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Edward Elgar
2021

Kröger , M 2021 , Forests and current transitions . in A H Akram-Lodhi , K Dietz , B Engels & B M McKay (eds) , Handbook of Critical Agrarian Studies . Edward Elgar , Cheltenham , pp. þÿ 3 8 7 4 0 0 . h t t p s : / / d o i . o r g / 1 0 . 4 3 3 7 / 9 7 8 1 7 8 8 9 7 2 4 6 8 . 0 0 0 5 4

http://hdl.handle.net/10138/342879
https://doi.org/10.4337/9781788972468.00054

unspecified
submittedVersion

The Edward Elgar Handbook of Critical Agrarian Studies

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Pre-print version of the chapter (for the final, modified and published version, please see: https://www.elgaronline.com/view/edcoll/9781788972451/9781788972451.00054.xml)

Chapter to section 4: Contemporary Debates

Forests and Current Transitions

The importance of forests and their transitions for critical agrarian studies

The topic of forests and their current transitions – for example, deforestation within rural transformations, tree plantations and regenerating pastures as tree-covered areas – is at the core of understanding several overarching themes in critical agrarian studies (CAS). There is often an inherent schism between agriculture and retaining forest cover, but such a schism is not inevitable. People maintain a substantial variety of forest activities, including different types of agroforestry, swiddens, hunting and gathering, and non-wood and wood-based forest product usage (González and Kröger 2020). Modernity and capitalism (Moore 2010) – as well as many prior "civilizations", such as the Roman and other ancient empires (Perlin 2005) – have largely seen forests as sources of wood essential to the growth and expansion of their power, and have consequently erased most of the world's old-growth forests (Radkau 2012).

Critical agrarian studies have and can continue to contribute to these and other closely related forest debates in different disciplines and topics by adding a deeper analysis of power relations, agrarian political economy, and political ecology. For example, analyses have challenged the claim that swidden practices or forest commons are unsustainable or unviable practices, highlighting how modernizing states and the expansion of corporate profit-seeking have labelled the common lands of peasants and Indigenous populations "empty" or "unproductive" (Fox et al. 2009; Toivanen and Kröger 2018). Such barring of customary rights and legal access to common ancestral forests have pushed peasants towards illegal uses of forests and hostile attitudes towards these areas that they formerly held as commonly governed (Peluso 1992). Modern industrial forestry has often cast prior practices that sustained natural forest cover as "unsustainable" to delegitimize competing land uses and control by traditional populations and to legitimize the sector's own deforestation and tree plantation practices (Shiva and Bandyopadhyay 1985; Carrere and Lohmann 1996; Hall 2002;

McCarthy 2010). In these forest transitions, the very concept of "forest" is at the core of the debate: whether there actually is a forest in a place does not matter if powerholders manage to label an area a forest (Vandergeest and Peluso 2006; 2015). Transforming the *Cerrado* forests in inland Brazil into monoculture plantations (Oliveira and Hecht 2016) or the worldwide labelling of any areas by would-be "development" inducers as shrubland, savannah, already degraded forest or other non-natural forests – or as simply nothing – (see Scott 1998) is a key discursive tactic that shapes the understanding of what forests are and whether they are transformed or not. Therefore, in addition to providing an analysis of the actual forest practices of different social groups (see Schroeder and González 2019), definitional issues (see Kröger 2014) and forest discourses (see Pülzl et al. 2014) are at the core of critical agrarian studies of forest transitions. Other scholars and theorists have also studied forest transitions for different purposes, such as trying to generalize the broad changes that, for example, urbanization and industrialization bring to tree cover.[1]

The discussion on forest transitions in this chapter will reveal that we urgently need a better definition of forests, or understandings of forests that are based on indigenous ontologies, not only on western conceptualizations. I will showcase the different positions within critical agrarian studies regarding the debate around monocultures (including tree plantations) and forest transitions in different parts of the globe, including the important forest transitions occurring in the global South as well as the global North. I canvas the current major forest transitions globally, examining the changes in forests due to the development of pastures, soybeans, oil palm and/or mining and other extractive capitalist expansions that are currently expanding at an increasing rate despite dire global and regional climate disruptions. Particular attention is focused on Brazil, where contemporary forest transitions are used to illustrate what critical agrarian studies has already contributed and what should be studied.

