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Abstract

This chapter assesses how prominent definitions of (agro)extractivism are suited to explain forestry extractivism, and what are the shared and particular qualities of forestry extractivism as it manifests itself in large-scale tree monocultures for pulp production in Uruguay. Different definitions of (agro)extractivism are assessed. Forestry extractivism is one distinct form of agro-extractivism, with some notable differences. Key features of forestry extractivism include (i) specific trade deals, as pulp investments are costly; (ii) long-term setting-up through stages: master plans, enclosures, establishing pulp mills, and managing rising conflicts after the building; (iii) mills and plantations; (iv) ecological and carbon impacts; and (v) massive legitimization campaigns. This analysis should be accompanied by a global

political economic and resource geopolitics analysis of particular global extractivisms, such as forestry. This should also be tied to particular contexts, polities, and lived environments, which significantly influence especially the politics through which global extractivisms of different types are birthed and resisted. In here, what constitutes forestry extractivism in the context, polity, and sector of Uruguayan pulpwood tree plantation expansion is analysed. World-ecological and political ontological analyses are important for defining what activities should be called extractivist, and what types of extractivisms of what are involved in each activity.

Introduction

In this chapter, we assess how prominent definitions of (agro)extractivism are suited to explain forestry extractivism, and the shared and particular qualities of forestry extractivism as it manifests itself in large-scale tree monocultures for pulp production in Uruguay. The definitions of (agro)extractivism by McKay (2017), Alonso-Fradejas (2018), Gudynas (2015), Svampa (2012), and others are assessed. We identify forestry extractivism, including industrial pulpwood plantations and cellulose pulp production facilities, as one distinct form of agro-extractivism, with some notable differences in comparison to the production of soybean, corn, and other crops via monoculture plantations. One key difference is the prevalence of much higher capital investments in the pulping part of forestry extractivism, wherein pulp investments costing several billion euros are the key expansion mechanisms of pulpwood plantations (Kröger 2013a, 2013b). These pulpwood plantations of eucalyptus, pine, and acacia are the most prominent feature of forestry extractivism, in terms of hectares occupied, and the long-term planning needed to establish and root them (Kröger 2014). Other forms of forestry extractivism are tree plantations serving primarily as sources of carbon substitution, for example, as charcoal material to supplant coke in the iron ore-steel making complexes, or as material for producing pellets,

wood chips, or other energy and electricity production raw material (Kröger 2016). However, it should be noted that in the same way as all natural resource extraction, agriculture or mining is not extractivist in character; the label "extractivist" should also not be used for all forestry techniques and forest- and tree-based economic sectors, and land-use activities and processes. This chapter will help to clarify what constitutes forestry extractivism in the context, polity, and sector of Uruguayan pulpwood tree plantation expansion.

We will also make some general comments on extractivism and particularly agro-extractivism, enlightening how forestry extractivism helps to nuance and pinpoint key features that conceptualizing extractivism more broadly should take into consideration. We will not provide herein systematic comparison of different agro-extractivist sectors, but do offer some notes and methodological comments on how such studies should be carried out. This discussion is based primarily on our own field research and case studies on forestry investment expansion sites around the globe, especially in Uruguay and Chile (Ehrnström-Fuentes 2015, 2016, 2019, 2020; Ehrnström-Fuentes and Kröger 2017, 2018), Brazil (Kröger 2013a, 2013b, 2013c; Marini et al. 2017), Southeast Asia, Africa and elsewhere (Overbeek et al. 2012; Kröger 2014, 2016), and Finland (Kröger and Raitio 2017), as well as our studies in other extractivist sectors, such as mining and agriculture, in different polities of the planet.

We focus on the case of Uruguay, as the largest landowners of Uruguay are multinational paper and pulp companies with headquarters in and with other deep ties to Finland. Currently, about 1 million hectares of the country's 17.1 million hectares are covered with pine and eucalyptus plantations that are mainly in the hands of Finnish companies (Uruguay XXI 2016). The corporations UPM and Stora Enso are the main owners of these plantations destined to pulpwood production in Uruguay. Stora Enso holds a joint venture with the Chilean CMPC corporation, called Montes del Plata at the estuary of the Plata river, while UPM has one mill in Fray Bentos, alongside the Uruguay river. UPM is currently building another pulp mill, which, if finished, will be the world's biggest, in the middle of the country in the province of Tacuarembó. Both of the UPM projects have been highly contentious, the first one, called Botnia (and first

owned primarily by another Finnish company, Metsä Group, owned mostly by a Finnish forest owners' cooperative), creating a major international conflict between Argentina and Uruguay (Kröger 2007; Pakkasvirta 2008), and the second creating major internal opposition and protests, for several reasons (Bacchetta et al. 2019). The particularity of Uruguay is that the pulp mills are located in tax-free and free-trade zones: they are not part of the tax regime of Uruguay in the same manner as, for example, soybean plantations in Uruguay or similar pulp investments are in Brazil. Therefore, what Uruguay exports are eucalyptus trunks, to be processed and shipped away by the corporations as pulp, a commodity used in paper, cardboard, and tissue production around the world, especially in China.

Forestry extractivism a particular kind of agro-extractivism

Gudynas

One of the most well-known and applied short definitions of extractivism is offered by Eduardo Gudynas. This definition has been created within the discussions around what is industry and what is merely raw material extraction without notable socio-economic benefits, which is resisted. This definition is applied especially in Latin America, due to the five centuries long history of extractivism in different forms, where raw materials were exported from the continent for the benefit of colonial, imperial, or neoliberal hegemonic or dominant global powers.

Gudynas (2018, 26) defines that "we are faced with an extractivism when three simultaneous characteristics occur: an extraction of natural resources in large volumes or high intensity, where half or more are exported to global markets, and are as raw materials or commodities".

