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New frontiers in sustainable palm oil

**Moving beyond
controversy to shape
sustainable futures**

(Image: Icaro Cooke Vieira/CIFOR, CC BY-NC-ND 2.0)

Introduction

Dr Josie Phillips,
palm oil researcher for China Dialogue

Palm oil is a highly debated raw material, viewed as both an economic driver and an environmental destroyer. But its widespread use in everyday products like food, cosmetics and pharmaceuticals has made it indispensable in modern life. The massive increase in production – nearly 1,500% since the 1980s – has led to deforestation, habitat loss, and biodiversity decline, impacting both ecosystems and people.

Addressing these challenges is complex due to the intricate web of actors and interests involved in the global palm oil industry. The extensive supply chains and difficulty in tracing the origin of the commodity further complicate the situation. As a result, palm oil has become highly politicised, entangled in trade disputes and political manoeuvres

between producing and importing countries. Resolving these issues requires a multifaceted approach that considers international cooperation, social justice, and environmental sustainability.

Over the past four years, China Dialogue has examined this globally significant commodity and its challenges. Our reporting has provided nuanced debate, diverse perspectives and dived deeper on lesser-known aspects of the industry including the new frontiers for oil palm expansion, biofuels and oleochemicals, as well as efforts to adopt regenerative practices.

The drive to produce sustainable palm oil has remained a key theme throughout China Dialogue's coverage. In November 2022, we sent a team of international journalists and researchers to Kuala Lumpur, Malaysia to attend the annual conference of the Roundtable on Sustainable Palm Oil

(RSPO) – an organisation trying to make sustainable palm oil the norm. From there, Emma Bryce reported on the ongoing and emerging challenges that RSPO must face as it continues moving the industry towards a more sustainable business model.

While RSPO is generally recognised as the industry's leading standards body for producing certified sustainable palm oil, it is not alone in trying to shift the baseline of best practices. In his op-ed, Robert Hii explains why RSPO has struggled to raise its certification beyond 19% of global palm oil production and proposes how Malaysia's national palm oil standard – MSPO – could bridge the gap, particularly to improve traceability in the industry's murky chemical supply chains.

From Latin America, Jack Lo reported on the “star” in the RSPO's toolkit. The Remediation and Compensation Procedure (RaCP)



provides a mechanism for member growers to make amends for clearing forest without the proper assessments. Some may argue that unsolicited clearance should result in suspension or expulsion from the RSPO, but this mechanism does provide an avenue for accountability. In his piece, Jack considers some of the conservation efforts that companies are supporting through the RaCP, including the protection of nearly 10,000 hectares of primary forest in Guatemala.

In his [op-ed](#), RSPO China's Fang Lifeng makes a strong case for investing in sustainable supply chains. He explains how major global events like the pandemic, war in Ukraine and droughts in Latin America threaten global supplies of vegetable oil, and what actions are needed to safeguard food security. Increasing support and demand for RSPO certified palm oil in the major markets of India and China remains key, and this will not


be possible without raising awareness among consumers. In her [piece](#), Yuhan Niu introduces some of the civil society organisations working to raise awareness of sustainable palm oil through education and business partnerships in China, and explores the potential impact of targeting China's instant noodle and cosmetics industries for consumer campaigning.

China remains a key target for strategic campaigning, but India is still the world's largest palm oil importer. Consuming over 8 million tonnes each year, the commodity has come to account for around 40% of India's total vegetable oil consumption. In a drive to become self-sufficient in oil, the Indian government has been promoting domestic cultivation with an ambitious goal of increasing the area under cultivation by 300% by 2026. However, as Lou Del Bello explains in her [article](#), these plans have ignored the impact that climate change is having on India's rainfall.

As the impacts of climate change are increasingly felt around the world, Chih-Ching Lan and I [explore](#) how the industry can act towards its 'net-zero' goals. From science-based target setting, to supporting small-scale farmers, removing atmospheric carbon, and installing methane capture facilities, the list goes on. But ultimately, there will be no net zero without ending deforestation.

In recent years, rates of deforestation for palm oil in Indonesia and Malaysia have steadily declined, demonstrating the impact of collaborative sustainability efforts. But demand for palm oil as a fuel could hamper this progress. In his article, Nithin Coca [reports](#) on Japan's plans to burn palm oil for electricity as part of its push for energy security, as well as the impact of resistance from local grassroots communities in slowing the expansion of palm-oil-fired power stations.





Attention is increasingly being given to the importance of forests in mitigating our converging crises. In her [article](#), Louise Hunt examines efforts to conserve wildlife through connecting fragments of forest in the Malaysian state of Sabah. Filmmaker Chen Yih Wen also visited Sabah, which has been particularly impacted by logging and oil palm cultivation in the past, to document the efforts to regrow Borneo's precious forests. Her [film](#) highlights how local scientists and communities are partnering Indigenous knowledge with research-led forest regeneration, in collaboration with Danau Girang Field Centre, Cardiff University and social enterprise Kopel.

While forest regeneration is crucial, we need legislation to protect what forests remain. The EU's newly adopted Deforestation Regulation aims to prevent the import and sale of deforestation-linked products within

the EU market. In their [op-ed](#), forestry expert Aida Greenbury and Kyle Saukas of Climate Advisers, explain why supporting Indonesia's smallholder farmers, which supply nearly a quarter of the world's palm oil, will be key to successfully implementing the law.

The regulation is a landmark piece of legislation. Its ambition to end the role that EU consumption plays in deforestation is certainly admirable. And by addressing a suite of different agricultural commodities that contribute to global forest loss – including beef, soy, palm oil, wood, cocoa, coffee and rubber – the legislation presents an opportunity to address more broadly the challenges we face. Most prominently, these are protecting forests, providing sustainable livelihoods, ensuring food security, and slowing climate change. The palm oil industry has expressed significant concern over the legislation,

which requires geolocations for the origin of the raw materials, but it does present an opportunity to demonstrate progress made in sustainability.

China Dialogue's dedicated reporting on palm oil has concluded this year, but our team will continue to foster deeper understanding of the industry and its complexities. We will continue to explore consumption patterns, policies and impacts in major markets like China and India, while also addressing the broader challenges around forest-risk commodities. China Dialogue's commitment to providing balanced coverage and engaging stakeholders remains, and we will continue building dialogue between governments, industries, impacted communities, NGOs and consumers, examining the latest sustainable practices and scientific studies, and exploring the innovative solutions needed to tackle our planet's major challenges. 🌱

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RSPO faces challenges of post-pandemic palm oil



Azina Ap Dongkin, a palm oil smallholder from an Orang Asli indigenous village in the Malaysian state of Perak (Image: Regina Lam / China Dialogue)

The role and remit of the industry's leading standards body were the focus of the first in-person meeting since 2019

China Dialogue | December 15, 2022

“With the way the environment is being destroyed, the way climate change is happening, the way we travel, the way we consume, it’s just a matter of when the next pandemic will happen.”

Dr Jemilah Mahmood’s sobering words echoed in the ears of almost 1,000 people attending the Roundtable on Sustainable Palm Oil in Kuala Lumpur, Malaysia last month. Because of Covid-19, this was the first time in three years the annual meeting had been convened in person.

Mahmood, professor of planetary health at Sunway University, Malaysia, and the event’s keynote speaker,

acknowledged that the industry had suffered because of the pandemic. But strikingly, she also highlighted palm oil’s role in deforestation, now recognised as a potential driver of epidemics as it shakes zoonotic viruses loose from wild habitats.

Her warning was clear: as palm oil continues pushing against forest frontiers, it not only endangers biodiversity and climate, but could be implicated in the next pandemic.

Mahmood’s words underscored why certification – intended to ensure palm oil production doesn’t harm the environment, smallholder farmers, plantation workers or the rights of

indigenous people – can be such a critical tool.

Despite the pandemic’s challenges, RSPO members were keen to celebrate successes. Certified plantations are now associated with lower greenhouse gas emissions. And certification is increasing, especially among smallholders, an underrepresented group.

Yet challenges remain. In emerging markets, where more than 60% of palm oil is consumed, RSPO certified products still have a marginal presence. It covers 3% of palm oil consumed in India and 8% in China. By comparison, around 20% of global palm oil production is covered.



Corporate action can make a considerable positive difference. These organisations have the power, influence and finance to help drive change at a systemic level.

Increasing coverage by attracting new growers and processors into the scheme is difficult. And despite progress certifying smallholders (who produce about 40% of palm oil globally) the financial rewards of certification often don't trickle down, making it a hard sell.

Meanwhile, a growing share of production goes towards products like biofuels that fall outside the remit of the RSPO.

At the same time, other certification schemes have emerged, raising questions about the RSPO's continued relevance. The organisation's CEO, Joseph D'Cruz, stressed its role as part of a regulatory ecosystem and a lever for positive change. But some think the mandatory palm oil regulations in Indonesia and Malaysia (known as ISPO and MSPO) threaten it with redundancy.

The European Union's newly agreed deforestation legislation, which has strict traceability requirements for imports, also shifts palm oil sustainability from a voluntary to a mandatory space – something many see as the only real path to change.

Hovering over all of this are questions on the actual impact of RSPO certification. To know it's working means quantifying its effects on the ground: how it's changing forest cover, species diversity, worker rights, and gender equality.

Certification rates are not enough. By focusing only on them, the RSPO risks "selling [itself] short," said RSPO co-chair Anne Rosenbarger at the closing address.

Her co-chair Carl Bek-Nielsen seemed to sum up the organisation's lurking insecurities: "We want to keep the RSPO relevant, alive and kicking."

In a rapidly evolving industry, can the RSPO maintain its grip on the market? Is certification enough to keep attracting producers, especially smallholders? Crucially, is it shifting the dial on deforestation and climate change?

Our writers share their perspectives of the RSPO roundtable from their areas of coverage: Africa, Indonesia, Latin America, India and London.

Africa: Smallholder struggles

Abdul Brima and Zubaida Mabuno Ismail

Oil palm originated in West Africa, before it was taken to Asia and became a plantation crop. Ironically, Africa's own industry has remained small. It has so far been underrepresented at the RSPO, both in terms of attendees at the annual roundtable and coverage of plantations. But that's changing.

Africa now accounts for about 5% of global palm oil output and at least 10% of demand. It was more visible at this year's conference, with people from Sierra Leone, Uganda, Ghana and Nigeria in attendance.

At the centre of this expansion story are smallholders. A collective of almost 5,000 smallholder farmers in Sierra Leone has become the first independent group to achieve RSPO certification in Africa. "Getting the smallholder farmers to improve their yields and to sustain their livelihoods motivates us to go into



Bockarie Landa, an oil palm farmer in Sierra Leone (Image: Saidu Bah / China Dialogue)

sustainable palm oil,” explained Isaac Kwame Quarshie of Golden Star Oil Palm Farmers Plantation in Ghana, one of the few African growers at the conference.

However, many African smallholders are said to be discouraged by the high levels of literacy required by the multi-layered certification process. With adult literacy rates at 66% in sub-Saharan Africa, this is a significant hurdle for the RSPO to overcome.

There are much larger challenges, too. Smallholders in countries like Sierra Leone, for instance, are struggling with land rights, community displacement and poverty. In one breakout session, speakers noted that the RSPO’s complaints process remains notoriously slow. Most complaints related to land rights aren’t being heard or resolved, according to Robin Averbeck, forest programme director at the Rainforest Action Network.

Streamlining that process could be crucial as the African industry grows. D’Cruz noted during his opening statement that it’s an urgent priority to protect communities and improve smallholder inclusion, especially in Africa. How the organisation plans to tackle this, however, remains to be seen.

