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Profound changes in socio-natural environments are taking place at an accelerating rate around the world, affecting the ways people dwell within the landscape, relate to place and imagine the future. This chapter focuses on relationship between dwelling and politics by looking at a landscape that has changed to such an extent that previously familiar places have become almost unrecognisable to the local population. Hence, dwelling in these landscapes is considered so challenging that people are starting to avoid them or relating to them through new technologies. To be more precise, I will explore the politics involved when landscapes are (re)made through new technologies and representations as contrasted with dwelling, that is, as a way to *live in* emerging landscapes. I argue for incorporating a phenomenological understanding of landscape into understanding the politics of environmental transformation (political ecology) by exploring multi-scalar experiences and representations in relation to profoundly transformed landscapes.

The village of Buntoi in Central Kalimantan is located in what Anna Tsing would call a "disturbed landscape" (Tsing 2015). Large-scale timber logging started here in the 1960–1970s, when timber corporations accessed the land and began cutting down large trees. In the 1990s, a paved road was constructed to ease transportation; in 1996, the Mega Rice Project (henceforth MRP), through which President Suharto intended to transform 1.4 million hectares of swamp forest into rice fields, was extended to the vicinity of the village, transforming previous dwelling places into something entirely different. These changes in the landscape are felt both in terms of experience and livelihoods; for instance, since deforestation resulted in dry peat soils, fires regularly erupt (see Galudra et al. 2010).[1] Disturbance in the landscape means profound ecological change, which in turn opens up the landscape to the new (eco-social) assemblages, gazes, and relations (Tsing 2015), including to climate change mitigation schemes, conservation projects and also new species and humans (Lounela 2015; 2017; forthcoming).

1 Between 2000 and 2008, Central Kalimantan lost about 0.9 million hectares of forest and still has a high rate of forest loss. The reasons have to do with changes in national and local policies (decentralisation) and institutional, social and ecological change (Suwarno and Sumarga 2015: 78). The recent large forest fires (esp. 2015) and spread of oil palm have added to the problem.

In 2010, Central Kalimantan was nominated as a climate change pilot province by the central government and President Susilo Bambang Yudhoyono.[2] Consequently, Central Kalimantan and many villages like Buntoi, became the site of climate change mitigation activities, especially REDD+, the acronym for the UN programme on Reducing Emissions from Deforestation and Degradation plus. Initially, REDD aimed at reforestation and forest conservation through result-based payments and carbon trade (Howell 2014: 1), later integrating social dimensions and questions of livelihood into REDD + schemes. These climate change mitigation projects have been initiated by international donors and local NGOs in collaboration with state agencies, and implemented in specific *places,* using specific techniques.[3] They produce maps to show land use plans and property rights, in an effort to stabilise and transform socio-natural relations.

James Scott (1998) has famously argued that states produce abstract knowledge through maps, which tend to simplify or even misrepresent local (complicated) knowledges and practices. Nancy Peluso, among the others, has noted that the mapping of forest resources is a political act, and for the last couple of decades a counter-mapping movement has resisted the state appropriation of 'customary' lands through drawing their own maps (Peluso 1995: 383–384). However, as noted by Stuart Kirsch (2006: 202), counter-maps too may displace the embodied knowledge normally gained through local practices and dwelling. While state maps typically indicate property boundaries and mark land rights, increasingly NGOs and indigenous people's groups, supported also by international organisations, such as those coordinating climate change mitigation schemes, also produce maps representing use rights, high-value species and local knowledge.

This article shows that maps are political representations of the landscape that may structure how local populations will experience dwelling in the future. Maps are produced both by external specialists who stress the visual and the abstract, who "know by seeing" and make landscapes legible from the distance (Scott 1998), and by local populations, who attach cultural

2 REDD+ mitigation projects have become widespread in Indonesia since the COP13 (Conference of the Parties) meeting in 2007 in Bali: the number of pilot projects on the ground has varied as they have been stopped, restarted and continued. After negotiations that could be traced back to the meeting in 2007, the government of Norway and Indonesian President Susilo Bambang Yudhoyno signed a Letter of Intent, which led to Central Kalimantan being declared a climate change pilot province on 23 December 2010.

3 In the beginning, REDD+ pilot projects operated together with the Payment for Ecosystem Services (PES) or other carbon trading schemes and trials aiming to contribute to the UN-initiated climate change treaty (Angelsen and McNeill 2008). When the COP 21 Paris Agreement to limit temperature increase to less than two degrees Celsius was signed, REDD+ was mentioned. It was thus officially recognised as a performance-based payment mechanism to reduce emissions. However, no carbon trade mechanism is directly mentioned. The agreement has been criticised for not achieving enough and for playing fossil fuels and deforestation against each other (see Lang 2015).

values and meaning to landscape on basis of their "knowing from within" (Emery and Carrithers 2016: 394).

This opens up four important questions. How do people, living in Buntoi, live and dwell in a place that is being transformed so profoundly and that is constantly under threat? What kind of future do they imagine for these places? Who are the dwellers and how do they experience the landscape? What kinds of new assemblages and representations are being formed through their encounters?

Like the rest of this book, this chapter is informed by a long history of debate over structural and phenomenological approaches in landscape studies. Some cultural geographers, such as Denis Cosgrove, proposed radical cultural geography that combined Marxist materialist and symbolic approaches in the analysis of the spatial formations of landscapes (Cosgrove 1983: 10). Anthropologist Christopher Tilley rejected Cosgrove's notion of structured landscapes and, building on Tim Ingold's dwelling perspective (see Introduction, this volume), argued that landscape instead constitutes a "physical and visual form of the earth as an environment and as a setting in which locales occur and in dialectical relation to which meanings are created, reproduced and transformed" (1994: 25). In a similar vein, Steven Emery and Michael Carrithers (2016) explore seemingly oppositional approaches to landscape, namely the Ingoldian dwelling phenomenology and Cosgrove's cultural geography, which focus on political representations of the landscape, and argue that recent ethnographic writings on landscape do not sufficiently theorise the relationship between dwelling and politics (2016: 393; see also Árnason et al. 2012). In order to overcome this limitation in ethnographic research on landscape, they borrow from rhetoric culture theory in an effort to combine both representation and dwelling perspectives into a single framework. In other words, they explore "how landscapes are used to make stories, arguments and moral positions both plausible and appealing" (Emery and Carrithers 2016: 395) in rhetorical situations.