[1] For example, the generalizing theory on 'forest transitions' (FTT) by Mather (1990) argues that deforestation first increases with urbanization and industrialization over a long period, followed by reforestation (see also Rudel et al. 2010). Hecht (2010) offers a useful critique of FTT and a similar theory of "deforestation", the Environmental Kuznets Curve, both of which have underlying Malthusian frameworks, and for example do not differentiate between tree plantations and forests.

The key debates around how to provide answers to pressing sustainability issues, such as the clean development mechanism (CDM), REDD+[2], and other "carbon capture" issues, are addressed. These debates are likely to become ever-more influential in policies impacting the 'lived environments' of forest-dwelling populations and other peasant and rural peoples (see Taylor 2015). Currently, most of the focus on battling climate change has focused on curbing carbon emissions without giving due importance to biodiversity; tree mass and carbon capture are prioritized at the cost of rich forest ecosystems inhabited by people. This chapter also identifies several research gaps and provides ideas for deepening the criticality of agrarian studies on forests – including suggesting world-ecological, political ontological, and other post-cartesian and post-extractivist analyses of forests and forest transitions. I will also provide a list for further reading on this fascinating topic, which (for abovementioned reasons) should be studied more deeply and broadly by critical agrarian studies.

Forests: contemporary debates and conceptual issues

What are forests? Lund (2018) found that there are more than 1700 different definitions of forests and wooded areas in the academic literature and official reports. How should we define forests? What is the difference between an area with trees and a forest? Who has and who should have the power to define forests? These questions have risen to a prominent position since the spread of industrial tree plantations started to drastically shape rural landscapes in the Global South and the Global North, often under the guise of expanding forests. The different Food and Agriculture Organization (FAO) definitions of these tree plantations, which are typically large-scale, continuous monoculture plantations consisting of the industrial forestry and charcoal sectors of eucalyptus, pine or acacia and are produced for the purposes of pulp-making or charcoal, still call these plantations 'forests'.[3] The former definition, "industrial forest plantations", was at least somewhat better than the current "planted forests" definition, which unites all kinds of semi-natural, semi-planted forests with monoculture tree plantations (Kröger 2014), making it difficult to know what specific data are referring to or for researchers to follow what a fellow researcher is arguing (but see Jackson et al.

[2] Reducing emissions from deforestation and forest degradation, sustainable management of forests and the conservation and enhancement of forest carbon stocks (REDD+) is the key global program through which the UN and FAO try to combat deforestation (http://www.fao.org/redd/en/).

[3] See the latest FAO definitions of natural forests and "planted forests" with their new subcategories, which show some improvement in comparison to the definition before the latest version, here: http://www.fao.org/forestry/plantedforests/67504/en/ (accessed 28 January 2019).

2005; Hua et al. 2018). International and national organizations' forest definitions have also been the victim of "forestry imperialism", where powerful nations have steered the definition towards their own interests and stripped away many of the signifiers that are crucial for forest-dwelling traditional populations' forest-based livelihoods and understandings of what forests are (Kröger 2013b; 2014). Uruguay and Chile provide examples of industrial forestry expansions that have been argued to have colonial-type power relations (Groglopo 2012) and both visibly violent and hidden conflicts (Ehrnström-Fuentes and Kröger 2017). The battles around defining and conceptualizing forests and areas consisting of planted trees are constantly gaining more importance. In addition to critical agrarian studies, many other fields such as ecology, are joining the criticism on existing forest definitions used by powerful institutions (Sasaki and Putz 2009).

