

PALM OIL, STATE AUTONOMY, AND ASSEMBLAGE OF LAND USE GOVERNANCE IN SARAWAK, MALAYSIA

Helena Varkkey

DEPARTMENT OF INTERNATIONAL AND STRATEGIC STUDIES,
UNIVERSITY OF MALAYA, MALAYSIA

Malaysia is the world's second-largest producer of palm oil. Sarawak, Malaysia's biggest and most heavily forested state, was initially left behind during the palm oil boom as its challenging terrain was considered unsuitable for commercial palm oil production. However, by 2015, Sarawak became among the top states in Malaysia in oil palm plantation hectareage. In this paper, an assemblage lens is employed to explore how, through a process of territorialization and reterritorialization, the Sarawak State Government was able to steer change within the state-level forest and land use policy to make available firstly Native Customary Rights lands, and later peatlands, to investors for conversion into oil palm plantations. Aspects of previous colonial assemblages, including land use autonomy, centralized control of commercial activities, and an ambiguous relationship with natives, contributed to a governance system enabling the state to purposively construct relationships within the assemblage to support its developmental goals.

INTRODUCTION

Out of the total 13 states in Malaysia, Peninsular Malaysia on mainland Southeast Asia has 11 states, and East Malaysia on the island of Borneo is made up of the two large states of Sarawak and Sabah. Malaysia was an early pioneer of intensive oil palm production, with the crop first being cultivated for commercial production in Tennamaram Estate in Peninsular Malaysia in 1917. When synthetic rubber caused international natural rubber prices to drop in the 1960s and 70s, oil palm production became more profitable than natural rubber. This led to large swathes of once-lucrative rubber plantations across the Peninsular and Sabah being quickly converted to oil palm plantations. Malaysia quickly became the world's largest producer of oil palm and maintained that position until Indonesia surpassed its output capacity in 2008.

Today, Malaysia is the world's second-largest producer of palm oil, with about 41% of global production (Varkkey 2016).

Sarawak, the biggest and most heavily forested state in Malaysia, was initially not considered very suitable for oil palm cultivation because of its challenging terrain (Varkkey et al. 2018). However, by 2005, oil palm became the most widely grown crop in Sarawak based on hectarage (Kamlun et al. 2012). In 2015, Sarawak's oil palm planted area stood at around 1.4 million (Varkkey et al. 2018). The cultivation of palm oil in Sarawak has not been without controversy. Much of the extension has involved the large-scale conversion of agriculturally poor but biodiversity-rich rainforests into plantations with significant environmental costs.

Furthermore, much of this land had previously been held under customary forms of tenure. Nevertheless, the palm oil industry has caused massive landscape, environmental and socio-economic change across the state. In this paper, an assemblage lens is employed to explore how, despite the constraints mentioned above, powerful entities have used governance to enable the exploitation of firstly Native Customary Rights (NCR) lands, and later peatlands in Sarawak for conversion into oil palm plantations to suit their interests.

Assemblages are defined as relational constructs, in which several human and non-human entities are brought together towards certain strategic ends, in particular spaces and times (Blanco et al. 2015). Assemblage processes represent the continuous processes through which these relational constructs are being constantly remade over time. During this process, actors may seek to fix other elements of an assemblage in patterns of relationship which support their projects, a process described in the literature as territorialization. In this context, governance can be understood as a process through which different actors engage in efforts to steer change, which involves fixing relationships between entities to support their aims. Such activities lead to the emergence of governance assemblages. These are provisional, situated, and unique compositions continuously emerging from the processes through which these entities come together to achieve particular, issue related goals. In the course of such assemblage-making, powerful entities may seek to establish specific sets of relationships

between entities that define or enroll them in ways that support their perceived interests (Li 2007).

This paper explores how the Sarawak State Government has maintained a position of significant power in the Sarawak oil palm assemblage, and critically, the role its autonomous control over land use governance within the state has contributed to this success. This autonomy was particularly useful for the Sarawak State Government to solve the problem posed by the quickly dwindling availability of arable land for conversion into oil palm plantations in the late 1980s. Significant local autonomy over land use stems from the history of the state, the unique traditions of governance, and its relationship with the Peninsular, and have placed the Sarawak State Government in a unique position to shape relationships between different entities in the state's palm oil assemblage. A feature of this process has been the capacity of the Sarawak State Government to fix relationships between land and other components of the assemblage in ways that constitute land as an object of economic potential. Through the process of territorialization and reterritorialization, the State Government was able to ensure the availability of an 'unlimited' supply of lands (Cramb 2011) to plantation investors through the formulation and adaptation of state-level forest and land use policy to expedite the conversion of these lands into oil palm plantations.

The paper first identifies the key non-human and human entities in the Sarawak palm oil governance assemblage. It then explains how the Sarawak State Government carried out territorialization and reterritorialization by assembling other entities in ways that support its interests, firstly with NCR lands, and later with peatlands. In the same section, the paper also acknowledges the dynamic nature of assemblages by delving into the efforts of other entities attempting to reterritorialize palm oil governance in Sarawak, although with varied success. The piece concludes with reflections on power and agency in the palm oil sector in Sarawak and Malaysia more broadly.

KEY ENTITIES IN THE SARAWAK PALM OIL ASSEMBLAGE

The assemblage approach pays close attention to how non-human and human entities are combined in the generation of assemblages. Maintaining these entities in specific territorialized relationships

requires the active agency of these non-human and human actors (Blanco et al. 2015). In this case, key non-human entities include the oil palm tree itself, and the NCR lands and peatlands of Sarawak. In terms of human entities, key actors include indigenous groups, the Federal Government, the Sarawak State Government, commercial interests, and scientific communities.

