it concerns local food production aimed at being profitable. Two reasons are advanced to justify this lucrative aspect, one is to tend toward autonomy while the other is based on a matter of sense regarding all the energy invested, it ought to be a minimum lucrative. This organic production would ideally channel capital, which in turn could be transferred to other sister projects or regeneration projects according to Caro. The urban farm would produce food for restaurants and local neighbors so that they can access fresh food without travelling too far and by doing so reduce the carbon emission. It would be an organic, bio-intensive kind of farming using proper rotation. Nevertheless, it will take some time as admitted Caro, *like a couple years to develop what makes sense for this place, which way we would rotate the crops, how long is it gonna take, what elements, minerals, nutrients for the soil...to keep everything healthy* (Caro's interview, 20 April 2019). Everything to say that it is still in a process of making stage, although currently in an advanced stage. The short-term priorities for her would be to make all the basic infrastructure functioning efficiently, take down the last eucalyptus trees and woodchip them, remove the invasive plants so the regeneration of the native forest can continue.

Regenerative agriculture and ecosystem restoration were very much present at Pio Pio, be it in our daily life, or close environment through which we moved ourselves and even regularly in our discussions. The society for ecological restoration has defined ecological restoration involving humans as *intentional action in assisting the recovery of an ecosystem that has been degraded, damaged or destroyed*' (Society for Ecological Restoration, 2004, 4 in Weng, 2015, 134). Well this is clearly the state of the native forest as Andres told us *"the native forest here in central Chile is one of the most damaged in the world. There is less than 20 % left and it is also a place with great biodiversity. It is the place where per dollar invested, you can protect the more native species. It is also important for the water aspect"* (Andres, fieldnotes, 7 April 2019). The best way to regenerate the soil, the more effective but also the more cost-saving, is through organic farming explained us Andres (Fieldnotes, 16 April 2019). But the challenge is considerable. Indeed, there are at least three obstacles to native forest regeneration admitted the agronomist. *First is that the new native plants simply dry during hot summer, the second is the*

invasion of exotic plants that grow faster and finally, animals like rats, rabbits, cattle introduced by human (thus also seen as a kind of invasive species, initially alien to Chilean native forest ecosystems). So the first step in the ecological successions is to remove the invasive plants and leave the new native plants occupy the land again. I felt really blessed to have met Andres. He seemed to know quite a lot and thank to him, I discovered my second fieldwork as I accompanied him a weekend to Edo's place and its reforestation project.

2) reforestation of native forest-Edo's project



Picture's caption: On the left side of this Edo's property picture, the eucalyptus plantation has been partially clear-cuts two years ago and transformed into chips for biomass to regenerate the soil, while the right side of the picture is dedicated to a space where two future greenhouses for native trees breeding will be located, as a local-organic garden and a specific space for veggies such as "Asian delicatessen" for the Korean market of Santiago.

I first met Edo the weekend of the 5, 6 and 7th April. I was amazed by his project. I decided right away, I would come back and try to better understand his action. My second journey started with the unexpected adventure with the two neighbors (the night of the 20 April when I lost myself in the native forest), already recounted earlier in this work. Today we went to take the dogs for a walk to the Rio Rappel [an estuary] with Sven and Edo. *Wayra* and *Machi* are the two Belgian Malinois we are accompanying to the river. I took interest in their names, Edo told me that *Wayra* stands for *wind* in Quechua while *Machi* means *Shaman* in Mapuche. He will explain me later a little bit more about the history of the region “*Here were the picunche, the northern mapuche from the north, we are right at the intersection, at the frontier between the Inca empire and the Mapuches. This all era from San Antonio to Melipilla, to Santiago. This was the natural border but there were a lot of exchanges*” (Edo’s interview, 28 April 2019). When I asked him about his mapuche influences (his has got mapuche friends but also a few artifacts in his house) he responded: *I think it has to do with respecting those who were here before us, as the true land-stewards. I mean their name Mapuche means people of the earth. And Chile has a very long history as an agricultural country, but also as a extractivistic country, neo liberalism was implemented for the first time here in Chile. (...) And the Mapuche, they are people that were never invaded by the Spaniards, they keep protecting their land and their ecosystems* (Edo’s interview, 28 April 2019).

We arrive at the extremity of his property, a flat, swampy land followed by a pebble shore, we started playing with the dogs, contemplating the countless wild birds and lovely light of the ending day. “*Remember the three levels/plateaux I told you about? here is the lowest one. I want to put fences [to protect it from wandering cattle] and recreate a wetland, you know because the cows eat everything. We are in a biological corridor right now, by itself the Rappel River estuary is a very big biological corridor for the central Chilean ecosystem* (Edo’s interview, 28 April 2019). I had never seen so fish-bearing waters like that before, my gaze was attracted by dozens of their jumps. At some point we saw a small fishing boat and two men paddling. Edo asked me smiling “*do you want to eat fish tonight?*”. I was of course enthusiastic. We called the two fishermen by raising our arms and moving them in big circular motions, and they came to our direction. Once the two kilos of fish are in their bag, after a fifteen minutes-talk with the fishermen about their fishing sprinkled with home-made local chicha, we came back to the houses and open-fire place.



(Sven's picture near Rio Rappel when we met the fishermen who proposed us some home-made chicha beverage)

The two cabins on stilts (in case of flooding) stand on the edge of the clearing. Edo's property is 4 hectares and half going from Rio Rappel to the eucalyptus plantation that has been partially cut down. As he made distinctively clear, eucalyptus plantations are neither forest nor native but are monoculture plantations. *They acidify the soil, take away biodiversity, very high hazards of droughts and fire burning. Overall just a bad bad bad decision to create these plantations here. But you know, all the native forests here have biodiversity, water retention, healthy soils, very high nutrients, very high biodiversity, all of those things* (Edo's interview 2019). While he was preparing the fishes, I started looking around to gather firewood with my flashlight. It was already cold and dark. A couple minutes later, the delicious smoked fishes were ready as was I to interview and connect the dots with what I experienced during the last days of working with

Edo. The bellies full, encouraged by the chicha and the unbelievable stars above us, we started the discussion around the crackling fire.

The truth is that I can still not believe what we have done (Edo, Fieldnotes, 26 April 2019). I have always been thinking about doing a family farm, a small farm. It's really amazing how we have started from nothing and it has grown, into a living and breathing place, soon a productive one, that's is gonna produce eco-communal services for the community around. “(Edo, Fieldnotes, 25 April 2019). *But I don't mind, I am enjoying the process [smile].*

They thus started with a small-scale farm project to work the land seven years ago. They were the first foreigners to enter the valley. Edo's land is situated at the extremity of it, so in order to get there, he used to open seven gates before to get to his place. The neighbors have stayed for a time at a distance but from the moment He started to work the land and forest while building his cabins, everything started to change. He added smiling *now they talk about “us” haha* (Edo, Fieldnotes, 26 April 2019). Edo and Vicke (his partner) also thought about creating a community but once they arrived, they quickly revised their plans because they were changing the all game in the valley. *There was already a community, we stepped back. we wanted to work for them and with them.*” (Edo, Fieldnotes, 25 April 2019). *“The first three months I was here in a tent, Vicke was in Amsterdam and she was working for university(...)”* *You can do amazing things when you have a purpose and constancy in the work at first when we came, we didn't have all this project in mind, just the idea of a family farm and working the land. Now we are thinking on a totally different scale, different level.* Indeed, from a farm the idea of a poly-faces project flourished.

In order to do that, Edo went to *El Mansano*, a Chilean school in transition where one can learn to grow organic crops, learn more about food systems theory and practice as well as permaculture. *But I, maybe it's my Dutch mindset, but I really started to think, okay but if you have an amount of square meters that gives you an amount of nutrients based on the basic food that we eat, then what happens if per square meters you have food that has very high nutritional value? Then all of a sudden, the square meter of food starts to get a different monetary value.* (Edo's interview 28 April 2019).