Critical agrarian studies on forests are particularly appropriate for assessing the dilemmas related to these endeavours due to their focus on power relations, especially those issues left unexamined by more technically minded or natural scientific forest and forestry researchers, those who focus on conservation without people, or even many political economists of forestry. There are crucial dimensions to these debates that readily escape the analysis of even radical political economics. Forests are often home to many Indigenous and traditional populations who still retain some of the longest-lasting commoning practices (McElwee 2009) but are also typically being ethnic minorities and targets of land grabs (Ferreira 2009). An example could be swidden cultivation (Fox et al. 2009), which can be considered sustainable in comparison to modern consumption and production patterns (Nepstad et al. 2006; Hecht 2011). Forests and trees also have an "agency" or spiritual side to them that political ontology, ethnographies of non-modernist forest dwellers (Kohn 2013), analyses of Indigenous forest-based cultivation practices (Schroeder and González 2019), and even some biologists/foresters examining the deeper nature of trees and forests are starting to discover (Wohlleben 2016). Forest knowledge of Amazon indigenous groups have been found to offer untapped potential for challenging and contributing to the current definitions in global forest governance, offering onto-epistemological openings and practical tools to address the climate crisis (González and Kröger 2020). These post-Cartesian analyses offer a new viewpoint to question the modern notion of "sustainable forestry", where sustainability has come to signify sustained yields. "Sustainability" emerged from the concept of sustainable forestry in German forestry in the nineteenth century (Scott 1998). Such anthropocentric notions of forests and trees as (primarily or even only) wood resources are and have been challenged by many of those populations studied by critical agrarian studies, such as those who are heavily pressed by the advance of land grabs, deforestation, industrial plantation expansions and extractivism.

Forests should thus be defined as areas with multiple tree species that grow together with other vegetation, in natural or semi-natural formations, and allow for the co-existence of multiple forms of life, that is, a web of life that only a forest can sustain. On the other hand, tree monocultures or tree plantations with very few species should not be called forests or planted forests but should be referred to as plantations, which are more akin to agricultural crop production.

There is a long history of the physical and symbolic degradation of forests and the conflicts these transitions have caused (Perlin 2005; Miller 2007; Moore 2010; Radkau 2012; Ghazoul 2015). The worst damage to millennial forests and trees has been accomplished through the past centuries' unprecedented advances in western deforestation practices and means. Timber and logging frontiers have been essential for building the core regions of empires for 5,000 years (Perlin 2005), and later the capitalist world-system and providing fuel for the production of sugar and other early industrial mills that were essential for the system (Moore 2015). The historical frontiers of the deforestation of capitalism were defined by the decimation of forests and valuable trees in regions such as coastal Brazil (especially Brazilwood and later araucarias) and in countries such as Poland, Norway (logging for building materials for Amsterdam and other cities) (Moore 2010), Burma (teak for construction), and Finland (potash, tar, and paper) (Kröger 2013b).

In many political economies – such as Brazil and Argentina – whose "agro-hegemonies" were built upon agribusiness and latifundio (large historic landholders') lobby groups (Miller 2007; Campbell 2015), forests are cast by these agrohegemonies as non-possibilities for development and as impediments to economic growth through pasture expansion, monocultures, mining, dams, infrastructure and cities. It is important to note that the motives of forest policy are intersectoral (Kröger 2017a) and vary strongly across different world-ecologies; their constellations depend on the regionally dominant political economies and ecologies. However, it is not common to construct alternative forest policies due to the pressure of the capitalist world-ecology, which could be said to have an inherent bias against forest-based livelihoods, as well as forest commons (Toivanen and Kröger 2018).

Natural forests have been both useful for and impediments to different varieties of capitalism. Standing forests have played a major role in the capitalist world-system, for example, during the rubber boom of the Amazon, which left the forest standing while exploiting the rubber tappers, illustrating the importance of studying the situated histories of social relations taking place

in forests and behind the creation of forest-based commodities (Peluso 2012). Recently, Amazon cooperatives harvesting non-tree-based forest products have thrived and managed to increase the wealth of those living close to cities rich with collectable fruits, nuts, medicinal extracts and oils and other products (Hecht 2007). In addition to these value creations, natural and semi-natural forests continue to be crucially important for many peasant livelihoods.