Non-Human Entities

The oil palm: The oil palm tree (*Elaeis guineensis*) has West African origins and now flourishes throughout the tropics, growing commercially in almost 20 countries worldwide. The fruit of this tree produces palm oil, which has been used and consumed by humans for 5,000 years. It is an important global source of food and biofuel and has various industrial uses. Among the 13 major vegetable oils produced worldwide, palm oil holds the largest single share of the market, accounting for about 35% of world vegetable oil production. It also has the lowest production cost and is the most efficiently grown vegetable oil in land use per unit of output (Varkkey 2016).

NCR lands: Before joining the Malaysian Federation Sarawak was under colonial rule beginning from James Brooke, installed as the first Rajah of Sarawak in 1841. The Brooke administration determined two types of land tenure systems here. NCR lands were based on native customary law or “adat” and perpetuated traditional land use and farming systems among the Sarawak indigenous groups. The other was a codified land system, which legalized private land ownership and supported the commercialization of agriculture. However, such native rights to land were a threat to the Brooke administration because they interfered with the regime’s political and economic goals to control natural resources in Sarawak. In this vein, the Brooke administration proclaimed that all lands which were not codified and/or privately owned belonged to the state. The colonial government also imposed the same ruling that all lands belonged to the Crown when Sarawak was ceded as a British colony in 1946 (Ngidang 2005). This was also adopted by the new administration when Sarawak joined the Malaysian Federation in 1963. Consequently, in Sarawak, formal title to much of the land is vested in the state, concentrating power over land use and ownership within the local state.

Between the 1960s and 1980s, the State Government's efforts were mostly focused on improving the productivity of smallholder agriculture on NCR lands. As a result of these efforts, there was a gradual shift from traditional land use to semi-intensive land utilization. Cash cultivation became a prominent feature of the farming system in rural Sarawak. Initially, promoting large-scale commercial plantations on NCR lands was problematic because of the complex landownership based on the "adat" system. However, changes in land policies and practices in the 1990s were designed in favor of large-scale utilization of ancestral lands for commercial plantations, citing the need to eradicate rural poverty and to integrate the periphery to the center (Ngidang 2005).

Peatlands: The majority of Malaysia's 2.4 million hectares of peatland are found in Sarawak (1.7 million hectares) (Melling et al. 2011). Here, peatlands are found along the coasts and in the Rajang Delta and Baram River areas, with some peat deposits being as deep as 20 meters (Phillips 1998). Waterlogged tropical lowland peat swamps perform vital ecological and environmental functions (Evers et al. 2016). These include maintaining the intricate hydrological balance of the lower regions of large river basins, serving as a buffer between salt and freshwater, and providing a habitat for animal life that cannot exist in other ecosystems (Phillips 1998). It also plays an important role in the global carbon balance (Page et al. 2011). Carbon is stored in the peat formed from organic material like tree and vegetation litter, sediments, and organic soil accumulated over thousands of years. The anaerobic conditions and low availability of nutrients in these peat swamps constrain the decomposition of these organic materials so that carbon stocks continue to grow (Parish and Looi 2011).

When peatlands are drained for agricultural use, decomposition occurs quickly, and carbon dioxide is released into the atmosphere, contributing to climate change. Drained peatlands also dry out quickly and become highly vulnerable to fire. Accidental or intentional (often started as a cheap and quick way to clear the land before planting), peatfires can go deep underground and burn up even more carbon. The smoke from these fires also produces serious localized and transboundary air pollution (Varkkey 2016). Traditionally, peatlands have been largely regarded as a 'difficult' soil with low fertility due to its impenetrable physiognomy and

waterlogged conditions (Phillips 1998). In their natural state. Peat swamps are poorly suited to agriculture as most plantation trees and other crops are not adapted to a semi-aquatic environment, and if they grow at all, are unstable and can easily succumb to windthrow (Varkkey 2016). Difficulties also emerge with working such land and providing access routes by which raw materials and inputs can be brought into and out of these areas.

For this reason, before recent times, peatlands have seen limited local exploitation by mainly indigenous communities. To convert and prepare peat swamps to plant crops on commercial scales, these areas have to be cleared of vegetation, drained, and dried so that the water table drops. This is done through an expensive process that involves constructing ditches to allow water to drain out of the area. It involves the use of machinery and drainage technologies, which have only become available relatively recently.

Even once it has been converted, deep peat is still considered problematic. Peat soil is acidic, low in oxygen and inorganic ions, high in carbon, and has high concentrations of humic acid. These factors create conditions that are suboptimal for most crops, necessitating significant soil management interventions to bring this land into production (O'Reilly et al. in this issue). While the techniques used to adapt these areas for agriculture may deliver productivity in the shorter term, they cause further problems in the longer term, including surface subsidence due to soil shrinkage and compacting, decomposition, leaching, loss of peat material during reclamation, irreversible drying, heavy metal poisoning and increased incidences of burning.

Human Entities

Indigenous groups: Around two-thirds of the people of Sarawak are made up of indigenous groups. The indigenous inhabitants of Sarawak can be divided into two main groups, the coastal peoples (the Malay and the Melanau) and the inland or interior peoples, the Dayak. Broadly, the Dayak peoples include the Bidayuh (Land Dayak), Iban (Sea Dayak), Kenyah, Kayan, Kedayan, Murut, Penan, Bisayah, Kelabit, and other groups. Historically, these groups developed and practice a way of life based on shifting agriculture complemented by hunting and gathering (Kaur 1998); some of these practices continue. However, there has also been a

steady trend of rural-urban migration since the 1980s in Sarawak (Cramb 2009), changing the population makeup of urban areas previously dominated by the minority Chinese.