Scholars have argued that landscapes are produced through processes of dwelling and engaging in specific encounters, through which the landscape is opened up to new socio-natural gatherings and relations (Ingold 2011; Tsing 2015). This phenomenological approach stresses the importance of organisms (animals and humans), experience, movement, emergence, imagination and perception:

> It is to join with a world in which things do not so much exist as occur, each along its own trajectory of becoming. In the life of imagination, the landscape is a bundle of such trajectories, forever ravelling here and unravelling there (Ingold 2012: 14).

Ingold's 'dwelling perspective' implies that "landscape is constituted as an enduring record of – and testimony to – the lives and works of past generations who have dwelt within it, and in so doing, have left there something of themselves" (Ibid.: 189). However, it is not only the experiences and marks of human dwelling and living within the landscape that matter, but also the material elements, plants, trees and animals and their interaction between

humans and non-humans that contribute to processes of constituting a landscape: "the perspective of dwelling, [represents] a way to overcome the entrenched division between the 'two worlds' of nature and society, and to re-embed human being and becoming within the continuum of the lifeworld" (Ingold 2011: 4; see also Bird-David 1992; Descola and Pálsson 1996; Descola 2013). In this worldview, humans do not construct or build nature; rather, they come into being in relation to, and through engagement with, the material and non-humans around them while at the same time producing intimate knowledge (Ingold 2000: 47, 112). Allerton, following Ingold, notes that there is no built and unbuilt environment; landscape is an enlivened and lived-in environment; Southeast Asian landscapes, such as the one in Buntoi, are often animate, that is, inhabited by ancestors and spirits in addition to humans, animals, plants and other natural elements (Allerton 2013: 5, 97).

In certain respects, this case study provides challenges to the phenomenological approach to landscape. Being bound up with state formation and global capitalist processes, especially frontier making, Buntoi landscape has long been profoundly transformed. From an ecological and social standpoint, it has long been experiencing severe disturbances. This concept, disturbance, has been introduced from the natural sciences into ethnographic research by Anna Tsing (2015):

> Disturbance is a change in environmental conditions that causes a pronounced change in an ecosystem. Floods and fires are forms of disturbance; humans and other living things can also cause disturbance. Disturbance can renew ecologies as well as destroy them. How terrible a disturbance is depends on many things, including scale (Tsing 2015: 160).

For instance, large forest fires may alter an entire ecosystem. However, disturbance is not always destructive, rather it may also produce new human-plant-animal-spirit assemblages: "The disturbed landscape is socially transformed eco-social gathering. [...] Disturbance opens the terrain for transformative encounters, making new landscape assemblages possible" (2015: 160). The disturbed landscape raises questions around the phenomenological approach to landscape. How does a profoundly disturbed landscape relate to intimate knowledge and memories of dwelling places? What happens when familiar marks in the landscape have been wiped out, erasing or changing the mnemonic devices that bind the memories of the local populations and their lived experiences to each other? What's more, severely disturbed landscapes have increasingly become targets of environmental interventions: conservation agencies, climate change pilot projects, and so forth, invite local populations to imagine their future by reproducing the landscapes through visual and managerial techniques, and introducing environmental restoration efforts.

Anthropological debates concerning the separation of landscape studies into political versus dwelling perspectives have invited various responses. This chapter suggests that these approaches can be fruitfully combined through ethnographic research, specifically by focussing on experiences of

dwelling in a severely disturbed landscape where people make great effort to try to take hold of the landscape through (simplifying) representations such as maps. Hence, this chapter explores landscape of political experience through an ethnographic case study among the Ngaju people in the village of Buntoi, Central Kalimantan.[4]

Buntoi: It is not only a capitalist landscape

The village of Buntoi is about two hours' drive with motor vehicle along the asphalt road that leads to Bahaur, on the southern coast. It is located in the district of Pulang Pisau, along the Kahayan River. The village elders claim that the village dates back to 1670, when it was called Lewuk Dalam Betawi. According to the villagers, it has been a trading port for the Batawian people (today known as the native Jakartans) since the 17th century, during Dutch colonial rule. The first missionaries arrived in the area in the first half of the 19th century. The Ngaju have practiced hunting, gathering and shifting cultivation, but also engaged in barter and trade in forest products along the rivers. Since the 1940s, after the Second World War, they began to trade rubber and plant cassava for trading purposes; in this period of time, capitalist relations became embedded within the Ngaju landscape (see Lounela 2017).

Today, Buntoi is one of eleven villages in the sub-district of Kahayan Hilir. During fieldwork the population was about 2,700,[5] many of whom are immigrants (Banjar, Javanese, Madurese) who either married villagers or moved there for work, mainly as rubber tappers. The Ngaju obtain their livelihoods mainly from rubber tapping, in combination with shifting cultivation, collecting forest products, hunting and fishing, various precarious jobs or working as state officials. Several decades ago the economy was based on swidden rice cultivation, mostly understood as a collective or family activity that did not involve money – groups of men and women went, in rotation, out to the village fields. Recently, however, much slash-and-burn rice cultivation involved monetary transactions, with many Ngaju paying others to do the work for them. In the rubber economy, initially the Ngaju collected rubber from the local latex trees, such as *jelutung* (*Dyera costulata*)

4 The chapter is based on ethnographic fieldwork conducted in three 1.5–3 month periods in Buntoi and the Central Kalimantan province capital city of Palangkaraya between 2014 and 2016, and two short research periods in the Central Kalimantan district of Kapuas and village of Mentangai Hulu in 2012–2013. I acknowledge funding by the Kone Foundation in 2012–2013, and the Academy of Finland for 2014–2016. I wish to thank Dr Pujo Semedi and Angela Iban from the University of Gadjah Mada, Oeban and other people in POKKER, and Alina (names of the villagers are pseudonyms), my companion throughout fieldwork in Buntoi. The chapter is dedicated to Pak Nambang who passed away far too early in 2018. I also wish to thank the editors of the book, Eeva Berglund and Timo Kallinen, and the workshop participants, as well as Isabell Herrmans and Kenneth Sillander for their valuable comments. The content of the chapter is solely on my responsibility.

