

Land grabbing, conflict and agrarian-environmental transformations: perspectives from East and Southeast Asia

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Land Grabs and the River

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Abstract

This paper looks at how waves of land grabbing in West Kalimantan, Indonesia are transforming the political ecology of the Kapuas River. Key land grabbing activities include the ubiquitous palm oil industry, mining (particularly bauxite and gold), logging and pulp and paper plantations, and a variety of green grabs (Heart of Borneo, national parks and REDD projects). Currently, concession permits cover 130% of the province, leading to land conflicts and to a politicization of the spatial planning process. In this paper, we want to look beyond these territorial conflicts by linking them, via the river, to “city-rural-river-transformation loops” characterized by specific networks of economic and political actors operating at different scales. We start this empirical inquiry by action research with “Citizen Research Groups” (CRG) in communities impacted by key qualitative transformations. The CRGs started to challenge their “local land grabs” for example by using community drones for counter-mapping. Later, they connected their experience to that of the other CRGs and to how this affected the river as a whole. We argue that while all the land grabs are ultimately driven by the “meta-network” (Castells) of the financial markets at the global scale, appropriation and accumulation strategies manifest themselves differently according to the materiality of the specific resource. While palm oil and bauxite mining are large scale operations by transnational corporations and enjoy intimate relations with national and provincial governments, gold mining is conducted by local start-ups and worker-entrepreneurs and is criminalised by the state. And each activity changes the ecology of the river in a particular way. The palm oil industry not only destroys the forest-river-ecosystem but also pollutes the river with run-off pesticides and fertilizers and with palm oil mill effluent (POME). Gold mining not only lays waste to riverine landscapes but also pollutes the river with mercury. In Tayan, large bauxite operations have laid a lake dry that was a key resource for fisherwomen. Pollution has created a crisis for fishermen and women as natural fish stocks have plummeted. In the poorer areas of the city, the river is so dirty that it can no longer serve as a site of social reproduction (drinking water, washing, laundry), with serious related health issues. Money and power flow up the river, while resources and pollution flow back to the city. Land grabs transform the river from a space of life and livelihoods to one of pollution and illness. At the same time, the river has the potential to connect and scale up otherwise localized and segregated struggles over land grabs.

Keywords: aggregate land grab, eco-social transformations, city-rural-river-transformation-loops

Introduction

Research on land grabbing is typically focused on the political economy of agrarian change and on the specifics of large scale land transfers, looking at the actors involved, the politics and power relations behind the deals, the social and cultural conflicts accompanying ‘accumulation by dispossession’ etc. In this paper, we aim to explore what happens when one land grab is added to another until the scale of aggregate land grabs impacts a whole eco-social landscape. In particular, we would like to contribute to a greater understanding of the ecological impacts of land grabs in relation to dynamic ecologies (Borras et al. 2011: 211), by focusing on land grabs in West Kalimantan and their impact on the political ecology of the Kapuas River.

The research findings are based on a three year project on the political ecology of the Kapuas River (2011-2014, funded by the DFG) in which we explored how capital and political power in/via the provincial capital Pontianak shaped rural transformations that, in turn, changed the river, and, by flowing back into Pontianak, the city. To this end, we developed a series of action research modules in seven locations that represented key ongoing agrarian and river-related transformations. These “Participatory Hydro-Political Appraisals” (PHPA) were undertaken in cooperation with “citizen research groups” that we formed at the onset of each PHPA in order to include local people in the development of research questions and interventions. Our hope was that by initiating action on issues raised in the course of the project, our research could go beyond documenting changes to the political ecology of the river and contribute to doing something about it.

The argument in this paper is as follows. Firstly, the aggregate impact of a large number of land grabs of different kinds (palm oil, mining, green grabs, logging) is a frontal assault on what Michael Dove (2011:13) has termed the “dual economy of subsistence and market production” of the small holders in the whole province of West Kalimantan. Appropriation of smallholder lands by various means (including voluntary sales) – because it is happening everywhere – destroys the independent land base of smallholders. Secondly, the ecological impact of the land grabs, again because of the totality of the landscape change involved, threatens and restricts access to forest and river resources that are an important part of both subsistence and market livelihood components. Thirdly, the combination of these two developments accelerates class differentiation among smallholders with accumulation by some and proletarianisation of others. Kapuas inhabitants generally become more mobile in the search for a paid jobs or join the recent ‘gold rush’ and the aquaculture boom along the Kapuas River and its tributaries. This extensive small scale gold mining and the aquaculture boom, in turn, has a detrimental impact on the river, thereby deepening the ecological crisis and feeding back into the first two mechanisms.

With the aim of politicizing these transformations, we then argue that each type of land grab (palm oil, mining, logging) and the smallholder responses (gold mining and aquaculture) to their aggregate impact, are characterized by specific “City-Rural-River-Transformation-Loops” that are made up of different actor networks, spatialities, ecological materialities, gender dynamics, social and political conflicts and discourses. Understanding the specifics of these loops is important for successful political interventions. At the same time, generalizing from each loop to see their interconnectivity is crucial to challenge the overall development model currently being pursued. Organising along and politicizing around the river offers one way of connecting and scaling-up otherwise separated and marginalized local struggles.