Indonesia: Combining strengths

Fidelis Satriastanti

Indonesia, the world’s largest palm oil exporter, launched its own sustainability standard back in 2011. So far, the Indonesian Sustainable Palm Oil certification (ISPO) scheme claims to have covered 5.45 million hectares across 800 plantations, an area larger than the Netherlands.

However, Timer Manurung of Indonesian NGO the Auriga Foundation, still thinks the RSPO has the edge: “RSPO could be the best certification there is. At least they have a grievance mechanism, though it takes a long time.”

From an international standpoint, RSPO has an advantage over ISPO, said Hotler Parsaoran, labour specialist of Sawit Watch, another Indonesian NGO. “The government launched the ISPO because there were a lot of criticisms [towards the palm oil industry] at that time. So it was just a way for them to show that Indonesia has its own standards and certification.”

Both RSPO and ISPO lack basic features, such as labour insurance, he said. “You would still need to check in the field whether they actually comply with the standards.”

Meanwhile, Bernardus Steni of Kaleka, a non-profit research institute, believes the two standards could be complementary. Because RSPO-certified palm oil has many buyers, the “ISPO can connect with the RSPO for networking” he says. And because ISPO certification is mandatory in Indonesia, it has many contacts that would be useful to the RSPO. “So, I don’t see it as competition.”

On how to attract more members, Steni added that the RSPO’s 20% of global certification covers major players, who “can be the driving force for their subsidiaries and groups to also apply [for certification].”

RSPO’s strength, as he sees it, is that it can unite many different features – such as a grievance mechanism, and contact with buyers and major producers – into one applicable instrument.

Latin America: Potential

Alejandra Cuéllar and Jack Lo

Palm oil is an incipient crop in Latin America and sustainable production could find an important foothold there. “The region does not promote deforestation [for palm oil]. Most of it is being grown in degraded areas,” explained Gustavo Gómez of Proforest in a Twitter Space organised by Diálogo Chino during the conference.

In Colombia, oil palm has been produced on former cattle pastures since the 1960s, requiring no direct deforestation and maybe even helping to increase the carbon stocks on these lands.

In fact, at 25%, Latin America’s palm oil crop currently has the highest percentage of RSPO certification in the world. This



A remote area of virgin peatland rainforest was cut down to make way for this palm oil plantation in Papua, Indonesia (Image © Greenpeace)

has been achieved mostly through the inclusion of large farms in the scheme. But what about smallholders?

In Kuala Lumpur, the RSPO handed certification to Mexican smallholders working in the southern states of Chiapas and Tabasco. This gave them a significant place among growers hailing from palm oil powerhouses, Malaysia and Indonesia. The challenge will be making this certification the norm for Latin America's smallholder majority, who must be convinced to come on board.

Understandably, it all boils down to the benefits smallholders receive. At one panel event about practising social due diligence on farms, an audience member cut to the chase, asking: "Is sustainability in palm oil worth it?" Francisco Naranajo, head of RSPO in Latin America, replied: "It should be about improving the livelihood of smallholders, it's not just about certification," echoing the sentiments of RSPO co-chair Anne Rosenbarger.

India: Relevance

Lou Del Bello and Rishika Pardikar

India is the world's largest importer and second largest consumer of palm oil after Indonesia, consuming more than 8.5 million tonnes a year. Globally, about two-thirds of palm oil is used in food products, but in India 90% of imports are used for cooking, tying palm oil intricately to food security.

"In markets like India where palm oil is used as an essential food commodity, as cooking oil particularly by poorer people, price sensitivity is a huge issue," says D'Cruz. So far, 3% of India's palm oil is certified. While certification does add a price premium to palm oil products, D'Cruz noted that price increases are driven mainly by commodity markets, not certification itself.

Either way, efforts are afoot to improve the sustainability of palm oil imports, as well as of domestic production, which is



Packing up palm oil at a warehouse owned by Sinar Mas in West Java, Indonesia. For decades, Indonesia has shipped out tanker loads of raw palm oil for processing into higher value cooking oil in places like India and China (Image: Reuters via Alamy)

nascent. The RSPO has a mapping tool in the works, which may help to plug the huge data gap on targeted planting areas, and identify where they may overlap with areas of high conservation or social value. The tool should allow the RSPO to "engage before the expansion happens," says Ashwin Selvaraj, deputy director for market transformation at the RSPO. This could help avoid potential conflicts, like those where state governments in some regions have allegedly targeted forests of value to local communities, to make space for palm oil plantations.

"A lot more evidence-based research needs to be taken up to understand the deforestation risk as well as the risks on soil and water quality," says Neha Simlai, senior manager with the sustainable trade initiative IDH.

Simlai doubts the RSPO's international voluntary standards will ultimately be adopted by India's national government. "It's perhaps more important to not do a lift-and-shift of voluntary standards, but to create a process of continuous improvement," she said. "To say, 'We need to progressively get better in the way that we import oil. And if that happens, then we're still going to address global challenges.'"

Reaching 'net-zero'

Dr Chih-Ching Lan and Dr Josie Phillips

The irrefutable connection between agriculture and climate change has

been part of the sustainable palm oil conversation for some time. And yet, while the industry is no stranger to so-called "zero-deforestation" commitments, on reducing greenhouse gas emissions or reaching net zero, few companies have dared to set robust targets.

Partly that's because the many diverse sources along the palm oil production chain make carbon accounting difficult, explained conference speaker Dr Surina Ismail. Ismail is group head of sustainability at IOI Corporation, which is among a minority of palm oil companies that have set voluntary net zero targets (by 2040, in its case). Peatland drainage, land use change, and mill waste all release emissions; the latter, also known as palm oil mill effluent, is especially worrying because it emits methane.

Mark Wong, head of downstream sustainability for Sime Darby Plantation – another company which has made a net zero commitment (for 2050) – spoke of the difficulty aligning companies' variable carbon accounting methodologies and mitigation measures. This has made it hard to quantify the industry's true progress. Meanwhile, the technological challenge of achieving full-chain traceability – especially in accounting for Scope 3 emissions – is an obstacle for companies trying to map their impacts in full.

Recently, new guidance for the palm oil sector has come from science-based target initiatives for forest, land and agriculture and greenhouse gas protocols, which could help to coordinate the data. However, there are issues around how to consolidate existing information, and how to move forward collectively in reducing emissions.

Certification is embedded in this complex reality. Research suggests that RSPO-certified palm oil carries a lower carbon footprint than conventional palm oil, but whether carbon emission calculations can be applied to Scope 3 remains a real challenge, complicating the path to net zero. 🌀

Opinion: Malaysia's sustainability standard can clean up murky supply chains

Palm oil supply chains would be a lot simpler if producer country standards were more widely recognised, writes Robert Hii

Robert Hii | November 29, 2022

The oleochemical sector produces high value materials from oils and fats. It has made huge contributions to the use of palm oil in product manufacturing.

Oleochemicals are incredibly useful as, for example, additives, emulsifiers and thickeners in food, skincare and paint. But as a [recent report](#) from China Dialogue highlighted, the complexity of oleochemical supply chains may be

hampering progress on sustainable palm oil. This is true, and I would add, these supply chains would be far less complex if the standards of producer countries were more widely recognised.

A broader acceptance of national programs like the Malaysian Sustainable Palm Oil (MSPO) standard would clean up the industry's murky supply chains because they can cover many more plantations and facilitate enforcement.

Keeping consumer goods affordable and sustainable

The RSPO standard is considered best-in-class when it comes to producing sustainable palm oil. The multi-stakeholder platform was established in 2004 in response to growing concerns over the negative impacts of the palm oil industry, such as deforestation and poor labour conditions.

RSPO certification generates price premiums for producers and many multinational companies purchase RSPO-certified supplies. But certification by the RSPO hovers at around 19% of global production. This reflects the

Unloading palm oil fruit bunches in a palm oil mill in Bahau, Negeri Sembilan, Malaysia (Image: Lai Seng Sin / Alamy)



market reality of global palm oil demand where large consumer countries like India and China have less interest in paying for a premium product.

Companies which use certified palm oil often purchase it through the RSPO's mass balance supply chain model. This, as one of the cheapest of the RSPO's schemes, allows palm oil mills to take in fruit from both certified and non-certified growers and mix the two together. The term is used because the amount, or "mass", of certified fruit that comes into a mill must be equal to, or in "balance" with, the amount of certified oil that leaves it (factoring in oil extraction rates). It is touted as an entry point for sustainability-conscious companies. However, the mixing makes the supply chain murkier, undermining traceability efforts.

For a higher price, brands can use palm oil purchased through the RSPO's "segregated" model. This offers a higher degree of traceability, and hence assurance that the palm oil is not associated with deforestation because the oil is kept separate throughout the supply chain. Unfortunately, the higher price means the model is not compatible with global demand for affordable consumer products.

Ir Qua Kiat Seng, a senior lecturer in chemical engineering at Monash University Malaysia, knows about the complex infrastructure and costs involved in a segregated supply chain. When he was with ASEAN Oleochemical Manufacturers Group (AOMG), Ir Qua worked with the RSPO to develop the rules that connect businesses using oleochemicals to the RSPO's certified supply chain systems.

"It's never clear who will cover the cost of the [segregated] volume. Where sellers do not have buyers for the remaining volumes of material, they have to absorb the total costs and this is not



It's never clear who will cover the cost of the [segregated] volume

Ir Qua Kiat Seng
Monash University Malaysia

economically sustainable." This is made more challenging in the oleochemicals industry where a great deal of palm kernel oil may be needed as a feedstock. For example, it takes 25.5 metric tonnes of palm kernel oil to produce a single tonne of caprylic acid, Ir Qua explained.

While the mass balance model makes sense for companies that want to start using some certified materials, the national certification schemes introduced by producing countries in recent years can offer solutions to remove the murky elements of certified palm oil by enabling much greater coverage of palm plantations.

Are national standards the way forward?

The RSPO has faced criticism for failing to hold member companies accountable for environmental or social issues or skirting commitments to purchase sustainable palm oil volumes. The core problem is that, as a voluntary programme, it doesn't have the legal backing for full coverage and strict enforcement. This is where government-backed national standards like the MSPO – which covers 96% of Malaysia's plantations – could bridge uncertainties in the supply chains and offer a new pathway for sustainable palm oil.


The MSPO has been criticised as less robust than the RSPO but these

criticisms have largely been based on paper policies, rather than what happens on the ground. Where the RSPO's strongest punishment is the expulsion of a member, without legal action, the same member can continue to deforest and break the accepted rules on sustainable production.

Malaysia's national certification standard has teeth because it has the backing of the Malaysian Palm Oil Board (MPOB). This government body has the power to issue or revoke operating licences for palm plantations and mills.

MPOB has taken direct action against companies which break the rules. In late 2020, it ordered an immediate halt to, and suspended the operating licence of, a mill accused of polluting the Sembrong River in south Malaysia. Last year, 56 operators were penalised for manipulating weighing scales and underpaying smallholder farmers for their fresh fruit bunches. Threats of prosecution and fines up to 200,000 Malaysian ringgit (about US\$43,000) were issued.

This year, the MPOB updated its standard with requirements for companies to commit to no deforestation, no peat development, and no exploitation policies. Such "NDPE" policies have contributed to reduced deforestation rates in Indonesia. MSPO 2022 also incorporates UN International Labour Organization Convention (No. 29), which concerns forced or compulsory labour. Although the changes do not come into effect until 1 January 2024, MPOB is responding to demand for palm oil products that are sustainable and acceptable on the global market.

As its certification and standards grow more rigorous, Malaysia's palm oil offers a much-needed opportunity to clear up the industry's murky supply chains. 