5 Perencanaan penggunaan lahan desa Buntoi, Kecamatan Kahayan Hilir Kabupaten Pulang Pisau, Tahun 2014–2024. Public Document 2014.

in the swamp forests. After Indonesian independence (1945), people planted industrial rubber trees (*Hevea brasiliensis*) in gardens along the banks of the canals (called *handel*) in plantation-type styles (see Lounela 2017).

The indigenous religion of the Ngaju people is Kaharingan, which divides the cosmos into the upper and lower world, equated with upriver and downriver. The upper world has its own deity, called Mahatara or Mahatala, indicating the Hindu influence on Kaharingan, and the underworld deity is called Tambon – a mythical water snake – or *jata* in the everyday language (Schärer 1963: 12–15).[6] Even though numerous Ngaju have converted to Christianity or Islam, some Ngaju still hold beliefs related to Kaharingan. According to the man known as the customary head of the religion, only eight Kaharingan-practicing families are left in Buntoi. He blamed the Christian religion (rather than Islam) for the decline of Kaharingan, and noted that mostly only old people (including himself) still practiced Kaharingan customs, like giving offerings to the spirits. However, I witnessed several situations in which offerings were given to spirits or ancestors, indicating that human-nature-spirit-ancestor exchange relations are still embedded within the landscape.[7]

Various spirits have specific locations that indicate their position in the cosmos; so-called higher spirits – deceased people of higher status – live in the upper world, while the lower world is inhabited by female spirits, although both worlds are inhabited by good and bad spirits (Schärer 1963: 16–19). After death, humans may also turn into animals, reside within the landscape, and communicate with people. These spirit animals may also take the form of humans and appear in specific situations in the human world. For example, a crocodile living in the Kahayan River may be an ancestor as well as the founder and protector of the settlement. Deceased humans may be defined as "transformed ancestors" among the many Dayak groups, including the Ngaju (see Béquet 2012; Couderc 2012: 169–176).

One morning, during fieldwork in Buntoi, I went fishing (*merempa*) together with an elderly couple from the village. We were out for many hours under a hot and humid sun; our trip consisted of sitting first in a little boat, and then walking on the sand and collecting shrimp and catching fish along the shores of the Kahayan River. As we waited for low tide in the little boat, I asked if there were any crocodiles in the river. "Yes, there are", the woman replied, "but they will not disturb us, one has to let them know first, then they will not disturb us. Ancestors [*datu*] are everywhere, deep in the water, close to that big island." It was at this point that I realised she talked about

6 See Hans Schärer (1963), *Ngaju religion: the conception of God among a South Borneo people*. Schärer did missionary work among the Ngaju in South Borneo in the 1930s and was later trained in anthropology. His work offers a good comparative reference for contemporary ethnographic material, but should only be regarded as such.

7 Catherine Allerton has noted that in Flores, spirits and ancestors often became blurred; spirits could be understood as ancestors of the land (2013: 110). Among the Ngaju in Buntoi, some ancestors were named and not regarded as spirits, but sometimes the ancestors seemed to be perceived as spirits too. This I think is the case with spirit animals, which are considered ancestors.

ancestors who sometimes take the form of a crocodile (*jata*) and who live deep down in the river.

She held the view that the ancestors could turn the *kampong* (settlement) invisible and dark to protect it from outsiders wanting to harm the village, who would then see only trees in the darkness; this was the ancestor's way of protecting the *kampong*. In her view, nothing bad had happened to Buntoi, which good fortune was a result of powerful ancestors inhabiting the river and a nearby island.

Clearly the landscape of Buntoi is constituted by social relations, and sustained through exchange relations between living people, ancestors and living spirit beings and animals and plants. In order to be able to engage in these exchange relations, one should know who resides in this landscape. However, one can only achieve such intimate knowledge through dwelling in it. I had seen tiny houses and large yellow flags on an island in front of the settlement, along the rivers and also in the village. These were the houses of the spirits and ancestors. They are connected to ancestral lineages of the villagers. If the ancestors are not visited and given gifts, they might then ask for gifts through dreams – they might appear not only to the persons in question, but also to other people with whom they could communicate and who could deliver the message to the persons concerned. The villagers should perform rituals, offering gifts to the ancestors and asking them to protect or assist them in achieving some particular objective. Spirits inhabit certain trees in the forests; one should ask permission from them (*roh gaib*) before felling large trees. However, people should also (and the same goes for foreigners) ask permission before entering an ancestral place; ancestors are known to "possess" those places (see Robbins 2003), and only spirits may grant access to humans.

The local customary head of the Kaharingan religion explained that when people practice slash-and-burn rice cultivation, they must first give part of the rice seeds to the spirit of the rice. They must then give part of the harvest first to the spirits of the stones (who make the tools sharp). They may also ask the kings (*raja*) of the monkeys and mice not to disturb their cultivation by giving them their share (*bagian*) through a specific offering. In this way, spirits will not disturb their slash-and-burn cultivation or other efforts in the forests. In this way, everybody will receive their just share without the spirits becoming angry.

Documentation of local forest types, gathered by the local customary leaders and others in the village, clarifies that the spirits inhabit several types of places: *bahu* is land that is cultivated using slash-and-burn methods, which means it is periodically left fallow. It can return to forest in due time, and be planted with fruit trees or similar. *Kaleka* refers to abandoned spaces in small settlements (of perhaps one family) where fruit trees often grow; *Sahep* is deep peat soil, and sometimes a place for hunting and placing traps that are called *sahepan*; finally, there are forests that should not be disturbed by humans at all, called pukung *pahewan* (also *leka uluh)*.[8]

8 Dokumen prencanaan penggunaan lahan desa Buntoi, kecamatan Kahayan Hilir Kabupaten Pulang Pisau tahun 2014–2024. Public document.