Action Research along the river

Our research design attempted to combine a kind of functionalist overview of this very large river (via a long exploratory trip up the river by boat, collecting primary and secondary material and lots and lots

of interviews) with in-depth, qualitative research on what we identified as key transformative processes. For these qualitative studies, we selected seven locations with seven different foci (see Figure 1) and decided to try out an action-research approach. This was because we generally wanted to avoid objectifying, hit and run type of research, were interested in what dynamics would develop if citizens started developing the research agenda with us and – perhaps most importantly – because we wanted our research to be an intervention into the political ecology of the river rather than just a passive reflection of it. We called these action research interventions “Participatory Hydro-Political Appraisals” (PHPAs).

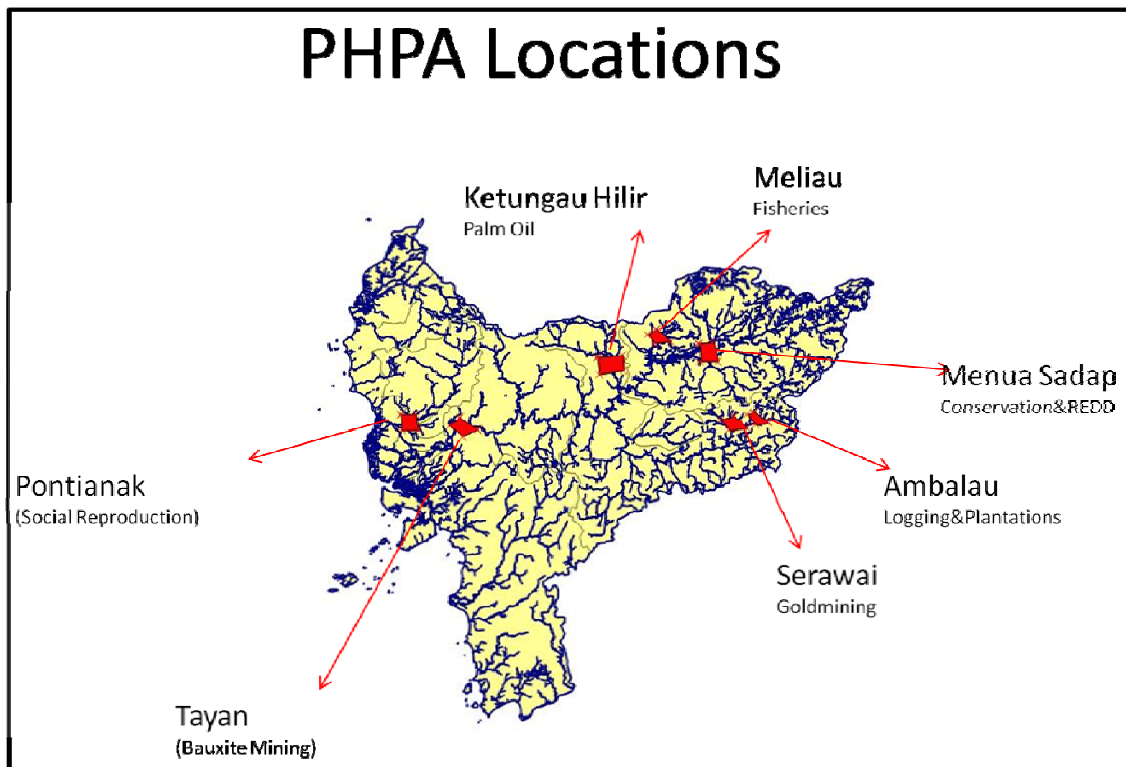


Figure 1: Research Locations along the Kapuas River

The PHPAs started with the formation of “citizen research groups” (CRGs) in each locality that developed the PHPAs together with our researchers. The PHPAs consisted of various exercises including a river transect and a place biography interview (more for our benefit) and then group discussions focusing on problem analysis, change objectives and intervention analysis. These group discussions were conducted with different groups (e.g. women only groups, youth, different hamlets etc). In two locations, drones were used for counter-mapping purposes (see paper by Radjawali/Pye). Our hope was that the CRGs would continue with their action-oriented enquiry after we had left the site. In March 2015, we conducted two rounding off workshops involving members of the citizen researcher group. The first workshop, joint-organized with Swandiri Institute, had the objective of relating the different transformations and local situations to each other via their relation to the river. A second workshop, jointly organized with Tanjungpura University in Pontianak, brought academics, community scholar activists and officials from relevant government agencies (regarding water politics, land use change, spatial planning etc.) to discuss solutions to issues raised in the communities.

An Aggregate Land Grab

The Kapuas peoples have been connected to global trading networks for hundreds of years, with the

river serving as a trading route to bring valuable forest products from the highlands to the coastal port of Pontianak in pre-colonial society. As Dove (2011) argues, smallholders on Borneo have successfully followed a “dual economy of subsistence and market production,” in particular by using rubber as a cash crop that can be combined flexibly with labour requirements for swidden agriculture. In this way, they resisted attempts to be incorporated into corporate agriculture and were able to defend their economic independence, including de facto control over much of the agricultural land in West Kalimantan.