Producing palm oil and protecting forests in Latin America



A worker monitors oil palms on a Palmas Group plantation in central Peru. The company has been working towards RSPO certification since 2016 (Image: Palmas Group)

Growers must make up for past forest loss and keep trees standing to gain RSPO sustainability certification

Jack Lo Lau | June 19, 2023

With its increasing presence in our foods, cosmetics and fuels, palm oil has come under scrutiny for its record in driving deforestation in the tropical regions where it is produced. These concerns have given rise to international initiatives like the Roundtable on Sustainable Palm Oil (RSPO), which oversees one of the industry's most widely used sustainability certification schemes.

Though they are smaller players in the global palm oil landscape, producer countries in Latin America have managed to maintain relatively decent records on sustainability, experts tell China Dialogue. "This region has the highest percentage of certified palm oil in the world, which is around 35%," explains

Yasmina Neustadtl, the RSPO's market transformation manager for Latin America.

"The big drivers of deforestation in countries like Ecuador are palm, coffee, cocoa, and cattle ranching," says Carolina Rosero, director of Conservation International's Amazon programme in Ecuador. "The only ones that are taking care to correct past mistakes in search of a better future are in the palm sector, with certifications like RSPO," she says.

Oil palm plantations in the region are also "mostly being developed in previously degraded forest areas", according to Gustavo Gómez, senior project manager at Proforest, a nonprofit promoting responsible commodities production.

However, despite its good record, Latin America has not escaped the high risks often posed by the growth of palm oil production. A recent investigation by the IUCN (International Union for Conservation of Nature) and Netherlands-based NGO Aid Environment warned about the threats of deforestation for oil palm cultivation in Colombia. According to the subsequent report, between 2021 and 2022, 23,311 hectares of forest around these plantations were burned to make way for production.

In response, Colombia's National Federation of Oil Palm Growers (Fedepalma), the NGO Solidaridad, and the Tropical Forest Alliance sent a letter asking for a retraction and corrections, claiming that the study's approach and methodology had been inadequate. IUCN removed the report from its website, stating that they are revising for republication at the end of June.

Rosero says: “The most difficult thing is the control and traceability of these plantations. This is something that needs to be worked on at all levels, from national governments to small- and medium-sized producers. It is important not only to stop deforestation, but also that these crops contribute to conservation.”

Neustadtl explained how the RSPO works with different procedures to help prevent deforestation and bring about restoration. She says the RSPO has around 150 “filters”, or requirements, to ensure “the whole value chain is sustainable, that it respects the environment and human rights, and that it does not generate more deforestation. And one of them is the Remediation and Compensation Procedure (RaCP). I like to call it the star of the RSPO.”

What is the RaCP?

The RaCP applies to companies that control high conservation value (HCV) land that has been cleared for palm oil production since November 2005. These companies are obliged either to restore these areas or compensate for lost conservation values. The threshold is November 2005 because that is when RSPO brought in its requirements and guidelines for certification. Crops that have caused deforestation since then cannot be certified.

In order to meet RSPO certification requirements, members must submit HCV assessments of their land before



Community members living near Palma del Espino’s conservation area in Peru, who settled there in hopes of finding work in the oil palm plantations (Image: Palmas Group)

developing new areas for production. If they are found to have previously cleared HCV areas without conducting this assessment, the RSPO withholds certification until a RaCP is completed.

First, the environmental and social liabilities caused by a grower’s non-compliant land clearance are calculated, using a Land Use Change Analysis (LUCA), including the number of hectares to be remediated or conserved. Growers must then submit a plan detailing the actions they will take to account for their losses. On top of the RSPO’s requirements, growers “must add an element of additionality – that is,

do more than what they are required to do,” says Neustadtl.

Two types of projects are accepted under the RaCP: those in which companies directly remediate the affected site or parties, and those in which they support conservation projects led by third parties, usually NGOs. In Latin America alone, there are around 90 currently active RaCP projects, and each must be funded by the company for 25 years.

Rosero says that as the RaCP allows for indirect remediation for loss of conservation values, some may see the mechanism as “a kind of greenwashing, where deforestation is overlooked”. She says that Conservation International has worked alongside other commodity-certification standards to improve the quality of remediation initiatives, which she says must benefit “the thousands of families” who depend on palm oil.

What are high conservation value areas?

High conservation value (HCV) areas are habitats with outstanding biological, ecological, social or cultural value. They can include forests, grasslands, watersheds or whole landscapes, which should be appropriately managed to maintain or enhance their value. The HCV approach was developed by the Forest Stewardship Council in 1999 and is now widely used by various certification schemes.

Conserving on their own

Palmas del Espino is a subsidiary of Peru’s largest palm oil producer and

exporter, Palmas Group, and has been operating for over 40 years. It controls nearly 34,000 hectares of land across three regions in central Peru. It has its own crops, and at the same time extracts, refines the oil and makes products such as soaps, and various inputs for the food industry. In 2021, the company produced more than 172,000 tonnes of crude palm oil. Its main clients are Nestlé and Pepsico, and it has been working towards RSPO certification since 2016.

“In 2015, an article was published in the Guardian stating that we were developing a project that would lead to the deforestation of thousands of hectares of primary forest,” says Sandra Doig, responsibility manager at Palmas del Espino, recalling one of the company’s motivations for seeking certification.

“That forest had all the permits in order since the 1970s because the government wanted to develop palm projects, which in the end did not work out. When we bought the forest [in 2015] there were already about 700 hectares with plantations,” says Doig.

The situation became a turning point for the company. “It was clear to us that sustainability is a competitive advantage,” she recalls, saying the company decided to pursue less damaging production despite this being “the more demanding side” of the market.

“It would have been easier to sell [the forest area], but after analysing it and discussing it with the RSPO team, after doing our LUCA, we decided to conserve the 14,000 hectares,” says Doig. She says that the company was originally supposed to conserve or remediate 6,000 hectares, according to the RSPO’s calculations.

Doig says the company has no regrets over taking this approach, despite the fact that developing the project would have reportedly allowed it to grow its revenue by up to 40%.

Around 700 families had settled across the estate, driven by hopes of working on the oil palm projects that the government had planned to develop since the 1970s. “How could we tell them that we would not touch the forest if they were hoping for this crop? So

since last year, we have been working with them to find economic alternatives to keep the forest standing,” says Doig.

Currently, much of the population works in the production and sale of charcoal, which itself can contribute to deforestation. Palmas del Espino have been working with the Institute for Investigations in the Peruvian Amazon (IIAP) – an entity linked to the environment ministry – and the National Agrarian University of La Selva, to promote research on the soils and ecosystems in the area, to gain the knowledge necessary to develop plans for alternative livelihoods.

Supporting NGOs

In some RaCP cases, compensatory action may be agreed upon and carried out at a different location to where the original deforestation, and loss of high conservation values, took place.

NaturAceites is a Guatemalan company that operates across the palm oil supply chain, including growing, processing, refining and manufacturing consumer goods. It is fully certified when it comes to its own plantations, but also processes oil from third parties. In all, around two-thirds of its palm oil is certified, but it hopes to reach 100% by 2025.

To monitor this production, NaturAceites has contracted the company Satellintelligence, which sends them reports every three months indicating any changes in land use that are generated in their concessions and in their supply base, including their sub-contracted growers.

“We have 100% traceability of the fruit because we don’t buy from just anyone,” says Héctor Herrera, the company’s sustainability manager. “They [the suppliers] are duly audited by us and certified by the RSPO.”

Herrera explains that 3% of their production comes from forests that were deforested or degraded after



Community members near the Palmas del Espino conservation area in Peru attending to their plots of land, where they grow enough food to be self-sufficient. This RSPO certified palm oil company has been working to promote more sustainable economic activities in the region. (Image: Palmas Group)



Workers harvest oil palm fruit on a Palmas Group plantation in Guatemala. All the company's plantations are RSPO certified. (Image: Palmas Group)

2005. For this reason, they had to develop a conservation project.

Their first initiative was the Perú-Peruito project, covering a 9,400-hectare area of forest in the south of the Laguna del Tigre National Park, part of the Maya Biosphere Reserve that covers one-fifth of Guatemala's land area. It is possibly the last remaining nesting place of the scarlet macaw, which is nationally endangered, according to the Wildlife Conservation Society (WCS) Guatemala.

"They needed the funding," says Herrera, referring to the public-private alliance in charge of conserving Perú-Peruito, which is formed of WCS Guatemala, the NGO Solidaridad and the Guatemalan government. The government could not afford the cost and international funding was not forthcoming, he adds.

In this project, which according to the requirements of RaCP will be funded by NaturAceites for 25 years, they are also working on patrolling and environmental education with the municipality of San Andrés Petén, a community of 1,500 that borders the area.

"Because of the RSPO certification, we were obliged to conserve 260 hectares,

but with this project alone, we are exceeding 9,000 hectares," says Herrera.

A smaller project is being developed in the Bocas del Polochic wildlife reserve. In this wetland area, NaturAceites is supporting the conservation group Defensores de la Naturaleza (Defenders of Nature) in their work to raise awareness among artisanal fishers to prevent the catch of manatees, which are sought after

for the supposed aphrodisiac qualities of their fat.

The project also involves initiatives to use biological corridors to reconnect fragments of forest and protect existing connections between forests and rivers. Herrera says these allow wildlife to be protected without affecting their water sources and nesting areas. Herrera adds that the company is also conserving 1,990 hectares of primary forest around its plantations nationwide.

Herrera emphasises the important role collaboration with NGOs has played in their projects: "For us, involving NGOs and civil society is the best and most transparent way to conserve. We are not specialists in conservation, so we look for third parties who do know. We have a lot of confidence in these alliances."

The sustainability manager says the 25-year fund is worth around US\$780,000, with 80% dedicated to Laguna del Tigre and 20% for the manatee project. "We are protecting 36 times more than what we have impacted in the past," Herrera says. "That's where the additionality lies." 🌱



Scarlet macaws are endangered in Guatemala. As part of its RSPO commitments, palm oil company NaturAceites is funding a conservation project in the Maya Biosphere Reserve, thought to be the species' last nesting site in the country. (Image: Doug Greenberg / Flickr, CC BY NC)

Opinion: Investing in sustainable palm oil is key to mitigating future crises

As the global supply of vegetable oil experiences shocks, sustainability efforts complement measures to safeguard supply stability, argues RSPO China's Fang Lifeng

Fang Lifeng | July 19, 2022

Millions of people around the world who have been grappling with extreme hunger in the wake of the pandemic must now contend with a shortage of vegetable oils. These oils represent one of the biggest weekly expenditures for poor families in low-income countries and about 10% of the world's daily calories, making them the second most important food group after cereals.

A constellation of factors has led to a tightening of global supplies of this staple ingredient of home kitchens, restaurants and packaged food. Chief among them is the war in Ukraine. Russia and Ukraine account for 60% of global sunflower oil production. Millions of tonnes of it, earmarked for export, has been stuck in Ukraine, sending prices soaring. This has compounded an already difficult situation in which droughts in Latin America reduced soybean yields; acute labour shortages and Covid-19 mobility restrictions in Malaysia reduced palm oil production; and the Indonesian government curtailed exports of palm oil by raising export tax to ensure local supply.

OECD-FAO Agricultural Outlook 2021-2030 statistics indicate global demand for vegetable oil is projected to expand by 33 million tonnes by 2030, a 15% increase on 2020 levels, with food use accounting for 68% of that demand. Palm oil remains an important part of a diversified and balanced market for vegetable oils.