These characterizations clearly apply to Uruguayan eucalyptus plantations and pulp production. The extracted volume is large and the intensity high, and practically all the

production is exported, first as tree trunks from Uruguay to the free-trade zones where the pulp mills are, and from there as pulp to the transnational space of global markets.

In the last two pages of the book *Extractivismos* (2015), Gudynas further emphasizes that particular valuations and ethics underlie extractivisms. He argues that it is essential to analyse the alternative valuations that people resisting extractivism have, so as to understand what extractivism is. We will come to this point of Gudynas in defining extractivism later in this chapter. The earlier definition of Gudynas (2018) is simple and clear, and easily applicable and understandable. It serves to not over-extend the concept, or use it too vaguely. However, this conceptualization is problematic if a production practice would otherwise be destructive, large-scale, and socio-ecologically problematic, but not destined to export markets. In this sense, the definition provided earlier may be too nationalistically focused, given that there are many internal colonial frontiers inside countries, and not just between them. Leaving these cases out from the analysis of extractivism would create an unnecessary gap on how extractivism is understood and examined in both practice and theory. For example, much of the forestry practices around the globe would, according to Gudynas' definition, not be considered as extractivist, as in many places, especially in the global North, pulp is further processed into paper and other pulp-based higher value products, and maybe even consumed, within that same country. Yet, we acknowledge that the previous definition holds analytical merits due to its clarity and the possibility it gives to pinpoint how the new wave of export-oriented mega-pulp mills targeting both Global North and South suggests a deepening of extractivist stances globally and how Finland and Uruguay differ in terms of added value to the national economy. The global pulping boom suggests that forestry extractive operations are becoming larger in scale, leading to more severe environmental degradation, and contributing relatively more to the national foreign trade balance (and thus being more relevant for national macroeconomic policies). We will next move to more specific definitions of agrarian extractivism from the general definition of Gudynas.

McKay

McKay et al. (2020, intro, this book) call for a more rigorous definition of agrarian extractivism. Two exemptions are definitions given by McKay (2017) and Alonso-Fradejas (2018). We will next present these definitions and then analyse how they explain forestry extractivism.

McKay (2017) names agrarian extractivism as defined by four interlinked features:

1 large volumes of materials extracted destined for export with little or no processing;

2 value-chain concentration and sectoral disarticulation;

3 high intensity of environmental degradation; and

4 deterioration of labour opportunities and labour conditions in the area/sector.

Pulp production in Uruguay fulfils all these four categories. Uruguay exports eucalyptus trunks to the free-trade zones, which then produce pulp (and pollution and carbon emissions). The value chain is highly concentrated in the hands of two to three foreign corporations only, which are disarticulated from the rest of the economy (Ehrnström-Fuentes and Kröger 2018). Pulp investments in the global South are typically enclave investments, which do not support the creation of local industries or development, but buy the required capital goods for the building and maintenance of the mills from the core localities within the system of global pulping, which Kröger (2014) calls forestry imperialism. In this system, Finland, Sweden, and Austria are the key countries which have the corporations producing the pulping machinery: the Finnish Valmet corporation has produced about 80% of the pulping capacity of the world, while Austria's Andritz, with production lines in Finland and Sweden, is another key pulping machinery producer. The Finnish-Swedish Poyry Consulting is by far the leading project planning engineering corporation. Also, the chemical producers are located in these countries. United States and Canada also have some technology producers, but most of the value chain and key functions have been very focused on a select group of countries and corporations that have

headquarters in tied relationships to national production networks in these countries (for pulping, especially in Finland, Sweden, and Austria). This is thus a niche form of creating value, of particular relevance in the case of how forestry extractivism is organized through different multinational corporations with their head offices and main shareholders group up the value chain located in the global North.

Eucalyptus plantations cause major environmental degradation, due to the application of agro-toxics, and acidification, salinization, and erosion of soils, as well as by decreases in stream flow and availability of clean water (Jackson et al. 2005; Kröger 2014). Water scarcity is another direct environmental consequence of eucalyptus plantations, leading to the need to supply rural communities caught in the middle of the plantations with externally sourced water from tank trucks in Uruguay, for example (Ehrnström-Fuentes 2019). Eucalyptus plantations covering hundreds of thousands of hectares occupy disproportionately large sections of municipal territories in a limited territory, making it hard or impossible for other forms of land uses to co-exist. This situation forces a semi-voluntary exodus of farmers, as well as other rural dwellers, who no longer can find jobs at local farms (Ehrnström-Fuentes 2019). Tree plantation jobs in Uruguay are seasonal, low-paid, requiring extensive travelling, and based on precarious working conditions (Ehrnström-Fuentes and Kröger 2018): silvicultural workers are the most impoverished and have poorest health and economic indicators of all worker categories in Uruguay (Cardeillac Gulla et al. 2015). Corporations and politicians claim new pulp investments would be required to generate jobs, but figures show that the number of jobs for wood extraction for pulping has decreased between 2007 and 2016 by 992, totalling 1,669 in 2016. At the same time, however, 1,100 new jobs were created for pulp processing, and 1,050 for other pulp-related forestry activities (Bacchetta et al. 2019, 36).

We will make further use of the four features stated previously in providing a more detailed analysis of the existing pulp investments and projects in Uruguay after this section on applying definitions of agrarian extractivism to forestry in Uruguay.

Alonso-Fradejas

Other key definitions of extractivism help to further elucidate forestry extractivism in Uruguay. We will next move to assess the definition given by Alonso-Fradejas (2018), wherein agro-extractivism is seen as having three key features:

1 the extraction and appropriation of the surplus value, rents, and state revenues, including by means of financialization;

2 the appropriation of productive and reproductive labour; and

3 the contamination and exhaustion of external nature's energy and materials as well as damaging workers' health and vitality.