Federal Government: Malaysia observes a two-tier government system, with both the Federal Government and State Governments having constitutions and legislative powers (Yong 2006). The Ninth Schedule to the Malaysian Constitution provides for the general distribution of legislative powers between the Federal and State Governments (Hansen 2003). The Federal Government has jurisdiction over matters such as foreign affairs, international trade, defense, internal security, finance, communications, transport, and education. The individual states retain the power to formulate their own policies relating to natural resources such as land, forest, wildlife, agriculture, water resources, fisheries, minerals, and mining (Yong 2006, Hezri and Hasan 2006, Memon 2000).

Hence, most forests are public lands administered by the state, except for some (about 2%) alienated land where forest clearance is permitted for private use (FAO 2010). Each state has its own Forestry Department and related institutions to manage these public forest resources and implement forestry policies at the state, district, and local levels (Yong 2006). The Federal Government does not have any powers to enforce forestry laws in the states. The role of the Federal Government towards state forestry matters is confined to some administrative matters such as research, training, and advisory, without the power to enforce (Ariffin 2015, see Figure 1 below).

Federal List	State List	Concurrent List
Mineral resources	Land	Wildlife
Marine and estuarine fisheries	Agriculture	Town and country planning
Pest control	Forestry	National parks
Shipping and navigation	Infrastructure activities for state works	Rehabilitation
Water supplies	Water	Eroded and mined land
Tourism	Riverine fisheries	Drainage
Infrastructure activities for federal works		Irrigation
		Housing

Source: Adopted from the Ninth Schedule of the Federal Constitution

Figure 1 Distribution of Powers in the Federal Constitution (Ashraf 2019)

Sarawak State Government: The Borneo states of Sarawak and Sabah have more 'independence' than other Peninsular states due to their later entrance into the Malaysian Federation under the 1963 Malaysia Agreement following the departure of the British from Borneo (Majid Cooke 1997). This Agreement included conditions meant to allay fears of both states that they would be overwhelmed both economically and politically by the more developed Peninsular states when they joined Malaysia. Hence, the Ninth Schedule of the Malaysian Federal Constitution includes List 2A (Supplement to State List for Sabah and Sarawak) and List 3A (Supplement to Concurrent List for the States of Sabah and Sarawak), which accorded even greater control to the two East Malaysian states over various areas of governance, particularly natural resources (Memon 2000).

Sarawak hence has exclusive legal jurisdiction to make laws affecting land use, forestry (including the removal of timber and biomass), impounding of inland water and diversion of rivers, electricity, and the production of electricity generated by water (Memon 2000). Furthermore, upon joining the Malaysian Federation, Sarawak negotiated special provisions concerning land-related legislation that provides greater state control over land utilization policy (Hansen 2003). Hence it is empowered to gazette¹ reserves, issue forestry or agriculture permits, collect royalties and premiums, decide on the land use and allocation of the forest and its development, and so on (Yong 2006).

This was further underpinned by the new developmentalist ideology adopted by recent leadership, which espoused the need for the state to "catch up" with the rest of Malaysia. Sarawak leaders often admonish the central government for not paying adequate attention to Sarawak, resulting in a large development gap between Sarawak and Peninsular Malaysia. The rapid expansion into palm oil is part of the state's insistence that "Sarawak should not be left behind" (Ling 2016). Because the economy of Sarawak so heavily depends on the exploitation and export of natural resources, the state has, over the years, zealously guarded its constitutional rights against interference from the Federal Government (Hansen 2003, Memon 2000). For example, the Chief Minister traditionally holds the role of Minister for Urban Development and Natural Resources in Sarawak. Hence, the Chief

Minister oversees the Department of Lands and Surveys, the Forest Department, and the Sarawak Natural Resources and Environment Board (NREB – see below).

Furthermore, the allocation of state land is the jurisdiction of the State Planning Authority (SPA) under the Chief Minister's Office (Hansen 2003, Taylor et al. 1994). The SPA allocates land and forests according to the two principal pieces of written land legislation, which are the 1953 Forest Ordinance and the 1958 Land Code (Taylor et al. 1994). The formulation of policies on forestry and land development in Sarawak is concentrated at the highest level of authority (Yong 2006).

Commercial interests: The first commercial palm oil plantation in Sarawak was established relatively late and on a relatively small scale; on 3,000 hectares of state land in Miri in 1968 under a joint venture between the Sarawak Government and the Commonwealth Development Corporation (Lau 2016). However, despite its huge land size of 12.4 million hectares, only 28% of Sarawak's land has historically been considered suitable for commercial crops, with the remaining land made up of 58% steep land, 13% peatland, and 1% infertile land (Varkkey et al. 2018). Thus, Sarawak was largely 'left behind' during the early phase of commercial palm oil expansion, which saw vast areas of forests in the rest of Malaysia converted into palm oil plantations in the 1960s and 1970s.