Imported edible palm oil, canola oil, sunflower oil and soybean oil made



People buy cooking oil in Palu at a basic goods market, set up by the Sulawesi authorities, on 26 April 2022. To try and secure domestic supply, Indonesia would ban palm oil exports from 28 April to 19 May. (Image: Pacific Press / Alamy)

up 24% of China's 37 million tonnes of total edible oil consumption in 2021, or nearly 8.9 million tonnes. With high reliance on imports, any disruption and increased cost of supplies could have serious consequences.

Palm oil is the second most consumed vegetable oil after soybean oil in China, with a share of 20%. Of this, 80% is edible – mainly used in instant noodles, blended edible oil, processed foods, frying and industrial baking – with the rest going into industrial processes. The country's oil-processing industry takes in imported palm oil for refining and fractionation to generate margarine, grease, shortening and cooking oil and oleochemicals.

The vegetable oil market is likely to remain dominated by palm oil and

vulnerable to external risks. It is therefore crucial to manage these risks effectively and ensure the stability and sustainability of the palm oil supply chain.

Facing supply chain shocks

Safeguarding food security is a critical priority in China, and the central government has explicitly linked it to national security. But according to data from China's General Administration of Customs, palm oil imports contracted by 58% in the first five months of 2022, compared to the same period last year. Imports of other major edible oils, including soybean, rapeseed and sunflower, also fell. Recent Covid lockdowns in China, which have reduced visits to restaurants, where palm oil is more prevalent than in

households, and high global vegetable oil prices, have resulted in demand disruptions. These will have a lasting impact on domestic consumers and companies that rely on these commodities.

During the recent, short-lived palm oil export ban imposed by Indonesia, Chinese food producers scrambled to adapt as prices rose amid the supply shortage. Although vegetable oils are largely interchangeable, substituting them can cause headaches for food manufacturers due to issues including the functional properties of the oils, allergies and labelling requirements. Some companies, such as Fujian Panpan Food Group, opted to reformulate their products, while others contemplated closure.

Diversifying edible oil imports and boosting domestic production is China's main strategy to secure a steady supply of vegetable oils. While efforts are being made to address near-term supply chain issues, we still have to deal with the climate crisis and work towards achieving long-term sustainability goals.

Food sustainability and food security are not contradictory priorities; the two must go hand-in-hand if we are to ensure the resilience of our food systems now and in the future.

Supply security and sustainability are one

As the world's second biggest importer of palm oil, accounting for 10% of palm oil trade volume, China has a critical role to play in this regard. Supporting the sustainable development of the palm oil industry is in line with the national strategy of "ecological civilisation" as well as a green Belt and Road Initiative, and congruent with China's commitment to be a responsible country in combating the effects of climate change and protecting biodiversity. China has also pledged to peak its carbon emissions before 2030 and achieve carbon neutrality before 2060;

and at COP26, it signed up to the Glasgow Leaders' Declaration on Forest and Land Use, committing to halting and reversing forest loss and land degradation.

Achieving these goals requires more companies along the supply chain to adhere to standards such as the RSPO's. Certified sustainable palm oil reduces the need for land conversion and deforestation. A life cycle assessment calculates that RSPO-certified oil emits 35% less greenhouse gas and is associated with a 20% lower impact on biodiversity than conventionally produced palm oil.

China has not yet issued a dedicated policy on the sustainability of palm oil importing. A positive development is that the Ministry of Ecology and Environment is leading on the development of a national strategy for a green value chain, which will involve a series of action plans such as sustainable importing policy, supply chain due diligence and international cooperation. In 2020, China and Malaysia issued a joint press statement recognising the significance of trade in commodities, especially palm oil, and committing to the sustainable development of the palm oil industry. This commitment is likely to guide trade with all palm oil producing countries, together with the upcoming national strategy.

Some may think that in the face of surging prices and supply chain uncertainties, sustainability should take a back seat. But in fact pursuing sustainability has the potential to strengthen the stability of supply chains.

China is a key destination for exports from Indonesia and Malaysia, which combined are projected to account for 83% of global palm oil production by 2030. Bilateral dialogues with these producing countries to exchange information on supply and demand dynamics, thereby promoting the consistency of policies and actions, will help China improve the stability of the supply chain and secure palm oil inventories for its domestic vegetable oil consumption needs. China's policy signal of prioritising the sourcing of sustainable oil will also help transform the supply

chain, spurring investment in sustainable production and trades.

A long-term increase in the uptake of certified sustainable palm oil in China can drive up production over time. Meanwhile, by getting involved in overseas palm oil production and the upstream supply chain, China could also leverage the financing of sustainable practices, carry out capacity building, and therefore increase the output of certified oil. This will also help reduce poverty, bring about economic growth and provide other socio-environmental benefits to palm oil producing countries in Southeast Asia, Latin America and Africa.

RSPO-certified palm oil takes innovation in oil palm cultivation and production one step further. It tries to make yields higher and more reliable than conventional palm oil by supporting growers, especially smallholders, to adopt the RSPO Principles & Criteria, in order to build their capacity via access to high quality training, project partners and resources. In the meantime, RSPO is also working with members from the supply side to ensure certified palm oil is available on the global market, and more importantly to scale up shared responsibility commitments from traders to retailers by setting annual percentage point uptake targets for them. It is hoped that these measures will boost the uptake of certified palm oil in China, where stakeholders have shown willingness to embrace the concept of sustainable palm oil, and the membership of RSPO is steadily growing.

The true test of resilience comes during times of crisis. Palm oil importers like China cannot and should not wait for a supply chain crisis to happen again. To mitigate future disruptions and stave off the climate crisis, action needs to be taken now to de-risk and future-proof China's edible oil supply chain. After all, it takes four years for the oil palm to yield fruit. 🌴

The author would like to thank Gu Keren, vice president of the Oil and Fats Branch of the Chinese Cereals and Oils Association, for his contribution and valuable comments on this article.



Improving palm oil awareness in China

Awareness-raising by civil society is beginning to bear fruit, with plenty of potential in instant noodles and personal care

People browsing cosmetics and skincare products at a shopping mall in Chengdu, Sichuan province (Image: Alamy)

Yuhan Niu | June 12, 2023

“Remember, recently you got in the habit of checking the list of contents whenever you buy something? Thanks to that little act of yours, nature is already changing...”

At the COP15 biodiversity talks in Montreal last December, WildBound, a Chinese educational non-profit, launched a game about orangutans and palm oil called Forest Life.

Players, in the roles of ordinary consumer, palm oil company executive and small-scale farmer, generate varying impacts on orangutan habitats and biodiversity according to how they consume, invest and produce.

In recent years, Chinese civil society organisations have undertaken various initiatives to raise consumer awareness of palm oil. The commodity is not yet a public issue in China, with most people unaware of its use in their products, much less worrying about its sustainability. WildBound’s chief impact officer, Mingyi Lu, calls rectifying this “a long-term job.” She adds that, while challenging, “it is by no means impossible.”

Chinese consumers are becoming increasingly aware of the environmental and social impacts of their consumption choices, as the government pushes forward to its goals of peaking national carbon emissions by 2030 and reaching net zero before 2060. This is the situation presented in

the Sustainable Consumption Report 2022, jointly published by SynTao and Jiemian News. Consumers in the 21–40 age bracket, who are more open to paying a premium and willing to share their experiences, are more likely to be guided by low-carbon messaging. However, the report notes that the great majority of sustainability certification and markings are not yet widely applied, including those for palm oil.

Palm oil is invisible to consumers

China is the world’s second largest importer and third largest consumer of palm oil. Imports were around 7 million tonnes annually in 2020 and 2021, mainly coming from Indonesia and Malaysia.

Despite high demand for palm oil, there is little demand in China for the sustainably produced, premium-priced stuff. Only about 1% of China's palm oil imports are certified as sustainable, according to a 2020 report by the UNDP (United Nations Development Programme). While a WWF study in 2021 found that around 4–7% of palm oil consumed there was certified by the leading standard-setter, the RSPO (Roundtable on Sustainable Palm Oil).

The low demand is partly attributable to lack of consumer awareness. Some 80% of the palm oil imported into China is used in the food industry, but many Chinese consumers don't know they are eating it. A 2018 consumer survey conducted by WWF Beijing found that of 5,000 respondents, 46% had never heard of palm oil, let alone its links to deforestation.

Palm oil is rendered invisible on the Chinese market by unspecific labelling. In the European Union, since 2014, food products must reveal specific vegetable oils, including palm oil, on their labels. While as the law stands in China, as in many other countries, the general term “vegetable oil” is enough. In addition, multiple derivatives of palm oil are used in household and personal care products, usually without any indication that palm oil is among the raw materials, leaving consumers in the dark.

How to make palm oil more visible?

Palm oil is not much discussed by the public. When initial concerns arose, they focused on health considerations. In 2005, an instant noodles brand advertised under the slogan “Healthier, not deep-fried”. This started to put the presence of palm oil in instant noodles onto consumers' radar. Public concern, however, was limited to whether palm

oil's high saturated-fat content posed a health risk, with the ‘people's health network’, an online information service run by the People's Daily newspaper, noting that “while excessive intake of saturated fatty acids is not healthy, the body still needs them in moderation”.

The low level of palm oil knowledge among the general public makes it harder to reach consumers through awareness-raising and advocacy. As Mingyi Lu of WildBound explains, to attract involvement such initiatives generally have to be presented within the framework of biodiversity and forest conservation.

In 2020, RSPO and WildBound joined forces to launch Changemakers for Nature. Co-founders Isabel Nepstad and Songqiao Yao initially wanted to take young people to the Amazon to witness deforestation and experience for themselves the importance of protecting forests and biodiversity.

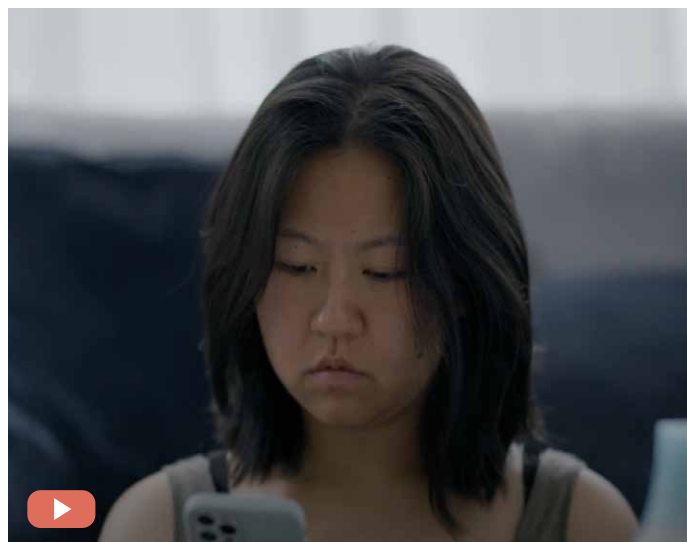
Due to the pandemic, participants had to learn instead through online and offline courses and then create their own impact-driven projects and solutions. The courses included knowledge relating to sustainable palm oil. One of the participants, Yang Yang, produced a short film on the sustainable palm oil initiative,

Behind the Shelves, which has been viewed over 1 million times across Chinese social media and video platforms, according to Changemakers for Nature.

The biggest problem in promoting certified sustainable palm oil in China is finding products that contain it, says Mingyi Lu. This means they can only promote the concept without matching it to the corresponding products and purchasing scenarios. Even when consumers agree on the importance of sustainable palm oil, it is hard for them to make practical changes in how they shop.