Land grabs have fundamentally changed this.

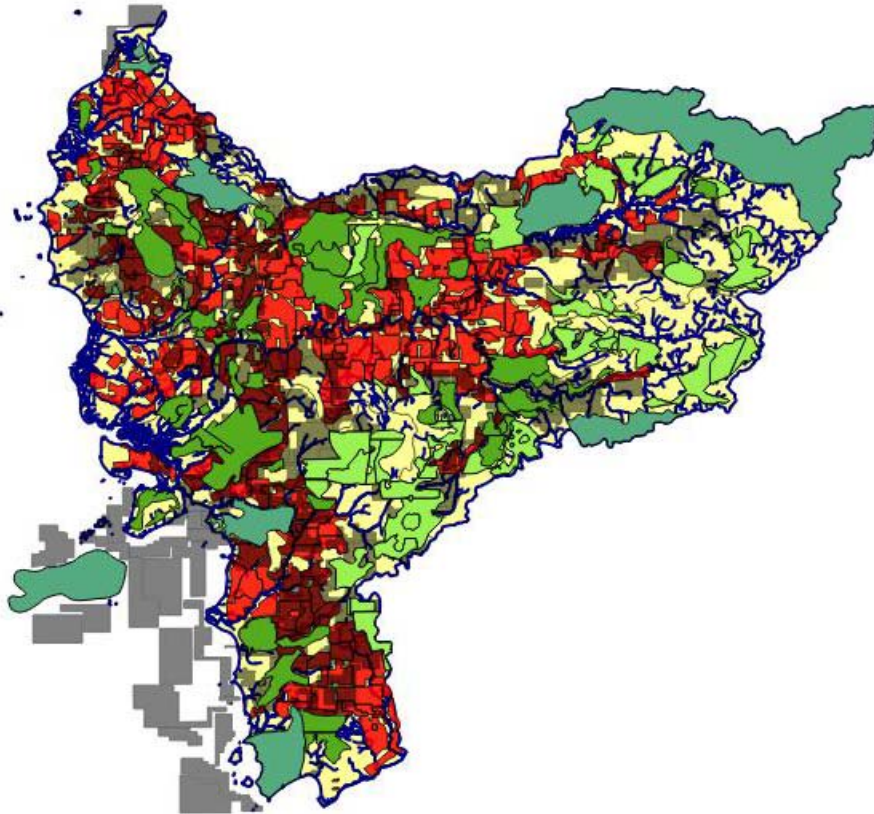


Figure 2. Concession licenses in West Kalimantan. Green: conservation areas; Red: palm oil; grey: mining; yellow: logging; brown: pulp and paper (Source: Swandiri Institute 2014)

As shown in Figure 2, concessions and conservation areas now cover most of the Kapuas watershed. According to Hermawansyah (2014), 19.4 Million Ha of land in West Kalimantan Province has been allocated for oil palm plantations, mining, logging activities as well as industrial forest for pulp and paper industries. Due to concession overlaps, this allocation represents 130% of the size of West Kalimantan Province (14.9 million ha). 721 concessions have been allocated for mining companies involving 5 Million Ha of land, while 377 concessions have been allocated for oil palm companies involving 5 Million Ha of land (Swandiri Institute, 2014). Furthermore, 47 concessions have been allocated for industrial forest companies involving 6.6 Million Ha of land and 30 concessions have been allocated for logging companies involving 2.8 Million Ha of land. And this does not include protected areas and national parks. A look at the map gives a striking visual impression of the squeezing out of smallholders by corporate land uses.

In the upper reaches of the Kapuas, two large protected areas stand out, the Betung Kerihun National Park in the mountainous centre of Borneo and the Sentarum National Park composed of a large number of lakes, swamp forests and peat land that acts as a kind of sponge for the river ecosystem as a whole. From the perspective of the citizen research groups, these national parks

represent a “green grab,” i.e. “the appropriation of land and resources for environmental ends” (Fairhead et al. 2012: 238). In Menua Sadap, an Iban longhouse on the Embaloh tributary at the edge of the park, park regulations restrict access to swiddens, hunting and logging, and access and national park control (they have an office in the village) is under repeated negotiation. In a more recent development, a German development project, ForClime, has suggested participatory mapping of community forests to inventories its carbon for potential REDD+ projects. Two hamlets have agreed, while Menua Sadap have rejected the offer. In Sentarum national park, our PHPA took place in Meliau, a hamlet in the buffer zone. Although the park has not evicted the fishing villages along the lakes, timber access and agricultural activities are restricted.