Against this background of elaborate understandings of the local surroundings, it is curious why the Ngaju began cutting down trees when corporations entered the area in the 1960s. Nevertheless, a logging company built a factory just opposite the village along the Kahayan River, and a large-scale logging operation started in the forests behind the village: most of the large trees were cut down and small canals were cut across the peat land to transport the logs to the Kahayan River. In the 1990s, an asphalt road was built across the village, which reduced river transportation dramatically but also increased access to the cities and the flow of goods and money to the village. In 1995, President Suharto inaugurated the Mega Rice Project (MRP), which led to the destruction of almost all the forests across the 1.4 million hectares of peat land. The project aimed to transform the area into rice fields in Central Kalimantan. The scheme failed, and what was left in its place was something I would call a naked, deforested and wounded landscape of canals that was, furthermore, vulnerable to fires. The local men who took part in the cutting down of the forests referred to it as cleansing (*pembersihan*): not only large trees, but also small trees, were cut down and canals grew in size enormously as the machines dug into the land. Further still, during my fieldwork, construction began on a new coal power plant along the banks of the Kahayan River opposite the settlement.

Such frontier development is one reason why the Ngaju have started to engage in exchange relations with the state or corporations rather than with spirits. Eilenberg has discussed frontier as a distinct aspect of a border. He, as well as other geographers and anthropologists, defines frontier as a "discourse of state imaginaries of opportunistic wilderness and infinite unexploited resources" (2014: 161). In the Indonesian context, frontier landscape has mostly been discussed as an open space with respect to capitalist claims and corporate and market demands: changes are rapid; nature is being converted into natural resources and extracted in a violent manner; new property regimes are being formed with new actors (Tsing 2005; Peluso and Lund 2011; McCarthy 2013; Lounela 2017). Illuminating comparisons abound elsewhere. For instance, Joel Robbins has argued that among the Urapmin of Papua New Guinea, "possession", understood in Hegelian terms as mutual recognition, is an inherent part of exchange. Urapmins are ready to give their land away to mining companies in order to become recognised by the modern state and become modern citizens (moving into the city), and they might well consider this a form of exchange (2003: 21). Similarly among the Ngaju, people in Buntoi are increasingly engaging in exchange relations with the state and transnational agencies rather than with spirits. Frontier development, the impact of Christian hostility towards Kaharingan beliefs, and the erosion of local knowledge (*ilmu*), all had a role in how the state and other agencies were able to capitalise upon as they sought to appropriate natural resources. The resulting shift in exchange relations became especially clear to me, when I took a journey through a disturbed landscape together with some villagers and NGO activists.

Walking through a disturbed landscape: Encounters

I had heard that in the newly formed and legally recognised village forest area (*hutan desa*), which I describe in more detail below, it was still possible to find natural forest (*hutan alam*) – but I had never seen or visited such forest even though I had often expressed my wish to do so. When I expressed my wish to visit this natural forest, though it was inside the village forest area, many villagers told me that it was very difficult to visit; it was too far away. Finally, one day, I was able to join two NGO workers, one from South Kalimantan, the other a Ngaju from a village along the Kapuas River, who wanted to see the forest, together with a middle-aged man and woman from the village who had also never visited it. Alina, a villager in her thirties, was especially happy to join us. This, her first visit to the forest, was now possible because in me she now had a female companion and could travel together with the men. We were led by Karli, a young half Madurese and half Ngaju man who lived far away, within the village but on the border of the forest. Karli and his brother Parli often spent time in the forest hunting, patrolling and serving as guides for local groups that needed to go to the forest, consultants, state officials, NGOs or donors.

The idea had been to leave at sunrise, but it was 9 a.m. before we left the village with two boats. It was obviously late, considering that we were to walk about six kilometres from the riverside deep into the forests, and this after about nine kilometres by boat along the river. The trip was supposed to take two days and one night. We were late because we had had a debate about how to go into the forest: Karli had been of the opinion that we should take boats and travel through the canals and rivers passing the neighbouring village, and then enter the forest there, which would mean not having to walk for too long. However, my host forbade us from doing so for three reasons: we could not enter the neighbouring village without permission, secondly, there was illegal logging going on nearby (and loggers may carry guns) and, thirdly, it was not safe for me as a western white person as I could be mistaken for someone on a mission to investigate local natural resources for economic or other interests.

During our boat trip on the large canal, for about the first two kilometres from the village we saw old rubber trees growing amongst rattan and bamboo and some fruit trees, after which a number of relatively young rubber tree plantations spread along the banks. Alina told me that the rubber trees were planted there some time after the big fires that followed the MRP in 1997. The further from the village we went, the more obvious it became that there had been profound disturbances: the land here had burned at least once, but more probably two or three times, since 1997. After traveling nine kilometres by boat, the canal became so narrow that we could not continue. We pulled up the boats and left them in the bushes, took drinking water with us, and started to walk.

Where we landed, I found no traces of the 'pristine' forest, or even relatively old anthropogenic (human-modified) forest (Descola 2016). What I saw was an ecosystem that had emerged out of recent forest fires,

not swiddens made by locals.[9] *Kelakai* (*Stenochlaena palustris*) bushes and grass spread high (sometimes reaching my head) along the banks of the canal and made walking very difficult.[10] The peat soil was soft and wet and the vegetation was sharp. Sometimes water reached up to my waist, and it was full of biting ants. Some isolated trees about ten years old grew here and there. It seemed to me that it would take years before the forest would regenerate. After about three kilometres more, we reached more dense and regenerating forest, though it was still quite young. But the walk thus far had taken a long time: it was already afternoon and raining, and the heat was almost unbearable. Karli suggested that we turn back because soon it would be dark, and we would not be able to reach the pristine forest that day.

A young mapping expert named Dung, who was helping an NGO located in the capital city of Central Kalimantan, was traveling with us. He used a GPS to establish our coordinates and figure out where we were, and how many kilometres we had walked so far. Karli laughed at him for his ridiculous technology: his own feeling was that we were about three kilometres away from the forest. "Feeling", replied Dung, with irony. Karli explained the forest is a place where there is no seniority. Once he himself had saved a mapping expert who had become lost in the forest. Although the expert had claimed seniority and superior knowledge of the forests, by the time Karli found him, he was wounded and in a bad state. Karli had not gone to school maybe, but he knew the forest. Knowing and feeling the forest in the intimate way Karli did was related to how he had been dwelling in it. In contrast, Dung was used to calculating distances using modern technology and orienting himself with that knowledge (see Emery and Carrithers 2016).