Changemakers for Nature has been encouraging businesses to produce sustainable products. But companies have found the process of sourcing sustainable palm oil convoluted, with long lead times and inflexibility in terms of quantities. It is not simply a matter of telling an upstream supplier “I'll take a few barrels first to give it a try”. One way or another, companies have lost interest, preferring to wait until the supply chain becomes more robust before trying again.

In addition to educating young consumers, they have also opted to work with Nanjing's Hongshan Forest Zoo, incorporating messaging about sustainable palm oil into the



Video directed by Yang Yang for WildBound, used here with permission



Scan the QR code to watch on your phone or click the screenshot to watch on computer



zoo's Orangutan Care Week Garden Party. Mingyi Lu believes that seeing orangutans at the zoo gives visitors a connection with them, making advocacy more effective. The Forest Life game described at the top of this article likewise starts with conserving orangutans, promoting the importance of making sure palm oil is sustainable for protecting them. But the roles played by the user, of palm oil executive and farmer, also link directly into supply chain issues.

Interestingly, Mingyi Lu thinks that to a certain extent, the low awareness of Chinese consumers also shortens the "understanding path" when promoting sustainable palm oil. "In some countries and regions, palm-oil-free products are considered more sustainable. When sustainable palm oil is promoted to them, consumers will subconsciously reject it, fearing it will be 'greenwashing'. In China, on the contrary, since consumers do not know much about palm oil, we can talk about the concept of sustainable palm oil and the RSPO system while informing them how common palm oil is in our life."

Can companies guide consumers?

The premium for certified sustainable palm oil ranges from 3–30%. If consumers have low awareness and are unwilling to pay that premium, this deters companies, focused on their bottom lines, from investing.

However, interviews with Chinese companies conducted by CDP China for a report in 2020 indicate that companies are increasingly aware of the risks, and potential long-term cost to supply chain resilience, of unsustainable palm oil.

The report found that felling of forests for oil palm releases large amounts of carbon dioxide, fuelling climate change, and the resulting changes in precipitation and increasingly



Large companies can both build up domestic suppliers of sustainable palm oil and, through promotion and publicity, boost consumer awareness

Fang Lifeng
Head of RSPO China

severe extreme weather can lower the quantity and quality of palm oil production. Changing weather patterns associated with climate change are forecast to reduce oil palm yields by 13.4%, threatening the stability of supply chains, according to the report.

This also exposes companies to reputational risks as consumers become more aware of sustainability and recognise the negative impact on the environment of unsustainably sourced palm oil. If increasing numbers of companies can become aware of these long-term costs, and be less risk-averse, this would favour the development of sustainable palm oil.

Fang Lifeng, head of RSPO China, says that with more than 300 member companies in China, the organisation is focusing its main efforts on further raising industry awareness and knowledge of sustainable palm oil, and mobilising more companies to procure it. If a few leading enterprises are willing to inform and guide consumers at the same time as sourcing sustainable palm oil, that will elevate consumer awareness, stimulating yet more companies in the sector to source sustainable products.

Promoting sustainable palm oil through instant noodles and cosmetics

A quarter of China's palm oil imports are used to produce instant noodles, and worldwide more than 70% of personal care and cosmetics products now contain one or more palm oil derivatives. Starting with these two sectors, there is good potential for promoting certified sustainable palm oil to Chinese consumers and raising their awareness.

In its 2022 annual report, Master Kong, which has nearly half of the instant noodles market in China, stated: "We are committed to reducing the negative impact of packaging and palm oil procurement on forests... 43.8% of palm oil suppliers in the Instant Noodles Business have obtained Roundtable on Sustainable Palm Oil (RSPO) certification." The statement could be misleading as Master Kong is not a member of the RSPO, and the proportion of its suppliers that are RSPO certified does not reflect the proportion of certified oil it buys.

According to a WWF report on palm oil, also from 2022, the costs to companies of transitioning to sustainable palm oil and working

with certification bodies include membership, assessments, audits, documentation, training and the premium paid for certified palm oil. The report estimates that, on average, the burden for businesses is negligible, at US\$0.0009 per 70g packet of instant noodles.

However, as Fang Lifeng explains, competition in the Chinese instant noodle industry is fierce, with tight gross margins. This does not mean that there is no room for transformation in the sector. Some Japanese instant noodle companies have already pledged 100% use of sustainable palm oil. In the end, it comes down to how willing companies are to act, and what their long-term business objectives are.

Cosmetics consumers, by contrast, are more tolerant of premium prices. WWF's 2018 consumer survey showed that people were generally willing to accept a premium of 6–10% for sustainable palm oil, especially for cosmetics and personal care products. With the trend towards sustainable cosmetics, the make-up and personal

care sector offers a potential point of entry for raising consumer awareness.

Such cosmetics have taken off in China in recent years. In 2021, Tmall Global, an e-commerce platform for international brands to sell directly to Chinese consumers, defined the concept of “clean beauty” products, including use only of RSPO-certified palm oil. Environmentally friendly “clean beauty” brands were widely embraced by consumers, with January-to-June sales in the category rising by over 600% year-on-year.

Speaking at the 2021 International Cosmetics Innovation Focus Conference in Shanghai, an RSPO representative said: “A survey of the north-east Asia market, with a sample size of 400, revealed that the decisions of approximately 91.5% of consumers considering a cosmetics purchase are driven largely by product contents. The sustainability of those contents is also a major factor”.

Fang also observed that awareness of sustainable palm oil as an important

component of products is gradually spreading through the personal care and beauty sector, and industry stakeholders are increasingly open to discussion of the topic.

Homegrown brands came late to this industry in China, and the market is mostly dominated by international beauty brands. In 2021, French personal care company L'Oréal had the biggest share of the Chinese cosmetics market, at around 12.2%, and 100% of the palm oil procured by L'Oréal is RSPO certified.

Says Fang Lifeng: “With international brands making commitments and driving action along supply chains in the Chinese market, many Chinese companies have come to realise the added reputational risks – both domestically and internationally – they will face if they don't take steps to source sustainable palm oil. At the same time, by moving first, large companies can both build up domestic suppliers of sustainable palm oil and, through promotion and publicity, boost consumer awareness.” 🔄



A customer shops for instant noodles at a supermarket in Huaibei, Anhui province (Image: Alamy)

India's palm oil plans fail to account for climate change

A national drive to expand domestic production relies on old rainfall and humidity data



Madhava Rao, an oil palm farmer in Andhra Pradesh, southern India (Image: Kevin Samuel / China Dialogue)

Lou Del Bello | April 19, 2023

India's ambitious drive to expand domestic palm oil production fails to consider the subcontinent's changing climate, analysis shows. It's an oversight which may derail the country's plans to become self-sufficient in the oil.

With US\$9.6 billion worth imported in 2021, India is the world's biggest buyer of palm oil, mostly from Indonesia and Malaysia. It hopes to shift part of the present and future revenues of this market to the pockets of its farmers, by increasing the country's cultivated area of oil palm to 1 million hectares by 2026, up from 350,000 hectares in 2019.

Once established, palms take three to

four years to become productive, and will bear fruit for 20 to 25 years. Researchers have been working with the government to identify the most suitable ecosystems for such a long-term undertaking. In the past, these could have been effectively identified by observing historical climate data to predict rainfall, among other factors. But as climate change alters weather and water patterns across the globe, such information tells only part of the story.

M.V. Prasad, principal scientist for the palm oil branch of the Indian Council of Agricultural Research (ICAR), explains that the institute, which operates under the government of India, has identified nearly 2.8 million hectares of suitable land in 18 states. The north-east of the country is seen

as particularly promising. "The plan looks at water requirements for irrigation, rainfall, temperature and relative humidity, also keeping in mind that palm oil production should not disturb forest cover nor local flora and fauna." Only areas with adequate humidity and water availability have been earmarked for expansion, Prasad says.

Roxy Koll, a climate scientist at the Indian Institute of Tropical Meteorology, notes that "the assessment considers the long-term average conditions of the past rainfall (1950–2000) over India to zoom in on regions with favourable rainfall." However, he explains, "rainfall patterns have changed during this period, with a reducing trend over central and north India, and the assessment does not consider these observed changes,"

instead averaging out the results over the examined 50 years.

“Since oil palm cultivation is planned for the near future,” Koll adds, “we need to consider future changes in rainfall gauged from climate projections, which the assessment also omits.”

More deluge, less rain

Around the world, climate change is exacerbating extremes, whether it's drought or floods, says Samantha Kuzma, a research analyst responsible for Aqeduct, a data project from the World Resources Institute (WRI). “And those things could even happen in the same place.”

The Indian subcontinent is an example of this trend. Due to climate change, researchers expect a higher number of storms to bring a lot of water at once, while the total rainfall will keep declining over the coming decades. When a lot of rains falls in a short time, the water is washed away before it can seep into the ground and replenish aquifers.

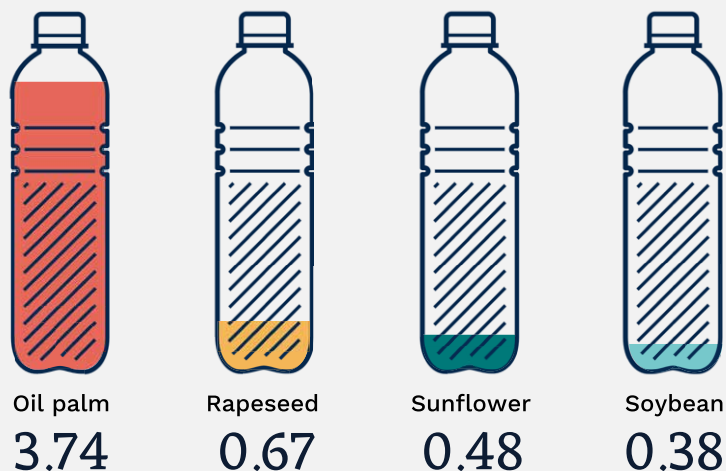
In a 2015 paper, Koll observed that contrary to what previous studies suggested, climate change is making the Indian monsoon weaker, leading to a significant decrease in overall precipitation in north and central India, including north-eastern regions and the Bay of Bengal. Between 1901 and 2012, the period analysed by Koll and his team, rain also declined across the Western Ghats mountain range, in the south of India, particularly in the state of Kerala.

These are all areas that the Indian government deems most suitable for expansion, based on the data analysis that, according to Koll, misses the way weather variability is evolving.

How thirsty is oil palm?

ICAR's M.V. Prasad says that while oil palm requires more water than other edible oils such as groundnut, sunflower

Annual yields of different vegetable oils (tonnes per hectare of farmed land)



or sesame, it also produces around five times more per hectare.

Oil palms could also require less water than other crops they replace, but crop water requirements can vary a lot in India and if rain continues to decline, impacts on agriculture and other human activities would be felt regardless.

Globally, agriculture remains the largest drain on freshwater, with about 70% of use going to feed crops, says Kuzma. But as the population grows, so does its water demand, she says. “It’s in our clothing, it’s in our cell phones, it’s in our cooling needs, so the more people you have, the more water we need to meet their demands.” Communities will have to reshape agriculture in the context of an increasingly industrialised, thirsty society. And the role of water-intensive crops hangs in the balance.

According to Aqeduct, oil palm cultivation in Latin America, West Africa and Southeast Asia will all be subjected to some degree of water stress in the coming 20 years, with particular severity in Venezuela and the Philippines. In 2020–2021, India’s palm oil production was around 0.29 million tonnes, a fraction of the 73.8 million tonnes produced globally in the same

year. If it wants to expand as planned, water stress is an underestimated challenge that farmers will have to reckon with.

“Even though I am an oil palm farmer,” says K Kranthi Kumar Reddy, general secretary of the National Oil Palm Farmers’ Association, “my personal opinion is that India should diversify its vegetable oil [production], not just depend on palm oil. Because any monoculture is dangerous for the environment.”

