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ight members of the Kimadi tribe stand, crouch or sit on the hard ground, knotty with exposed tree roots, enjoying the relative cool offered by a verdant canopy of leaves overhead. Just a few metres away, the quiet clear waters of a Bismarck Sea lagoon, filled with small schools of striped tropical fish, lap against the grassy bank. The setting is tranquil and bucolic - but not for the Kimadi, who have travelled from their traditional territory in Madang province in Papua New Guinea in the South Pacific to consult with an NGO, the Bismarck Ramu Group (BRG). Founded in 1996 and headquartered just outside the town of Madang, BRG provides consulting services and advice to Indigenous groups like the Kimadi who are fighting ever-growing threats from logging and palm oil development on their lands.

The word "Kimadi," says tribe spokesperson Matheu Lawun, is a word encapsulating three clans - the Matev, Dibaren and Kimbu - which make up a community of about 400 people living 80 kilometres north of the town of Madang. Lawun describes how the clans have lived there since time immemorial - gardening, hunting and relying upon the sacred forest "for building purposes, for our drugs and, during droughts when food is low, we look to the forest for food. There is bread fruit, wild yam and nuts like aila (chestnuts) and walnuts," says Lawun, a lean 51-year-old Matev-clan member. And, if water supplies run low, the cane rattan vine provides copious amounts of water accessed by cutting a section of the vine and pouring out the refreshing liquid, he adds.

The forest is also a source of health and wellbeing. If someone contracts malaria, which is endemic to much of the country, a tea made from the bark and leaves of the Alstonia scholaris evergreen is drunk as medicine. Other tree brews assuage gastrointestinal upsets, while some plants act as analgesics or antiseptics, staunch blood flow and even

provide birth control, says Kimadi tribal member Anna Tome.

Signs that the Kimadi's subsistence lifestyle is under threat first appeared last July when Malaysian company Woodbank Pacific began logging about 10 kilometres upstream. Roads were cut into the steep, hilly wilderness to allow logging-truck access. Then, clear cutting began of softwood and hardwood trees, such as the kwila, which grows up to 50 metres high and is used in a variety of products, from furniture and musical instruments to building bridges. But the loggers were cavalier as they felled these forest giants, letting some logs fall into the waterways and leaving them to rot, contaminating the water flowing downstream to where the Kimadi villagers live, says Lawun. "All the communities downstream are being affected."

This past February, members of the Kimadi tribe were shocked to find signs posted in their traditional territory by Woodbank Pacific. The signs stated that parts of their land were a "nogo zone," says Lawun. Two of the clans, the Dibaren and Matev, responded with a letter opposing all logging and surveying operations on





their territory. The letter concluded by stating that refusing to comply could result in a delay in operations and possible legal action. If the letter is ignored, says Lawun darkly, "we will go and burn one of their logging vehicles."

The Kimadi have reason to be worried about the pernicious ubiquity of logging in their home province. In 2010, Madang province had 2,000,000 hectares of tree cover extending over 76% of its land area. In 2017 alone, it lost 15,900 hectares of tree cover, Global Forest Watch reported.

Ancestral occupation of land

apua New Guinea, one of the world's most culturally diverse nations, consists of 19 provinces and the National Capital District. Its population speaks upwards of 850 languages, with each dialect representing a distinct cultural group. These communities, no matter their isolation, hold something as dear as the land that gives them life: Papua New Guinea's unique system of landownership called "customary tenure." It gives land resource management to clans, tribes or communities based upon ancestral occupation of the territory where they live. Customary landowners have the freedom to sell their land, lease it or

enter into agreements with companies that will generate income in order to pay for infrastructure projects such as schools, health centres, water and electricity services, roads and ports, according to Making Land Work, published by the Australian Agency for International Development.

The Kimadi's troubles are a microcosm of the impact of development in Papua New Guinea, an ecological gem just north of Australia in Oceania that, while only half the size of Ontario, has some of the richest biodiversity and unique flora and fauna in the world. Here are found tree kangaroos, carnivorous mice, birds of paradise, birdwing butterflies and more than 2,000 species of orchids. The nation, which gained its independence from Australia in 1975, is not only spectacularly beautiful but also resource rich, with significant gas and mineral deposits and abundant fishing grounds. It is also home to the world's third largest rainforest, which spans the neighbouring country of Indonesia, making it an important carbon sink and a producer of oxygen, as well as being home to 8.3 million Papua New Guineans, most leading a subsistence lifestyle. However, like rainforests around the world, which now cover just 6% of the Earth's surface, PNG's wilderness is being threatened not only by logging interests but mining and agricultural plantations, especially palm oil, found in cosmetics, processed foods, biofuels and pharmaceuticals, among other uses.

In PNG, the roots of the deforestation problem lie with Special Agriculture and Business Leases (SABLs), which have weakened Indigenous Papua New Guineans' claims to customary landownership. Before the Land Act (1996) came into existence, about 97% of PNG was controlled by Indigenous peoples. However, provisions in the act enabled the state to lease land from customary owners, then re-lease it to private companies or individuals. According to Father Philip Gibbs, a professor and vice-president of research and higher degrees at Divine Word University in Madang, this "lease-leaseback scheme" has resulted in 10% of the country's total land area ending up in private hands. The national and provincial governments of Papua New Guinea encouraged landowners to enter into the strategy, giving up their land, often based upon false promises of community enrichment or employment, Gibbs says.