This was a curious encounter and point of debate: in Buntoi village, Karli is considered an expert in matters to do with the forest. It is his job to stop illegal loggers and hunters as well as prevent forest fires. He is half Madurese and half Ngaju; one villager told me that his Madurese smell had been washed away to make him 'local'.[11] He was living six kilometres away from

9 Philippe Descola (see also this volume) suggests that landscape should be understood in terms of transfiguration *in situ* (in the practices of the place) and *in visu* (the representational view), which he explores through Amazonian subsistence gardens (resembling, by the way, many Southeast Asian gardens) and which "render patently visible the relationship between cultivate vegetation and the forest cover it replaces" (2016: 7); there is a continuum between the forest and garden in terms of their similar ecological principles.

10 Kelakai is an edible plant and is a part of the Ngaju diet. However, in a forest with few trees it totally takes over until the trees are high again.

11 There is a long history of Madurese (immigrants from east Java) presence in Buntoi and Central Kalimantan (see also Lounela 2017). Tensions between the Dayaks and Madurese have been high in recent decades for many reasons I am not able to discuss here. However, violent conflicts between the groups occurred in 1996–1997, 1999 and 2001, which was the worst one. In 2001 conflict 150, 000 Madurese were displaced, with Madurese deaths reportedly between 431 to 3000, depending on the source (Smith 2005: 1).

the village centre, on the edge of the forest[12] in a neighbourhood built up, according to some stories, in the seventies, when loggers had built huts (later houses) there, to live in while they were in the forest. Karli continuously hunted, walked through and patrolled the forest area, but I never heard him talking about the forest spirits. During our walk, he did not point out any specific places or trees, although like his brother Parli he could navigate his way through the forest better than most people from the village. Karli had intimate knowledge of this specific landscape, but he could not relate so easily traditional Ngaju beliefs concerning the forest.

In Buntoi, many Ngaju had started to avoid going into the forest: "it is dangerous, because one could die", as the son of the customary head told me when describing getting lost there with a group of men some years earlier. He explained that they had been afraid of dying from thirst and hunger before finally being found. Thus, the forest was no longer familiar even to young Ngaju living in the village centre. On the other hand, new encounters included the NGO staff, consultants, donors, biologists and social scientists, and state officials, who explored the landscape through new techniques with no social memories. But all these people were concerned about the destructive changes to the landscape, thus partaking in unexpected collaborations and encounters (Tsing 2005). Following Anna Tsing (2015), I would propose that this kind of severely disturbed landscape is open to transformative encounters and assemblages; things and relations dissolve and gather again in such a landscape. Disturbance does not only refer to permanent changes in ecosystem, but to profound changes in social relations. Further below I will discuss other aspects of such encounters, for example those that resulted in the mapmaking and subsequent legalisation of the forest village area in 2013.

Climate change mitigation and new representations of landscape

Stuart Kirsch has nicely described how the Yonggom of Papua New Guinea continue to "emphasize relations to place" despite the landscape destruction caused by mining companies (2006: 201). In their struggle to maintain and renew their relationships with places that have histories, they have turned to mapmaking. Likewise, in Buntoi people have been involved in mapmaking since at least 2011. Their mapmaking practices have mainly been supported by transnational climate change mitigation projects. In this section, I will argue that this kind of mapmaking produces a particular landscape along with the ways in which people dwell within it – and will continue to do so in the future.

12 Since the village law 1979 the villages all over Indonesia have been structured so that the Village is divided into units: village; hamlet *(dusun*) and neighbourhood (*rukun tetangga*).

Already in 2009, the Partnership for Governance Reform programme[13] had begun promoting climate change mitigation projects and REDD+ programmes at the government and local community levels: Buntoi village was part of these programmes, notably of forest governance reform (decentralisation through the village forest programme – *hutan desa*).[14] After 2010 the Partnership programme, UNORCID (United Nations Office for REDD+ Coordination in Indonesia) and USAID IFACS (Indonesia Forest and Climate Support: Reducing Emissions through sustainable forest management) supported different kinds of projects in Buntoi village.

POKKER SHK, an NGO located in the regional capital city of Palangkaraya, in Central Kalimantan, was given funding to facilitate the formation of a village forest area unit (*hutan desa*), which would help conserve 7,025 hectares inside the village area in collaboration with three other villages (altogether 16,000 hectares in the district of Pulang Pisau). The main idea seemed to be that legalisation of the village area could enhance forest restoration efforts and stop illegal logging and forest fires. As it stands, most of the land in the Pulang Pisau district has been designated state forest land.[15] This village forest area unit was the same forest through which I had walked together with Karli and the others in our search for pristine forest.

The legalisation and mapping of the forest village area went as follows: the village forest area in Buntoi was mapped for the first time by POKKER in 2011, and a proposal to set aside a village forest area was made to the governor of Central Kalimantan and the Ministry of Forestry. The Ministry of Forestry verified the proposed village forest area, and after that in 2012, issued a Decision Letter (SK) to establish a village forest area within the state-protected forest.[16] The governor of Central Kalimantan further issued the SK to implement the management of the village forest area (*Rencana Kelola Hutan Desa*) permit in 2013. The permit is for 35 years, but it can be extended, and the management of the forest should be evaluated every five years.[17] After the legalisation process was complete, USAID IFACS supported strengthening the management of the village forest through POKKER SHK,

13 The partnership programme dates back to the 1990s. It was established in 2000 as a United Nations Programme (UNDP) to enhance good governance and respond to the economic and social crisis at that time: it "is a multi-stakeholder organization established to promote governance reform. It works hand-in-hand with government agencies, CSOs, the private sector, and international development partners in Indonesia to bring about reform at both the national and local levels. The Partnership builds crucial links between all levels of government and civil society to sustainably promote good governance in Indonesia." Retrieved from http://www.kemitraan.or.id/our-history (28.9.2015).

14 http://www.kemitraan.or.id/sites/default/files/Kalteng%20-Kemitraan%20Closing%20Paper.pdf, pages 30–31.