He says that oil palm is a more lucrative crop compared to many alternatives, and that’s why he has chosen it for his farm. But he concedes that water scarcity is a problem which is likely to get worse as farmers need to dig increasingly deeper wells to reach depleting aquifers. This, combined with manpower shortage and increasing fertiliser and fuel costs means that “agriculture is not going to be remunerative in future at all.” Organic farming, Reddy says, can help reduce water consumption, but diversification remains key to keep Indian agriculture environmentally and financially sustainable. “Oil palm has become the main source of edible oil in India, due to adverse market conditions for other oils,” he explains. “But as a result farmers suffer.”

How can the palm oil industry reach net zero?

Ending deforestation, and enhancing transparency and cooperation, will be key to balancing palm oil emissions and removals

Chih-Ching Lan, Josie Phillips

| June 19, 2023

Food systems contribute approximately one third of greenhouse gas emissions, and are therefore a crucial focus in global efforts to slow climate change.

Palm oil, the world's most widely used vegetable oil, could play a key role in these efforts, with improvements in its production having potential to bring significant emissions reductions.

Although palm oil production has faced intense scrutiny due to its

connection with deforestation, recent developments indicate that progress has been made.

According to Trase, a commodity transparency initiative, palm-oil-related deforestation in Indonesia has been decreasing for almost 10 years, despite growth in production. Malaysia has experienced a similar trend. These two countries produce about 85% of the world's palm oil.

The United Nations' climate change convention has emphasised the importance of decoupling agricultural production from forest loss, stating

that ending deforestation will be critical to achieving global net-zero emissions by 2050.

The Council of Palm Oil Producing Countries, an intergovernmental body led by Indonesia and Malaysia, asserts that the industry is on track to achieve net zero. Some industry experts even believe this goal can be reached by 2040, a decade before the UN's target. However, it is essential to consider the necessary actions for palm oil producers, companies and countries, and examine the integrity of their commitments to meeting this challenge.



Smouldering forest fires on peatlands cleared for oil palm, Sumatra, Indonesia, 2013. Deforestation for new plantations is still the main way palm oil contributes to global heating. (Image © Ulet Ifansasti / Greenpeace)

What is net zero and what does it mean for companies?

The Paris Agreement, adopted in 2015, aims to limit global warming to well below 2C above pre-industrial levels, while “pursuing efforts” to restrict the increase to 1.5C. In 2018, the UN’s climate science body, the IPCC, published a special report that emphasised the need for rapid transitions in various sectors to achieve the 1.5C target, including a 45% reduction in global net CO2 emissions by 2030 (from 2010 levels) and reaching net-zero emissions by 2050.

Using the IPCC definition, “net-zero” emissions refers to a balance between human-driven greenhouse gas emissions and removals over a specified period.

In the world of business, the Science Based Targets initiative (SBTi) was established in 2015 to help the private sector set emissions reduction targets based on scientific evidence. The initiative validates whether a company’s climate targets align with a 1.5C or 2C pathway, considers the year of net-zero commitment, and ensures robustness, credibility, and

accountability in climate action.

Critics argue that “net-zero” targets can be misused if companies focus more on carbon removal and offsetting than on reducing emissions. To address this, frameworks like SBTi are crucial for companies to establish time-bound targets and demonstrate progress through transparent reporting and monitoring. Crucially, SBTi does not recognise carbon offsetting as emission reductions and requires separate reporting of offsets and removals.

What climate targets exist in the palm oil industry?

Pressure to confront sustainability challenges has driven efforts to produce and promote certified sustainable palm oil, and to eliminate deforestation and exploitation from supply chains. Managing the impacts of the Covid-19 pandemic and war in Ukraine has been a significant focus for the industry, but addressing climate change and emissions, especially those related to deforestation and peatland use, has also continued to grow in importance.

While the palm oil industry has been relatively slow to start working with SBTi on net-zero target setting, some major palm oil producers, including Malaysian firms Sime Darby and IOI Corporation, and Singapore-based Wilmar International, have made climate commitments. Though their targets have yet to be validated under the SBTi, many palm oil producers are experienced in working with sustainability frameworks that require them to disclose greenhouse gas emissions data.

Reporting emissions is a requirement for certification by the Roundtable on Sustainable Palm Oil (RSPO), the industry’s leading sustainability standard. The RSPO’s emission calculator, PalmGHG, has been used for over a decade to assess emissions related to land use, management practices and energy consumption.

Consumer goods manufacturers at the other end of the palm oil supply chain, including Unilever, Nestlé and Mars, have already adopted science-based net-zero and emissions-reduction targets. Many of these companies have recognised the importance of eliminating deforestation and land-use emissions to achieve climate targets. For example, Nestlé committed to become deforestation-free by the end of 2022 for palm oil and several other key commodities. It claims to now be 95.6% deforestation-free for palm oil and outlined that the final percentage points are hardest to reach due to the challenge of reaching smallholders. This is exactly why the cooperation and commitment of palm oil producers will be essential to realising such targets.

How are emissions accounted in the palm oil industry?

The Greenhouse Gas Protocol is widely used for accounting emissions. Developed by the World Resources Institute and the World Business Council for Sustainable Development,



Clearing peatland forest in an oil palm concession, Central Kalimantan, 2013. As well as being home to numerous endangered species, like orangutans, proboscis monkeys and ramin trees, Indonesia’s peatland forests release greenhouse gas from their soils if cut down. (Image © Kemal Jufri / Greenpeace)



Wilmar International's palm oil refinery in Dumai, Sumatra. Most of a refinery's greenhouse gas emissions come from the energy needed to power its operations. (Image: Wahyudi / China Dialogue)

it helps companies build inventories of their emissions. It's also a requirement for companies seeking recognition of their targets by the SBTi. The protocol categorises a company's emissions into three scopes.

Scope 1 refers to direct emissions from company-owned and controlled sources, such as combustion in boilers, and vehicle emissions. Scope 2 covers indirect emissions from purchased energy consumed by the company. Scope 3 includes other indirect emissions throughout the value chain, including the extraction and production of purchased materials, transportation, and the use of sold

products and services.

Under SBTi, if a company's Scope 3 emissions are less than 40% of their total emissions, then they are only required to report their scope 1 and 2 emissions. However, for most business in most industries, Scope 3 accounts for over 70% of their carbon footprint.

Palm oil companies that operate both upstream (with plantations and mills) and downstream (with refining and oleochemical production) are considered "vertically integrated" in the supply chain. Their greenhouse gas emissions reporting for Scope 1 and 2 is often divided into upstream and downstream

sections. But calculating and reporting on Scope 3 emissions is challenging due to supply chain complexities and a lack of traceability in the palm oil sector.

Scope 3 emissions require intensive supply chain risk management, engagement with suppliers and other stakeholders, and outreach efforts. While SBTi generally only requires targets to be set for Scope 3 when they account for 40% or more of a company's total emissions, Scope 3 emissions in the palm oil industry are often excluded from greenhouse gas inventories due to difficulties collecting data.

The industry faces significant traceability challenges due to the involvement of so many independent mills, dealers, and millions of smallholder farmers. Currently, not a single palm oil producer has published Scope 3 emissions in their greenhouse gas inventories, although some have begun mapping them.

For RSPO member companies, the PalmGHG calculator helps companies track emissions related to land-use change, peatland management, fertiliser, palm oil mill effluent, and more. It also includes calculations for carbon sequestered from any forests conserved within a concession and from the oil palms themselves. It calculates net greenhouse gas emissions by subtracting sequestered carbon from emitted carbon.



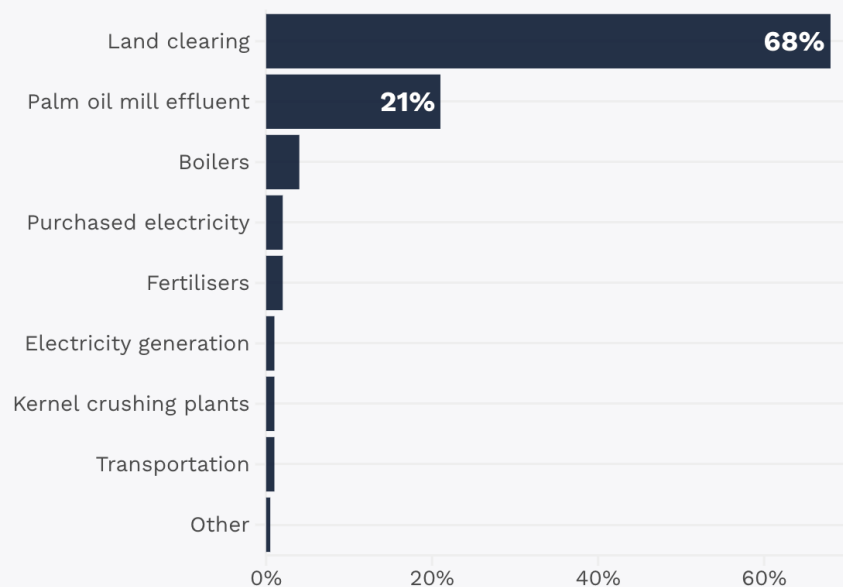
Fields of crops surround a palm oil mill in Central Kalimantan, Indonesia. To the left are ponds of oily wastewater which emit methane. (Image © Ulet Ifansasti / Greenpeace)



The cargo ship Great Motion (大运) at sea near New Zealand carrying 10,000 tonnes of palm kernel oil, which is used in animal feed for cows and sheep among other uses (Image © Nigel Marple / Greenpeace)

A large palm oil company's greenhouse gas emissions, by source

The firm is Sime Darby Plantation Berhard, a vertically integrated company



Data source: [Sime Darby Sustainability Report 2021](#) • Note: Scope 3 emissions are not included • Graphic: China Dialogue

These efforts seem to have had an impact, with RSPO-certified palm oil found to generate about 35% less emissions than non-certified palm oil per kilogram of processed oil. The difference is attributed to factors such as peatland use (RSPO members are less likely to plant on peat), crop yields (they tend to have higher yields) and treatment of palm oil mill effluent (they are ahead on methane capture technology).

SBTi's Forest, Land and Agriculture (FLAG) initiative and the Greenhouse Gas Protocol's upcoming guidance on the land sector and GHG removals will provide additional frameworks for land-intensive sectors to account for emissions, carbon removal and storage. These initiatives are expected to complement the RSPO's emissions calculator, enabling companies to estimate their net emissions, set science-based targets and work towards net zero.

How can palm oil emissions be reduced?

Several strategies can help reduce emissions in the industry. Firstly, preventing plantation development on tropical peatlands and upholding no-deforestation commitments.



Oil palm saplings grow on burned peatland, West Kalimantan, Indonesia, 2015. Plantations certified as sustainable by the RSPO typically emit less greenhouse gas, but the scheme only covers 19% of palm oil produced globally. (Image © Ulet Ifansasti / Greenpeace)

Implementing peatland management systems can also prevent fires and further emissions on existing peatland plantations. Preserving primary and secondary forests – those regenerating largely through natural processes – within oil palm concessions is important, as these forests store more carbon than plantations.

Addressing palm oil mill effluent is another key area. Treating it using anaerobic digestion simultaneously captures and utilises methane, whilst providing an economic return through the generation of biogas. This practice is becoming more widespread among plantation companies, helping to reduce emissions and generate energy.

Managing fertiliser use is another essential for mitigating emissions. Chemical fertilisers, which emit nitrous oxide, a particularly potent greenhouse gas, must be carefully managed. Organic residues, such as palm fronds and empty fruit bunches, can be utilised as alternatives with lower carbon footprints.