Forestry extractivism in Uruguay also fulfils all these three categories. Especially the point about appropriating state revenues is important here, as the Uruguayan state is in an extremely disadvantageous contractual relation with the pulp-producing corporations (Bacchetta et al. 2019). The plantations and pulp-producing operations generate very low or no tax revenues, and are indirectly highly subsidized (e.g. through state-funded infrastructures for the logistical services of the operations). The appropriation of labour refers to significantly reconfiguring the kind of state-funded education and professional jobs that are offered in the extractivist context (Balch 2018). In Uruguay, the state has focused on periodically rolling out a new pulp investment after the first one, so that the construction workers who have built one mill are not unemployed once the project is finished but can find a future job in the next project. This is a kind of path dependency, technological lock-in, and an agro-industrial enclave without economically important interindustry synergy benefits (Kröger 2007; Balch 2018), where the pulp companies ensure that the state supports their further expansion, by ensuring thousands of job opportunities during the construction phase. However, after the construction phase is over the state needs to find new jobs for them. In fact, Balch (2018) has pointed out how the corporations

adjust job creation figures to their own agenda and through carefully designed corporate social responsibility (CSR) activities, employ tactics to detach themselves from fulfilling the promise of employing large numbers of people, while still paying attention to portraying an image of themselves as responsible.

Also, new professional education courses have been offered, and educational sectors and states in Finland and Uruguay have signed several contracts to repurpose the Uruguayan educational sector to make more workers available for the forestry sector (Fermi 2019). This has, of course, many opportunity costs and appropriates the free education offered by the state for the purposes of extractivist operations, and their smooth running. The appropriation of labour production has myriad and deep political impacts. Bigger trade unions have thus supported continued pulp investments, and put pressure, especially on the linked progressive parties that have composed the Uruguayan government during the years when pulp investment decisions were made. The 2020 elections brought in a conservative government for the first time in 15 years, but this has not yet changed the state–pulp business relations, as the government's support for the expansion of the forestry sector has continued.

Point (3) is a bit divided: in the most clearly extractivist parts of forestry operations, the work is dangerous to health and the environment due to the application of pesticides and other features. It is difficult and problematic to find or present "hard facts" numbers on these issues, due to the political means of underreporting and overreporting of key numerical data by their institutional producers, and the hiding of data. For example, the impacts on water pollution by the Plata River pulp mills are not revealed to the public, but confidential, although observed by a joint commission of Argentina and Uruguay, established after their major international conflict around the Botnia pulp mill (Pakkasvirta 2008).

Svampa

Maristella Svampa's (2012) definition of extractivism includes additional considerations. Besides defining extractivism as large-scale and oriented towards export markets and as an activity where the environmental impacts are felt by local populations, Svampa makes explicit links to "intensive occupation of territories, land grabbing, concentration of landownership" and the large transnational corporations involved in the politics of extractivisms. Svampa's definition of extractivism as a form of *territorial occupation* indicates and emphasizes that land is not "empty" prior to the arrival of extractive operations but that extensive areas of land are occupied for the use of extraction. This focus on "territory" opens up space for an understanding of the ontological politics involved in struggles over land affected or threatened by extractivism (Ehrnström-Fuentes 2019). In the Latin American social movement literature, the term "territory" does not just refer to the physical boundaries, jurisdiction, or ownership structures but also includes the symbolic meanings, practices, and relations to non-human agents of that particular place (Ehrnström-Fuentes, 2020; Kröger and Lalander 2016). Thus, territorial occupations are not just about who owns or controls the land through ownership or law enforcement, but extractive occupations of territory also change the very ontology of the place by altering the symbolic meanings, practices, and human–other-than-human relations (Ehrnström-Fuentes 2019).

Svampa's definition emphasizes how states prioritize large transnational corporations over local populations and the weakening effects this has on democracy (see also McKay 2017). Yet, the transnational corporations are not the only agents involved in the politics over forestry extractivism, neither are they passive receivers of the benefits granted by the states. Transnational forestry corporations together with a myriad of different supportive non-state actors (e.g. forestry development consultants, suppliers, financial agents, corporate-benevolent media, and NGOs) are involved in shaping both the institutional environment in which they operate (Pakkasvirta 2008),[1] and the very ontology, or reality, that enables their own existence

(Böhm and Brei 2008; Ehrnström-Fuentes 2019). Thus, through carefully designed social development projects and marketing campaigns labelled as CSR, forestry corporations actively engage in local politics seeking to influence the public opinion and their legitimacy among key stakeholders (Balch 2018; Ehrnström-Fuentes 2019).

We discuss the implications of this ontological approach for examining forestry extractivism in Uruguay at the end of this chapter.

Forestry extractivism: particularities

The expansion of tree plantations and pulp mills, especially in Uruguay, reveal several factors which are important in highlighting the extractive character of these investments, but which are not yet captured fully or in a nuanced enough way in the previous definitions of (agro)extractivism. The discussion of these in the following helps broaden the understanding of how forestry can also take extractivist forms, and the differences that extractivisms can take. On a broad level, forestry extractivism converges with other forms of (agro)extractivisms, but it is good to provide analysis on the differences between these extractivisms as well, while understanding that the broader concept of extractivism captures well the much broader similarities between these, under which there are nuanced differences. However, there is still a need for systematic in-depth studies on different forms of extractivisms, across different sectors. Such studies should partake from first studying the various sectors within the same polity and context (e.g. soybeans and pulp in Uruguay), and then proceed with comparisons to settings which share the expansion of these same sectors (e.g. to soybeans and pulp in Brazil). One should avoid comparing a different sector in a different context with another polity and sector, for the many methodological issues this creates, particularly the impossibility of controlling the key changes in explanatory factors: thus making comparisons between, for example, Central American oil palm extractivism and Uruguayan pulpwood expansion are methodologically flawed and not recommended (Kröger 2020a).