As arable land for palm oil plantations dwindled in the rest of Malaysia in the 1980s, commercial plantation investors began to move to neighboring land-rich countries like Indonesia, the Philippines, and Papua New Guinea to establish new oil palm plantations. In response to this, Sarawak's then-newly sworn-in Chief Minister, Taib Mahmud, gave an open invitation to local investors: "Why not come to Sarawak to invest? You can operate from Kuala Lumpur. Sarawak welcomes you" (Cramb 2011). This was a welcome development to these plantation corporations who were beginning to come up against foreign investment barriers abroad (Varkkey 2016) and marked the beginning of large-scale palm oil investments in Sarawak. Sarawak earned its nickname as Malaysia's 'final frontier' for commercial oil palm cultivation. However, expansion was still limited to the small areas of available arable land in the state. Until the late 1990s, Sarawak continued

to lag behind smaller states in total oil palm planted area.

Scientific communities: These are networks of knowledge-based experts who help decision-makers define the problems they face, identify various policy solutions, and assess the policy outcomes (Haas 1989). In recent years, there has been an added interest in peatland science and policy among scientific communities due to the important role of tropical peatlands in the global carbon balance and the increasingly significant use of these lands for important agricultural commodities like palm oil. To this end, the extent to which cultivation of oil palm on peat can be sustainable is the subject of considerable debate within these expert networks

On the one hand, many scholars consider undisturbed peat swamps as more important to humans than if drained and developed (Phillips 1998, Wijedasa et al. 2016, Evers et al. 2016). Many peatlands experts suggest that large areas of currently drained coastal peatlands will be progressively subject to longer periods of inundation by the river and ultimately seawater, making agriculture in these areas increasingly untenable (Wijedasa et al. 2016). In short, they are generally of the view that the long-term potential of drained peatland to continue to sustain production-to-cost ratios at commercially viable levels is limited. On the other hand, there also exist certain state-sponsored scientific groups that argue for the viable and productive use of peatlands for such commercial agriculture. Most notably, the Sarawak State Government established Tropical Peat Research Laboratory (since renamed Tropical Peat Research Institute, or TROPI in 2016), which provides scientific support for developing oil palm plantations on peat (Cheng 2016), to complement Sarawak's agricultural goals.

ASSEMBLING PALM OIL GOVERNANCE IN SARAWAK

Within assemblages, various actors devise and employ strategies to establish specific sets of relationships between entities that enroll them in ways that support their perceived interests. The extent to which they have the resources and capacity to do so successfully constitutes the degree of power these entities have. Li (2007) describes these processes as taking the form of 6 assemblage practices, including *forging alignments, rendering technical, authorizing knowledge, managing failures and contradictions, anti-politics, and reassembling* (Li 2007). The most powerful entities in

any assemblage at a time are successful in defining these relationships in ways that suit their interests. This section explores the practices through which the Sarawak State Government sought to (re)arrange entities in assemblages that support its interests, in this case, in continuing the appropriation and conversion of lands in Sarawak for the production of palm oil. In this process, the State Government first attempted to territorialize NCR lands, and later peatlands.

Lacking the presence of the type of traditional governance systems which were inveigled in the colonial project on the Peninsular, Sarawak was governed by a unique colonial regime for much of the 20th century which involved highly centralized control of the formal economy, limited democratic accountability to certain subsets of the local population, and at best, the neglect of native rights and interests. While independence may remove many of the features of a colonial regime and empower new actors, the new administration rarely starts from scratch. New governance actors seldom entirely sweep away all aspects of previous governance assemblages. Rather, objects and sets of arrangements that formed part of that previous assemblage may be reconfigured and incorporated into new governance assemblages. In this way, some aspects of the deep structure of colonial governance assemblages may be retained. Often, this includes legislative hangovers and existing administrative practices that are perceived to be mundane or lacking in ideological significance. In the case of Sarawak, features of previous administrative assemblages, including highly centralized control over commercial activities and an ambiguous relationship with indigenous groups, appear to have been continued into the current era. Arguably, this results in a governance system that reflects the interests of a commercial and administrative elite, which can exercise considerable control over land-use policies affecting large swathes of land due to pre-independence legislation and policy habits, as detailed below.

(Re)territorialisation of NCR Lands

In 2000, Sarawak set itself an agricultural development target to become the new leader in palm oil production by 2010, hoping to increase planted areas from 300,000 hectares to 1 million hectares by the end of the decade (Hansen 2003, Hon 2011). However, until

the 1990s, the movement of commercial plantations into Sarawak was limited due to land constraints. This did not mean that there was a lack of interest: for example, a senior official from the Federal Land Development Agency (FELDA) indicated in 1982 that the agency was keen to utilize the 'idle' lands of Sarawak, but needed clear titles to the land, unencumbered by bothersome NCR claims (Cramb 2011). Hence, to maintain the interest of investors and the steady flow of profits into state coffers, the then Chief-Minister, Taib, quickly provided a solution: NCR lands would be made available for conversion into oil palm plantations. Such is an example of *forging alignments* within the assemblage: the work of linking together the objectives of various parties (Li 2007), in this case, the State Government who governs conduct and the commercial plantations whose conduct is to be conducted.

NCR lands were assumed 'idle' land simply because the people who occupy it were regarded as 'idle' (Cramb 2011, Doolittle 2007). Of course, identifying these lands as idle and underutilized is problematic (Carlson et al. 2012). These lands are often used for community farming or as areas for hunting and gathering. Some groups like the Dayak and Malays took up rubber planting on these customary lands from early in the twentieth century. Dayak customary smallholders went through an agricultural revolution by cultivating the technically, financially, and managerially intensive pepper crop in the 1970s (Cramb 2011). Oil palm is currently also one of the crops widely cultivated by indigenous smallholders on customary lands in Sarawak. Hence, customary land tenure has not been an obstacle to the adoption and expansion of smallholder cash crops among the Sarawak indigenous groups (Cramb and Sujang 2013).