That is when the idea slowly but surely created its space. *That's when I started to think, okay, if the biggest problem we have here in Chile, is the loss of the native forest, then what we should do is try to find different food and food components from this native forest, reproduce it in an agroforestry systems, give value to the forest, give better nutrition to the people that work the land and create a better agricultural economy, instead of taking away the native forest, is actually reproducing the native forest.* (Edo's interview, 28 April 2019).

As with Caro's project, the poly-faces-projects encompasses different complementary dimensions, and is the result of a long, sometimes uncertain process. It comprises for Edo a company (plant-based cosmetic corporation called Mas Newen), a local cooperative (focused, in the valley, on farming organic/local food and exchanges of services), a foundation (called Kodkod dedicated to the protection of the native forest), the all articulated around grounded regeneration of the Chilean native forest. I will dive into more details in every aspect of them all. But in the short-term period, Edo tells me that he has got two priorities. The first concerns the agricultural part of his project. He would like to get the corporation working with the neighbors and finishing the processing of the plants in the garden. While his next step regarding the company (Mas Newen) is to start working with Chilean laboratories to develop natural extracts and cosmetics from the local native forest.

Edo is stirring the coals with a wooden stick, focused on the flames, as he continues *"you know, I was born and raised as an hippie, but now I run several companies. I used to be like you, you know, against corporation but I have come to understand that if you really want to change something you need to get yourself the means. I want society to change as a all, as a system, that is become to start by regeneration, creating life, not extracting and destroying for self-interest and egocentrism"* (Edo, Fieldnotes, 26 April 2019). *So our idea is actually to, from our company Mas Newen, revalue, create value, create monetary power and as a company decide to invest into the soils, in more forest* (Edo's interview, 28 April 2019).

Three and half year ago, Edo and Vicke started Mas Newen, the plant-based cosmetic company (Edo fieldnotes, 26 April 2019). Now they have two of them, one in Chile that sells their products in South America and a second one in Amsterdam which distributes them in Belgium, the Netherlands, Spain and Germany. They do not do the same things but complement each other while bringing the advantage of having a research and development program as a plant-

base cosmetic company. Through the course of time plans have changed. Indeed, at the first place, Vick and Edo wanted to get into superfoods but they met a friend and got involved in cosmetic. Now it is the other way around, they are coming back to superfoods. *Once you have the production, all the different steps (production process), laboratory, you can also extract oil in a second time and finally more precise chemical component in a third time. But first get the farm going and only after, step by step, the super food (extract and make powder).* (Edo, Fieldnotes, 25 April 2019). So the idea is clearly expressed to start processing and extracting components from the native forest, that will be put straight back into the creation of more forest. Edo seemed to insist on the fact that, unlike regular company that would take the money into their pockets, or bring a fat bonus for their CEOs, He wants *to put it into our foundation. The foundation is for the regeneration of the central Chilean ecosystems.* (Edo's interview 28 April 2019).

Equally, his poly-faces project seems intrinsically linked with a concern for circular economy. Actually, both are articulated since the beginning. For example, their bottles are recycled PET bottles, as *for the packaging from our seaweeds, it's 100% biodegradable* (Edo's interview, 28 April 2019). The production comes thus from a circular production, which means that they try to close the processing cycles with the idea of a closed-loop chains in mind. Regarding the regeneration of the native forest project, it is even more explicit how circularity is embedded as Edo tells me that *the agroforestry, you know it gives us, water retention, biodiversity, soil, carbon sequestering, it brings down the temperature, [it regulates temperature] it creates oxygen, that's like, its eco-systemic services but then at the same time, you know each plant, each tree, will give us seeds, fruits, leaves and this leaves we can change to essential oil, into plant-based oil, fatty acids you know; omega 3, omega 6, omega 7, 9. But we can also get powder out of the fruits, we can get once we take fruits from the seeds, we can take oil from the seeds. So it starts to become circular in the way that there is no waste. So it's closed loop* (Edo's interview, 28 April 2019). I would summarize him as this: what comes from the environment, goes back to it.

So native forest regeneration, notably through the foundation, dedicated to spreading the idea, the model of native forest restoration and protection, is pivotal in Edo's project. As He told me *'I think we as society are on a losing end. But I believe that we can still do something, have a positive impact! If we have the possibility, we have to do it* (Edo fieldnotes, 25 april 2019)

which directly resonates with the ecological restoration literature which stand that humans in the process of restoring ecosystems endorse a positive role in assisting nature's recovery (Higgs 2003; Jordan 2003; Jordan and Lubrick 2011 in Weng, 2015, 134). But this positive role also seems to be conjugated with a change in subjectivities and normative tone as Edo continued *"we need to start to create a regenerative culture: we really need to start thinking about ourselves as caretaker. Take care of the environment, food we eat, the regeneration of soil, forest"* (Edo, Fieldnotes, 24 April 2019). Around the topic of native forest regeneration, although fragmentally, I could through the time spent with Edo, better outline the contours of the project through his discourses. It seems to be articulated around three main issues, namely heightened awareness and concern for biodiversity, a will to scale out the project to tend toward large-scale ecosystem restoration (biodiversity corridors) and finally, a more practical and down to earth approach attained through the mobility of its project.

Regarding the biodiversity element, Edo told me that he has *a list of 37 native species we want to plant. From grass up to the top, trees. We are gonna have soon 2 greenhouses running. All of them have medicinal properties, sometimes several"* (Edo, Fieldnotes, 25 April 2019). He has been collecting them for the last two years.

Edo's dream is to scale out his project and certain processes to increase his impact on the land. So now he has been doing that for six or seven years and has come to a point where he would like to continue but at the same time be more effective. Explaining me that *"like here we have a small piece of land that we're managing in a bigger piece, like a whole small ecosystem, 1600 hectares. It would be a dream actually, to be able to evolve, to go to 400 or 600 hectares.* (Edo's interview, 28 April 2019). He sees himself and the project as being part of a broader society regenerative movement, which potentially could have a great positive impact, the reason why he wants to scale up to large scale ecosystem restoration, (re)creating biodiversity corridors. *I think, if not only us, but there comes this whole regenerative movement, as a way of culture, of cultivating you know our society, our lands, our communities, it all becomes regenerative. I believe that in Central Chile we can create a green wall, that will stop the desertification of Northern Chile, and will stop the massive fires in Southern Chile. And that was always my belief. Now I'm reading studies from the universities here in Chile, we now know that* (Edo's interview, 28 April 2019).

But to achieve that large-scale impact, mobility is likely to be at the core of the strategy. For that, he thought about making the whole processing plant in containers so that they can move from one place to another, arrive already set up and start working. Adding that now that they have acquired some experience, it is the right time to make wise use of it, saying *because now we took all these years to get to a system. Now we have the system almost perfectly running. It would be an amazing thing to just copy the model, copy the blueprint, and go to more valleys and more places in central Chile and eventually create like a green corridor* (Edo's interview, 28 April 2019).