Current forest transitions – monocultures and deforestation

The past decades have seen massive deforestation, especially in the tropics but also in other parts of the globe. Perversely, this deforestation is often promoted in the name of expanding "forests", which actually means replacing native forests with "forest plantations" or tree plantations (Marchak 1995; Carrere and Lohmann 1996; Hua et al. 2018). This problem is rapidly increasing due to climate mitigation initiatives (Scheidel and Work 2018). Studies of tree plantations have shown that states have major roles in these modernizing ventures (Scott 1998; Kröger 2013a). State subsidies (Bull et al. 2006), ideological support, and the creation of neoliberal policies to promote corporate power at the cost of regulatory capacities are keys in birthing extractivism (Ehrnström-Fuentes and Kröger 2018). The socio-economic impacts of tree plantations depend on whether they are corporate, smallholder, community or state-owned/controlled ventures; for instance, whether popular, pro-poor agrarian reform has been carried out and forestry holdings divided more equally (Kröger 2014). There remains, however, a debate among scholars and a need for further research on the precise socio-economic impacts of tree plantations (Malkamäki et al. 2018) as well as on their socio-environmental impacts (see Kröger 2014, Ehrnström-Fuentes 2016). Climate mitigation and speculation cause tree plantations to displace forests and other areas at an increasing pace (Lohmann 1999; Lyons and Westoby 2014), both materially and discursively. This change is visible in the discussion around flex crops, including flex trees, which revolves around the rapidly changing multiple-ness and flexible-ness (or their absence or lessening) in different tree and wood-based production systems (Kröger 2016) and represents an important and under-developed area of research.

In addition to the replacement of natural or other forests of greater biodiversity with oil palm, rubber, eucalyptus, acacia, pine, teak and other tree monocultures to produce agrofuels, fibre, and so forth (Overbeek et al. 2012), there is an important and partially interlinked process of deforestation for the purposes of cattle ranching and feed production for the global meat industry (Oliveira and Hecht 2016; Fearnside 2017; Hoelle 2017). Logging valuable timber accompanies

these deforestation initiatives (Kröger 2017a; 2018) and is linked to the expansion of corn, soybean, sugarcane and rice plantations. There is also an important capital-labour division component in these expansions that needs to be studied in order to understand them; one important difference, for example, is that soybean and eucalyptus plantations require much less manual labour than oil palm plantations (Alonso-Fradejas et al. 2016). The production boom of biodiesel and food-based oil palm has had direct impacts to forest annihilation in Southeast Asia, and to some extent Central America, Colombia and Africa, possibly due to the presence of a larger labour force (see Gerber 2010, Alonso-Fradejas et al. 2016). Regionally dominant political economies need to be studied to understand how, when, where and what kind of forest transitions these activities are pushing and by whom. In South America, for example, deforestation has been largely caused by those involved in the 'value web' (see Borras et al. 2015) of meat production, such as soybean and beef producers (see Weis 2013). The process of forestland transitions has become increasingly internationalized and institutionalized, with pension and other funds enabling expansions.

Forest and forestry politics need to be further studied to explain the causes and outcomes of forest transitions; in particular, different types of resistance and conflicts. Tree plantations have been mired in myriad national and international-level conflicts, which have already been studied from many perspectives around the world (see Gerber 2010; Hall 2002; Hellström 2001; Pakkasvirta 2010; Prudham 2008). The study of tree plantation conflicts is likely to merge more closely with the study of "natural forest" conflicts, which thus far have been mostly separate study focuses (Kröger 2020a), as plantations increasingly supplant natural forests.