Consumer demand high

Ithough Papua New Guinea seems a world away, and lost in time, the West is implicated in the ongoing destruction of its forest. Consumers, whether they live in the United States, Canada, the United Kingdom or the European Union, have a huge appetite for timber products – and manufacturing behemoth China is happy to meet this demand. According to the World Resources Institute, China is the largest importer of logs, which it processes then exports as timber products. In 2016, it imported logs from more than 100 countries, according to the United Nations' Comtrade database.

Lela Stanley, the Washington-based senior policy advisor, Asia forests, for Global Witness, says the total 2018 export of logs from Papua New Guinea is greater than three million cubic metres, with more than 85% going to China via Malaysian logging companies. Studies by Global Witness and other NGOs indicate a significant percentage, "north of 70%" are illegal, "usually in violation of community land rights," she says.

Countries like Canada and the U.S. have legislation trying to ensure that illegally sourced wood products are not sold to consumers. This means that retailers should "do everything they can to ensure their imports are legal," says Stanley. This might involve interviewing a supplier, checking all documentation that declares the source of the products and even undertaking site visits. "But you can't rely upon

documents alone, so it's really about being quite aggressive in checking your assumptions and cross-checking your suppliers for proof that what they are selling you is actually legal." (The Canadian Association of Importers and Exporters as well as the Canada China Business Council declined comment while the Chinese embassy in Ottawa didn't respond to requests for an interview.)

The results of rampant logging and forest clearance are alarming on a world scale, since these once-pristine carbon sinks have been turned into sources of global emissions. Today, deforestation is responsible for 17% of annual greenhouse global emissions, says Stanley, of which tropical deforestation accounts for nearly half (8%). "That's quite significant as tropical forests should be a carbon sink – not a source – which is why protecting them is such a critical issue, not just for communities in Papua New Guinea but the globe."

Fighting to overturn leases

eter Bosip is executive director of the Center for Environmental Law and Community Rights (CELCOR), a not-for-profit based in Papua New Guinea's capital city of Port Moresby. CELCOR, which promotes and defends environmental and customary landowners' rights, is trying to fight SABL leases. Since 2005, says Bosip, there have been 72 SABLs issued, with 27 found to be illegally acquired. This resulted in 5.2 million hectares, or 52,000 square kilometres, of land being logged or turned into oil palm plantation from 2005-2011, an area seven times larger than the Greater Toronto Area. "That's huge," he says. "We have been demanding the government take appropriate actions by cancelling all the SABLs and give the land back to customary landowners."

Bosip explains how SABLs are illegally or clandestinely acquired by developers, most of them logging companies. Companies will connect with individuals who may or may not be members of a clan or tribe and strike a deal with them as representatives of the community. The government will then give its approval to the proposal. But when the developer goes to the area, to clear cut in order to plant palm oil, for example, "the majority of the land owners are taken by surprise."

Bosip believes that many of these deals are facilitated by bribes. He points to widespread government corruption among government officials, a claim backed by Transparency International, which ranks Papua New Guinea 135 out of 180 countries on the Corruption Perceptions Index, comparable to nations like Russia. As a result, CELCOR has requested

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help from the United Nations Human Rights Office of the High Commissioner in Geneva. Since 2011, the commissioner has been sending letters to the PNG government expressing concern that SABLs "infringed Indigenous peoples' rights." The PNG government has consistently ignored the commissioner's request for dialogue.

Another example of corruption, says Bosip, is the lack of taxes paid to the government by foreign companies. The companies declare a loss, despite exporting more and more logs every year. Although the companies pay royalties, taxes to the state are paid based on how much profit the firm admits to making. "They declare they are making zero or even negative profit."

Such exploitation of PNG's abundant resources, says Gibbs, leads to economic stagnation for much of the country, including a "steady decline in infrastructure and services in recent years, particularly in rural areas." In 2018, the United Nations Development Programme placed PNG at 153 out of 189 countries on the Human Development Index, which measures basic human development achievements in a country.

There are worrisome developments ahead, says Bosip. In 2018, PNG announced its formal commitment to China's \$1 trillion-plus

Belt and Road Initiative (BRI), an ambitious development strategy embracing 152 countries. Bosip says the PNG government hasn't revealed publicly the "terms and conditions that have been agreed to by the state." He fears China's so-called debt trap diplomacy, whereby a country faces unsustainable debt and is forced to give up strategic assets. This happened in Sri Lanka in 2017 when a Chinese company gained a 99-year lease port after the country failed to pay back loans to Chinese banks. "The worst thing that can happen is the Chinese say to the Papua New Guinea government, 'you defaulted on your loan payment so we will take over all the land and especially the forest land.' So, we are very worried," Bosip says.

Papua New Guinea is facing a future that will see even more of its forests razed as the government pushes for more palm oil production while logging companies continue to conduct themselves in a rapacious manner. For tribes like the Kimadi, development of natural resources bodes an ill future. For them, not only their land but their lifestyle is on the chopping block.