Mindful of the past, yet conscious of alternative futures (Ganz, 2003, 3), I could not better describe Edo's project, beside the ecological initiative, to (re)create the local cooperative that used to be here in the valley. This is the social, history grounded and political side of its poly-faces project as I like to see it. No so long ago, an agricultural cooperative was bringing together folks in the valley, farming exchanges as well as other services were commonplace. Today, tells me Edo, there are maybe 20 people really living permanently (mainly families and older people) but then during the weekends it grows to like 40 people (Edo's interview, 28 April 2019). The cooperative brutally ended up with Pinochet overthrow and murder of the progressive and ahead of his time, the president Salvador Allende in 1973. And Edo added *you know like you said, it makes a lot of sense to go back into this all agricultural cooperative because in this there is a lot of knowledge. there is a lot of history and there are a lot of infrastructure left in the valley.* (Edo's interview, 28 April 2019). It also resonates I can feel with his personal and family history because his father fled to The Netherlands back in the time. He also shared his acknowledgment of the previous cooperators and current neighbors in the valley. *Also like campesinos, I've learned a lot of things here from our neighbors, and they don't know how to read or write. But they absolutely know how to move in this ecosystem here, what the dos and don'ts are. There's wisdom there.* (Edo's interview, 28 April 2019). When I asked him how participation in this cooperative might take place and how it will work, he told me: *I think there are different ways to become part of the cooperative. I think you could be giving services to the cooperative, maybe with tractors or maybe with different machines or maybe with hand picking. heumm i think you can get into the cooperative if you work your own land if you have land. Put your land into the cooperative for the produce that you produce. I think that you could rent your land to the cooperative if you don't want to work it yourself, then we can work it for you. And i think there can be different types of models, so that you can have a return. Either it be the produce or a*

part of the produce, or a part of the % of the sales of the produce, or both together. I think there are a lot of interesting ways that we could have a look at with the cooperative. (Edo's interview, 28 April 2019). But before everything, he wants to see what the neighbors' interests in the question might be and then together around the table, start envisioning possibilities.

D from inspiration to tactics and strategies

It was like this place chose me, I did not choose this place. I was gonna study wine and sell wine to China from Chile (...), it would have been pretty successful in that sense [making money]. And I was at the right place at the right time. But this was this huge cosmic shift (Caro's interview, 20 April 2019).

Inspiration is pivotal for Caro and Edo. It endorses many shapes and declines itself as purveyor of creativity and information. Drawing from a wide range of different supports, thoughts and persons such as documentaries, books or thinkers/writers/philosophers, ecological practitioners, other projects, family bonds or Nature itself. They help them to create sense and hope, gather crucial resources to carve their argumentation or simply made a significant impression on them. I tried to be aware of such signs, be it a book often consulted on the table, a documentary we have together seen and discussed it through, or authors they were constantly referring to or pointing me towards. I could, to some extent, cartography and articulate (although it remains subjective and not exhaustive) some of their motivation and inspiration sources.

When I asked Caro where the idea of Pio Pio comes from and how her project came progressively to life, she responded by referring to five main sources of inspiration. First, she told me that, everything that comes out of this project is from a lot of different pieces of advice or ideas, criticisms of other people in other places. In that sense Pio Pio represents the embodied idea, as She expresses it, of the intent *to have a world that is self-aware of its diversity, but yet understand that is all connected, interconnected at the same time* (Caro's interview, 20 April 2019). Equally and maybe at the source of such open-mindedness are the many travels around the world that she has done. Being able to see closer *all that diversity of culture and people,*

thinking, ways of being, different smells, different tastes. And just the ability for people to exchange ideas, a symptom, a look, a lesson you know, that was most important for me with the project. (Caro's interview, 20 April 2019). The university of Vermont, as a teaching and learning institution, has had a big impact on her, mainly because *it's a very green university, very ecological super ahead of their time as well, socially just* (Caro's interview, 20 April 2019). And then, following her words, lots of inspiration from Pio Pio can be attributed to going to Burning man. A festival in the Nevada desert that just blew her mind (...) *because it showed you like there not so much limitation. Your Mind limits you quite a bit but look what happens if you ignore that limitation and you just go further and further, look at what you can create. And that for me was, a physical proof, tangible proof that, you can go outside of the box. And that it is possible. People have the passion for it. And for me that was pretty confirming or affirming, it gave me courage.* (Caro's interview, 20 April 2019). She finished by a personal last reason but nevertheless of the utmost importance for her. She explained me that, the all project of Pio Pio was dedicated to her father who passed away. Recreating life and meaningful initiative on his land was her way to honor his person and ensure a continuity in his memory.

Through the next weeks spent and activities, a lot of other sources of inspiration gradually came up. The university of Vermont was not the only institution to inspire Caro. The Savery institute situated in Colorado and bringing forward the regenerative agriculture concept and movement on the international scene, was also a prominent example. As the *Bioneers* environmental justice conference in San Francisco where Joanna Macy (environmental activist, deep ecology and complex theory thinker but also Buddhist practitioner) gave a beautiful, heartbroken but still hopeful talk. As the great unravelling of ecosystems and extinction of species is occurring on a large scale and fast pace, the great turn toward life sustaining systems and societies has also begun. It was quite emotional to watch it with her. Regarding books, the *new alchemist* was of fundamental inspiration for her. *They are one of my ecological heroes, in fact they are part scientists, ecologists and half hippie, Marxists, poets and fighting for women's rights from the 70 in Massachusetts. They tried to create a place, like to be more auto-sufficient and do everything circular* [originally in Spanish] (Caro's interview, 20 April 2019). More down to earth concerning peri-urban agroecological practices, two books were constantly handed over, laying on the tables or read out loud: *The market gardener* by Jean-Martin Cortier and "*The urban farmer*" by Curtis Stone. Another book that was useful to craft Caro's argumentation was *the science of getting rich* by Wallace D. Wattles (insightful approach on framing according to

her). On societal and environmental issues *La batalla por el Paraiso* de Naomi Klein and the heterodox world-renowned Chilean economist Manfred Max-Neef were cited. Finally, we spend several nights, all gathered together to watch the documentary “Plantar Pobreza” [planting poverty]. The documentary was about the destruction of native Chilean forest for the benefit of large-scale monoculture plantation of eucalyptus, destroying in the way the indigenous and local populations. The interest of the documentary was first that it consisted in a well-documented account of the interactions between nature and neoliberalism in Chile (that was implemented first there), but also it was in Spanish without subtitle. As two of the volunteers did not manage Spanish well enough to follow the documentary, Caro paused after each sentence and translated it instantly. It was a marvelous opportunity to spark discussion on the subject as well as reflect on it.

Edo is also a great advocate of the documentary *Plantar Pobreza*. Another time, another place, a couple weeks after the collective viewing and discussion, he told me echoing Caro, *I have been showing it to people for years, it is excellent!* (Edo, fieldnotes 5 April 2019). As did he recognized Manfred Max-Neef, like Caro, as a genius. *What if a CEO reads Manfred Max-Neef and starts to change things* (Edo, 26 April 2019). For a moment, as the sentence was floating in the air and a pause was marked, I thought to myself wondering, wasn't he just talking about himself?

He has also accumulated an impressive amount of knowledge on various topics such as regenerative agriculture (set of technics and associated theory dedicated to increasing biodiversity, enriching degraded soils, improving watersheds and ecosystem services), Chilean history and the native forest through self-learning, watching/listening/reading and keeping interest up. It is the result of a gradual interest unfolding in a long-term process which started grossly 20 years ago when he started reading magazines about positive ecology news and projects. *I started to read and learn more about certain topics like economy and ecology, and ecology and philosophy (...). It was definitely a snowball effect, totally.* Nevertheless, a personal turn can be attributed to the witnessing of large-scale natural destruction during his south American travelling. *I think my travels in Brazil and the Amazon, for the first time, that I was seeing large scale deforestation (...) I started to really see what sort of destruction we are making as humanities. So I could see like the big scale of it. Yea and it hurts a lot actually to see it. It wasn't a pleasant thing. I think one of my main drivers is, maybe more than inspiration,*

is that I don't really like to see that sort of injustice to be done, to ourselves by ourselves, and sometimes I think that we don't know any better, so then I want to give solutions. (Edo's interview, 28 April 2019).