However, since colonial times, traditional land use in Sarawak has been in tension with the more profitable commercial plantation operations. The desire of the latter was often allied with the State Government, to promote representations of local small-scale agriculture as less efficient and poorly organized, and its inhabitants as idle or backward. The representations of these entities in these terms supported the creation of new mutually reinforcing relationships between the State Government and large-scale commercial actors. They made for the reterritorialization and utilization of these ancestral lands for commercial purposes justified

in terms of a 'civilising process', to help eliminate poverty among indigenous groups (Cramb 2011) and integrate them from the periphery of the state's vision of civil society into its center. As a result, the various political and administrative entities of Sarawak have, throughout its history, used legislative means to reconstruct land ownership, land values, and present specific ideas as to how best to develop huge tracts of ancestral land (Ngidang 2005).

This narrative has been modernized and formalized through the Sarawak Ministry for Agriculture Modernization and Rural Economy, which justifies its focus on NCR land as a move to transform large tracts of unproductive and under-utilized lands into viable economic units (Goh 2016) to help boost the rural economy (Borneo Post 2016). This was the State Government's attempt to *manage failures and contradictions* within the assemblage by presenting failure (indigenous groups being 'backward' and 'less civilized') as the outcome of rectifiable deficiencies (transforming 'idle' customary land into viable economic units).

As land matters are under state jurisdiction, the state can circumscribe the rules governing NCR or use their powers to oppose native titles and rights. Land and forest-related legislation have consistently and progressively been amended to introduce increasingly aggressive clauses to limit and compromise NCR over the years (Yong 2006). NCR to land was given a limited recognition in the 1958 Land Code, just before the state's independence. This Code created a racially-based relationship between different groups of people and land in Sarawak via a system of zoning land, by generating different categories of land which could be owned by different groups of people: (1) Mixed Zone Land, to which anyone can hold a title; (2) Native Area Land, to which only Sarawak 'natives' can hold a title; (3) NCR, which is not under title but subject to NCR; (4) Reserved Land, or land held by the government principally as forest reserves; and (5) Interior Area Land, which is the residual bulk of the state's land. The introduction of a distinct category of NCR alongside written titles adds further complexity to these arrangements. NCR land status can be superimposed over the other land classes (Taylor et al. 1994), except Reserved Land. Untitled land within a region classified as Mixed Zone or Native Area Land is typically 'state land subject to NCR'. Also, the proportion of Interior Area Land that is subject to customary rights

before 1958 continues to be legally recognized as NCR (Cramb 2011).

The Code defines that these rights could be acquired by proving that before 1958, there occurred (1) the felling of virgin jungle and the occupation of the land thereby cleared; (b) the planting of land with fruit trees; (c) the occupation or cultivation of land; (d) the use of land for a burial ground or shrine; (e) the use of land of any class for rights of way; or (f) any other lawful method. Once 'legitimate' customary land has been established, the holder of customary rights could be issued with a grant in perpetuity free of rent, implying recognition that NCR amounts to a form of ownership (Cramb 2011). Until then, the land was held 'by license from the state' (Cramb 2016).

This potentially broad approach to NCR recognition reflected the de-facto situation in Sarawak before 1958, whereby indigenous groups habitually used large areas of land, which was perceived as having only limited economic value. New technologies and new species (in particular palm oil) have changed that situation resulting in the emergence of an assemblage in which the commercial potential of land affected by NCR increased. This is linked to new strategies being adopted by the Sarawak government to enroll this land in the emerging palm oil assemblage. The Land Code (Sarawak State Government 1999) was amended by the Sarawak Government in 1994 to enable the government to extinguish NCR to land, making it accessible for large-scale private land developers. It was amended again in 1996, with a new section stating that "whenever any dispute shall arise as to whether any NCR exists or subsists over any state land, it shall be presumed until the contrary is proved, that such state land is free of and not encumbered by any such rights". A 1997 amendment allowed the government to amalgamate NCR within a 'development area' into a single parcel of land, and to grant a lease of up to 60 years over the land to a body corporate approved by the Minister and 'deemed to be a native' by the cabinet. An amendment in 1998 streamlined the extinguishment of NCR and minimized compensation payouts. Finally, in 2000, an amendment removed the sixth method listed for creating NCR, namely "any other lawful method", which excluded forest land for community use within a longhouse territory (*menoa*) (Cramb 2011).

The Forest Ordinance has been amended for this purpose as well. In 1984, a government directive restricted the rights to make NCR claims, citing the fear that native forest dwellers may destroy commercially viable species through swidden agriculture or for private consumption; for example, in boat-making or building community longhouses (Cooke 1997). A 1987 amendment made it a criminal offense to barricade logging roads (Leigh 1998). Furthermore, the establishment of Permanent Forest Estate now specifically requires the termination of NCR. Also, new laws such as the Land Surveyors Ordinance 2001 have been enacted to criminalize activities related to land rights defence, such as community mapping activities, and remove from the courts the power to decide on the admissibility of community maps as evidence at the courts (Yong 2006).

Furthermore, the areas estimated as NCR by the state often differ drastically from figures used by claimants, customary courts, and non-state actors (Cramb 2016, 2011). For example, in 1988, Cramb and Dixon estimated the total area of NCR as 3.1 million hectares, about 25% of Sarawak's land area. However, in 1997, Sarawak officially asserted that there are only 1.5 million hectares of NCR in the state (Cramb 2011). Official figures were based on aerial photographic evidence of cultivation before 1958 only, and exclude forested land reserved within community territories (Cramb 2016). The lower figure reflects the government's desire to exclude as much land as possible from officially recognized customary claims (Cramb 2011).