Transitioning to renewable energy sources, such as solar power and biomass waste, to power production processes can reduce emissions from energy consumption in both upstream and downstream operations. Optimising energy efficiency and increasing production

Carbon stock value of lands in RSPO's PalmGHG

Land uses	Carbon stock (tonnes of carbon per hectare)
Primary forest	225
Logged forest	87
Coconut	75
Rubber	62
Cocoa under shade	70
Oil palm	≥50
Secondary regrowth	48
Shrub	26
Food crops	9
Grassland	5

Source: "Pilot application of PalmGHG", *Journal of Cleaner Production*, 2014



Spreading fertiliser on oil palms in Papua, Indonesia. Organic residues can be used instead of chemical fertilisers, releasing far less planet-heating gas. (Image: Agus Andrianto / CIFOR, CC BY-NC-ND)

efficiency at mills and refineries can further reduce emissions per unit of production.

How can palm oil producers remove carbon from the atmosphere?

Living plants, through photosynthesis, capture CO₂ from the atmosphere and store it in their tissues, including their leaves, stems and roots. This carbon can also be transferred to the soil through plant roots or plant material. To meet the goals of the Paris Agreement and achieve net-zero emissions will require significant removal of atmospheric carbon. Therefore, nature-based solutions, like forest restoration, improved forest management, agroforestry and soil rehabilitation, will be essential.

However, carbon offsetting, which involves payment for carbon removals elsewhere, has drawn criticism for potentially undermining emissions reduction efforts and lacking transparency. Crucial to ensuring integrity will be frameworks like SBTi, which emphasise the need for clear and transparent communication on carbon removal and offsetting to avoid greenwashing and false accounting.

In the palm oil industry, atmospheric carbon removal is primarily accounted for by the growth of oil palm crops and by forest conservation within concession areas. The RSPO's PalmGHG calculator considers these factors when calculating net emissions.

Under the Greenhouse Gas Protocol and SBTi, carbon removal accounting becomes more complex, requiring separate reporting of emissions and removals, with a focus on removals on land owned or operated by a company rather than through purchased offsets. The upcoming guidance from the protocol will provide further clarity on carbon removal calculations

in the land sector, offering opportunities for the industry to progress towards net zero.

What about palm oil's indirect emissions?

Scope 3 emissions encompass all the indirect emissions throughout a supply chain, including raw material production, logistics, distribution, manufacturing, retail, product use and end-of-life. Reducing Scope 3 requires collaboration among different companies in the supply chain. While it presents significant challenges for emissions accounting, it also presents opportunities for cooperation. Working with suppliers, including independent mills, dealers and smallholders, will be key. However, without traceability, it's difficult to ensure compliance with sustainability policies, let alone to measure emissions and implement reduction measures. Collaboration, investment outreach, engagement and incentives, such as preferential sourcing and fair prices, will be essential for progress.

One area which may offer solutions around Scope 3 is regenerative agriculture. Though it remains relatively new to the palm sector, practices such as intercropping and cover cropping, mulching and biochar application can enhance soil health, increase biodiversity and lock carbon into the soil. These methods can reduce reliance on emissions intensive chemical fertilisers and improve yields.

While implementing regenerative practices into massive commercial plantations may pose challenges, it holds significant potential for smallholder farmers, of which there are an estimated 7 million across the global palm oil industry. These small-scale farmers can benefit from diversified income streams, and make savings due to reduced fertiliser use, as well as potential income from the carbon market.



Transporting oil palm fruit in West Java, Indonesia. Tackling companies' indirect emissions, known as Scope 3 emissions, requires collaborating with independent palm oil mills, dealers and smallholders. (Image © Nathalie Bertrams / Greenpeace)

Dr Reza Azmi, executive director of Malaysian social enterprise Wild Asia, emphasises the importance of collaboration between commercial actors and smallholders to scale up regenerative practices, maximise the climate and biodiversity benefits of oil palm, and improve traceability through investment and incentives. He stresses that there are significant opportunities for the industry and its supply chains to support smallholders in adopting sustainable farming practices.

Reaching net zero

The road to net-zero palm oil will require hard work and cooperation, particularly in five action areas.

- First, **zero deforestation**, meaning upholding no deforestation commitments and policies, including support for forest protection, and restoring degraded lands.

- Second, adopting **sustainable land management practices**, such as responsible planning, agroforestry, and reducing fertiliser use.
- Third, capturing and using **methane** from palm oil mill effluent.
- Fourth, **adopting renewables**, including biomass waste and solar power.
- Fifth, **carbon removals**, via nature-based solutions and set-aside conservation areas.

The palm oil industry has already demonstrated action to reduce deforestation. But to reach its net-zero goals, it will need to build collaboration across the supply chain, as well as with governments, civil society and consumers. Vitally, it will require significant engagement with its suppliers, including independent mills, dealers and smallholders, which will be key to addressing and reducing Scope 3 emissions. 🔄

Japan's palm oil power push is faltering

Local resistance and high prices have slowed the expansion of palm oil power stations

Nithin Coca | April 12, 2023

In 2011, Japan faced an unprecedented energy crisis after the Tohoku earthquake had devastated the country and badly damaged the Fukushima Daiichi Nuclear Power Plant. The country's entire nuclear fleet – 54 plants in total – was shut down for safety reasons. For months, the country faced power shortages and the risk of blackouts.

In response, the government attempted to bring more distributed renewable energy onto the grid by implementing a feed-in-tariff (FiT) in 2012. This made it compulsory for power companies to buy energy from renewable sources at a fixed price. While it increased the penetration of solar significantly, it also included a controversial energy source: palm oil.

The idea was to burn palm oil in power plants to generate electricity, and the policy incentivised operators by providing a fixed rate of 24 yen per kilowatt hour (US\$0.18). At the time, this made it a highly profitable venture, as long as palm oil prices remained below 97 yen (US\$0.80) per kilogram.

In the following years, dozens of projects were planned. Permitted plants totalled 1,700 megawatts (MW) by 2018 – enough to power up to 1.7 million homes for a year. If they all came to fruition, they would potentially require a quintupling of Japan's annual imports of palm oil from Southeast Asia, from 720,000 tons to 3.4 million tons.



Protestors in 2019 call for a stop to a palm oil power plant due to be built in Japan's Miyagi prefecture by HIS Super Power (Image: Mighty Earth)

“There are concerns regarding the decline in biodiversity, greenhouse gas emissions and human rights issues in places where fuels such as palm oil are produced,” said Yuichiro Ishizaki, with the Osaka-based environmental non-profit Hutan.

Currently, only eight plants run by five companies have been built, capable of producing about 140 MW, though they have not been operating at full capacity due to high crude palm oil prices. Some larger planned projects have encountered local opposition, mainly due to concerns about noise and air pollution.

This opposition, coupled with the high palm oil price, and increasing sustainability requirements, could halt Japan's plans to use palm oil in electricity generation, and dent hopes of increasing imports from the top two palm oil producers, Indonesia and Malaysia.

Local pushback

One of the biggest projects in the pipeline was a 66 MW plant in Maizuru, a city of 78,000 people in Kyoto prefecture on the north coast of Japan. It was to be operated by Maizuru Green Initiatives GK, and sponsored by Canadian

Making electricity from palm oil biomass



Biomass is organic matter that can be used to generate electricity.

In the palm oil industry, it usually takes the form of crude palm oil or of two by-products – palm kernel shells and empty fruit bunches.

Millions of tons of kernel shells and empty fruit bunches are produced every year. While these materials can be returned to plantations as a form of organic fertiliser, some palm oil mills have installed units to combust and generate power from them. Mills can also sell this material on to other companies for use in power generation.

In Japan, crude palm oil is considered a form of biomass energy and has been included in the government's feed-in-tariff (FIT) scheme alongside palm kernel shells.

The biomass power plants discussed in this article all run on crude palm oil.

company AMP Energy. But residents were aware of complaints about fumes and noise pollution at a recently constructed palm oil biomass plant in the nearby city of Fukuchiyama, and feared the same would happen in Maizuru.

One resident, Takashi Morimoto, led a campaign involving a website, petition, media engagement and information requests to the regional government. The campaigners even reached out to AMP Energy and one of the companies providing technology for the plant, Hitachi Zosen, to communicate their opposition.

In April 2020, Maizuru Green Initiatives announced its dissolution, a major setback to the planned project and a victory for local environmentalists and residents.

“The withdrawal from the palm oil power generation business in Maizuru city... was successful due to the passionate actions of local residents,” said Ishizaki. “Opposing residents put up red banner-flags in front of their houses. The unity of local residents and the movement’s visibility were a major force.”

Later that year, the Fukuchiyama plant also ceased operation, after residents filed complaints with the Kyoto Prefecture Pollution Review Board for compensation for damages due to air and noise pollution.

Now the focus is on the proposed plant in Ishinomaki, Miyagi prefecture, Tohoku, where an even larger project, run by a company called G-Bio Inc, is

in the planning stage. This 103 MW plant will, according to environmental nonprofit Mighty Earth, consume hundreds of thousands of tons of palm oil a year. It, like the plant in Maizuru, is facing active local opposition.

“It’s located near the centre of a residential area. There is a risk that noise, stench and exhaust gas pollution will affect the entire district,” said Ishizaki. “As 33 fuel transportation trailers will pass through school routes with poor visibility every day, there are concerns regarding traffic accidents and health, and that land and house prices will drop due to reputational damage.”

Local campaigners have, following the model of the Maizuru movement, set



Following the example set in Maizuru, residents in Ishinomaki have put up banners outside their homes to protest the proposed G-Bio palm oil power plant (Image: Mighty Earth)

up an online petition and are engaging Japanese media and G-Bio. Thus far, the company has resisted and is pushing forward with its plans.

Environmental and financial sustainability

The inclusion of palm oil in the FiT scheme is increasingly at odds with Japan's own climate commitments. In 2020, the country announced it would reduce its greenhouse gas emissions by 25% from 2013 levels by 2030, and achieve carbon neutrality by 2050. The government is now requiring Japanese companies to disclose climate risks, and investing US\$155 billion into a decarbonisation fund. There is also a push to make overseas investments more climate-friendly, including by ending financing of coal projects.

For Roger Smith, Japan director at Mighty Earth, continuing to allow electricity generated from palm oil biomass on the grid puts those goals at risk.

“Japan wants to use renewable energy to meet its climate targets and goals, but

if they are using palm oil for electricity, they are actually making global emissions – and their own – worse,” said Smith.

It was already questionable to burn palm oil in 2012, but the science is now

increasingly clear on its large climate impacts due to deforestation and land-use change linked to the crop's cultivation in Southeast Asia, especially where plantations are established on carbon-rich peatlands. An analysis conducted by Friends of the Earth Japan found that, when you factor in land use change, generating electricity from palm oil grown on land cleared of tropical forest results in more greenhouse gas emissions per unit of electricity generated than the average fossil fuel-powered plant, and far more if the palm oil is grown on carbon-rich peatlands.

The efforts by environmental groups like Mighty Earth and Hutan have led to a significant policy change: to address sustainability concerns, from April of this year only palm oil certified by the Roundtable on Sustainable Palm Oil (RSPO) will be eligible under the FiT scheme. That, says Smith, is not enough.

“The RSPO was never designed for biomass electricity. It was designed for consumer products, so it has limitations for how useful it is,” said Smith. “Having standards is better than having no standards, but it does not address the heart of the problem.”