Serawai, an eight hour speedboat ride from the regency capital Sintang, Ambalau, on the Melawi tributary and two hours further up, and Ketungau Hilir, a similarly tortuous journey in the direction of the Malaysian border, are typical for recent land grabs that are happening along the midstream Kapuas tributaries and further upstream. In Ambalau, both a Pontianak based logging company and two subsidiaries of a Malaysian/Singapore palm oil corporation have been awarded concessions that overlap with land belonging to 22 villages and even residential areas. Locals find their access to forests for local logging and to agricultural land restricted, with heavy police presence. 60 villagers were jailed in 2011 after being criminalized in the context of land conflicts. In Ketungau Hilir, a Jakarta-based agribusiness company obtained a concession for 20,000 ha in 2010 and started clearing land in 2011. Before the land grab, smallholders followed a diverse livelihood strategy of paddy, swiddening, timber and NTFP and fishing. Again, villagers who opposed the deal were criminalized, with one family jailed for a month for working on their land and ripping out oil palm seedlings. Serawai was a hotspot both for gold mining and for logging, but is currently also seeing palm oil corporations moving in, with mixed reactions amongst the local communities.

Further downstream, about 2 hours from Pontianak, Tayan is the hot spot of large scale extractive industries. Several companies flocked to this area to mine bauxite. One of the major players is PT. Aneka Tambang (ANTAM), a state-owned enterprise mining and metal company. In Sejutang Village, PT. Mahkota Karya Utama a Pontianak-based mining company started their operation in 2013. The company was able to dry out a “lake” which had previously been a fishing ground for hundreds of households in Tayan Hilir. The company managed to mine and transform the whole wetland ecosystem into totally dry land. The community most affected, in Sejutang Village just couldn't react fast enough as they knew that the company has “bought” the land from an individual from the other village, thus they thought that the company operated legally, despite the severe environmental destruction it created. Only later in 2014 that community know that the lake that has been dried is actually outside of company's concession area, therefore the company has been illegally operating and destroying the area.

A landscape scale of agrarian-environmental transformations

The Kapuas River is 1,143 km long. Vast in itself, is connected to a much larger system of lakes, swamps and inundated forests that support a wide diversity of fish, prawn, crab, insect, bird and other species (Aida and Samuel 2010). Its fishery sector has sustained the livelihood of the riverine communities who live along its banks and on its tributaries and lakes. At least 200 species of fish live in Kapuas watershed (BRPPU 2013). The highest diversity of fish is found in the middle part of the watershed, where highest intensity of fishing activity also takes place, and then followed by downstream (estuary) and upstream areas. The mid-part of of the watershed is characterized with swampy forest which is part of the floodplain. The swamp forest is an important area of fish spawning, breeding, feeding and where they grow to maturity. The Sentarum Lakes are the key wetlands of the Kapuas watershed and are the main centre of freshwater fish production in West Kalimantan. Utomo (2009b) estimated fish productivity in the downstream area between Pontianak and Jungkat estuary at

1,847 matured fish per ha. Meanwhile, in the Tayan area as many as 157 matured fish per ha were identified in Kapuas main river and 403 matured fish per ha were identified in its surrounding tributaries. In the Sentarum Lakes area, between 1,087 to 1,634 per ha of matured fish were identified, while in Empangau protection lake, as many as 5,708 matured fish per ha were identified.

Fish is the most important and cheapest source of protein for people in West Kalimantan. Apart from an estimated 44,000 households involved in small scale commercial wild capture fisheries and aquaculture, fishing is a widespread additional activity for smallholders for home consumption. The Kapuas River and its tributaries provide an immense source of freshwater fish as (free) food supply for the locals. In other words, the rivers and lakes have become natural social safety nets for the population, especially for the lower economy groups.

In our two upstream research sites, fishing is a key activity, particularly in Meliau, where men and women fish on a commercial basis and for their own consumption. In Ketunggau Hilir, Ambalau and Serawai, fishing was also a common activity that provided an important part of local diets. The Semanduk Lake in Tayan was still used for drinking water in the 1990s. Fish were abundant, with people came from other places just to get the fish. Informants recalled that there were Arowana fish (a valuable and now rare species, see below) in the rivers and that they could collect cankung (water spinach) and shrimps every day.

The first major way in which the ecology of the river system is transformed is by the conversion of forests, swamp forests and peat forests into plantations or open pit mining. The pulse of the river is connected to this vast network of swamps, lakes, peatland and flooded forests which absorb water in the rainy season and release it in the dry season. Conversion of these, and drainage of peat not only changes the hydrology of the river by leading to less water retention capacity, less river flow in the dry season and higher peaks and flooding in the wet season, but has a severe impact on fisheries. By destroying crucial fish habitat, including river bank vegetation (some fish depend on particular types of fruit and seeds that fall into the river) and flooded forests that are important spawning grounds, fish stocks generally are becoming depleted and certain species are becoming rare.

