An enormous crocodile coils around a giant spiral, carved into a mountain. The crocodile breathes fire into the hole; its monstrous tail curves out of the horizon. The crocodile came from a faraway place. Its claws scar the earth. In the background men are seen carrying heavy burdens on their backs next to a cluster of huts. The eyes are drawn to the tail and to the march of thousands of people that move along it. The people who come as far away as the tail amass around the hole and are standing in defiance in front of the crocodile’s jaws. This scene of confrontation on a large canvas makes up the Indonesian artist Djoko Pekik’s painting titled “Go to hell crocodile”. The ‘crocodile’ in the painting is Freeport, the transnational mining company that owns Grasberg mine in West Papua. There is no subtlety in Pekik’s large canvas. Its harrowing environmental record together with its collusion with an occupation makes Freeport a violent behemoth to West Papuans. This is a kind of “environmental violence” where the target is both the territory and its indigenous people. What I call “Environmental violence” attacks the life-world, extinguishing it abruptly or gradually. It penetrates both the organic and non-organic. A part of, but not limited to, armed conflict, its indirect effects can lead to the loss of the livelihood of a people, and to a protracted degradation of ecologies.

If, as Raymond Williams writes, “we have mixed our labour with the earth, our forces with its forces too deeply to be able to draw back and separate either out”, then human agency and the agency of the earth are thoroughly mixed up. This entanglement is no longer only about labour power that is transforming our planet. Human action resulting in environmental degradation, deforestation, ecosystem destruction and species extinction and climate change, in the form of rising sea levels and greenhouse gases, are another form of planetary violence. While we share responsibility for pollution

Land Rights: Counter-mapping West Papua

Nabil Ahmed
through our patterns of consumption, the responsibility for planning, releasing, activating, regulating contaminants and therefore exposing populations to harm on a territorial scale, lie mostly with a small number of powerful actors—states, capital, transnational corporations—that dictate, control and compete over resources as vast tracts of the earth are laid to waste. New forms of eco-political and aesthetic practices are called for, to hold accountable those who profit from such violence and those in whom we place our trust for protection.

The colonial practice of land grabbing has intensified under neoliberal capitalism where nation states and corporations stand to profit from the poor around the planet. Historically, maps, surveys, and planning have been used to make territories legible by the state, to make territorial claims as forms of slow institutional violence that are now increasingly organized around techno-science and geospatial data, GIS, remote sensing and satellite imagery. For example, the application of such spatial technologies, along with state policies, are used to appropriate indigenous land, or are used to evidence legal arguments for land grabs. Can there be a counter-cartography that brings together the epistemological diversity of the peoples whose land is under threat yet one that can use the same cartographic methods, language of science, understood and accepted in legal forums? What are their associated risks?

Historically, the practice of counter-mapping by local indigenous communities has played an active role in Indonesia as early as the 1990s beginning in Kalimantan. Nancy Peluso coined the term in 1995 through her fieldwork in Dayak territories in Kalimantan where she showed how local villagers made sketch maps or appropriated state maps to in order to defend their territorial rights against a crony state which was giving away wholesale land to timber concessions in the vast tropical Borneo rain forests. Though the roots of the term lay in parish mapping projects, cognitive, map art practices etc. What is clear is that counter mapping is a political term which, while it crucially has a precedence in indigenous claim making against the state, it is also deployed widely by activists and communities worldwide. In the context of West Papua, this article explores counter-mapping as an act of resistance along two spatial trajectories, an ongoing environmental project of evidencing a slow moving environmental disaster and conflict in West Papua and strategies of ‘bottom-up’ efforts at geomatics practiced by indigenous people that locate common rights in long-living family trees, patterns of historical land use, to claim the boundary of their territories—hacking their habitats to make counter claims against the state and capitalist interests. As a political act, its aim to “appropriate the state’s techniques and manner of representation” has its danger in that fixing indigenous spatial knowledge into maps that follow standardized geospatial protocols can become stratified in the state cartographic project, the very powers it seeks to contest.