15 The state forest land, which has been divided into different categories, covers 82 per cent of the total 1,035,910,74o ha of land in the district. *Ringkasan eksekutif. Kajian Lingkungan Hidup Strategis (KHLS) RTRW, Kabupaten Pulang Pisau*. 15.7.2014.

16 Keputusan Menteri Kehutanan No: SK.586/Menhut-II/2012 tentang Penetapan Kawasan Hutan Lindung sebagai Areal Kerja Hutan Desa Buntoi seluas 7.025 hektar di Kec. Kahayan, Kab. Pulang Pisau, Kalimantan Tengah.

17 PP No 6 Tahun 2008.

which supported the capacity building of the Village Forest Management Organization (*Lembaga Pengelolaan Hutan Desa*) in the village.[18] USAID IFACS took a "landscape approach" in its climate change mitigation program. The strengthening of the village forest fit well with it:

> The IFACS Katingan Landscape covers 1.7 million hectares, largely consisting of deep peatland, and comprises Sebangau National Park and provides critical habitat for orangutan and other wildlife. The landscape includes parts of two districts–Katingan and Pulang Pisau–and the municipality of Palangkaraya. Central Kalimantan Province is still 59% forested (according to Ministry of Forestry data), but it suffers the highest rate of deforestation in Indonesia, after Riau Province in Sumatra. […] MSFs [Multi-Stakeholder Forum] in this landscape have an increasingly strong and vibrant membership, especially in Palangka Raya where they continue to focus on five thematic areas – green open space; implementation of SEA [Strategic Environmental Assessment], and GIS [Geographical Information System] forum and capacity; environmental journalism; community forestry; non-timber forest products; and livelihoods. IFACS will continue to support MSF programs especially for fire prevention and monitoring, shifting focus to Pulang Pisau District in the final work plan period. SDI [Spatial Data Infrastructure] network development will increase capacity of stakeholders in using accurate spatial data in Palangka Raya municipality and Pulang Pisau District (USAID-IFACS final report 2015: 126).

The village forest area in Buntoi is part of the so-called Kalawa forest area, which includes four villages. The Kalawa forest was understood to be communal forest, legally under the control of the state, but it is also a 'traditional' forest that includes the so-called *pukung pahewan* area – a sacred forest that should not be exploited that is guarded by the spirits and ancestors. People have been collecting forest products, hunting and fishing in this forest area for a long time. Ideally then, conserving it would benefit the local people, who would then continue to have access to it and to non-timber products, though hunting is now forbidden.

In April 2014, two young workers at POKKER SHK from Palangkaraya, conducted another mapping project, now outside of the village forest area. This time around, the NGO focused on the canals that crossed the peat lands bordering the village forest area. I travelled with them along the three different canals and took part in the mapping together with Alina and some other villagers. The core village settlement, made up of five main neighbourhoods together with a longhouse now preserved as a museum, and old family homes, is located along the Kahayan River. Behind the houses spread the gardens, with a mix of rattan, fruit and rubber trees, and other plants mirroring the forest. A paved road cuts through the gardens approximately 100 metres behind the houses, after which the old rubber gardens extend about two kilometres along the canals towards the village forest area. Then new rubber plantations mostly spread along the canals until the so-called *kolektor*, a small canal that runs horizontally past the

18 USAID IFACS terminated its activities in 2016, but a new programme called USAID LESTARI was to take over some of the earlier programmes.

main canals, and which the villagers understand as marking the boundary between their land use area and state forest categorised as protected forest. On another map, the *kolektor* was marked as a resettlement area in the event that the coal power plant being constructed nearby should pollute the surrounding area too much.[19]

This map (see Figure 1) was supposed to indicate zones of rights to land – especially the state categories - and rivers that have been transformed into canals. As in cartography generally, on the map made by POKKER SHK, imagining the future involves processes of visual zoning by an external gaze and producing abstract space. Colours on a map show different zones of land use. The white represents the settlement and cultivated rubber and fruit or rattan gardens area, which is most often understood to be under private ownership. The red line is asphalt road. The yellow section indicates the area categorised as state forest used for (industrial) production, but which the villagers may access so long as they do not cut down trees and so long as government has licensed other uses. The green represents state forest land and protected forest area (*kawasan hutan lindung*), where only limited activities are allowed.

One interesting point about this map is how it recreates property rights at the same time as it conceals social traces. There are no markings showing sacred sites, family homes, the longhouse, graves and so forth. As Kirsch, following Scott (1998), notes, a map legible to the state "bears the risk of displacing other, embodied ways of knowing one's land" (2006: 202; see also Lounela 2009). Indeed, the Ngaju have gained an intimate knowledge of the landscape through family practices – with parents and some of the children or grandparents practicing shifting cultivation, fishing, engaging in rubber tapping, collecting fruits and so forth. They dwelled within the landscape while getting to know it and transmitting this knowledge. The new maps represent a different kind of reality and future, a view from above, one without social traces, but with new boundaries (Kirsch 2006: 203).

On our walk to the forest, Karli seemed to be sceptical about the maps. Why waste so much money on those maps? What use do they have? Are they being sold to someone? When I returned the village in 2016, two years later state officials had erected cement pillars designating state boundaries on land that villagers considered their own. When I looked at the NGO map later, I could see the marked boundaries between the protected state forest area, and state land allocated for other uses, and land under the heading of private property. But when walking with the villagers within the landscape, we only noticed people's gardens, planted rubber, human-made canals and young trees in the protected forest area (on the maps, now also part of the

19 When I arrived in the village in April 2016, state officials were in the process of marking the state forest area with cement pillars, which they were erecting on land that the villagers considered their own and which they in turn had marked with rubber trees. The dispute soon became heated. Some villagers felt that beyond the *kolektor* there was a two kilometer-wide zone of adjustment. There is no room to elaborate here, but it does show how maps can also be 'insecure' proof of the claims to land.