Forest conversion in the proximity of the Kapuas and its tributaries and streams can also severely impact water quality. Logging, for example, increases the sediment load and turbidity of the river, while chemicals used to treat the logs on their journey down to the sea pollute it. Palm oil plantations also result in higher temperatures and higher sediment concentrations in streams, with “significant and often deleterious effects on aquatic organisms” (Carlson et al. 2014). However, pollution is much more drastic when oil palm mills discharge the residue left after processing – so called palm oil mill effluent (POME) into the river. Palm oil production uses up to 7.5 tonnes of water per tonne of crude palm oil, half of which ends up as waste effluent (Rupani et al. 2010: 73). POME consists of organic particles and residual oil, and the organic matter increases the uptake of dissolved oxygen by microbes as they break it down. This “biochemical oxygen demand” (BOD) measures the “degree of organic pollution of water” (Madki and Seng 2013: 242). According to Madki and Seng (2013: 239), “ton for ton, the oxygen depleting potential of raw POME is 100 times that of domestic sewage.” Because “microbial action will consume dissolved oxygen faster than atmospheric oxygen can dissolve in the water [...] fish and other aquatic life might die because of depleted oxygen” (ibid 242).

These impacts were discussed in our citizen research groups in various sites. In Ketunggau Hilir, the establishment of the palm oil plantation on peat forest (Gambut) has left the water polluted, even unfit for growing vegetables. Locals have to travel by motorcycles to fetch water in plastic containers. In Ambalau, the combination of logging and palm oil has led to a water crisis in the dry season, leaving the river turbid and unfit for swimming and depleting fish stocks. In Serawai, people are experiencing similar impacts from oil palm.

In Tayan, the combination of palm oil plantations and large scale bauxite mining has had severe impacts on the lake and river ecosystems. Community members feel surrounded by companies that are

steadily encroaching on their area. One Kapuas tributary has been taken over by palm oil plantations that pollute the water with their extensive use of rat poison. The mining company, meanwhile, has diverted the Semenduk river feeding the lake to wash the bauxite, discharging the tailings into the lake and into the Kapuas. The resulting sedimentation and pollution has changed the lake into a dried up moonlike landscape. It is now “difficult to find fish” and “almost impossible to find a fish as big as your hand.”

Increased runoff, sedimentation, POME discharge and mining tailings from the upstream combine with sewage and garbage from the city to pollute the river to such an extent that it can no longer be used for drinking water. The municipal water company (Perusahaan Daerah Air Minum, PDAM) is finding it more and more difficult to provide piped water of sufficient quality in the dry season, as increased water use for palm oil plantations etc. lead to lower water levels and increased salinity. But for poorer households living near the river, installation and fees are often too high. Water from the river is still used for washing and for laundry, but this makes the skin itchy. Meanwhile, the municipality fails to organize an effective garbage collection or sewage system, which finds its way via open sewers into the river.

Gold and Aquaculture: transformations from below?

Land grabbing attacks the independence of smallholders in a pincer movement by taking away land that is the basis for paddy and swidden rice and for commercial crops (rubber etc.), by restricting access to forest products, and – via overall changes in the political ecology of the river – by restricting abundance and access to fish and to clean water. At the same time, land grabs take place within an overall context of economic growth, investment and new business opportunities. In conjecture with the overproduction crisis in the rubber industry, which has seen global prices plummet from nearly three USD per pound at the recent peak in 2011 to 80 cents in 2015, smallholders are not content with defending a traditional status quo. Rather, they are looking to improve their lot, and want development.

In the context of low returns for traditional agriculture and the end of the logging boom connected to the decentralization of natural resources in 2001 (McCarthy 2001, Barr et al. 2006) that had provided substantial income opportunities, the potential returns from palm oil are a strong incentive to sign over land to companies or to join a plasma project (Rist et al. 2010). However, as Pujo and Bakker (2014) show in their discussion of Meliau in Sanggau district, land accumulation soon sets in, with the wealthier farmers buying up land from poorer sections of the population who are not so successful. In the case of other concessions such as pulp and paper plantations or mining, there are fewer opportunities for smallholder buy in. Whether by “adverse incorporation” (McCarthy 2010) or by “dispossession by accumulation,” the overall affect is a proletarianisation of smallholders, who adopt increasingly mobile strategies in their search for paid wages and other income opportunities.

In Menua Sadap, since the establishment of the national park, more Iban have to rent land to practice their shifting agriculture. This makes them more “connected” to and “dependent” on the financial economic system, thus making them more vulnerable to the risk of failure. During our field work in 2014, the rice harvest was not very successful and could only partly cover subsistence needs. Income that was previously available from logging has dried up. Nowadays, nearly every household has a member who is working or has worked as a migrant worker in construction or the palm oil industry in Sarawak. Similarly, in Ambalau, land grabs have meant that access to forests and income from timber sales has been stamped out and agricultural land has been taken over by private companies. It has now also become common for people to migrate to Malaysia to work as rubber tappers or palm oil workers.

One of the most important eco-social transformations affecting the Kapuas River is gold mining. The process of agrarian class differentiation with proletarianisation on the one hand and rural capital

accumulation on the other found in the gold rush that developed in the late 1990s and continues until today its major outlet and activity. Tens of thousands of people became involved in small scale mining of secondary alluvial gold deposits along the river, first in off-stream mining along the river banks and then in-stream gold mining (Lukas, 2013). Initial investment is quite small, leading to a great many and dispersed “start-up” ventures and a network of entrepreneurs (“bos emas”) who upfront the machinery and expenses for a gold mining “unit” and pay workers either with a portion of the gold revenue minus expenses or a fixed daily wage, with the bos shouldering the risk but also the profit. With rising gold prices after the Asian economic crisis in 1997, gold mining offered attractive possibilities to thousands of small scale entrepreneurs and employment to tens of thousands more for whom the dual smallholder strategy did not offer as much upward mobility or for those squeezed out by expanding land grabs.