Then the idea of doing something started growing. After going to *el Mansano* as explained earlier, he started to learn more and as time goes by, changed his mind and project. From just farming for food, it became farming for ecosystem restoration, *farming for the creation of healthy and nutritive soils, so we can start to eat properly again* (Edo's interview, 28 April 2019). He will later learn from people like the renowned agronomist Jairo Restrepo. He is *the guy who taught Altieri, Altieri got quite famous as he works at Berkley but its Jairo that taught him. He is also a really high intellectual, I want to invite him here*" (Edo, fieldnotes, 24 April 2019). He is also in contact with the journalist and ecosystem regeneration advocate John D. Liu which made various excellent documentaries on ecosystem restoration, notably "Green gold". Edo likes documentaries. As a matter of fact, he recommended me various of them. First "Sacred cow" which is about the use of cattle to regenerate the soil where he got the famous sentence he would frequently use "*it's not the cow, it's the how*"; second "Poly-faces" on poly-faces farming and regenerative agriculture and finally, a short but insightful one "How the forest heal people" which approaches the many ways in which forests have a beneficial impact on human health. Equally in the field of regenerative agriculture and sounder land management, Darren J. Doherty is a prominent figure pointed out by Edo, notably in reason of a water planning system coming from Australia, the key-line system. Edo plans on implementing that technic with Quinoa crops, a plant that has been around in the region, according to Edo, for 400 years. Actually, there is a project nearby, 50 kilometers from Edo's place near Quelentaro, that inspires him quite a lot. It is the regenerative agricultural project of Tinajacura. Finally, there is Ernst Gosh, the swiss farmer and research that specialized in agro-forestry in Brazil and developed the concept *Syntropic forest* and a set of associated technics. He has achieved with his technic to cover large scale of land in Brazil, turning them from advanced degraded soils to poly-cultures and agro-forestry systems, creating incredible amount of biodiversity and yields. *He does 3 months internship. That really would be my dream. To go there with Vike, learn a lot and with internet lead the ship with the project here with some associates. Right now it's not possible, but I am dreaming of it*" (Edo, fieldnotes, 24 April 2019).

Finally, there is the feeling to be connected to nature as the feeling to belong to it. *When you walk in a pristine forest, tells me Edo, it's art, the light, colors, design, everything has its purpose, its function, stones, sand every living being in its ecosystem. It's has an impact on your brain, how your glandes work. Remember the video I've showed you yesterday Julien?* (Edo, 26 April 2019). It was the hereabove mentioned *how forest heal people* documentary. But it goes beyond the aesthetical or intellectual grasp of nature, even if it is part of it. It is in a sense, an ecological approach as a sensorial present experience (Abram, 2005, 180) that Edo describes me when he follows the "flow a nature" or he is "being in tune" with it. *You know here I get to put my hands in the soils, remove trees and replant them, I feel really part of it* (Edo, 24 April 2019). *Working on the land is for me one of the most gratifying thing I can do, very satisfying, fulfilling* [big smile] (Edo, 25 April 2019). He does value and acknowledge his bodily, sensorial ways of knowing (Abram, 2005, 180). As he recognizes the capacity of others to do so: *of all the people I have met, the one that really understand what it is to be part of nature, connected to it are* [pointing to his fingers] *1° fishermen, 2° hunters, 3° farmers, because they depend on it, they are living it* (Edo, 24 April 2019). I think his long experience of vipassana meditation practice (almost two decades as he started at 17) might probably influence its mediation and perception to/with nature. Interestingly, Andres shared the same kind of meditative state while being in nature, *"when I arrived here [in Pio Pio], there was no-one, I as alone here. It was like a deep meditation, like exactly if I was far from everything but in Nature"* (Andres, Fieldnotes, 16 April 2019).

To tactics and strategies

It's like a chess game, you make your move, you advance..." [smiling and demonstrating on table] (Edo, fieldnotes, 25 April 2019).

A **tactic** according to Downing et al. is a behavior enacted at the time of the encounter, while a **strategy** is usually premeditated, it is to say prior to any development encounter and more systematic (Perramond, 2007, 501). I will thus try to delineate (humbly) some *chain of tactics*

and strategies, as says Perramond, leading towards ecosystems regeneration goals in Pio Pio as in Edo's reforestation project. It is of course a non-exhaustive list. They encompass, the nature of decision making, the legal means as juridical leverage, money channeling, the art and gage of finding the right people, support and legitimacy and finally the way to critically frame.

Far from "*a spirit of shallowness occluding the enchantments of Nature in the dark shadows of the environment (...) treated as being little more than terrestrial infrastructure for global capital* (Luke, 1996, 4) (see inspiration part), both projects seem to enact and embody the change they want to see appearing; although there is well an extension of the commodification frontier of nature in Edo's case. But rather it might be a way to get themselves leverage for action, as He calls it, the means of action. *I was born and raised as a hippie, but now I run several companies. I used to be like you, you know, against corporation but I have come to understand that if you really want to change something you need to get yourself the means. I want society to change as a all, as a system, that is become to start regeneration, creating life, not extracting and destroying for self-interest and egocentrism*" (Edo, Fieldnotes, 26 April 2019). It is interesting to notice that both, Edo as Caro, see themselves as trying to change "the system", sometimes referred as the economy/society, or on a corporate level, from within. In words, they both translate that view with a vehicle metaphor. Caro told me "*I don't know, part of me thinks that the way out of this economic problem that we have, this distortion, is to use that same vehicle but sort of slightly twist it, so it kind of goes and it creates a all new different thing,...*" (Caro's interview, 20 April 2019), while Edo complemented a couple days later "*It's not the company that's bad in itself, it's a car. You can drive it well or do shitty things*" (Edo 26 April 2019) and to add "*we need to change the rules of the game, it's like a chess game, strategy matters, we can play the rules of the system against itself*" (Edo, fieldnotes, 6 April 2019).

In that sense Caro, Edo and Andres as actors maneuvering projects of ecosystem regeneration exercise a sort of green governmentability or environmentability. It is according to Fletcher *a general strategy of governing human action in the realm of the environment* (Fletcher, 2010, 171-172 in Khan, 2013, 467) that produces certain kind of rationalities of rule. Foucault suggests, regarding that production of rationalities, that "*power produces reality; it produces domains of objects and rituals of truth*" (Foucault, 1995, 194 in Rutherford, 2007, 2). In order to farm for ecosystems regeneration, framing is therefore crucially needed. Environmentality

under the guise of regenerative ecosystems rationalities highlights *forms of knowledge/power that open up particular grids of intelligibility while foreclosing others*. A good example would be found when Edo endorses “*the lens of science*” (Rutherford, 2007, 2) and “*economic value*” when highlighting the multiple ecosystem services that the native forest possesses and could potentially benefit humans in contrast with staying invisible or unknown. By representing environmental problems in a specific way, consequently seeing them through those lenses proposes a particular range of solutions for their amelioration (Rutherford, 2007, 2). It might be argued that, these kind of regenerative ecosystems rationalities (although manifold) applied as environmentality strategies, implies solutions that necessarily follow the discourse used to frame the problem (Rutherford, 2007, 2). Although it might be true, I think it ought to be relativized, in the sense that, for what I can tell, Edo does not only see nature through its potential beneficial output for human kind but attributes to the native forest intrinsic values to which he feels a connection with. Nevertheless, he seems to be crafting intentionally his arguments and discourses on regeneration of ecosystems around scientific arguments and economical extrinsic value of nature. By doing that, he makes himself understandable and accepted as credible to some specific people, with the hope that his experiment will inspire them or help changing their (destructive) mindsets/perspectives. *We should show [politicians, people with extractivism mindset and narrowed view on profit] them that if we reforest and we revalue, that we can create a very strong economy out of it, create lots of work and make a lot of money with it. Much more than with agricultural systems that they are using. And once they start to understand those sorts of figure and ideas, I think a lot of people that are now in the extractivist mindset, that are on the other side, who want to accumulate as much as possible... I think if you can show them that actually it's not that smart to do, and if they follow our ideas, they can become much richer, I think quite a few of them will follow us* (Edo's interview, 28 April 2019). I will develop further the question of argumentation in chapter three.

More down to earth, various strategies are used to carry out the projects. Often, they seem to result from a trial and error process. A quick refresher on the different types we will examine before starting: the nature of decision making, the legal means as juridical leverage, money channeling, the art of finding the right people, support and legitimacy and finally the way to critically frame.