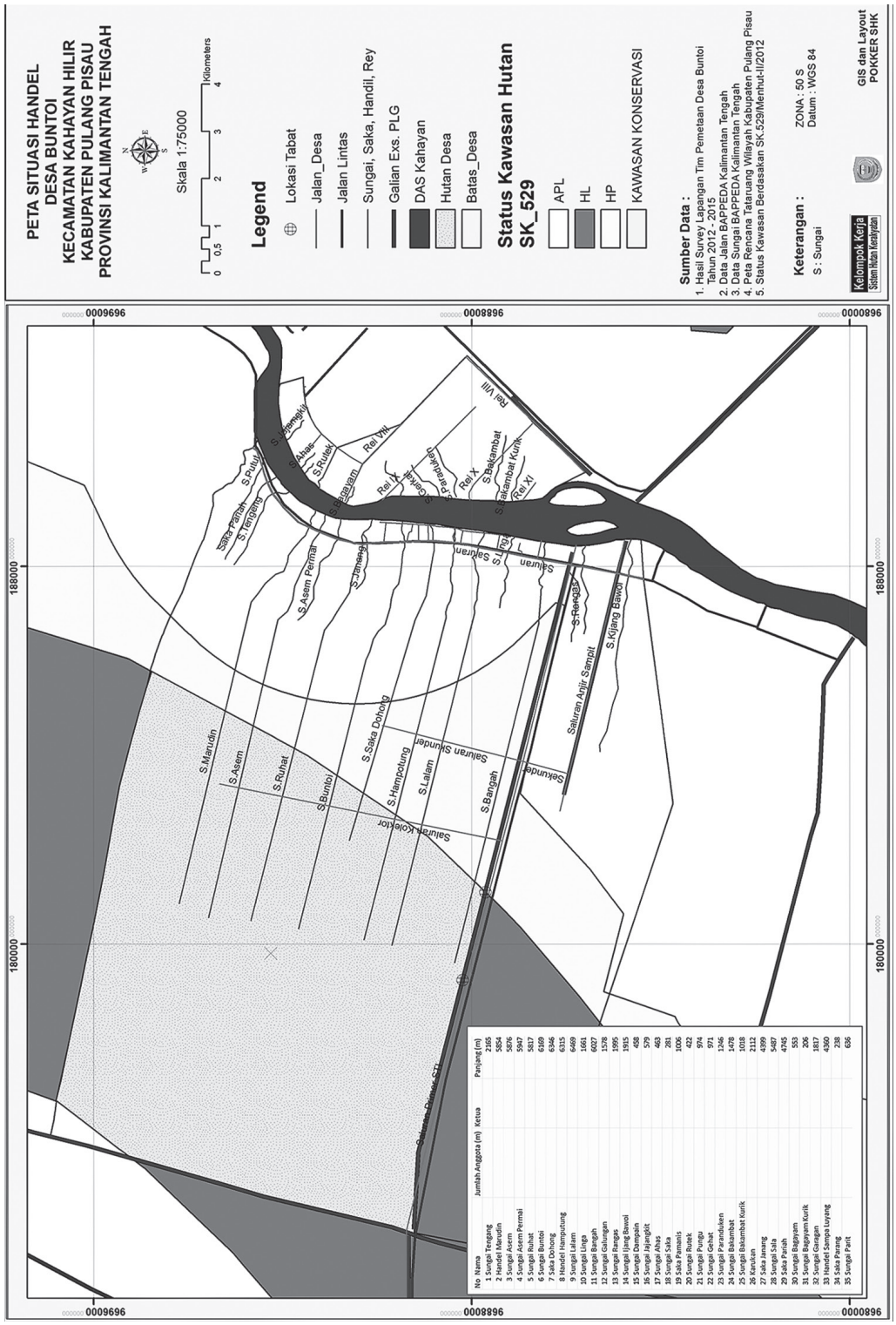

Figure 1. Map by POKKER SHK.

hutan desa in its legal status). The maps that might be legible but they do not coincide with dwelling experiences. Rather, they enforce and represent a certain viewpoint, one that will contribute to the experience of dwelling in the future.

Commodifying landscape: New value relations

This specific map was, of course, important because with it villagers could gain access to and conserve approximately 7,000 hectares of land near the village. The map could be used to represent the village and make it possible to see the state forest (categorised as a protected forest) legalised as a village forest area, which was what many, if not all, of the villagers wanted. Yet the map also paved the way for a plan that would commodify the village forest area through carbon trade; it was a tool for imagining a new future of commodified nature.

Since the legalisation of the village forest, it has been managed by the village forest organisation LPHD (*Lembaga Pengelolaan Hutan Desa*), which was headed by an elder, one of the customary experts in the village. He was close to the village head at the time when the village forest was being formed and he worked in close collaboration with the village elite and staff at that time.

The previous village head, my host Pak Nambang, had also been actively pushing for the *hutan desa* permit, but in 2014 was relieved of his duties by substitute staff and later replaced as village head in elections in February 2015. Most of the people I met felt that they did not know about the activities of the head of LPHD; they said he hardly ever communicated with other people or informed them about the organisation's activities. Thus, some of the villagers, including the person elected as village head in 2015, complained that they received no benefit from the village forest area, and feared that the benefits would go to someone else, notably those in LPHD. They also felt that they would not benefit economically either, because it was not then possible to plant oil palm or other harvestable crops on the land. Some villagers, and LPHD, thought that the most important result was that village forest area would prevent oil palm corporations from expanding into the village. For instance, two LPHD heads from the neighbouring villages and Pak Nambang once told me that they had been able to thwart efforts to establish palm oil plantations in their respective villages by establishing a village forest area.

POKKER SHK, which supported the LPHD suggested that carbon trade would solve the problem. Alina, who facilitated POKKER SHK's activities in the village, told me their main concern was to convince villagers that to make money they could sell carbon instead of timber or land to the palm oil corporations. Thus, training sessions were organised to teach people how to measure the size of trees and know how to calculate carbon. Villagers told me that they did not find these techniques difficult, but what was difficult for them to understand, was what carbon is, and how and where people could sell it. This training programme had been launched just as I arrived

in the field. The idea was that the carbon generated from the village forest area could be sold through the Plan Vivo Foundation, a registered Scottish charity, which had, and continues to have, its own technical specifications, with technical specifications for calculating carbon sequestered or emissions avoided by allowing trees to grow.[20]

The village forest area is now under the management and control of the villagers through LPHD. They are responsible for devising the forest management plans and implementing them as well as for preventing forest fires and stopping external threats. They also should be the main actors in rehabilitating the forest land, with support from state agencies and the private sector. In an interview with the provincial forestry official, he told me that the village forest area should be profitable because it will operate under a private-sector permit for the next 35 years. However, like many other officials from the district and provincial levels that I interviewed in 2016, he had the view that the village forest organisations were far too small, and that they lacked the financial resources to protect and manage large areas such as this, up to 4000–7000 hectares. There was administrative restructuring going on in central Kalimantan in 2016, but the important issue is that the state ministries at the regional level understood that while they had some responsibility for facilitating management of the village forest area through LPHDs, they did not have the resources to do it. Thus, they hoped the private sector would help.