Tropical deforestation gained ground globally during the 1980s and 1990s, becoming a much-studied topic in political ecology (see Schmink and Wood 1984; Hecht and Cockburn 1989; Hecht 2007; 2011) and forest politics (see Marchak 1995; Dauvergne and Lister 2011). Brazil and particularly the Amazon have been central in these discussions, and their study has opened up the dynamics of forest transitions in several ways. The initial concerns about Amazon deforestation included pasture expansion as a direct result of the wasteful practices of antiquated rural elites, who often burned and razed large forest areas (Fearnside 2017). The field has evolved much since then. The "modern monocultures" of agribusiness, whether they consist of trees or crops, can be contrasted with the old, less productive large estates, such as latifundios in Latin America, which can be seen as speculative ventures that seek to make money on expected future land valuation rather than production per se (Campbell 2015). In latifundio-type speculative landholdings, deforested areas contain very few cows; by contrast, 'modern cattle capitalism' is characterized by

intensively managed pasture areas, where the focus is actually on producing the maximum amount of beef (and other animal-derivative products). The latifundio speculative holdings typically hold cattle solely to ward off possible farmland productivity inspectors from land authorities seeking distributable or unproductive land, such as in Brazil. This 'primitive cattle capitalism' remains the greatest threat to the Brazilian Amazon forests.

Since the 2000s, the rapid development of increasingly precise satellites and remote sensing technologies has dramatically improved the capacity to monitor events in forests. Satellites are currently used by some non-governmental organizations (NGO) and state entities to uncover patches of deforestation as small as 10 metres. However, this is not to say that curbing deforestation is easy: would-be deforesters constantly adapt to monitoring by, for example, covering open-pit iron mines with very large blue-green plastic canvasses to prevent objectors from spotting them with open-access satellite data, as happened in Goa (Kröger 2020b), or degrading and polluting forests rather than clear-cutting them. These dynamics between deforestation and production oscillate between high demands from global markets and developments in regulation capacities (Hecht 2011; Fearnside 2017). A perverse outcome of this situation is the large-scale aerial poisoning of forests with Tordon and other agrotoxics, which can only be detected after a few weeks. This practice started in Brazil in spring/summer 2018 as a response to authorities' and researchers' newly refined skill in rapidly detecting, even under cloudy conditions, initiated clear-cuts and major degradations by loggers. Areas as large as 70 000 ha have been sprayed from airplanes, and although NGOs such as the Brazilian *Instituto Socioambiental* notified the environmental authorities, who were able to end at least some of these practices, the damage was already done (author's interview, 20 November 2018).

The current push by the Brazilian Bolsonaro government to allow the use of many pesticides that are banned elsewhere in the world is of concern. Brazil is already the world's largest pesticide user, and the compound effects of aerial spraying new soybean plantations deep in the Amazon may impact delicate ecosystems and species (Pedlowski et al. 2012). A similarly worrying and wanton process of polluting deforestation is occurring in the Peruvian Amazon province of Madre de Dios, where illegal medium-size gold miners spilling mercury into waters that they muddy are the key proximate agents causing most deforestation (Swenson et al. 2011). In this process, miners spread mercury into rivers, which are brought by fish into distant Indigenous communities and may potentially represent lethal impacts to human life. Examples of long-term forest changes can be found within the oil industries in Nigeria, Ecuador, and the Arctic, among others. Some troubling

features of contemporary deforestation are its inter-sectoriality (Kröger 2017a), the expansion of overlapping deforested land claimed by various industries (which together and wantonly destroy forests in an ungoverned ultraliberal, globalized process) (Käkönen and Thuon 2018), and the spread of forest transitions (to worse living conditions) to populations far away from the initial cleared sites (Swenson et al. 2011). These issues are particularly problematic because the phenomenon of deforestation and other major forest transitions, such as pollution and degradation, become harder to detect and track and thus govern.