Regarding the nature of decision making, it appears that it has evolved from a more participative co-creation process to a narrowing down of the decision-making roles attributed therefore to a couple of persons: Caro, Edo, their respective partners or even larger family sphere and Andres bridging the two projects. However, I might have only approached the surface and since I can only talk for the little I have been witnessed of, which is probably not even close to encompassing the full picture, I would prefer not extrapolate as to rush to hasty conclusions. From what they have shared with me, it seems to be a consequence of the previous experiences they have made. Apparently, they were brought, by the force of things, to take the lead. Again, differently but both Caro and Edo expressed similar feelings with related metaphors. *“I think it took me some time to take a leading role in what we are doing. In the beginning I was way too much... I wanted to co-create everything. And what we have learned is that co-creation is a very nice idea but it is very utopic. It means that if you do co-creation, everybody needs co-responsibility and most of the time it does not really happen”* (Edo’s interview, 28 April 2019). He previously told me *“I don’t believe in co-creation but in cooperation, co-participation, and when I asked why, he responded, “too many captains on the same ship”* (Edo, fieldnotes, 6 April 2019). *But I think our challenge is to always make bridges. That’s also why I always want to talk to all the institutions as much as I can. And that’s also why I want to talk to as many farmers as I can.* (Edo’s interview, 28 April 2019). Caro has been more struggling with setting herself priorities instead of doing everything at once. Apart from learning to focus on priorities she explained me the same tension (or duality in her term) between personal choices and more collective co-decision making: *“also it comes with a duality because if you open too much whatever ideas that comes to you, you lose your own voice a little bit. Maybe you weaken your ability to make decision because you are always, you know, too open. And then sometimes it’s, how they say that in Chile, too many cooks on the kitchen* (Caro interview, 20 April 2019).

Concerning the legal means as leverage. It comes first to the choice to opt for poly-faces projects concretized in different juridical entities, statuses and structures. For Pio Pio, there is the foundation (legal entity of being a non-profit) and the circular business (legal entity of being a business). For Edo there is the company (plant-based cosmetic corporation called Mas Newen), the local cooperative (focused, in the valley on farming organic/local food and exchanges of services) and the foundation (called Kodkod dedicated to the protection of the native forest). Caro explained me that a lot of people are going far away from the mainstream world and try to do everything without the help of the government or society in general. But to her, it seems

like a mistake because by doing that, you lose a tremendous tool. And She adds: *“everything that is set up is already set up. So look at the benefit that comes from those things not just the bad part. We can use this beneficial aspect and we can really change the system”*(Caro interview, 20 April 2019). *We can use it first to legalize businesses and we can second make a network and get involved and third get people coming, trust us, open our doors so that they can see the other opportunities* (Caro interview, 20 April 2019). Using legal means is also a way for her to anticipate future probable change that might threaten the agricultural project. As she told me *“today the land is still an agricultural zone but we have to protect it against urbanization and the rise of taxes [gentrification]* (Caro, Fieldnotes, 8 April 2019), because she believes that in the coming years politicians and bureaucrats *“are gonna change a lot what you can legally do or not, so before those changes I want to submit a project so that they cannot change, once the project approved, your use of the soil which is sealed. If there is a change in residential register, you cannot legally do anything related to agriculture, or non-profit or who knows”* (Caro interview, 20 April 2019). She also told me that Edo has transferred the headquarters of his foundation (the one dedicated to protecting the native forest), from Chile to the Netherlands to get more financial support (Caro’s interview, 20 April 2019). It goes without saying that what applies regarding the juridical structure of the poly-faces project for Caro works for Edo. For Edo, there is also this aspect of transnational legal architecture for his companies (complementing each-other) that increases his adaptation capacity. *We sort of follow the flow, (...) with Vike, not only here in Chile, but also in Holland, (...) so that we can move with the flow between everything when necessary.* (Edo’s interview, 28 April 2019).

Money channeling is for both projects an important aspect because mediating and delineating the circulation of capital towards their project (McClintock, 2015, 73) is a guarantee of continuity, scalability, credibility (*“the municipality won’t do anything for us, unless we start developing, they are gonna pay more attention”* tells me Edo) and also autonomy in order to not be dependent on government or other institutions delivering grants.

Mas Newen, Edo’s plant-based cosmetic company, is in that sense as interesting as it is paradoxical. On one hand Edo shares with me that money is not a personal driver at an individual level. *You know at the end, I am in this not because of I-tech biotechnology and Co, but because of simple stuff [true look, sincerity, pause in talking], autonomy, healthy food, well-being in general”* (Edo, Fieldnotes, 24 April 2019) and later to add *“I don’t mind about money,*

I mean myself. I would largely be satisfied with basic universal income. I could do my stuff. Money is really not an end rather a means. In our status of our company, it's called purpose-oriented company, it is not about giving money to shareholders, but one part is dedicated to regenerating soils for example, another part goes into the company itself and is reinvested..." (Edo Fieldnotes, 26 April 2019). On the other hand, He has set up several transnational companies which control "*all the processes of production, extraction, retail*" (Edo, Fieldnotes, 26 April 2019), based on a niche, literally exploding economical market of cosmetics which "*is one of the fastest growing market in the world, especially the ecological plant based one. It is expected a quadrupled growth in the next two or three years*" (Edo, Fieldnotes, 25 April 2019). I am personally quite reluctant to put a price on nature and extend the commodification frontier on previously non-commodified nature, even if I came to understand his argument of "getting yourself the means" to achieve considerable change. I still question Andres, the agronomist, about that matter "*but at the end of the day, we need to look at the total CO2 emissions of the various companies [otherwise it is just about greenwashing], and anyway who can afford a 25 euros bottle of shampoo?*" Then, to my utmost surprise, Andres answered with a big, happy and a knowing smile: "*He is Robin hood*". Seen from that perspective is a complete 180° reversal shift. Seeing economic income as a method to sustain and expand the main goal of native forest regeneration and considering the limited resources available to invest in the project, the regenerative project could still be somehow seen as based on eco-centric values (Shanee, 2013, 418). But more than that, it would bet on the consuming patterns of a privilege elite longing for social differentiation. Since consumption is not (only) a private activity but in fact intensely social and public (Lahikainen, 2018, 47-48), by buying, consuming and exhibiting those plant-based shampoos or super-foods, the new eco-purchasers will embody values, but also form their public persona and sense of self according to Lahikainen. Then, why not make use of it?

Following are the art and gage of finding the right people, support and legitimacy. On the field, Andres (creator of the agroecological company Milpa) as the official agronomist for both projects, is key actor. He is hired by Pio Pio but also by Edo to launch the garden and soon the greenhouses to grow native trees. Overall, he is a good friend of Caro. At the time when I was there, he used to spend one weekend or two every fifteen days at Edo's place, but was living more permanently at Pio Pio. He oversees and plans the gardens and vegetables production in both places. Caro told me that she was eager to learn from him and to me He seemed vital for Pio Pio. Equally, both projects welcome volunteers to work, mainly from WWOOFing (world-

wide opportunities on organic farms) and Work-away platform. Although we were six foreigners at Pio Pio during my fieldwork, Caro assured me that depending on the time of the year, there is an equal number of foreigners and Chilean coming. But what differentiates Edo and Caro is that they have different views on the volunteer system. Edo expressed more skepticism about the volunteers coming from Wwoofing organization, alias *a bunch of hippies on holidays that don't really work*, adding that he has had 70% bad experiences, 15% really good and 15% OK. While at Pio Pio, volunteers come from both spectrums, although I did work more (like six hours a day) at Pio Pio than at Edo's place where it was more flexible. It was more about flows than strict schedules. Regarding the connection and search for allies/support, Caro can count on some of her neighbors, some politicians, administrators and friends at the municipality, other people doing similar ecological projects but also through Andres and his multiple friends in the sector of agroecology because through the university he has a lot of contacts (Caro's interview, 20 April 2019) and also "*a lot of friends because of her dispersion*"(translated as her many travels).