This brings to mind Tanya Murray Li's discussion on conservation and community-based forest management (2005), where she argues that it tends to transfer responsibility for forest management from the state or corporations to poor communities, something I have also argued in the case of state forest management in Central Java (Lounela, 2009). As it stands, community-based forest management involves demanding work; Ngaju are expected to expend a great deal of energy and time planning their own forest management operations, patrolling the forest, stopping illegal logging and preventing forest fires. Otherwise, they risk losing their permit to manage the forest. It also entails that the villagers should become cheap labour in the production of new valuable types of environment, similarly to what Jason Moore suggests with his concept of "capitalocene" (Moore 2015).

In Central Kalimantan, NGOs and donors have generally taken the view that the carbon trade, eco-tourism and non-timber products could offer economic benefits to the villagers. Furthermore, most REDD+ and climate change mitigation activities involve money: eco-tourism and non-timber products (but not hunting) from the village forest area would bring benefits one could count in financial terms. Indeed, such politics have been enacted in my field sites also, for instance the villagers involved in LPHD had already planted 12 hectares of rubber trees in the village forest area in 2014, but they had burned in the 2015 forest fires. Once again, the disturbed landscape became open for different kinds of assemblages of persons and plans, but also for new fears and dreams for the future.

20 Retrieved from http://www.planvivo.org/about-plan-vivo/ (28.9.2015). This plan was probably not actively advanced after the 2015 forest fires.

Conclusions

In this paper, I have discussed the politics of dwelling, describing various entanglements and encounters between the actors engaged in the production of landscape.

For a long time, people living in Buntoi have engaged in the production of local landscapes through complex environmental practices: swamp forests and gardens around the settlement used to be places of dwelling, practicing hunting, fishing, tapping rubber, collecting forest products and engaging in slash-and-burn rice cultivation. Usually couples, possibly with their children, would be mobile for a relatively long periods before settling in places familiar to them from having used them to gather forest products (*kaleka*). In the past men would typically hunt. However, since the nineteen-sixties, logging corporations, and later, state initiated programs such as large-scale canal digging along with agricultural schemes, have transformed the landscape. Furthermore, especially after the new reform era (1998-), conservation efforts and climate change schemes have contributed to landscape production, including via making maps, that is, detachable representations of the landscape.

Buntoi landscape has become a dwelling place for NGO activists, scholars, donor organisation staff, state forestry officials and others engaged in mapping species, measuring distances and studying the landscape from a detached point of view. It has also become gendered place: what is important today is for men to have physical strength and knowledge about the disturbances and changes. For instance, sometimes villagers engage in conservation through rubber or tree planting or they are patrolling in the forests. These tasks transform accepted social relations: couples no longer walk long distances collecting forest products, hunting is forbidden in the village forest area and (illegal) loggers are considered a problem. In short, changes in the landscape transform social relations. A disturbed landscape is open to new encounters, but these are different kinds of encounters, extending from the locality to global arenas, producing new assemblages.

Such assemblages are also being manifested in the ways people engage in new exchange relations: the Ngaju used to engage in exchange relations with spirits, ancestors, family members and their neighbours, as well as with animals and other materialities that embody their own spirits. But today, as noted by the Kaharingan customary head, only a couple of older people, and those who still know, engage in such exchange relations with spirits and ancestors. Instead, people are increasingly engaging in exchange relations with the state and corporations, not to mention environmental and climate change mitigation schemes, where landscapes appear and are evaluated in terms of money or conservation values.

In general, maps operate as tools to simplify and make legible complicated rights and systems (Scott 1998). Maps also stabilise power relations. The state categories that are reproduced in NGO-made maps, seek to guarantee access rights to some areas, and can also be read as counter-maps (Peluso 1995; Kirsch 2006). This explains why and how maps become popular

tools for local people to seek access in places like the village forest area (*hutan desa*). Maps do not just show landscape in the form of zones of state categories and property rights, with a kind of abstract gaze, they redefine use rights: hunting, timber logging and any other 'destructive' activities that are forbidden or frowned upon, but also open limited access to the landscape – here village forest area – that not so long ago was customary forest area

These representations become part of villagers' life: through the work of LPHD, the responsibility for managing and conserving the village forest area is now in the hands of the villagers. The stakes are high: if they fail to manage and conserve the area well enough in state's eyes, or secure additional economic resources for such efforts, they could lose the permit. Thus, some villagers dream of pristine forests in which limited livelihood systems could be developed, new settlements established along the border of the village forest area or forests become valuable in terms of the carbon trade. At the same time, other villagers wish for economic development and, for instance, oil palm plantations, and so they resist the mapping and the politics it brings. In short, I argue that the maps have multiple, sometimes contradictory, effects. They also create new political landscapes.

I have brought together two seemingly contrasting approaches to landscape: the phenomenological and political ecology approaches. However, I have suggested that ethnography is able to combine them into a single frame of analysis: dwelling within disturbed landscape is a socio-natural experience, which involves narratives and representations that give meaning to a landscape at the same time as they constitute its emergence. But landscape is also a representational object: it can be detached from local material practices through mapping and rule making, or what I would call abstraction. The example I have given of experience of dwelling within a disturbed landscape in Central Kalimantan, shows how histories of environmental transformation and related power relations become embedded within a landscape but I have also argued that apparently abstract and detached representations of a landscape become entangled with the experiences of dwelling in such a disturbed landscape. When walking with Karli in the village forest area, he often talked of how he and his brother were alone in trying to stop forest fires and prevent illegal logging; sometimes they succeed, but often they did not. It was a landscape of alienation, death, familiarity and hope – or a landscape of political experiences.

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