Extractive industries have exploited remote sensing technologies soon after the launch of the first Landsat satellite in 1972. The Landsat satellite was a sensing technology that could recognize surface lineament patterns that would show underground geological structures. As an act of counter mapping, similar methodologies can be used to monitor mining activities and related land cover changes. This article describes some of the work undertaken that evidences and monitors “out of sight” mining activities and their resultant contaminations in West Papua, to capture pronounced and subtle land cover changes (e.g. vegetation disturbance, vegetation decline, river dynamics, turbidity) using remote sensing data.

The two practices are different but share common aspirations of environmental justice, one an artistic research project that sometimes seeks to support of Papuan diaspora activist’s political claims in international forums and draws inspiration from the others regional resistance. Two very different epistemologies connecting sky and ground, remote sensing science and indigenous agency/knowledge can act in territorial claim making. In light of current indigenous and environmental activist gains in the Indonesian constitution, which recognizes customary forest rights, methods for evidencing environmental violence in West Papua might help keep alive its emancipatory dreams.
West Papua, the western half of the subcontinental Island of New Guinea, has been described as a “rich mother lode of natural and cultural history” for ecologists and conservationists. Its immense territory, spanning 400,000 square kilometres hosts the largest tropical forest in the Asia-Pacific and its only glaciers (fast disappearing). Thousands of yet unknown to science plant and animal life inhabit the vast forests, rivers, swamplands, lakes, mangroves, and savannahs. From an ecosystem perspective, West Papua’s extreme biodiversity is attributed to its wide altitudinal range. Its biodiversity is mirrored in an indigenous population of Melanesian Peoples represented by numerous tribes and languages.

According to the government’s current Master Plan for the Acceleration and Expansion of Indonesia Economic Development (MP3EI), Papua and Maluku are designated as regions for mining, plantations, fisheries and forestry. The untapped economic potential is enormous. But this development is selective as customary land is taken sometimes with the barrel of a gun and other times with wicked promises of prosperity for the indigenous people of West Papua. Systematic land-grabbing and deforestation are common practices. Reportedly 2,064,698 hectares of land has been appropriated for palm oil plantations alone, while over the last 10 years Papua has officially lost nearly 5 million hectares of forest. The transnational BP is operating a project called ‘Tangguh LNG’ in Bintuni Bay for the extraction of natural gas. Grasberg mine in West Papua contains the world’s largest known deposit of gold (91.4 tonnes compared to Freeport South Africa at 60.44 tonnes). It constitutes the world’s third largest open-pit copper mine reserves (32 million), however at extraction rates of fewer than 10 cents per pound, it is the cheapest copper in the world and is expected to generate 80 billion US dollars for the mining companies.

Freeport dumps vast amounts of waste as byproduct into the regional ecology. Arsenic, a byproduct of copper mining, is in and around the soil and the water of the land that belongs to the Komoro people, which the mine uses as its dumping ground. Yet beyond the superlatives, this is by no means a normative case of environmental poisoning by a mine. In contemporary Indonesia, a stark example of an unfolding state crime is in its complicity in the poisoning of an occupied territory. A damning 2013 report by the Asian Human Rights Commission meticulously documents the mass killings through aerial bombing and indiscriminate shooting perpetrated by the Indonesian military in the Papuan central highlands between 1977 and 1978. However, gross human rights violations did not abate after the fall of the Suharto regime. King and Wing explain, while the period of the mid-1970s is often referred to as the era of the greatest suffering, as Indonesia’s military used Papua for its combat training exercises while simultaneously conducting a genocidal campaign in East Timor, the current situation is a “silent genocide.” Freeport’s investments in West Papua are protected by Indonesia’s military forces, responsible for documented massacres and human rights violations against the Papuan people including aerial bombings, extrajudicial killings, torture, assassinations, disappearance, detention, and rape of civilians. The state and the mining company have poisoned and continue to poison, West Papua, a zone of conflict.
grievances and a site of conflict. In the Mimika region mining and its tailing has permanently altered the landscape. Freeport, which now shares the mine with Rio Tinto uses a 293,000-hectare area including the Otomina and Ajkwa River to the Ararfura Sea in effect as a geotechnical system for tailing deposition. The journey for the toxic waste begins from the mine located over 4,000 above sea level through its ore-processing centre down to the lowland estuaries and a diverse forested coastal zone of mangroves sago, tropical and cloud forests. The movement thus traverses both a vertical and horizontal path of destruction. Over 200,000 tons of tailings flow through the river per day into this area, which contain highly toxic arsenic, copper, cadmium, selenium. The mine is in the heart of the ancestral land of the indigenous Amungme and Kamoro, two of the many ethnically Melanasian indigenous people that make up Papua. Already large tracts of their ancestral forests have disappeared, with equally irreparable biodiversity loss.