But the gold rush had serious polluting side effects. Off-stream mining along the rivers led to the “conversion of hundreds of thousands of hectares of land into desert-like landscapes” (Lukas 2013), while in-stream mining increases the sediment load and turbidity of the river. Another concern is mercury pollution of the river which is used by small-scale miners to amalgamate the gold, leading to fish deaths in some places and to high mercury levels in the Kapuas in Pontianak (Yayasan Konservasi Borneo 2003, Adijaya and Takao 2004). In turn, this exacerbates the smallholder livelihood crisis along the river, further accelerating social differentiation processes.

The other important small scale accumulation strategy is aquaculture. Decreasing wild fish stocks and pressure on particularly valuable species – connected to the ecological changes in the ecological river system – but also government support programmes and potential income led to a boom in aquaculture, particularly in Malay fishing communities. In the Sentarum Lakes area the predatory fish Toman has become the species of choice because of its high price and transportability as a live fish. However, this type of aquaculture has increased the pressure on wild fisheries in the river, because the feedstuff for the Toman is made up of small fish and fish fry. Aquaculturalists use an indiscriminate kind of fishing method with small-meshed large nets called warin, which are set up across the run of the river, basically collecting anything swimming along that part of the area. According to Asyari (2009), fish caught by warin nets could account from 100 kg to 150 kg per day which the majority type of fish caught were fish as big as anchovies or smaller. Because these include fish fry of migratory fish, the Iban fisherwomen and – men from our PHPA in Meliau identify warin nets and aquaculture as a major cause of declining fish stocks, particularly of larger and valuable specimens.

City-rural-river-transformation-loops

Two exercises in the PHPAs, the spatial problem analysis and the spatial intervention analysis aimed to relate key issues as perceived by the participants to actor networks and their spatialities along the river. The idea was that in order to achieve key change objectives, the citizen research group would need to discuss how, where and with/against whom they need to intervene. While interconnected, we argue that the different transformations are characterized by city-rural—river- transformation loops characterized by different actor networks, spatialities, ecological materialities, gender dynamics, social and political conflicts and discourses

Starting with palm oil as the land grab which was an issue in all of the seven PHPAs, it is obvious that transnational corporations are the key actors. At the local level they are known by the name of the subsidiary company, although locals often know the parent company as well. In Ketungau Hilir, the company, PT. Buana Hijau Abadi (BHA) is a subsidiary of PT. Triputra Agro Persada (TAP), a Jakarta-based agribusiness company established in 2005. But this Indonesian corporation (a member of the RSPO) brought in two Singaporean investment companies as major shareholders in 2012. In Ambalau, both palm oil companies belong to Good Hope Holdings (also, would you believe it, an RSPO

member), a Malaysian/Singaporean palm oil company that belongs to Carson Cumberbatch Holding Company based in Sri Lanka. Ultimately, these transnational corporations are linked, via commodity index funds and the financialization of agrifood production networks and flex crops (Clapp 2014) to the “meta-network” of the financial markets (Castells 2010). But sections of the state are also important. In both Ketungau Hilir and Ambalau, concessions were given out by the Regency, despite the concessions overlapping villages and customary land. There is a close relation with the courts (who sent a family to jail for months in Ketungau Hilir for farming their own land), with the police, with consultants and academics who draw up the environmental impact assessments etc. Pontianak itself only plays a secondary role for a global network that reaches into the local space, incorporating local elites via socialisation and pay-offs. The river functions as a transport vein for machinery and crude palm oil, as a production factor providing water, but also as a pollution dump for run-off pesticides and rat poison, erosion, and POME. Conflicts emerge over land rights, develop into horizontal fights between different factions of village leaderships and adat councils and continue as unresolved negotiations over payments, percentages and side effects. The transition from a diverse smallholder strategy to a corporate monoculture is usually characterized by a shift in economic and political power away from women and towards men (Julia with Ben White 2012). The dominant discourse is one of “sustainable palm oil” – as well as being the only (development) game in town.