When approaching the phenomenon of forestry extractivism, which should also be done by bounding the case to a specific context as in here, first it is important to note that forestry extractivism here (and in most other contexts) includes two separate but interconnected operations: tree plantations and cellulose pulp production. These sectors have distinct impacts on the local population and the environment, and they create different kinds of political economic dynamics and contentious politics. Yet, in studies examining the socio-economic–environmental effects of the whole sector, the analysis must include both operations and their interconnected dynamics. The following list opens up key mechanisms of how these two interconnected sectors of forestry extractivism is expanded, several of which show how they differ from other forms of extractivism.

Specific laws and trade deals in a bound international order

The first key difference to note by the example of Uruguayan pulp investments is the role of bilateral state–corporate cooperation in promoting, supporting, and protecting the birth of the sector long before the actual decisions are taken on the investments. In Uruguay, the state has paved the way for the birth of the forestry sector by: (i) creating laws that enabled the spread of large industrial tree plantations; (ii) signing bilateral trade agreements with the home country of the investing corporations (Finland); and (iii) establishing free-trade zones in which pulp mills can be set up and operate without fiduciary responsibilities (Ehrnström-Fuentes and Kröger 2018). These state-level supportive mechanisms are executed prior to investments, protecting the corporations from allegations of unlawful conduct as well as from potential financial losses due to political changes in the operating environment of the host country (Ehrnström-Fuentes and Kröger 2018). Conflicts are common to investments in forestry (Ehrnström-Fuentes 2015; Gritten and Mola-Yudego 2010; Joutsenvirta and Vaara 2008; Leys and Vanclay 2010; Myllylä and Takala 2011; Kröger 2013c), and for the corporations, there is a need to safeguard

themselves from the social and political risk associated with these conflicts. Uruguayan pulp investing highlights a much more bilateral and longer term international binding of production roles between Finland and Uruguay than, for example, soybean or palm oil expansion in Latin America, whose ownership and international and national power structures are much more spread and less bound and tight than in this exemplary and globally important case of forestry extractivism.

Long-term setting-up through stages

While agro-extractivist ventures can often be established in a matter of years or even in a year, it takes more than a decade, even several decades, to establish the required material basis for modern pulp mills, even when using fast-growth species such as eucalyptus. Forestry extractivism is thus introduced in several stages in comparison with other extractive modes:

1 **Strategic phase.** The making of land available and suitable for large-scale monoculture tree plantations undergoes a carefully designed strategic plan during which suitable areas for tree plantations are identified and mapped, regional land-use plans are changed, legal arrangements are implemented, and economic incentives (subsidies) for tree plantations are set up. Consultancy firms act as the architects of these strategies, creating a coherent narrative about the benefits of forestry, which are needed to attract investor interest and to garner support among local lawmakers that shape the institutional landscape in favour of forestry investments (Carrere and Lohmann 1996). This normally takes several decades, while, for example, soybean plantations have been expanded in South America through a much faster strategic planning phase.

2 **Tree planting phase.** During this stage, rural communities undergo an ontological transformation in how community members engage and relate to the land. Farming communities that used to sustain themselves through food production practices are

transformed into tree plantation communities sustained through industrial low-waged labour moving in and out of the community (Cardeillac Gulla et al. 2015). The changes in landownership from settled smallholder farms to distant multinational corporations impact how and by whom land is managed, how the ecology of the land is practised, and territories are constituted. Thus, as communities, ecologies and their associated human and other-than-human actors are increasingly linked to forestry operations; this also influences the political preferences for the further expansion of forestry and the arrival of (contested) pulp mills. Land ownership turns markedly concentrated, much more than in soybean or other extractivist sectors, where regional and national elites and even middle-sized farmers have remained much more prominent than in the corporate-controlled forestry extractivism (Kröger 2020b).

3 **Pulp mill planning and construction phase.** During this phase, the desirability of the whole forestry sector is likely to be publicly debated. In contrast to other agro-extractivist sectors, forestry destined to pulp production, due to the long planning and building phase, may offer more possibilities for public deliberation over the desirability and impacts of the sector on the local community and the environment. However, although broad similarities are shared between pulp investment dynamics across different contexts, this deliberative space is not offered automatically across the board, but depends on polity differences, and especially on whether contentious agency is being built, i.e. whether there is the will and capacity to question pulp investments by the civil society and progressive state actors (Kröger 2013a). As planning for pulp-based economies takes a long time, specific politics are ushered in. For example, in contrast to the environmental impact assessments (EIAs) executed in the highly contentious mining sectors, the forestry practices and work relations are already settled in the country and in many local communities at this point (see point 2). This creates more political interest skewed towards adding more value to the existing operations, going from logging to pulp

production. Thus, in contrast to the mining sector (see Kröger 2020a), the forestry sector is well established with linkages to the local economy long before the desirability of the sector is publicly debated during the evaluations of the EIA. In comparison to agro-extractivism in the form of agricultural crops, such as the soybeans, corn, and cotton planted on commoditizing resource frontiers in Brazil's Mato Grosso state, for example (Kröger 2020b), there seems to be however much more contestation of mega-investment plans and in particular of the construction of pulp mills than for resisting the expansion of the crop-based agro-extractivisms that are not so dependent on high-cost and tightly controlled capital goods such as pulping lines and specific forestry techniques.

4 **Post mill-construction phase.** Conflicts are most likely to emerge only after the mills have been constructed, and the dire reality of unrealized promises is revealed to the public (Kröger 2010). This opens up a new era of contentious politics or extensive usage of CSR policies aimed at curbing mobilizations, or both. The execution of future projects becomes increasingly difficult within the same region, as visible in Uruguay.