Several processes in different parts of the globe highlight these dynamics. For example, over half of the old growth (trees over 150 years old) forests in Finland have been cut during the first 15 years of the 2000s (Kröger and Raitio 2017), and China's ambitious policies to 'protect' and 'restore' 'forests' have actually meant a transformation of both native forests and croplands into tree plantations (Hua et al. 2018). Such qualitative worsening of tree-covered areas from forests to tree plantations has not, however, been noted by the global community (or state authorities) as much as the clear-cut deforestation brought by the multiple 'flex crop' expansions in Latin America (see Borras et al. 2015) and by oil palm and pulpwood expansion in Southeast Asia (particularly in Indonesia and Malaysia) (McCarthy 2010). When deforestation is carried out mostly by large landholders, who are often linked to corporations and export markets, these transitions can be more easily detected by would-be regulators (be they research entities, government agencies, NGOs, or others). The massive losses in the Brazilian *Cerrado*, for example, where soybean plantations have quickly wiped out vast areas of forestland, have been noted (Oliveira and Hecht 2016). When deforestation takes place in a patchwork fashion, however, it usually remains less visible (as in the Nordic countries) (Kröger and Raitio 2017). Nonetheless, the phenomenon is the same; forests and all that lives and comes to life with them are disappearing. The tree line is travelling north due to climate warming, but forests are being degraded by the expansion of logging, fires, pests and other interlinked climatic and productivist expansions into the Arctic (Kröger 2019a).

In this sense, deforesting resource frontiers (see Kröger and Nygren 2020) should be understood not merely in political economic terms but in terms of major changes in what exists and can exist in a given piece of land: they should be understood as 'frontiers of existence' (Kröger 2017b). An analysis with a central focus on rights to exist and the value of life itself (be this the lives of peasants, other humans, animals, insects, trees or other forms of life) – which takes as a starting point the fact that different forms of life do exist and may even have a right to exist - is still lacking in critical agrarian studies. The discipline typically continues unreflectively using (in the

vein of existing vocabulary) terms such as "volume of meat produced" instead of, for example, focusing on the numbers of lives lost. This type of vocabulary is at odds with the conceptions of life and the web of life of many Indigenous forest dwellers, who see trees as entities that have lives.[4] Future critical agrarian studies should be careful not to unreflectively engage in the modernist project of making the world commensurable and consumable through Cartesian analysis (see Moore 2015), which hides lives and assumes an anthropocentric or peasant-centric posture (if these peasants are studied at the cost of everything else that exists in the web of life).

Contemporary forest transitions and policy debates

In this section, I will provide some examples of the debates around contemporary forest policies. I will first address the financialization of forest (non-)transitions through the debates on REDD+ and *yasunization*. Second, I will discuss how progressive governments have tried to develop social welfare policies and monetary handouts to people for not deforesting and the debate around this through a discussion of Brazil's *Bolsa Verde* and other initiatives. The third paragraph discusses different conservation policies, including "fortress conservation" and biocultural conservation areas, and their current relation to deforestation. Finally, before the conclusions, I will briefly introduce the large debate around certification schemes and their (questioned) importance in governing forest transitions.

Yasunization of forests

In the existing literature, some of the above concerns on the commercialization and westernization of nature are visible in the debate around REDD+ (Schroeder and González 2019; González and Kröger 2020), 'yasunization' (Temper et al. 2013), and other environmental-economics promoted initiatives. These initiatives try to protect forests and offer higher returns for forest stewardship by forest dwellers and governments that protect forests through financial compensation for such acts. Critiques of the aforementioned initiatives are mostly found in critical agrarian studies, where the World Rainforest Movement's, the Corner House's and Chris Lang's writings have been highly

[4] Many Indigenous people and other animists do not see trees as "things" as a flat or Latourian-inspired ontology would see them (see Kohn 2013; Schroeder and González 2019) but rather as beings or entities that escape Cartesian dualisms; some trees "consist", for example, of multiple visible and invisible (to most people) beings that share the "tree". Similar non-modernist understandings of what trees are can be found in folklore in traditional forest-dweller locations, such as Finland.

influential. These studies argue that the CDM, REDD+, and other carbon market initiatives have major obstacles to overcome before they can be launched or calculated (Lohmann 1999; Kröger 2016) and often have negative consequences. These initiatives may even result in replacing native forests with tree plantations and dispossessing forest dwellers (Lyons and Westoby 2014). These and other conservation ventures that bar traditional forest uses by peasants and Indigenous groups have been criticized as green grabs (Fairhead et al. 2012). Other fields, such as ecological economics, have also criticized ecosystem services as commodity fetishism (Kosoy and Corbera 2010).