While Edo, in his research and development phase, is looking for legitimacy and technical support, he can find some collaboration through universities. Coming from the Netherlands, He has notably chosen Utrecht University for a collaboration rather than Wageningen, which is still in an intensive monoculture paradigm like in the 70th, while Utrecht would be much more ahead regarding agroecology. But apart from the UU Science lab and pharmaceutical department, he told me, *we are talking with European Space Agency, and the Universidad de Santiago, through Andres Fidela and the Universidad Catholica de Valparaiso*. As previously mentioned, Edo is in contact with John De Liu, from the Ecosystem restoration camps. Finally, with a smile, he tells me that *the UN [United-Nations] is starting a ten-year program for regenerating biodiversity and regenerative agriculture is gonna be at the forefront. They are gonna release plenty of money and it's gonna be at the core stone*" (Edo, Fieldnotes, 24 April 2019). But he finished by saying that even if he believes that he does need those institutions, he expressed the will and need to stay the more independent as possible. *So I don't want to be dependent only if I get grants or if I get funding externally. Like I want to be able to do everything, maybe I do it a bit slower, but I we will be able to do everything ourselves, or at least with independent parties*.

As to how Caro and Edo critically framed their discourses and narratives on regeneration of ecosystems is something that left me staggered. Indeed, I was surprised by their strategic use of frames *activated to support their goals* (Ford Foundation and Atlantic Philanthropies, 2016, 5) and even more afterward, when I started to read literature on the subject. Their ability *to craft and deploy (...) collective stories* (Ford Foundation and Atlantic Philanthropies, 2016, 7) appealing to *narrative change* which is about *shifting paradigms and discourse over time* (Kohn & Dantas, 2016 in Ford Foundation and Atlantic Philanthropies, 2016, 8) was quite convincing. Before diving more in depth in the topic in the last chapter, I wish to leave the floor to Edo's words when he expresses the desire to create a regenerative culture, highlighting a change in subjectivities while advocacy for a narrative change: *"we really need to start thinking about ourselves as caretaker. Take care of the environment, food we eat, the regeneration of soil, forest"* (Edo, Fieldnotes, 24 April 2019).

Chapter 3: the power of framing new narratives on regeneration of ecosystems

In this chapter I will analyze the discursive narratives crafted around regenerative ecosystem practices taking place at Pio Pio and in Edo's project as I will intend to account for their role, strategy and ecological justification. I will try to bring forward two provisional answers regarding the research questions: A) *How do environmental practitioners in ecosystem regeneration in Chile frame their ecological restoration narratives and practices and to what ends?* B) *What values, beliefs, human/extra human beings/nature justifications sustain those narratives?*

Regarding the first question apprehending strategies, the means and the ends, ecosystem regenerative rationality, embedded in a broader environmentality dynamic, has lead Caro and Edo to critically frame their narratives as an instrument to initiate their projects of Chilean native forest regeneration. Eventually, it will also become a tool to delineate flows of capital.

What is emphasized, is how specific persons in particular contexts are *empowered to interpret Nature to society* (Luke, 1996, 1). Native forests can be seen in this paradigm as socio-political artifacts (Fabinyi, Evans and Foale, 2014, 3). The sclerophyll forest is made intelligible, visible and intrinsically valuable through their *discursive processes, and therefore can be used to legitimize* (Luke, 1996, 1) regenerative ecosystems projects.

For that purpose, it might be useful to come back to the concept of environmentality according to which the environment, more than hyper-complex metabolism, is also a site of power where *truths are made, circulated, and remade* (Rutherford, 2017, 1). Those fights for meaning, happen as much in the imaginaries and representations of the protagonists as in the material world (Fabinyi, Evans and Foale, 2014, 6). Mediated, those truths circulate through narratives (discourses) and frames (how these discourses are received/processed/interpreted and in turn expressed/crafted). Although part of way more complex social and cognitive interaction processes, those two concepts will hopefully highlight some key aspects. A narrative can be circumscribed as a *system of related stories that are articulated and refined over time to represent a central idea or belief* (Ford Foundation and Atlantic Philanthropies, 2016, 12) resulting of social and collective processes (Cortazzi, 2001, 384). It goes without saying that they inscribe themselves in situated contexts (historically, geographically and politically) that open up the possibilities to either articulating and foregrounding some stories while silencing and backgrounding others (Ford Foundation and Atlantic Philanthropies, 2016, 13). While people tend to view the world through different moral lenses and morally contrasting viewpoints (Feinberg and Willer, 2015, 2), it might be interesting to know more about those processes through which narratives get for example more adhesion or, on the contrary, the opposite reaction, of course possibly ranging to any degree of the spectrum. I will thus intend to draw on the insight of the cognitive linguist George Lakoff, who is working at the frontier between sociology, neurosciences and linguistic, to investigate the concept of “frame” which consists in mental structures shaping how we interpret the world and reality surrounding us. According to Lakoff frames *include semantic roles, relations between roles, and relations to other frames* (Lakoff, 2010, 71), which explains his continuity with the renowned sociologist Erving Goffman. *Frames articulate our worldviews, which are in turn activated by language; carefully framed appeals can animate a set of values that already exist but may be sublimated in constituents* (Ford Foundation and Atlantic Philanthropies, 2016, 11).

As previously mentioned, I was surprised by Caro and Edo's *ability to tailor their arguments* (Feinberg and Willer, 2015, 6) according to the different targeted audiences (group or person) and goals, which is something far from trivial I thought. Interestingly, some researches showed that moral rhetoric in itself, is quite ineffective in persuading those who do not already share our own perspective (Feinberg and Willer, 2015, 1). For example, a study released by Kidwell, Farmer, and Hardesty found that conservatives exposed to pro-environment arguments but framed in words (embodying values) they can easier identify with such as loyalty, authority, and purity, increased the significantly the probability they start recycling for almost a three months' time period (Kidwell, Farmer, and Hardesty, 2013 in Feinberg and Willer, 2015, 3).

On the opposite, Caro and Edo seemed to, willingly or not, be aware of that and consequently craft their *arguments based on the morality of those targeted for persuasion* (Feinberg and Willer, 2015, 1). For example, Caro explained me more about her framing strategy she discovered through the book "*The science of getting rich*" by Wallace D. Wattles and talking about Pio Pio: "(...) *And present it in a way that sounds good to them. Maybe it is just a basis of language, you know, that makes these people go away from something. Instead of saying it's environmental, they don't care if it's environmental or not. But imagine if it's innovation, ho innovation. It's the same thing. Everything he says in his book is a special, specific language that he uses very carefully (...) so you can get people 's attention without deterring them* (Caro's interview, 20 April 2019). Or listening to Edo talking about a different audience (not politicians at the municipality, universities or investors but clients of his plant-based cosmetic company Mas newen): *if I talk as a company to our following customers, then I have to talk about much more grander things, like planetary issues, because they're behind their computer, and what they want is to think about a lot of these things, but hopefully not to do much about it* (Edo's interview 28 April 2019).

Equally, it might be appropriate to scale down the level of analysis to the use of metaphors activating those frames. Edo and Caro seem to frame some of their discourses, according to the audience, around key words and structures such as innovation, creativity, business, work, entrepreneur... A good example could be found in Edo's key-word "cooperation". He used it at least in a threefold way. First, as a decision-making process "*I don't believe in co-creation but in cooperation, co-participation* (Edo, fieldnotes, 6 April 2019) suggesting He wants to stay in control but is willing to concretize the project collectively, second as a way to interact

in harmony with nature: *You stop fighting what's around you [nature], you start cooperating* (Edo's saying, 6 April 2019) and third as a way to lower the guard of "people with extractivist mindset and focus on profit" as he calls them, and play the rules of the system against itself, as he liked to say *I am against revolution, I am pro evolution, I don't want to restart from nothing, put a mess. But regenerate life, work for something*" (Edo, Fieldnotes, 24 April 2019).