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Trees and the laws of supply and demand

Illegal import bans and ecotourism protect tropical forests

By Roberta Staley



orldwide, Interpol and the United Nations Environment Programme estimate the value of the yearly trade in illegal harvested timber at between

US\$30 billion and \$100 billion, or 10-30% of global wood trade.

About 7.3 million hectares of forest – an area the size of Panama – is lost every year to deforestation, according to the UN's Food and Agriculture Organization. At the current pace, the Earth's tropical rainforests will be gone within the next century.

The demand side

An alternative development model is clearly needed for countries like Papua New Guinea (PNG) that struggle with rule of law and corrupt governance, in order to meet UN Sustainable Development Goals and lift Papua New Guineans out of poverty while ensuring environmental integrity.

Much will depend upon China, not only because of its strengthened trade relations via the Belt and Road Initiative but also because it is the destination for PNG's raw logs. Beibei Yin, the China policy and advocacy senior advisor for Global Witness, says China should extend its own sustainability policies to PNG. China has invested US\$350 billion into programs like forest conservation and erosion reduction as well as poverty reduction to protect its own natural resources and adopt a more sustainable and long-term development model. "But China hasn't broadened its ambitions overseas yet," Yin says.

Pressure can be brought to bear by China's trading partners, says Yin, pointing to an EU-China joint study, titled "Feasibility analysis of the incorporation of timber legality requirements into Chinese laws or regulations to promote trade in legal forest products," which promotes mandatory laws and regulations that would oblige checks on the legality of timber imports. This is a way for China to protect its global trading reputation, says Yin. Unfortunately, "progress has been slow." (One Chinese company, Nature Home, which man-

ufactures floorings, wooden doors, cabinets, etc., has publicly committed not to buy any SABL-sourced wood, says Yin.)

Asia-Pacific Economic Cooperation (APEC), the 21-nation Pacific Rim association that includes Canada, China and the United States, could play a significant role in promoting sustainability in PNG. For the first time, PNG, which is APEC's poorest member, hosted the organization's annual summit this past November in Port Moresby. APEC's stated priorities include sustainability as well as innovative and inclusive growth, sustainable agriculture in response to climate change and a rules-based multilateral trading system.

As a leading example, Canada has strict laws preventing the import of products illegally sourced. These include the Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act. The act makes it illegal to import illegally harvested plants, including wood, so importers do need to know what they are buying or risk potentially millions of dollars in fines, according to the Government of Canada Justice Laws website

At the vanguard of progressive legislation is a new bill introduced this past February in California titled the California Deforestation-Free Procurement Act. It broadens America's Lacey Act, which banned trade on illegally sourced wood products in 2008. The Deforestation-Free Procurement Act applies to almost all deforestation commodities such as palm oil, beef, leather and soy, while providing misdemeanor charges for companies that violate it, in addition to sanctions. The act must be passed by the California senate.

Alternative income stream

Kisi Issack's village of Labablia, an informal collection of wood and grass homes on stilts, sits a coconut's throw away from the Solomon Sea tideline on the Huon Coast in Morobe Province, Papua New Guinea (PNG). Labablia is isolated from the outside world, accessible only by a picturesque, if bone-shaking, motorboat ride from the port city of Lae,

PNG's second largest metropolis with just over 100,000 people.

Issack, tiny and sinewy, with a weathered and kindly face, shelters in the shade out of the 30 C-plus muggy heat, slacking her thirst with just-opened, sweet, nutty coconut water. Issack is a senior guide and secretary with the Kamiali Wildlife Management Area (KWMA), founded by a Dutch NGO two decades ago. Today, KWMA is a biological research station that attracts scientists and hardy ecotourists (who pay C\$400 for a five day visit) study the surrounding lowland tropical forest and the coral reefs as well as monitor leatherback turtles, which come to Lababia's white sandy beaches every year to lay their eggs. Decreasing in number, leatherbacks, the world's largest turtle, are classified as vulnerable, due in large part to human consumption of their billiard ball-size eggs.

Issack is proud of the role the villagers of Labablia have come to play as land and oceanic stewards. Not only are they helping protect their ancestral homeland, but the money that they make from tourism helps to support health and education in the community of 800, who live dispersed on thousands of hectares that they own under Papua New Guinea's system of customary landownership. This alternative income stream is a bulwark against logging companies and palm oil plantations, since it funds vital infrastructure, such as community schools. Other indigenous groups, Issack says, have given up their traditional lands to logging interests in return for money, only to face long-term environmental effects. "Logging is short-term benefit," she says.

As part of their KWMA stewardship, Issack and her fellow villagers are focusing on initiatives to preserve the sandy beaches where the leatherback turtles lay their eggs. Climate change and rising tides — especially noticeable since 2016 — are eroding beaches. In order to preserve these crucial nesting sites, Issack says there are plans underway to plant kalapulim trees close to the tideline to act as wave breakers and anchor the beach. Preserving the integrity of the land and waterways is a way to honour the ancestors, says Issack, while "conserving it for the future of our children."