Targeted social policies for curbing deforestation

While the global commercialization of forests has been severely criticized, under some circumstances some national and regional-level policies similar to some REDD+ ideas seem to have had positive impacts on forest-based 'lived environments'. According to Adriana Margutti, who worked for Brazil's Workers' Party (PT) (interview, 21 November 2018) as a key person in developing and launching Brazil's *Bolsa Verde* programme, *Bolsa Verde* was a success. The policy gave approximately R$100.00 to forest-dwelling people in extreme poverty (earning less than R$70.00 per month, according to *Bolsa Familia* statistics) as compensation for not deforesting, which was verified by increasingly sophisticated remote sensing and geoinformatics by state institutions and researchers. However, the policy of Green Municipalities (*municípios verdes*), developed during the same era by the country's Ministry of the Environment, was not a success according to many of my informants. Many (or possibly even most) of the Amazon-located municipalities' secretaries of the environment have not received the federal funds allocated to each municipality to tackle deforestation. No funds came to the Belterra secretary of the environment, for example, according to the secretary himself, and the funds may have actually been used in advancing soybean and logging expansions into forests. These examples illustrate the importance of sound systems that ensure the functioning of finance-based deforestation-curbing activities and how difficult this is given the existing politics and power relations, according to which those in power usually benefit from deforestation.

Conservation policies and deforestation

The western idea of conservation requiring pristine forests emptied of people has been heavily criticized by political ecologists and others with field research experience. Brockington (2002) offers a fruitful critique on this "fortress conservation". This continues to be one of the biggest political forces affecting forests and their dwellers in, for example, several parts of Africa but also

elsewhere, as the literature on “green grabbing” has illustrated (Fairhead et al. 2012). The more inclusive bio-cultural conservation parks, such as the multiple-use conservation areas found in South America, where peasants can continue to live in forests, have been applauded as policy innovations. However, recent developments in many of these multiple-use conservation areas, such as the expansion of ranching, authoritarian populism that sees no problem with deforestation, and the decline of rubber prices, have placed severe political pressure on this more socially inclusive and often more politically feasible conservation model (Kröger 2019b). The fall of the rubber subsidies/markets has meant that rubber tappers are turning to cattle ranching and logging unless key activists resisting deforestation activities retain and build contentious agency in the forests (Kröger 2013a). This approach is increasingly difficult due to intergenerational dynamics in which the old rubber holdings of rubber tappers cannot be viably divided equally among their children to base their families’ livelihoods on. Ranching offers an easily available short-term means of obtaining funds for many families in the Chico Mendes Extractive Reserve, for example (Kröger 2019b). While extractive reserves and other multiple-use conservation areas developed by Chico Mendes and others in Brazil during and after the 1980s have had major impacts on the institutionalization of Latin American conservation and successfully created barrier zones against deforestation and offered forest rights to inhabitants (Hecht 2011), this model also poses intrinsic problems. One such problem is the high amount of labour required to collect and process non-wood-based forest products, which is often borne disproportionally by women; for this and other reasons, the most successful multiple-use conservation areas are located closer to urban centres. The successful areas have managed to thrive in the current superfoods booms of açai, nuts and other products (Hecht 2007). States should offer much greater assistance for developing and launching these sustainable forest-based markets and livelihoods. The way to ensure such an approach is to build international and national coalitions that are based on globally attuned contentious agency for forest-based livelihoods. Civil society must simultaneously use multiple strategies, including both contentious and routine acts. Resistance should be embedded in state and multilateral institutions, such as the UN and FAO, in addition to influencing crucial financial sectors to globally expand a forest conservation agenda that is socially and environmentally just. Actions by forest-dwellers by themselves are essential. The push to deforest is relentless. Mere creation of conservation areas as barrier zones is not enough, as for example the rapidly risen deforestation inside conservation areas during the Bolsonaro era proves (Kröger 2020c). The international system still de facto treats forests as something that can be lost to maintain the international flow of commodities, even in the face of global climate and ecological crises.