Forestry enclosures

The amount of land occupied by plantations is locally and regionally vast, as in other agro-extractivist models, and, in the case of Uruguay as well as most pulp-producing regions in the Global South, in large part centralized to the forestry corporations, who through direct ownership have more control of the whole chain of custody. High levels of land concentration to single corporations controlling hundreds of thousands of hectares in a 100–200 kilometre radius is a commonality of pulping in the Global South, distinguishing forestry extractivism as a particularly corporate-controlled form of extractivism in the array of (agro)extractivisms. In Uruguay, the occupation of vast areas of land is strikingly clear: according to UPM, its owned and rented tree plantations cover 385,000 hectares, while Montes del Plata is estimated to control between 200,000 and 300,000 hectares, while the total extension of eucalyptus and pine

plantations is around 1 million hectares (Bacchetta et al. 2019, 201). Another 4.1 million hectares of the country's 17.1 million hectares have been declared as a forestry priority (Uruguay XXI 2016). What this means is that land areas previously inhabited by other non-forestry-related practices (e.g. cattle grazing and agricultural practices destined to food production) are deemed less important. Through governmental incentives and land-use policies, the symbolic meanings of land-related practices are increasingly tied to forestry operations as a national priority. In areas destined to forestry operations, alternative non-forestry-related land practices are not able to resist these kinds of territorial occupations (Ehrnström-Fuentes 2019; O'Neill 2015).

Criticism of land ownership concentration and foreignization has been raised both by academics (Piñeiro 2012) and mainstream media (Toivonen 2016). In recent years, forestry corporations have started to offer cooperation programmes to local landowners. They explain that by planting eucalyptus trees on their land, the landowners will be able to "diversify" their traditional production (usually cattle and agriculture) through sustainable eucalyptus production using UPM's high-quality seedlings (Elhordoy 2019). Through these programmes, local landowners plant and manage eucalyptus plantations destined to pulp mills on their land (UPM Forestal Oriental 2018). These types of diversification of farm productivity into tree plantations are also enabled by financial assistance provided by the Inter-American Development Bank in close cooperation with the Uruguayan Agricultural Ministry.

The forestry enclosures do not only include tree plantations, but all associated infrastructure that encloses rural territories in forestry-related practices. For example, investments in roads and railways that serve the forestry sector are enabled to use public–private partnerships between the state and international development funds (Elhordoy 2019). In Uruguay, pulp mills, also financed by international development funds (Elhordoy 2019), are constructed on tax-free zones that represent another type of enclosure in which only practices related to the production of pulp destined to export markets are allowed to exist.

Sophisticated legitimization campaigns

The forestry sector presents itself as a central player in the new "green" bioeconomy that uses biomass, or renewable materials, "to create sustainable fossil-free alternatives in a variety of end uses" (UPM 2020). Thus, in order to appear sustainable, the forestry sector has heavily invested in various forms of CSR and played an active part in developing international certified standards (e.g. FSC, PEFC) and networks that promote sustainable forest management on global scales (e.g. World Business Council for Sustainable Development, The Forests Dialogue initiative, and the WWF's New Generation Plantations platform) (Stora Enso 2020). Certifications also play vital roles in the creation of a sectorial culture and philosophy tied to forestry in different contexts and at multiple levels (Carrere and Lohmann 1996; Pakkasvirta 2008). The narratives used to frame forestry as socially acceptable through media further strengthen the symbolic meanings of sustainability and ethicality as defined within the sector itself (Ehrnström-Fuentes and Kröger 2017; Ehrnström-Fuentes 2015), crowding out alternative ways of framing sustainability based on other land-based practices that still exist in places endangered by forestry expansion (Ehrnström-Fuentes 2019). In comparison to, for example, oil palm or soybean agro-extractivisms, the terms of debate in forestry are not so much about the need to avoid deforestation by extractivist expansion, as the forestry sector is much more likely to be associating itself (and being associated) as an agent of "reforestation", or expander of "planted forests", or even simply "forests", although in practice the sector does cause direct and indirect deforestation, and destruction of native ecosystems such as grasslands (Kröger 2014).

In fact, pulp and paper companies have, in the past, repeatedly been exposed to reputationally damaging consumers and publishing house boycotts for their involvement in clear-cutting old growth and native forests (Halme 2002; Joutsenvirta 2006; Stine 2011). Thus, as a consequence, the sector as a whole, not just in Uruguay, has over a long period of time included social responsibility in their strategic management decisions and marketing campaigns to mould

"public opinion in favor of the pulp and paper sector, hiding the negative environmental, economic and social impacts of this type of development" (Böhm and Brei 2008, 358).

How forestry corporations use CSR projects to legitimize the presence of pulp mills in local communities in Uruguay has been documented in detail by Balch (2018). Also, Ehrnström-Fuentes and Kröger's (2017) study of oppositional voices in Uruguay and Chile show how the corporate activities designed to create a "social license to operate" (SLO) are used to silence grievances and legitimize plantations and pulp mills to key influential stakeholders elsewhere (investors and end customers). This sophisticated corporate counter-tactics have led to major revamping of the local political setting, remoulding the political landscape in its favour, destabilizing counter-mobilizations that expose the adverse social and environmental impact of forestry operations (Ehrnström-Fuentes and Kröger 2017, 2018). Similar kinds of legitimization campaigns do also exist in other extractivist sectors, such as mining and agriculture (e.g. round-table discussions on sustainable palm oil and soybean that would supposedly not be produced in deforested areas). In the case of forestry extractivism, these campaigns have started to focus more and more on framings that seek to legitimize and coin these corporations as forerunners in the bioeconomy, as key bio- and green-economy parcels of the struggle against fossil-fuel-based economies, which would further help in mitigating the climate change (Ehrnström-Fuentes 2019). This is a distinct struggle and dynamics for legitimization campaigns than the campaigns by other forms of extractivism, such as mining or animal feed production, whose negative climate impacts (e.g. deforestation) are more self-evident, and emphasized internationally.