Finally, I would like to outline an aspect of their narrative crafting art which is that it embodies radical hopes in forward looking and positive frames. On the hand, prospective or forward-looking responsibility (Lahikainen, 2018, 126) is advanced in the argumentation of both Edo as Caro. For example, Edo told me "as long as it reinvested in the next line of generation that is coming, then it makes sense. Or else we are worthless as intelligent beings" (Edo's interview 2019), on the other hand, their ecological practices of ecosystem regeneration are coined and experienced (lived) symbolically as positive. Providing potential solutions to advance reforestation of the Chilean native forest through regenerative agriculture but also fighting climate change and enhancing biodiversity might give concrete hopes and a precedent for the next (hopefully large-scale) projects going in that sense. The symbolic meaning of restoration (Hertog and Turnhout, 2018, 1224) is deep and its positive impact potentially promising. *We worked our ass off for this, we always say we are work-alcoholic but it's ok haha because we know we have a higher purpose* (Edo, Fieldnotes, 25 April 2019). *I think that's my main goal in life, is like to do as much ecosystem restoration as we can, by all means [laughs]. There's so much degraded land, there's so much to be won, and we are such an intelligent species that it would be very ignorant of us not to use all that intelligence and try to make something that creates life, instead of following or continuing that weird system that we have programmed in our society of just extracting, of just consuming, it just doesn't make sense* (Edo's interview, 28 April 2019).

Regarding the second research question "What values, beliefs, human/extra human beings/nature justifications sustain those narratives?" I will try to highlight the different values and rationale underlying Edo and Caro's narratives on ecosystems regeneration, not only grounded in ethical considerations but also justified by pragmatic arguments (Hertog and Turnhout, 2018, 1221). Since ecological regeneration requires value-laden choices, according to Hertog and Turnhout, the justifications for their relevant practices will logically encompass different reasons related to values, beliefs and human-nature relationships.

I could mainly identify three rationales behind their ecosystem regeneration narratives. The first appeals to virtuous stewardship of nature and is associated with land management practices, the second implies eco-centric and holistic views on nature as being autonomous and independent from human actions, while the third adjusts the focus on more pragmatic discourses related to ecosystems services on which humans depend.

The native forest regeneration narrative elaborated around **virtuous stewardship** is based on ethical duty (Hertog and Turnhout, 2018, 1226). In that sense, the two researchers developed further that, are advanced various motivations of responsibility but also of care to increase biodiversity, endangered species or ecosystems while nature is seen as threatened and pressured by humans but also, to some extent, dependent their action for management and sound reforestation. It seems to resonate quite well with what Edo shared with me (...) *but that stands consequence of proper land management and land stewardship maybe. I really believe in land stewardship, I don't believe that we are owners. But I think we should be here and try to see if we can do it right* (Edo's interview 28 April 2018).

Second comes into being reflections and narratives articulated around views of **nature as autonomous**. The focal is here embracing a more holistic view, not so much focused on a few rare species, but rather on entire ecosystems as hyper-complex metabolisms (Hertog and Turnhout, 2018, 1226). In these narratives, nature is perceived as possessing **intrinsic value**. Values such as respect for living beings, their right to live are put forth. Listening to Caro was really insightful regarding that perspective, when I asked her why she finds important to support environmental education and ecological awareness today, in this society (one of the stated goals of Pio Pio), she responded in these words *"I think those things are based on respect. Well it all starts with being the most respectful I possibly can and I think that, until today, human behaviors have not been on the right side of the story nor respectful. Today there is plenty evidence that there is disturbance of ecosystems, in society, people are rising in dissatisfaction, nor the animals are happy, but I think there are ways to live without damaging nature. That is why I wanted to connect people to create amazing things (...) I think it is very important to learn these topics, see those things with a more holistic vision in order to get to understand the logics of your actions, the consequences [originally from Spanish]* (Caro's interview, 20 April 2019). She also finds herself and other human beings embedded in webs of life joining the deep

ecology school of thought. She told me “*deep ecology talks quite a lot about the fact that we are not above nature, we are part of nature*” (Caro interview, 20 April 2019) *and we want to make them understand [the kids through the foundation dedicated to eco-literacy in the future] that they are also part of something bigger than them. But also giving them tools for the future, to be able consistently remind themselves how to tend to this place that we call home* (Caro interview, 20 April 2019).

Finally, among the narratives I have had the opportunity to notice are the one gravitating around **pragmatic wise use** (Hertog and Turnhout, 2018, 1226). This category of narratives and discourses insists on quite pragmatic, utilitarian but also common sense reasonings. The two colleagues add that the focus is also put on ecosystems services and its relevant function on which human depends physically and spiritually. In this cluster of ecosystem services, different kind of values can be found such as intrinsic but also and even more extrinsic value of nature, *the dependence of society on nature, capital returns of regeneration, the promotion of human (mental and physical) health, the beauty of nature, and its spiritual value for humans* (Hertog and Turnhout, 2018, 1224). As Edo told me: “*since we live here, I think it’s really important to understand what there is in that forest before we lose it. And if there are berries with very high nutrients, that are very tasty, and that we can reproduce, let’s reproduce them. And if we can do it in such a way that the biodiversity becomes higher and higher, and the diversity of products we create becomes higher and higher, then we can get something really good out of it, instead of just killing it* (Edo’s interview, 28 April 2018). Equally he did not seem to have any trouble explaining me the many ecosystem services of the Chilean native forest, like “*(...) agroforestry, you know it gives us, water retention, biodiversity, soil, carbon sequestering, it brings down the temperature [it regulates temperature], it creates oxygen, that’s like, its ecosystemic services but then at the same time, you know each plant, each tree, will give us seeds, fruits, leaves and this leaves we can change to essential oil, into plant-based oil, fatty acids you know; omega 3, omega 6, omega 7, 9. But we can also get powder out of the fruits, we can get once we take fruits from the seeds, we can take oil from the seeds. So it starts to become circular in the way that there is no waste. So it’s closed loop* (Edo’s interview, 28 April 2019).

Conclusion - radical hopes as horizons or the new frontiers of ecosystems regeneration

Mindful of the past, yet conscious of alternative futures (Ganz, 2003, 3) would be an adequate way to describe Caro and Edo's projects consisting, among others, in native forest regeneration in Valparaiso province, Chile. Grounded in pragmatism but balanced with acute ideals, they both, through their poly-faces initiatives, embody and enact changes based on a culture of regeneration and care toward the environment. This ethnographic research proposed to investigate how these actors, feel, think and strategically act according to their values while pursuing and implementing native forest restoration projects, namely in Pio Pio Cultural Center For Sustainability and Eduardo Caceres' reforestation project. Both projects being bottom-up citizens' initiatives, they aim at fostering eco-literacy, soil and ecosystem regeneration, circular economy through peri-urban agroecology for Caro and plant-based cosmetic and local cooperative for Edo.

I have explored, in this work, the various ways in which they concretize their ideas, develop and sustain their economic and socio-environmental laboratories. To attain their reforestation goals, they demonstrated twice as much ingenuity and determination. It encompassed first, opting intentionally for poly-faces structures with different but complementary aspects. It is to say for both projects, a foundation either to promote environmental care and awareness (Pio Pio) either to protect the native forest (Kodkod in Edo's case), a business entity focused on peri-urban agroecological farming at Pio Pio while Edo's plant-based cosmetic company called Mas Newen is dedicated to processing and extracting components from native trees and in a close-loop process, reinvest it into the soils. In both cases, the channeling of money is seen as a strategy to tend toward more autonomy while consisting in a non-negligible tool to achieve significant change. Finally, there is a socio-political project to recreate a local cooperative in the valley coming from Edo's part. Besides the poly-faces aspect of their projects, they deploy various other strategies regarding the nature of decision making (narrowing down of the decision-making roles), the use of legal means as juridical leverage (working with the municipality, legalizing the agricultural project at Pio Pio, building a transnational legal

structure of Edo's companies), money channeling (for autonomy, continuity, scalability and credibility), the art of finding the right people, support and legitimacy (be it a skillful agronomist or a progressive university) and finally the way to critically frame.