Conservation has a counter-discourse, in Menua Sadap and Meliau, villagers are offered ecotourism as their development path, or, as in REDD schemes, making money by not using resources. A different set of actors is involved, from a specific set of government agencies, in particular the Ministry of Forestry, the administrations of the national parks etc with their baggage of state-colonial mindsets and ways of working (bureaucratic and corrupt moneychangers) to transnational environmental corporations like the WWF (with their tendency to work with whoever has power (so called decision makers) and to develop top down megaprojects like the Heart of Borneo that are retrospectively participated) and development agencies like the GIZ pushing the REDD agenda with their ForClima programme. But at the global scale, via REDD, emissions trading and carbon speculation, conservation has also become financialised. A network of “pension funds and venture capitalists, commodity traders and consultants, brokers and aggregators, GIS (geographic information system) service providers and technology procurers, business entrepreneurs and salespeople, green activists and anxious consumers, as well as NGOs and state agencies (Fairhead et al. 2012: 239) reaches into the districts, villages and hamlets. In Menua Sadap this takes the form of a salaried KPH work group, national park jobs, and potential money from REDD (all usually in the hands of men). The basic conflict is clear: between customary law and state control, while for the river loop, conservation efforts stave off ecological crisis, without solving the livelihood one.

The logging industry involves a very similar set of actors (Ministry of Forestry, development agencies and initiatives such as FLEGT, police and military) but with a greater role for local politicians, Pontianak and Malaysia. In Ambalau, the logging company PT Benua Indah is Pontianak based. Logs travel down the river to the saw mills and furniture factories in Pontianak and then via the port to the open sea – or, ignoring the river, are transported directly to Kuching in Malaysia. Police protection is doubly important: to impose corporate ownership rights for the legal logging – and to look the other way for the illegal side to the business. As with frontier expansion palm oil and larger gold mining concentrations, the male logger camps are serviced by trafficking and prostitution rings. The discourse seems to be clamping down on illegal local logging whilst enabling legal because corporate plunder.

In the case of bauxite and of mining in general, the figure of China looms “menacingly”. In Tayan, Chinese investment teamed up with indigenous capital (PT. Aneka Tambang (ANTAM), a state-owned enterprise mining and metal company and PT. Mahkota Karya Utama a Pontianak-based mining company) and with indigenous, political patronage in the person of Governor Cornelis. The

Dayak Customary Council at the provincial level remains silent about the destruction of the Semenduk Lake, while villagers receive “dust money” by way of compensation for the trucks that rumble through their hamlets. The river retains a key transportation role for bauxite that is shipped through Pontianak to China – and as a pollution dump for mining tailings.

Gold mining involves a different set of actors, one that spatially most closely follows the river. A decentralized network of local “bosses” with one, three or 20 mining units operate in close proximity to the miners. The landscape scars of decentralized operations spread up the river, while gold, mercury and sedimentation flows down it, all of it accumulating in Pontianak, where the gold connects to the global gold market, and the rest flows into the sea and into drinking water. Again, a connection to the meta-network emerges: 40% of gold consumption is accounted for by gold bars in bank vaults, while price hikes stem from speculative financial crisis. Is gold mining a bottom up entrepreneurial alternative to land grabs or rather a kind of glocal land grab driven ultimately by the financial markets? At any rate, the recent, industrialized form of expansion and its destructive nature differs from the pan mining that used to be by one aspect of dual smallholder livelihoods. The dominant discourse has identified and criminalized the miners as the bad guys, while the gold miners demand a decriminalization and government support to become ecologically less destructive.

Fish is also a highly decentralized industry with a dendritic system of trade along the river for domestic consumption of fresh fish and more popular salted-dried fish. For the commonly consumed fish (e.g. Toman, Lais, Baung), the market goes as far as Pontianak. The fisher communities in the Sentarum Lakes complex are combination of artisanal fishers, Toman aquaculturalists, or the mix of both (artisanal and aquaculture). For instance, Meliau fishers are mainly artisanal fishers, while most of the villagers downstream of Meliau are toman aquaculture fishers. High value fish connected to international markets such as Semah (*Tor tambroides* and *Tor duoronensis*) with the market chain goes directly from Putussibau in Kapuas Hulu (Indonesia) to Kuching, Malaysia. Global demand for certain species in capture fisheries, most notably Arwana or Siklok (*Schleropages formosus*), are reminiscent of river-traded binges in forest products in former times (e.g. gutta percha, see Potter 1997). Due to increasing demand from international markets in some Asian countries (China, Hong Kong, Taiwan, Singapore, etc), the fish was hunted down in its habitat in the Sentarum Lakes area during the 80s and 90s, endangering the species. Aquaculture networks include patron-client relations between local capital, banks like the Bank Nasional Indonesia, and producers. The more aquaculture spreads, the more it tips the balance of fish ecology away from capture fisheries, leading to new upstream – downstream conflicts and to more male control over the river as a productive space.

Dazed and Confused

While each transformation loop has specific characteristics, some common patterns emerge. All of these loops pass through or end up in Pontianak somehow, and it is here that the socio-ecological transformation of the river translates into a crisis of social reproduction, at least for the poorer women of the city. Major transformations of the river are connected via transnational corporations to the global scale of the financial markets (carbon and REDD, flexcrops and palmoil, global production networks and bauxite, financial markets and gold; to a lesser extent logging). At the same time, sections of the Indonesian state are proactive in pushing through a development model that woos these flows of investment. Extensive networks between political parties, national provincial, regency and district governments, police, courts, and academics enable land grabs through spatial planning (see paper Radjawali/Pye), permits, amdals, socialisasis, and repression.