Mapping a Genealogy of Conflict

The destruction of Papuan mountain, rivers, forests and land connects to a planetary scale. The tropical rainforests in the archipelago are part of the equatorial ‘green belt’ that includes the Amazon, and Congo that sustains the planet. Equatorial forests and the Pacific ring of fire forms a diagram for this research in that like a giant horseshoe and a thick line, they cut across from the Indonesian archipelago, intersecting again on the other side of the planet, in Latin America. Under neoliberal imperative of resource accumulation, such tropical forest-geological fault lines produce new alliances of geo-politics, a politics with the earth, among Asian, African and Latin American territorial struggles.

According to the FAO in 2010 Indonesia as a whole had 52 percent forest cover with an annual deforestation rate of 0.5 percent over the last decade. So far, much of the deforestation and related conflicts has taken place in forested regions in Borneo and Sumatra. However, vast tracts of Papuan forests are equally under threat for palm oil production. The exploitation of Indonesia’s land resources began under Dutch colonial occupation through forest enclosures under the term Domeinverklaring in 1870. Land that had been part of the commons were formalized into Dutch colonial state property which it considered ‘unused’. After 1949, the newly independent Indonesian state only asserted its rights on indigenous land further, continuing with the annexation of West Papua (then Irian Jaya) in 1969 as part of a cold war geopolitical game. What then began in full swing under President Suharto’s regime of crony capitalism and rampant corruption of exploiting forest resources has not stopped since the fall of that regime in 1998. Land grabs surrounding forests in indigenous territories estimated to be forty million hectares spread through the archipelago in Sumatra, Java, Kalimantan, Sulewasi, Maluku, Flores and Papua. Conflicts have mainly resulted from overlapping claims where state and local governments handed over concessions and permits to logging, mining, and palm oil companies.
In May 16, 2013 the word ‘state’ was removed in front of the word ‘forest’ in Indonesian constitution. Known as Ruling No. 35, customary forests are now classified as titled forests. The landmark ruling was a result of the Indigenous People’s Alliance of the Archipelago (AMAN), the indigenous community of the Kenegerian of Kuntu and the indigenous community of the Kasepuhan of Cisitu petitioning a judicial review on numerous articles of the National Act No. 41 Year 1999 on Forestry. The 1999 law had already recognized customary forests however it had defined customary forests as “state forests located in the areas of custom-based communities.”[16] Finally the possibility of territorial wrongs righted had appeared on the horizon for millions of indigenous people in the archipelago. Since the passing of the Forest Act of 1967, the same year mining concessions were handed over to Freeport, no government mapping exercise has taken into account local land claims. Up until the ruling, any local claims to territorial rights were always trumped by state power and government produced maps. But under the new constitutional ruling, what had been indiscriminately destroyed or considered expendable, as state-owned forest could perhaps now be questioned. The two organizations, which have been spearheading the urgent counter-mapping project, are Network for Participatory Mapping (JKPP) a grassroots organization that uses local spatial knowledge to evidence land rights and the Indigenous Peoples’ Alliance of the Archipelago (AMAN). The two organizations together have submitted ancestral domain maps outlining over two million hectares of customary forests to the Indonesian Geospatial Information Agency. So far the two territories that have at least been partially mapped are West Kalimantan and Papua, which took as long as fifteen years to complete. Yet it remains to be seen how the government will incorporate this rich spatial data to implement the changes in practice. Here lies the challenges faced by indigenous activists: the longer it takes for the maps to be produced; the less chances there are of implementation in the law. Furthermore the customary rights to forests also have to be recognized separately by regional governments and not only at a federal level. According to Abetnego Tarigan from WALHI, official mapping data does not exist. There are still over thirty million hectares of indigenous territory left for mapping, a mammoth task for the activists, especially when the encroachment on land continues. Though in light of the recognition of customary forests, the need to produce various types of counter-maps have become even more crucial in order to demarcate ‘state’ and ‘local’ forests, contested territories and evidence pollution and deforestation such as in the Mimika region in Papua.