Resistance and Attempts at Destabilisation

Assemblages and the territories they create are dynamic and contingent. At any one time, other entities which negatively perceive current arrangements may destabilize existing arrangements, forming new patterns of relationships within an assemblage (Li 2007). In the reterritorialization process of NCR lands, the Sarawak State Government ran into such destabilizing obstacles from indigenous groups and their supporters. Consequently, plantation investors still faced the problem that extensive areas of suitable land remained 'encumbered' with *claims* of NCR by various indigenous groups. Even ostensibly unencumbered state land earmarked for land development has often turned out to be subject

to NCR claims, especially in Central and Northern Sarawak, where settlement is more recent. For example, some longhouse communities which cleared forest after 1958 for shifting cultivation still consider remaining old-growth forest within its territory to be subject to NCR claims (Cramb 2011).

As a result, companies that receive concessions from the State Government, including NCR lands, were almost certain to be involved in conflicts with local communities. Indeed, a list by Danish forest consultants Pro Regenwald (2010) identified at least 57 land conflicts from 1995 to 2010 related to oil palm plantations on NCR lands. In today's hyper-connected world, companies could ill-afford negative publicity relating to land disputes, which have often been couched in terms of big business bullies against marginalized natives. A particularly high-profile case was that of Tabung Haji, one of Malaysia's biggest oil palm plantation companies, clashing with over 100 Iban families near Serian as they blocked the company from harvesting oil palm on 3,000 hectares of their NCR land (Papau 2014). Amid negative publicity, Tabung Haji was compelled to abandon its plans.

Hence, these indigenous groups, often working closely together with interest groups and international media, have managed to destabilize the Sarawak State Government's efforts to advantageously fix the position of former NCR lands according to its interests. Despite the legislative measures described above, the conversion of NCR lands into oil palm plantations was relatively slow. As of 2016, only 328,000 hectares of NCR land have been converted into oil palm plantations (22% of the official and 11% of the unofficial NCR area) (Goh 2016). This situation presented a challenge to the Sarawak State Government, which had placed significant political capital into the development of oil palm. Consequently, it sought other ways to open up and streamline access to land for private estate development (Cramb 2011).

Reterritorialization of Peatlands

The Sarawak State Government hence sought other avenues to find land for palm oil. Sarawak thus proposed that its 1.7 million hectares (Lau 2016) of peatlands as a solution to this problem, as a viable source of land to meet the demand of commercial oil palm plantations in the state. While less productive than plantations on

mineral soil, oil palm can be grown in the extreme conditions found on drained peatland (Tan et al. 2009). It must be noted, however, that such cost calculations rarely extend to a consideration of long-term environmental, public health, and rehabilitation costs associated with these activities.

This is facilitated by the biological characteristics of the oil palm itself and the economics of the industry. Biologically, the oil palm has a high tolerance for areas with fluctuating water tables (Liew 2010). There is anecdotal evidence that oil palm grown on reclaimed peatsoil can produce comparably high yields (Ministry of Forestry 2009). Economically, the sheer productivity and profitability of the oil palm industry are such that even though the constraints discussed above make oil palm development on peat soil more expensive (with set-up costs on peatlands almost double as compared to set up costs on regular mineral soil) (Liew 2010), high sustained demand and trading prices for palm oil continue to make this economically viable. Secondly, peatlands are attractive because of the valuable types of commercial timber growing in these areas, like the Alan (*Shorea albida*), Ramin (*Gonystylus bancanus*), and Terentang (*Camponosperma spp*) (Parish 2011, Phillips 1998). Concessionaires can log these areas during land clearing, with the profit from the sale of this timber used as revenue to fund plantation start-up costs (Stone 2007). Finally, the usually secluded nature of peatlands (far away from towns and cities) also usually mean that plantation companies can conduct their practices relatively free from over-scrutiny by environmental authorities (Varkkey 2016).

Hence, significant actors in the Sarawak governance undertook a new process of fixing peatlands in the oil palm assemblage. Similar to the NCR narrative, Sarawak presented its peatlands as 'idle' or wastelands (see Manzo et al. 2019). Thus, it was a viable (and cheap) source of land to meet oil palm cultivation goals in the state. In a further attempt to *manage failures and contradictions*, the State Government argued that given the scarcity of agricultural land on mineral soils in Sarawak, it is necessary to develop peatlands in plantations to improve the livelihood of local communities (SIIA 2017).

Similarly to the case of the NCR lands detailed above, the Sarawak State Government has used its autonomous jurisdictional rights to amend forest-related legislation to bring about a

transformation of the relationship between peatland and the oil palm assemblage. This began in earnest in the 1990s, when it became obvious that the complications related to NCR lands were reducing the attractiveness of these areas to investors. In Sarawak, most of the peat swamp forests are gazetted as 'permanent' (managed to maintain forest cover for multiple purposes) but not 'totally protected' (managed to preserve biodiversity and natural ecosystems in situ with no commercial activity allowed other than tourism) (Phillips 1998). This means that most peatlands would fall either under the category of Permanent Forest Estates (including Forest Reserves) or State Land Forests (not reserved permanently and can be alienated for agriculture) under the Forest Ordinance. With the amendments to the Land Code and Forest detailed above, much of the state's peatlands would fall outside what could be considered to be NCR.