Characteristics of this development model are waves of commoditization, transfers of land from smallholders to corporations, focus on profit and accumulation to the detriment of subsistence component of dual strategy, diversified livelihoods, and the disregard of issues relating to social

reproduction. The river epitomizes this transfer. Formerly, it fulfilled functions as a site of production (fish), a site of trade of market cash crops (timber, NTFP, gold), and a site of social reproduction. Today it is becoming a site of capital flows, a site of resource extraction and a pollution dump. Feedback mechanisms between degradation on a river scale of an intricately connected ecosystem and livelihood options and alternatives accelerate the agrarian-ecological transformation of the river.

Faced with the aggregate impact of eco-social changes brought about by land grabs, local responses can do very little. Pujo and Bakker's (2014) critique of White et al. (2012) that they fail to account for local agency in their critique of land grabs as a deal for the rich misses this crucial dimension of scale. Their argument, that individual landowners could earn quite a good income at a particular point in time hardly refutes the scale of the transfer in land, power and social relations of nature that is currently taken place in West Kalimantan. In fact, their own example illustrates that local landowners were not given a choice over whether the state company would establish palm oil on their lands – their action radius was limited to accommodating to the project forced upon them.

In our PHPAs, similar problems and questions of scale arose. In all our PHPAs, citizens were faced with decisions on how to react to interventions coming from powerful networks of actors operating on the local, national and global scale. The city-rural-river-transformation-loops set the options that are open to local communities. In the context of the overall development model being pursued, this boils down to the option of accepting the development on offer or being marginalized and quite often criminalized: Should we rent our land or not have any development? Let the mining company in or not have a bridge? Look for gold as return from forests (restricted timber access) or rubber (collapse of global prices) are not sufficient or work as migrant labourers in Malaysia, etc.

One problem is that local communities often have incomplete knowledge of the bigger picture in which they find themselves. In Menua Sadap, our CRG was not aware that their area is classified as APL (Other Land Use Area) which means it can be leased out to an oil palm corporation. Even with "knowledgable" persons employed by the forestry office living at their longhouse, most of the community members do not have any knowledge at all about spatial planning processes and commoditization of their territory. Their struggle against the encroachment of the national park was impotent because they could not intervene effectively in the centralized, intransparent and transactional spatial planning practices.

In Tayan, people were not sure about the status of their land, and so were unsure whether their land titles were legal or not. In such a context, it makes sense to lease out an insecure land title for cash. This kind of insecurity encourages divisions at the local level about what to do when an investor moves in, promising money and development. Aside from the territorial conflict between Semenduk Village and Kawat Village when one Kawat villager 'sold' the lake to the bauxite company, Semenduk men also gave their consent to the company that it could operate in their hamlet. There is an agreement of land "lease" between the company and the villagers where the company paid a certain amount of money per ha of land leased out by the villagers. It is in this context that the villagers receive "uang debu" (or literally dust money) every month which to compensate the waves of dust going into their village and houses due to the mining activities. It was only later, when the lake had dried up, that opposition to the mining company began to grow.

Another problem is that *adat* structures become integrated into the transformation loops, and are no longer independent. In Tayan the Malay fisherwomen in Bekat Lake area informed that they could not trust their Malay *adat* figures as they were the ones who allowed the presence of oil palm plantation into the lake complex. The people who facilitated the establishment of large scale mining companies (bauxite) in the area are prominent persons of the Dewat Adat Dayak (DAD) at the provincial level. So the local Dayaks of Tayan realize that they are facing "their *adat* elites". In Ketungau Hilir in Sintang, it is the local Dayak elites who gave away their lands (including customary land) to the oil palm companies. They also threatened the families who disagreed with the

establishment of oil palm plantation in their area and did not support them when they were jailed.

The river connection

To develop agency that can offer alternative options and development paths rather than just different ways of accepting the current one requires the scaling up of perspectives and struggles. One possibility to do this is with the river as a physical and political connection – relating individual cases to each other and via interconnectivities and generalizations, politicizing the bigger questions of development models, an of corporate and state power.

The river can become a potential organizing tool because it offers a way in which local situations can be related to a bigger interconnectivity. This potential could be glimpsed during the “connecting the dots” workshops at the end of our action research. It was interesting to see how the different CRGs could relate their experience to that of the others, and how the river connected them. It was particularly illuminating for groups to hear the womens group from the Pontianak slum area discuss issues of water quality and social reproduction. In an otherwise quite male dominated forum, women from other areas immediately responded by politicizing the issue of water quality in their own areas. Tayan’s successful experience with the drone also created a lot of excitement, with other CRGs planning to use drone counter-mapping in their own struggles. Academics from the university were also inspired to critique the practice of writing up ‘fake’ environmental impact analyses, and to develop their own “drone” project to measure organic pollutants along the river. The suggestion of representatives from Menua Sadap to create a network of Kapuas River communities to share experience and solidarity was met with general approval. Whether or not this will happen we cannot say. But the river offers a way of combining the ecological and the social to challenge the current development model and to create alternative trajectories.

(overcoming contradiction between local problem and political position regarding political parties).

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