Despite the investments in CSR and other stakeholder relations, conflicts with environmental movements and local populations, whether visible or more covert, are still commonplace to the instalment and running operations of pulp mills, and the expansion and sustaining tree plantations in Uruguay and elsewhere. These conflicts seem to be more visible internationally and more present than conflicts around soybean plantation expansion in Uruguay or elsewhere. For example, a Google search on 17 July 2020 on "Uruguay pulp conflict" versus "Uruguay soybean conflict" results in 1.5 m hits versus a bit less than 0.9 m hits. "Pulp conflict"

in general produces 17.8 m hits, while “soybean conflict” produces 7.55 m hits. “Palm oil conflict” produces however 29 m hits, and “mining conflict” 137 m hits, which shows the much higher visibility of these two sectors than pulping, globally.

We will next move to a more detailed analysis of the political ecology and political ontology of forestry extractivism, which are key issues, or maybe *the* key issues, to consider when analysing and defining extractivism.

The political ecology of forestry extractivism

The definitions of agro-extractivism, as well as the definition of extractivism by the various authors discussed earlier, offer tools for pinpointing, especially the political, economic, and social aspects of extractivisms. These analyses of the politics involved in extractivism also offer possibilities for deepening the analysis of political ecology (studying the effects/politics of extractivism on the ecology, and vice versa, within the same ontology) (see e.g. Alonso-Fradejas 2018) or a political ontology (studying the effects/politics of extractivism on and with alternative ontologies or alternative ways of being) approach (see e.g. various works by Gudynas and Svampa).

A political ecology approach for examining extractivisms emphasizes the socio-ecologically destructive characteristic of extractive operations and to use these as the basis of inquiry. Most existing political-economic analyses of extractivism give some importance to ecological matters, from the viewpoint of how the destructive aspect of extractivism is its key defining feature, affecting the political and accumulative dynamics in crucial ways. Ye et al. (2020) list ten key features of extractivism, one of these being the creation of barrenness, places that are depleted, destroyed, or polluted by extractive operations. Dunlap and Jakobsen (2019) emphasize the destructive and violent characteristic of extraction, and so does Jason W. Moore (2015) in his work on the Capitalocene and the web of life. For Moore, capitalism is a frontier, a destructive project in its core: it needs to extract, blunder, and appropriate new value by

expanding resource-extracting frontiers, which cause destruction within the web of life. Alonso-Fradejas (2018) weaves together a more detailed political ecological analysis of soil, hydrology impacts of sugar cane, and palm oil production with a Marxist conceptual analysis of this metabolic rift.

Research on extractivism should engage with the relevant ecological impact studies of the type of extractive operation in question, uniting this to political economic analyses. We will next assess monoculture tree plantations more in detail in this vein.

The key issue to consider in the political ecology of forestry extractivism is that monocultures of eucalyptus used in pulp production acidify and salinize soils and decrease stream flows (Jackson et al. 2005). They also deplete and decrease the availability of water, especially drinkable water, due to the use of pesticides in the plantations, and diminish groundwater tables due to their fast-growth cycle of eucalyptus clonal stands, and the breeding of eucalyptus variants that require much water to grow faster (Kröger 2014; Overbeek et al. 2012). This leaves behind landscapes and soils that are eroded (Jobbágy and Jackson 2003). The existing ecosystem services of the Uruguayan grasslands are depleted, and the resiliency of the systems is lost (Céspedes-Payret et al. 2009). This also explains how cheap pulp can be produced in these mega-mills. This is premised on a cheapening of nature, a process that is based on appropriation of nature's unpaid work, in terms of Moore. This is how commodity frontiers have destroyed and depleted lived environments since the 15th century, as Moore (2015) describes, moving to new areas. In the case of South American pulp investment expansion, these have spread from the coasts and accessible river sites inland (Marini et al. 2017), as visible also in Uruguay.

Another key type of extractivist appropriation and destruction of existing accumulated capital, in nature or ecosystems, is the loss of organic soil carbon when natural pampa grasslands previously used for pasture are converted into tree plantations. Studies in Uruguay on 20-year-old eucalyptus stands established on grasslands suggest that even though eucalyptus growth does capture carbon from the atmosphere into the tree trunks, beneath the surface the existing soil

carbon rapidly dissolves: about 80% of the positive impact of tree planting in terms of carbon capture above the ground is cancelled due to the negative impact on carbon balances underground (Carrasco-Letelier et al. 2004). Similar impacts in terms of carbon emissions and balances of soils are also present in other forms of agro-extractivism, and elsewhere such as in sugar cane and oil palm plantations in Central America (Alonso-Fradejas 2018, 346). The focus of most analyses lies on what happens above the ground, to justify the investments, and to capture the rents from booming carbon markets and credits, for their supposedly beneficial effects on carbon sequestration and, thus, climate change mitigation (Overbeek et al. 2012; Kröger 2016). These carbon calculations require much more detailed and critical scrutiny.

Moreover, pulp mills themselves produce about double the amount of carbon emissions as they produce pulp. Thus, a 1-million-ton-per-year-producing pulp mill produces over 2 million tons of carbon emissions (https://suomenluonto.fi/uutiset/vahtikoira-miljardin-kuution-hiilivelka/). Furthermore, most of the produced pulp quickly returns to the atmosphere, when converted into cardboard and tissue products, which are mostly not recycled (Carrere and Lohmann 1996; Dauvergne and Lister 2011). Even when recycled, the processing of new materials contributes to more emissions (Overbeek et al. 2012).

The green image of forestry corporations thus needs to be seriously challenged. The overall carbon impact is clearly negative, and these pulp investments are not a solution to curbing climate change, quite the contrary. Mega-pulp mills are unnecessary and unsustainable investments. In terms of the extractivist theoretical apparatus, pulping does just that what its name suggests: pulping landscapes, existing ecosystems, and carbon balances, appropriating existing organic matter in the soil, converted into pulp, for profit and gain which concentrates to particular corporate elites (Kröger 2013b). What is left behind in many places are eroded and polluted soils, uninhabitable, and water scarce rural landscapes (Carrere and Lohmann 1996), which are locked in into ever-further forestry extractivism, as many soils, especially in low-precipitation countries such as Uruguay, do not serve anymore for other purposes, or would require extensive investments in irrigation.