In 1996, the Forest Ordinance was further amended, and a mechanism was created for oil palm estates to be established within Forest Reserves (Cramb 2016). In 1997, new Forests (Planted Forests) Rules were introduced, providing for the issuance of 'licenses for planted forest' within land zoned as Forest Reserves and allowing licensees to plant oil palm on 20% of the plantable area for one cycle of 25 years (Cramb 2016, NEPCon 2017). In the early 2000s, Sarawak classified agricultural plantations as a 'public good', which implies that the SPA can expropriate land for oil palm plantations (Hansen 2003). Since then, the Sarawak government has classified large tracts of lands claimed as belonging to the state as State Land Forests, enabling it to be alienated for other land uses like agricultural plantations (NEPCon 2017). As a result, palm oil plantation activities have accelerated land-use change in the lesser regulated government-owned State Land Forests (Hon and Shibata 2013).

A state-wide Independent Peat Basin (IPB) study was also conducted in 1992, which classified 91 out of the 109 IPBs (one-third of the total 825,156 hectares identified) as having potential for agricultural development. To quickly tap this potential, road development in the peat-rich coastal plains of Sarawak was increased in the late 1990s to improve access to peatlands. As a result, peat swamp forests in Sarawak suffered a tremendous loss of almost 50% between 1990 and 2009, especially in coastal areas

due to intensified oil palm development (Kamlun et al. 2012). Following this, Sarawak launched its Sarawak Corridor of Renewable Energy (SCORE) in 2006, its long-term development strategy for the central region. SCORE reaffirmed the state's commitment to further oil palm expansion in peatland areas. The three key growth industry areas identified, Tanjung Manis, Mukah, and Similanjau, were dominated by peat swamp forests (Hon 2011).

Other assemblage practices like *authorizing knowledge* (by specifying the requisite body of knowledge, confirming enabling assumptions, and containing critiques) and *anti-politics* (re-posing political questions as matters of technique, closing down debate about how and what to govern and the distributive effects of particular arrangements by reference to expertise, and encouraging citizens to engage in debate while limiting the agenda) (Li 2007) can also be observed within the Sarawak State Government's efforts at reterritorializing peatlands. In this context, the capacity of the State Government to successfully fix the peatlands in an oil palm assemblage also depended on it being able to establish that the cultivation of oil palm in these areas was technically viable. To do so, new actors drawn from the scientific community were brought into play. Sarawak invested significant resources in supporting research aimed at enhancing peatland conversion and cultivation for oil palm. Most notably, the State-sponsored TROPI remains the sole research unit under the Chief Minister's Department, reporting directly to the Chief Minister, and is formally recognized by the State Government as the *knowledge authority* of peatlands in Sarawak. This had the effect of bringing new entities in the assemblage in the form of researchers and research techniques, which played an important role in establishing that such areas could be used to cultivate oil palm.

TROPI argues that oil palm is currently the most economical perennial crop for planting on peat soils as it gives the best return of investment when properly managed (Melling et al. 2011). It points out that oil palm has been successfully grown on peat in Malaysia for two to three generations now, and there are oil palm plantations on peatlands that have matched the productivity of those on mineral soils (SIIA 2017). TROPI argues that it is possible to cultivate almost all peat areas while mitigating its possible negative impacts using specialized agricultural techniques. This

includes artificial soil compaction using excavators, a controlled drainage system to maintain stable water table levels, planting oil palm trees on raised mounds to prevent leaning, and using excavators to push leaning trees upright. According to TROPI research, artificial soil compaction can improve yield and reduce the need for regular fertilizing, as compacted peat retains fertilizer better. It also increases peat density and capillary rise, which reduces the rate of carbon emissions and reduces the amount of oxygen in the soil, reducing the risk of fire (SIIA 2017). This could be a practice of *rendering technical and anti-politics*; by reposing political questions (the sustainability and long-term tenability of palm oil on peat) as matters of technique (compaction, controlled drainage, etc.).

Within the academic field, there is some criticism of the technical solutions proposed by TROPI. Compaction has been found to have negative effects (SIIA 2017), as compacted soil impedes root growth and penetration, reducing the uptake of water and nutrients and possibly resulting in stunted, drought-stressed plants and lower yields. It also reduces the ability of the soil to store water and regulate water flows, possibly increasing the severity of seasonal droughts and floods. It furthermore does not address the issue of long-term peat subsidence, as peat above the water table level will continue to decompose and subside until the area becomes permanently flooded and thus unsuitable for planting. Despite this, TROPI retains a key role as the official source of scientific knowledge on peatland cultivation. Its 'best practices' for oil palm development on peat are widely promoted, enabling State Government officials to maintain that oil palm growers in Sarawak are employing measures that minimize fire and environmental damage.

The introduction of legislative changes and knowledge authorities to the assemblage allowed new alignments forged between the oil palm tree, governance entities, plantation companies, and peatlands. This mapped well onto the growing desire of palm oil companies (responding to growing pressure from human rights interest groups) to avoid conflicts with local communities by exploiting apparently "idle" peat swamps where community conflicts were less in evidence (though not wholly absent). As a result of these various assemblage practices, oil palm

cultivation on peatland in Sarawak has expanded dramatically to become the most widely grown crop in the state based on hectareage in 2005. In 2006 Sarawak achieved its 1 million hectare goal (Kamlun et al. 2012), surpassing the planted areas of the Peninsular states of Johor and Pahang, which formerly were the top two states in terms of oil palm hectareage in Malaysia (Hon 2011, Sarawak Report 2014). Over the next two years, 70% of the increase in the national total planted area took place in Sarawak (NEPCon 2017).