Within the context of evidencing land cover change caused by the activities of the Grasberg mine, counter-mapping can also be a valuable tool. A research project is currently underway that brings a number of scales, and forms of territorial evidencing to produce a composite picture for evidencing environmental violence in West Papua.[17] The project takes shape around several sets of spatial data: the identification of human impact through settlements, mining infrastructures, tailing deposition areas, sedimentation and second; the natural features of the area of interest, mainly variety of vegetation (forests), water (rivers, estuary). It further seeks to show the interaction between mining activity and natural resources, vegetation loss, and the territorial scale increase of the tailing deposition area continuously moving to the mouth of the Arafura Sea. Superimposing and calculating these data sets can show what customary lowland forest areas have been destroyed or might be under threat from future deforestation. Combined with fieldwork, and analysis to determine the chemical makeup of the tailing area can begin to connect this wealth of data that can be used and monitor the mining company’s activities in a conflict zone. Furthermore a territorial scale resource and conflict-mapping project is underway to overlay sites of commercial presence (foreign and domestic) around oil, gas, minerals, timber, military presence, language and
ethnicity, trends of human rights violations to support a people’s struggle.

**Indigenous Politics and Counter-mapping.**

Participatory mapping is a form of ‘local territorialization’ where the maps and map-making act as an advocacy tool for land rights.[18] Using the same language of state cartography such as zoning, resources, land use, and boundaries, indigenous people are asserting their own claims for securing land rights. The inclusion and recognition of ancestral domain maps in the Indonesian national spatial data infrastructure is a win for the indigenous people of the archipelago. Politically for the nation state it fits into the state motto Bhinneka Tunggal Ika (Unity in Diversity) with increasing recognition of indigenous rights. On the other hand for West Papua, inclusion can be seen to even detract from the independence movement and its long time dream of Papua Merdeka (Free Papua). Counter-maps are like counter narratives, however do they lose their power when included in grand narratives such as nationalism? Maps and imagery of landscape transformation in Papua can provide evidence towards realizing this emancipatory dream in legal and contemporary forums. The question that remains is how to win incremental rights while keeping alive dreams of emancipation.

Contrary to the imagination of European explorers and popular culture, the vast forests of Papua were not ‘pristine’ scenes of natural history populated by Stone Age savages. Rather, even the scarce and scant paleo-ecological evidence shows human impact on the island going back over 30,000 years. The indigenous people of Papua, through the practice of agriculture, clearance, burning, produced “human landscapes, such as grasslands, secondary forests, and coastal woodlands”. [19] While the indigenous Papuans managed to alter their landscapes as shepherds of the forests over thousands of years, mineral exploitation by Freeport accelerated radical negative ecological impacts that have altered the landscape permanently. While the first established a new balance, the latter took the ecology out of balance and when it’s empty they would move out. It is the landscape that we turn to and forms of resistance, counter mapping as hacking habitat. In Amungme cosmology, spirits inhabit their landscapes. One of the most respected of the spirits is Tu Ni Me Ni, representing fertility and embodied in the landscape with “her head in the mountains, her breasts and wombs in the valley and her legs stretched out toward the distant coast”. [20] When Freeport sliced off their mountain they destroyed their spirit. Evidencing the violence...
on Papuan landscape from the sky and ground is evidencing cosmological crimes.

REFERENCES


[4] It is perhaps indigenous peoples that teach us that the end of state sovereignty is not temporal but geographic. On the latter point I pick up on Thom Kuehl’s reading of Nietzschean eco-politics, see Tom Kuehls, Beyond Sovereign Territory: The Space of Ecopolitics. Minneapolis: University of Minnesota Press, 1996.

[5] This research is part of ‘Earth Sensing Association’, a research association initiated by Nabil Ahmed for the diffusion of knowledge at the intersection of environmental change and conflict.


[17] The remote sensing research is carried out with Mike Alonzo and Jamon Van den Hoek.