This political ecological analysis leads us to a key observation. The specificity of forestry extractivism, at least in Uruguay, seems to be a deep capture and control of large swaths of land for several decades for the forestry corporations' purposes. This is assured by rights to pollute, which protect the investments through the possibility of charging the Uruguayan government in the international arbitration court for investment disputes, if the people decide to democratically increase regulations, for example. The continuity is ensured by a technological lock-in, where the forestry methods used, described earlier, make it possible to introduce ever-more extractive eucalyptus stands, increase the amount of fertilizers and pesticides, and thus deplete soils for other land-use practices. The salinization, acidification, emissions from loss of soil carbon, and decrease of water levels are particularly worrying aspects here.[2]

The destruction inherent to extractivisms suggests that extractivisms are forms of expanding unproductive capital: they are not really intensive forms of production, but actually, forces which destroy and deplete capital that resides in soils, in the broader conceptualization of capital which also includes soils (as Marx already suggested) (Dowbor 2018). Eucalyptus plantations in Uruguay have led to the loss of fertility of these soils (Céspedes-Payret et al. 2012). Tree plantations or pulp investments are also deeply extractive ventures, a sort of plunder of nature's bounty. We suggest that this political ecological analysis should serve as one key guideline in defining what kinds of natural resource exploitations should be called extractivist and which not.

The political ecology of forestry extractivism also suggests another important point for analyses of extractivisms. In many cases, extractivist operations of different types of work in conjunction. For example, forestry extractivism is a tool or modality for water extractivism, due to the negative impacts of polluting and consuming, appropriating water through plantation expansion (see Farley et al. 2005; 2008). Water extractivisms can take many forms, but the requirement of ample rainfall and soils which do not need to be irrigated suggests that forestry extractivism (as many other agro-extractivisms) is almost always working as a form of water extractivism. However, eucalyptus for pulp production cannot be grown in just any kind of

territories, since it requires about 800–1000 mm of precipitation per year (in contrast to 400 mm for soybean cultivation). Forestry consulting companies have mapped the areas around the world where eucalyptus monocultures would be possible, and there is a limited number of these places. Furthermore, in comparison to broad-leaf forest in similar precipitation, eucalyptus plantations are more likely to reduce water availability due to their high evapotranspiration, and be more threatened by drought (Liu et al. 2017). These political ecological characteristics of forestry extractivism further underline the importance of studying not only extractivism as a general process, but to study extractivisms, in their varied forms.

Lastly, we will delve deeper into analysing the political ontological dynamics, which can open up forestry extractivism.

The political ontology of resistance to forestry extractivism

To understand resistance to forestry and the politics of place that local groups engage in as they defend their life forms against forestry extractivism, it is not enough to examine these conflicts as merely environmental, or as expressions of "ecological distribution conflicts" (Scheidel et al. 2018). How "environment" and "ecology" are understood and practised by local actors depends largely on the practices that inform their way of being and relating to place (Blaser 2013b; de la Cadena 2015), which in turn informs how they respond to the arrival of extractivism in their community (Ehrnström-Fuentes 2016; Ehrnström-Fuentes 2020). The field of political ontology allows for a nuanced examination of the impacts, conflicts, and dynamics involved when local groups confront and resist the arrival of extractivism on their land (Ehrnström-Fuentes 2019; Ehrnström-Fuentes 2020).

Drawing on Indigenous struggles against states' efforts to colonize and develop Indigenous territories, Political Ontology (with capital letters) drawing particularly from Amerindian knowledge postulates that the dominant position that the modern myth/ontology

holds vis-à-vis other ontologies singularizes the multiplicity of place-based worlds into one presumed universally applicable reality (Blaser 2010, 2013a; de la Cadena 2015, de la Cadena and Blaser 2018). In essence, in encounters with modernity (e.g. participatory democracy, national politics), Indigenous ways of being, knowing, and relating (to) the world are not considered relevant, legitimate, or even acknowledged to exist (Blaser 2010; de la Cadena 2015). Ontological openings which question the modern forestry apparatus, with its narrow and western-based, technical definitions of forests and trees, are currently starting to challenge global forest governance (González and Kröger 2020). Thus, when ethical assessments of what exist, what is good, and what is desirable are done based on modern ontological assumptions, this effectively excludes, or makes invisible, alternative voices from the political debates about how life should be lived in the community (Ehrnström-Fuentes 2015). This exclusion of alternative voices is particularly clear in the debate over the desirability of extractive projects, where the "necessity" to create economic growth and development to solve issues of poverty are commonly used to legitimize new projects, while ignoring the harms caused to the ways of reproducing life in the community (Gudynas 2015).

The hierarchical ontological relations that exist between Indigenous communities and developmentalist states in other parts of Latin America are also present in Uruguay despite its lack of large Indigenous populations. The urban Uruguayan growth-driven techno-scientific entanglements with the forestry sector invisibilize many grievances felt by rural cattle farmers in regions assigned as a forestry priority. Due to their rural status as less productive and less capable of contributing to economic growth and development than the capital-intensive forestry assemblage, smallholder cattle farms and other oppositional voices have not been able to make their voices heard in the national media and political debates or mobilize a large unified movement against forestry investments (Ehrnström-Fuentes 2019).

The conflicts that have emerged do, however, make visible non-human forces involved in politics of extractivism. As noted previously, conflicts over water are common features in the political ecology of forestry extractivism. These water conflicts are also manifestations of

ontological conflicts between competing ways of performing the world through different human–water entanglements (Sepúlveda 2016). In Uruguay, the gradual decrease, and later absence of underground water is what has forced many cattle grazing farmers to sell and abandon their farms (Ehrnström-Fuentes 2019). Yet, this decrease of underground water availability has not officially been acknowledged as an issue related to forestry. Instead, drawing on scientific discourses, politicians, investing corporations, and even (some) scientists claim that changes in water precipitation, and thus availability thereof, is related to climate change rather than the arrival of monoculture tree plantations in Uruguay (Ehrnström-Fuentes 2019). This debate, revolving around the (ab)use of "science", is firmly situated within how facts are established within modernity, and has ended up erasing the lived realities of farmers who attest that the plantations have made farming very difficult because of their experienced water scarcity. Thus, to understand the organization of resistance (or lack thereof) it is important to pay attention to the mobilizing force of non-human actors as extractivism threatens the existence of the multiple worlds that these actors collectively sustain (Ehrnström-Fuentes 2020; Ehrnström-Fuentes 2019).