When Taib stepped down in 2014, his successor Adenan Satem continued Taib's trajectory when he announced that Sarawak would continue to open up coastal lowland areas (peatlands) to encourage expanding the oil palm industry (Lian and Sibbon 2016). Even though it was declared that only logged-over peat swamp forests could be developed into oil palm plantations in Sarawak (Melling et al. 2011), this hurdle was easily overcome as planted peat areas have been logged since the 1950s. Sarawak's planted area continued to expand, amounting to 1.4 million hectares in 2015, or 25.5% of all palm oil planted land in Malaysia. It contributed about \$2.03 billion (9%) of the state's total exports in that year, from which the state can collect substantial tax (Borneo Post 2016). Today, out of the 1.7 million hectares of peatland in Sarawak, about 550,000 hectares, or 32%, have been planted with oil palm (Lau 2016).

Resistance and Attempts at Destabilisation

Many experts in this field have generated evidence strongly contesting Sarawak's position. For example, more than 100 local and international scientists (including this author) wrote a strongly-worded Letter to the Editor of the journal *Global Change Biology* declaring that peatland development in Sarawak for oil palm would have dire immediate and future consequences (Wijedasa et al. 2016). The letter compiled extensive findings that show how contemporary agriculture techniques on peatlands have heavily impacted the peatland ecosystem through land clearance, drainage, fertilization, and often fire (Page et al. 2002). No current techniques have been shown to prevent the loss and subsidence of peat following drainage. These studies thus call into question the very notion of 'long-term sustainability of tropical peatland agriculture' (Evers et al. 2016). They argue that the Sarawak government's approach is short-term

profit production that irreversibly damages the peat swamp ecosystem (Wijedasa et al. 2016).

Notable bodies, like the Roundtable of Sustainable Palm Oil (RSPO), the world's leading palm oil certification system, have taken note of these scientific developments. As part of RSPO's latest Principles and Criteria 2018, RSPO certifiable members should no longer carry out new oil palm plantings on peat after November 2018 (RSPO 2019). However, Malaysia's Federal Government-facilitated Malaysian Sustainable Palm Oil (MSPO) certification system acknowledges that state law allows for planting on peatlands and has merely developed 'best practice' guidelines for these peatlands (MPOB 2020).

It is still unclear if these destabilization attempts by scientific communities (again, supported by interest groups and international media) will succeed. Sarawak still maintains that peatlands can, and should, be developed sustainably for agriculture, especially palm oil (Nurbianto 2016). However, recently in 2019, the current Chief Minister Abang Abdul Rahman Zohari announced a moratorium on new licenses for timber and oil palm except for communal and NCR lands (Bernama 2019). Simultaneously, the Sarawak State Government maintains its Sustainable Land Use Policy, which targets 3 million hectares of oil palm plantations in the state by 2020 (Lau 2016). There is a lack of clarity over whether peatlands which have already been licensed out before the moratorium can still be cleared for plantations. On another note, the refocus on NCR lands may be the precursors to yet another attempt at reterritorialization to stay on track of state development goals.

CONCLUSION

This paper has detailed how evolving governance assemblages can enable and legitimize palm oil expansion. In Sarawak, the State Government was able to retain substantial autonomous control over land use policy, due to its unique governance traditions stemming from historical factors relating to its former colonial status and current membership of the Malaysian Federation. Hence, the State Government is the most powerful actor in this assemblage as it has the strongest capacity to enact other actors and objects in ways that support their interests (Nuijten, 2005). This has placed

the Sarawak State Government in a unique position to shape relationships between different elements in the palm oil assemblage here, and over how land is constituted as an object of economic potential. When faced with resistance and obstacles, the Sarawak State Government has acted in purposive and groundedly rational ways (Long and Liu, 2009) to shape and reterritorialize elements of the assemblage in ways which support its perceived interests.

New forms of resistance, however, may be coming from within the industry itself, as some countries have taken steps to pressure the industry to adopt more environmentally sustainable practices, and as palm oil-producing countries and companies have taken individual and collective steps at both national and international level to respond to global concerns regarding its environmental impact. Examples include the international industry response of the RSPO and private sector pledges like “No Deforestation, No Peat, No Exploitation”, the European Union’s revised Renewable Energy Directive Recast (RED II), which aims to phase out biofuels linked to high indirect land-use change by 2030 (EU 2019), and the national response of Indonesia in declaring a more well-defined moratorium on peatland conversion.

However, the extent to which all this is likely to impact on the governance of the palm oil industry in Sarawak is open to question. The Sarawak government’s autonomy over its land-use policies has been remarkably durable, as it enjoys a significant degree of autonomy from the Federal Government while simultaneously retaining a considerable degree of centralized control at the state level. Despite recent shakeups in Malaysia politics, Gabungan Parti Sarawak, which has joined the new Perikatan National coalition to form the central government, still includes many former stalwarts of the old guard, making it unlikely to result in NCR and peatland politics in Sarawak coming under closer scrutiny. Hence, it remains unclear how much effect central scrutiny (if any) and indirect controls will have on state-level land use policies.

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NOTES

- 1 The 'gazetting' of land under the Malaysian law is the process of the State Authority publishing its decision to compulsory acquire the land in question for either public (e.g. forest reserve) or private (e.g. commercial agriculture) purpose in the Government Gazette, and giving public notice of the same. The Sarawak Land Code and subsequent amendments allows the State authority to gazette or degazette land as native areas and NCR (TRAFFIC International 2004).

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