In these poly-faces projects, agroecological methods were strategically used for the long-term purpose of regenerating the soils and restoring native forest. The objective was to farm not (only) for food but for ecosystems restoration, therefore framing and making those processes visible while convincing pivotal actors was crucially important. This echoes the two research questions articulated as followed: *How do environmental practitioners in ecosystem regeneration in Chile frame their ecological restoration narratives and practices and to what ends?* (2) *What values, beliefs, human/extra human beings/nature justifications sustain those narratives?*

Edo and Caro, as regenerative practitioners, elaborated inspiring and well-rounded narratives on ecosystems regeneration. They astutely used frames to activate regenerative narratives and support their goals. In a Foucauldian paradigm, they would be described as exercising a kind of green governmentality or environmentality under the guise of regenerative ecosystems rationalities. By highlighting particular grids of intelligibility while backgrounding others, Edo and Caro make intelligible, visible and intrinsically valuable the Chilean native forest through their discourses of regeneration of ecosystems. Both ecological restorationists see and attribute intrinsic value to nature while feeling a strong (inter)connection with it. In that sense, they seem to express deep ecology principles, which means that they feel part of a wider web of life and accordingly, have adopted eco-centric justifications but combine it with narratives and discourses crafted according to the different targeted audiences. Indeed, one specific element characterizing their discourses was their capacity to tailor their argumentation from the perspective and morality of the intended group/person they wanted to persuade which is not trivial. Furthermore, they were also relying on relevant metaphors to activate those frames and an overall positive forward-looking vision. Finally, the ecosystem regeneration narratives were articulated upon various values and beliefs on human-nature relationships. Three main clusters have highlighted the various reasoning underlying those narratives, combined under the categories of virtuous stewardship (ethical duty to act, sense of responsibility for biodiversity), autonomous nature vision (holistic views, intrinsic value of nature) and pragmatic wise use

(down-to-earth strategies, utilitarianism, common sense and more pronounced views on the extrinsic value of nature).

If Joanna Macy is right regarding the great unravelling of ecosystems and extinction of species that is occurring on a large scale and fast pace, but as does the great turn toward life sustaining systems and societies, then Edo and Caro might be seen as biopioneers of the current and promising regenerative agriculture movement. Their radical hopes in acts embodied in ecological regeneration projects might be a way out, or at least an encouraging step in the right direction. Let's get to work.

Bibliography

Abram David, 2005. *Between the Body and the Breathing Earth: A Reply to Ted Toadvine*, Environmental ethics 27 (2):171-190.

Altvater E., Crist E., Haraway D., Hartley D., Parenti C., and McBrien J. 2016. *Anthropocene or capitalocene?: Nature, history, and the crisis of capitalism*. Edited by Moore W. Jason, Pm Press.

Armesto, J. J., Manuschevich, D., Mora, A., Smith-Ramirez, C., Rozzi, R., Abarzúa, A. M., & Marquet, P. A., 2010. *From the Holocene to the Anthropocene: A historical framework for land cover change in southwestern South America in the past 15,000 years*. Land Use Policy, 27(2), 148-160.

Cortazzi, M., 2001. *Narrative analysis in ethnography*, In P. Atkinson (ed), Handbook of ethnography, London, Sage.

Donoso Pablo J. and Claudio Donoso, 2007. *Forest Species and Stand Types of Chile*, Department of Silviculture, Faculty of Forest Sciences, Universidad Austral de Chile.

Fabinyi Michael, Louisa Evans and Simon J. Foale, 2014. *Social-ecological systems, social diversity, and power: insights from anthropology and political ecology*, Ecology and Society.

Farmer Paul, 2004. *An anthropology of structural violence*, Current Anthropology Volume 45, Number 3.

Feinberg Matthew and Robb Willer, 2015. *From Gulf to Bridge: When Do Moral Arguments Facilitate Political Influence?*, Personality and Social Psychology Bulletin.

Ford Foundation and Atlantic Philanthropies, 2016. *Toward new gravity, charting a course for the narrative initiative*.

Heilmayr Robert, Echeverria Cristian, Fuentes Rodrigo and Eric F Lambin, 2016. *A planted-dominated forest transition in Chile*, Applied geography, Elsevier.

Hertog Iris M. and Esther Turnhout, 2018. *Ideals and pragmatism in the justification of ecological restoration*, Restoration Ecology, Vol. 26, No. 6.

Kibler K. M., G. Cook, L. G. Chambers, M. Donnelly, T. Hawthorne, F. Rivera, and L. Walters. 2018. *Integrating sense of place into ecosystem restoration: a novel approach to achieve synergistic social-ecological impact*. Ecology and Society 23(4):25.

Manuschevich Daniela, 2016. *Neoliberalization of forestry discourses in Chile*. Forest Policy and Economics 69: 21-30.

Marshall Ganz, 2001. *The Power of Story in Social Movements*, Kennedy School of Government Harvard University.

McClintock Nathan, 2015. *A critical physical geography of urban soil contamination*. Toulan school of urban studies and planning, Portland State University.

Mohammad Tanzimuddin Khan, 2013. *Theoretical frameworks in political ecology and participatory nature/forest conservation: the necessity for a heterodox approach and the critical moment*, University of Dhaka, Journal of Political Ecology, Vol. 20, Bangladesh.

Moore Jason W, 2017. *The Capitalocene Part I: On the Nature & Origins of Our Ecological Crisis*, Fernand Braudel Center and Department of Sociology, Binghamton University.

Moore Jason W, 2014. *The Capitalocene Part II: Abstract Social Nature and the Limits to Capital*, Fernand Braudel Center and Department of Sociology Binghamton University.

Lahikainen Lauri, 2018. *Individual Responsibility For Climate Change, A social structural account*, thesis, University of Tempere.

Lakoff George, 2010. *Why it Matters How We Frame the Environment*, Environmental Communication, 4:1.

LeCompte M. D. 1987. *Bias in the biography: Bias and subjectivity in ethnographic research*. Anthropology & Education Quarterly, 18(1), 43-52.

Luke Timothy W., 1996. *Generating Green Governmentality: A Cultural Critique of Environmental Studies as a Power/Knowledge Formation*. Department of Political Science Virginia Polytechnic Institute and State University Blacksburg.

Perramond Eric P, 2007. *Tactics and strategies in political ecology research, the royal geographical society, Area, Vol. 39, No. 4*.

Rutherford Stephanie, 2017. *Environmentality and green governmentality*, Trent University, The International Encyclopedia of Geography, Canada.

Salazar, A., Baldi, G., Hirota, M., Syktus, J., & McAlpine, C., 2015. *Land use and land cover change impacts on the regional climate of non-Amazonian South America: A review*. Global and Planetary Change, 128, 103-119.

Schindler, Seth, and J. Miguel Kanai. 2018. *Producing Localized Commodity Frontiers at the End of Cheap Nature: An Analysis of Eco-scalar Carbon Fixes and their Consequences*. International Journal of Urban and Regional Research 42, no. 5: 828-844.

Shanee Noga, 2013. *Campesino justification for self-initiated conservation actions: a challenge to mainstream conservation*, Neotropical Primate Conservation, Journal of Political Ecology, UK/Peru.

Swidler E.-M, 2009. *The social production of soil*. Soil Sci.

Weng Yen-Chu, 2015. *Contrasting visions of science in ecological restoration: Expert-lay dynamics between professional practitioner and volunteers*, Department of geography, University of Wisconsin-Madison.

Zalasiewicz, Jan., Smith A.G., Barry Tiffany L. and Mark Williams, 2008. *Are we now living in the Anthropocene?* GSA Today: v. 18, no. 2.

Sitography

European Forest Institute, planted-forests: the big opportunity for forest recovery in Chile and Uruguay, <https://www.efi.int/articles/planted-forest-big-opportunity-forest-recovery-chile-and-uruguay>