To understand how corporate agency affects these politics, it is important to note how forestry politics include elaborated CSR programmes that seek to erase conflicts and strengthen the forestry ontology among a wide array of civil society actors (Böhm and Brei 2008). This is partly due to the fact that in contrast to other agro-extractive fields in Uruguay (e.g. soy and rice), multinational corporations (and their associated business partners, as discussed earlier) are the main actors driving the expansion of the forestry sector, connecting large areas of land to extractive practices. Thus, the continuous expansion of the capitalist appropriation of nature is not an anonymous force of the "landed elite" but driven by clearly identifiable corporations and their appointed managers who, at any time, can be exposed as acting irresponsibly, as seen in the environmental campaigns previously discussed. By investing in community development projects (Balch 2018) and defining sustainability according to criteria set by the industry itself (Ehrnström-Fuentes and Kröger 2017), forestry corporations in Uruguay have used CSR to engage directly in the ontological politics of place (Ehrnström-Fuentes 2019). Thus, by shaping

the conversations, meanings, and relations to "the things at stake" (Blaser 2013b) in places affected by their operations, corporations use CSR as a mechanism to connect humans and non-humans in ways that further strengthen the forestry assemblage (for a detailed account of how forestry corporations use CSR to disable local conflicts, see Balch 2018). These brief notes on the ontological conflicts here should be complemented by detailed political ontologies of extractivisms in different places.

Conclusions

This chapter has identified forestry extractivism as a particular type of extractivism, which in some regards can be considered a specific instance or sub-category of agrarian extractivism. Uruguay was used as an example to identify how forestry extractivism functions in the case of pulp investments in that country based on extensive eucalyptus monocultures and paper pulp mills. Key features of forestry extractivism include:

1 specific trade deals, as pulp investments are costly;

2 long-term setting-up through stages: master plans, enclosures, establishing pulp mills, and managing rising conflicts after the building;

3 mills and plantations;

4 ecological and carbon impacts; and

5 massive legitimization campaigns.

We argued that political ecological, world-ecological, and political ontological analyses are important for defining what activities should be called extractivist, and what types of extractivisms are involved in each activity. We showed how the existing conceptualizations of (agro)extractictivism help guide research around forestry extractivism. The existing definitions

were found to be helpful, and we recommend adopting them as a checklist of what aspects need to be considered in analysing forestry and other forms of extractivism.

Pulping involves several forms of extractivisms, for example, based on a destructive relation with soils, water and carbon, forestry extractivism being thus definable as at least soil, water, and carbon extractivism. The carbon stored in trees is converted into paper products, and carbon is returned to the atmosphere in the production and consumption process, and depleted from soils due to the intensive production methods. If carbon storages would be increased, then that forestry practice would not be carbon extractivist. An example of this kind of process is, for example, the growth of hardwood trees in long-growth cycles in natural forests in Germany, described by Wohlleben (2016). To this list of extractivisms which are interrelated and form the possibilities of pulpwood plantation expansion, one can also add soil extractivism, as the soils are eroded.

We also discussed ontological conflicts related to pulpwood expansion, which the case of Uruguayan expansion can shed light on. Political ontology is central for understanding (agro)extractivisms, especially in contexts where conflicts and grievances remain for many years, mostly in the shadows, as within Uruguay. From a political ontology perspective, forestry corporations' ambitious legitimization campaigns are a direct response to the local conflicts around how pulpwood production and pulping affect, or threaten to affect, local ways of being in place.

Thinking through the concept of (agro)extractivism puts emphasis on what is extracted ecologically. This analysis should be accompanied by a global political economic and resource geopolitics analysis of particular global extractivisms, such as forestry. This should also be tied to particular contexts, polities, and lived environments, which significantly influence especially the politics through which global extractivisms of different types are birthed and resisted. The literature on Uruguayan pulp investment was used as an example of this here. Further studies on agro-extractivism should focus on making systematic and carefully designed comparisons where both the polities and sectors compared are controlled for, comparing, for example, soybeans and

eucalyptus in Brazil and Uruguay, which have both, but not any kind of resource-exploiting sector anywhere with any other kind of natural resource extraction. It is also good to separate and bound what "normal" resource extraction is, and what extractivist extraction is: several existing definitions, briefly reviewed and applied here, provide precise tools for this, which we recommend to use.

Notes

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1 In the case of Uruguay's forestry sector, the forestry consultant firms (e.g. Poyry Group) are the creators of strategies and ideologies, pulp, and paper companies (e.g. UPM, Stora Enso) as project implementers, chemistry companies (e.g. BASF, Bayer, Kemira), and machine producing companies (e.g. Valmet, Ponsse) as important suppliers of material goods, and financial investors (export guarantee agencies, international banks, and credit agencies) as provider of the necessary capital for these investments (Carrere and Lohmann 1996; Kröger 2007, 2010; Pakkasvirta 2008). In these networks, governments (e.g. Finland, Uruguay) enable the creation of links among the business actors and related associations (e.g. export promoting agencies, business associations, industry

representatives, and worker unions) (for a more detail overview of the governmental role in "birthing forestry extractivism" see Ehrnström-Fuentes and Kröger 2018).

2 Other forms of extractivism have also very negative and specific ecological impacts, whose comparative analysis to eucalyptus monocultures is however beyond the scope of this article.