Certification schemes

In the weak presence of markets for non-wood-based forest products, the push for logging inside conservation areas is currently severe. This result is due to the adoption of Forest Stewardship Council (FSC) certification schemes for would-be "sustainable communitarian logging" (Kröger 2018). These dynamics show how certification schemes that aim to support forest dwellers typically function as a veil to hide and legitimize the bulk of the wood trade, which is illegal (in approximately 80 per cent of the Brazilian Amazon), as the sawmills use FSC export openings to place illegal wood within the piles of "certified" logs for which no chain of custody can be guaranteed in practice. FSC and other forest certifications are currently heavily challenged, and NGOs such as Greenpeace have left the scheme, as it cannot establish a chain of custody in practice.

Conclusion

This chapter has offered some glimpses into current forest transitions, a vast topic for which an exhaustive account or comprehensive review is beyond the scope of this brief analysis. Forests are in transition due to expanding monocultures. The key reasons for deforestation, forest degradation, and pollution are the value web of meat production, which drives the expansion of meat consumption; existing practices of (illegal) land grabbing and deforestation for speculative purposes; the expansion of the wood-based bioeconomy based on flex tree plantations; and mining, hydrocarbon, dam, and other industrial and urbanizing ventures. Indigenous people and other traditional forest dwellers have largely managed to retain forest cover in areas where they have gained de jure and/or de facto land control (Garnett et al. 2018). Critical agrarian studies should delve more deeply into the analysis of both tree plantations and natural forests and all types of wooded landscapes between these two. This analysis should be critical in the sense of conducting political economic analyses of power relations and control, with a focus on who are the winners and losers of different forest transitions. Forest politics, including conflicts and their absence, should be studied to explain the causalities in forest transitions. Such analyses should also include an understanding of the multiple forms of life that are present in forests and are lost to deforestation.

Critical agrarian studies should continue to go beyond remote sensing, rational choice theory and other explanations of forest transitions that lump all human actions together without distinguishing who is doing what; without considering the systemic, structural and contingent impacts; and/or assuming that all humans or groups would act in a similar fashion. There should be

an analysis of both the proximate agents (who actually cuts the trees, for example, and all the steps in the 'value web') and the ultimate causes (which economic sectors and varieties of capitalism are behind the push, and what local contextual issues enable such transitions?) of forest transitions (Geist and Lambin 2002; Kröger 2019b). This approach can help in highlighting who is responsible for what and thus avoid the 'flat anthropocentrisms' so common in the more popular bestselling books of global history that also touch upon the issue of forest transitions (such as Weisman 2008). The study of different strategies by which contentious agency and other forms of resistance are created can elaborate the local varieties of forest politics and how these possibly affect forest transitions (Kröger 2013; 2020b).

The ongoing push for polluting deforestation in the forms of mining using mercury, oil exploration, and the use of agrotoxics to kill vegetation, which influence not only the targeted forest areas but also very distant communities and inhabited environments, is a dire concern. There are many authoritarian populist governments currently in power for whom forests are considered an impediment to growth. The development of sustainable forest-based alternatives to global extractivism is an urgent topic for which critical agrarian studies should provide answers. The ways in which forest communities and forest advocates could preserve and develop forest-based livelihoods through resistance and scaling up of successful state-society policies should be studied in more detail. The current frontiers of deforestation also require more analysis in terms of their global linkages. The issue of who is responsible for what has occurred and is occurring in past and contemporary forest transitions is also a topic requiring more analysis, which should cover the different commodity and deforestation sectors and their linkages to reveal who are the key actors and what is their responsibility and power in forest transitions.

Further Readings

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