Excavators clear carbon-rich peatland forest in an oil palm concession, Central Kalimantan, Indonesia (Image © Kemal Jufri / Greenpeace)



Subsidies that have gone to biomass could have supported more solar, more geothermal, offshore wind

Roger Smith

Japan director at Mighty Earth

It is unclear if this will even matter. The financial landscape for palm oil has changed significantly since 2012. Then, the price for crude palm oil was around US\$500 per ton. Now, it's around \$900. During last year's food oil price spike, it peaked at more than \$1,500. At this price, palm oil biomass energy, even with subsidies, may not make financial sense. The RSPO requirement will also add to operational costs.

The result is that nearly all of the planned 1,700 MW are at a standstill. According to Sayoko Iinuma, of Japanese environmental non-profit Global Environmental Forum, there are concerns that project operators are trying to push Japan's industrial ministry to include palm oil certified by Indonesia Sustainable Palm Oil (ISPO) and Malaysia Sustainable Palm Oil (MSPO) in the new FiT sustainability requirement. Those two schemes, backed by their respective national governments, are widely considered less stringent than the RSPO.

"If MSPO and ISPO are approved, it will be easier for operators to do business, and it is possible that previously certified FiT operators who have not been able to proceed with their projects will begin to do so," said Iinuma.

Indonesia pushed Japan to accept ISPO certification at an economic meeting in September 2022. One reason may be the desire to find new markets due to requirements by the European


Union limiting the use of palm oil in biofuels, alongside new due diligence import regulations on goods linked to deforestation.

Smith does not see much hope for the Ishinomaki project, or any of the others yet to be cancelled. He wishes that the government had focused on better sustainable energy options rather than allowing so much time and money to

be spent on what he feels is a clearly climate-unfriendly solution.

"The subsidies that have gone to biomass could have supported more solar, more geothermal, offshore wind, all power sources that don't require fuel and are actually coming down in price. While palm oil... is more expensive today than a decade ago," said Smith.

For Ishizaki, it's time for the government to realise its mistake, and remove palm oil from the FiT tariff, put an end to the Ishinomaki project, and stop subsidising the smaller facilities already operating.

"Biomass power generation is no longer recognised as carbon neutral," said Ishizaki. "The FiT programme should be changed, and the operation of palm oil power generation should be reviewed in order to prevent deforestation, biodiversity loss and the further extinction of animals and plants." 



The 70 MW Kagoshima Nanatsujima solar power plant on the south coast of Japan was built in 2013 following the Fukushima nuclear disaster. It is an example of the FiT scheme benefitting Japanese solar. (Image © Christian Åslund / Greenpeace)



A project to create forest corridors between protected areas in Malaysia could offer a lifeline to the endangered Bornean pygmy elephant, of which only around 1,500 remain in the wild (Image: RFF)

Restoring wildlife to oil palm landscapes

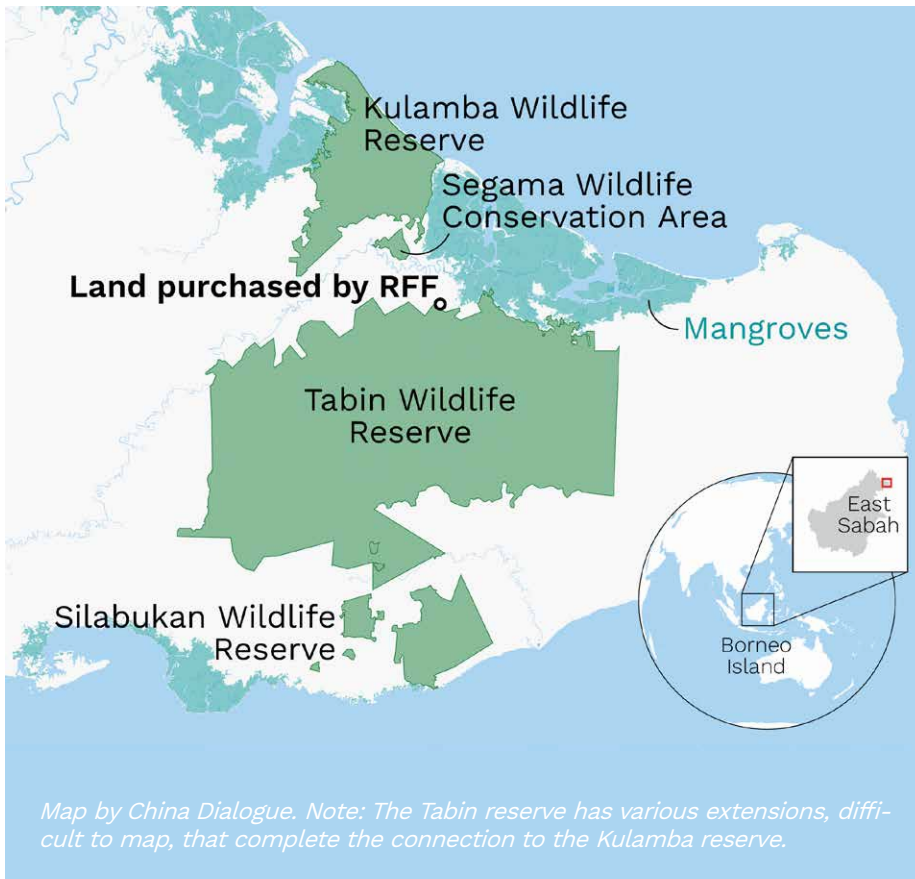
A German NGO is working with partners in Malaysian Borneo to buy up former plantations and reforest them, creating wildlife corridors between protected areas

Louise Hunt | February 22, 2023

East Sabah, in Malaysian Borneo, is a remote and sparsely populated peninsula, still covered in large areas by protected lowland forest and mangrove swamp. It is home to many endemic and endangered species, but their habitats and migration routes have become increasingly fragmented as oil palm plantations have spread.

Between Malaysia's largest wildlife reserve, Tabin, and another reserve, Kulamba, "there are huge plantations, so the reserves are disconnected," explains Annuar Jain, project field manager for conservation NGO the Rhino and Forest Fund (RFF).

Forest connectivity is considered essential for the survival of species such as the Bornean pygmy elephant. About a third of the estimated 1,500 remaining wild individuals reside in east Sabah, along with scattered herds of wild Banteng cattle that



restoring former oil palm plantations. It's expensive, but if you want to prevent the collapse of biodiversity, you have to do this," says RFF executive director, Robert Risch.

The land is not purchased directly, as only native Malaysians can own such land titles. "It was a new procedure that meant making an agreement to compensate the landowner, with Sabah Forestry Department acting as the trustee and the land being donated to the state government," he explains. In total, the NGO has spent 885,000 euros (US\$950,000) to buy the 65 ha, financed mainly by its partners Zoo Leipzig and Borneo Orangutan Survival Germany, along with private charitable donations. This land is now officially gazetted as Tabin Wildlife Reserve extensions and designated as totally protected area (TPA). Without this intervention, it would have remained degraded and fragmented by the damaging effects of oil palm conversion.

Restoration of the first pilot site began in February 2020 and a recognisable

number approximately 400 in Borneo, according to RFF. "We have already lost the rhino. We need to connect the fragmented forests for the wildlife to move and survive," says Jain.

Just over a decade ago, RFF, headquartered in Germany, set out to restore a wildlife corridor between Tabin and Kulamba by lobbying the Sabah Forestry Department to designate and protect approximately 2,300 hectares (ha) of previously unprotected forest land. To complete the corridor, RFF acquired a key 65 ha area that lay between protected forest. This involved buying four parcels of land between 2017-19, the majority of which was still productive oil palm plantation belonging to a local company and a smallholder.

This was a pioneering step for a small organisation. "As far as I know, we are the only NGO to be purchasing and



A 1-hectare lake, pictured here with the water almost white, created by RFF on a former oil palm plantation to encourage wildlife to return. Beneath the surrounding oil palms, tens of thousands of native tree seedlings have been planted. The palms will be gradually removed as the trees establish. (Image: RFF)

forest is beginning to form. “Even after five years it doesn’t look like an old oil palm plantation anymore. After 10 years you will have a lot of tall trees, closed canopy, recovered soil and a real forest link,” says Risch.

With the aim of reconnecting more crucial areas of biodiversity in east Sabah, RFF is now collaborating with the Sabah Forestry Department (SFD) on efforts to reclaim and restore state land encroached for oil palm. Key representatives in this partnership include Dr Robert Ong, SFD deputy chief conservator of forests and head of the Forest Research Centre in Sepilok, SFD head Datuk Frederik Kugan and Datuk Sam Mannan, who was chief conservator at the start of RFF’s project. Sabah Wildlife Department is also a supportive partner, adds Risch.

Restoration expansion

RFF has recently also begun working in the Silabukan forest reserve, south of Tabin.

“We identified Silabukan as a key area, it’s more than 10,000 ha of species-rich forest close to Tabin, and it’s possible to connect Silabukan to Tabin,” says Risch.

So far, RFF has replanted 63 ha of an illegal oil palm plantation and identified another potential 400 ha to restore. Much of the protected state land can be restored without going through the costly process of acquiring oil palm land, as expansion in these protected areas is illegal.

In Silabukan, RFF is working closely with the forestry department to alert the authorities to oil palm encroachment. For example, in August 2021, RFF’s staff spotted new oil palms inside Silabukan’s protected area. “We reported it to the forestry department and the next day they came to destroy the freshly planted trees,” says Risch. “A few weeks later the area was under restoration, and we planted native trees there.”



Members of the RFF team clear grass around seedlings on a former boundary road between Tabin Wildlife Reserve and the plantation that RFF bought. The area is maintained mainly as a pasture for wild animals. The seedlings will eventually grow into trees, creating a canopy bridge between the two areas. (Image: RFF)



Camera trap footage of the birth of a Bornean pygmy elephant, Tabin Wildlife Reserve, 2016 (Image: RFF)

“We could stop these activities because of our presence,” he adds.

Sabah is the poorest state in Malaysia, with a quarter of the population living below the poverty line. The forestry department is understaffed, so lacks the resources and capacity to patrol and enforce forestry regulations in the vast area. RFF, which is not locally registered, is providing a structural solution by funding a team of five local staff who work under the forestry department within the Forest Research Centre in Sepilok. “But they only work for our common projects with the forestry department,” explains Risch.

In this alliance, forestry department representatives are involved in RFF’s negotiations with oil palm companies to gazette land. “This facilitates a lot. We also need them to make sure these areas that we buy will be gazetted as totally protected areas,” he adds.

Project field manager Annuar Jain tells China Dialogue: “We have the advantage that because I also represent the forestry department it’s government-to-government, so it’s easier for us to talk to each other and make an agreement.”

Conservation NGOs such as RFF and WWF are able to work in Sabah because there is a particular openness and political will to cooperate, believes Risch. “This is quite significant in Sabah, compared to Indonesia or even other states in Malaysia. It’s a quite comfortable situation because there are people in the forestry department who really want to conserve biodiversity in the forest and this is quite outstanding,” he says.

Forest goals

Driving this political will is Sabah’s commitment, enshrined in its forestry policy, to extend totally protected areas to 30% or 2.2 million ha by 2025. “The policy to protect a big part of Sabah’s forests is a stable commitment and is exceptional worldwide. Now on a UN level they are promoting 30%, but for

Sabah this process started many years ago,” says Risch.

The state is on track to meet its target, says SFD’s Robert Ong.

“Legislated protected areas account for about 26%. Including other non-legislated conservation areas brings the total to 28%. If we include our mangrove forest, we are already at 30%... I’m quite confident we will be able to achieve a



***It’s expensive,
but if you want
to prevent the
collapse of
biodiversity, you
have to do this***

Robert Risch
Rhino and Forest Fund

protected area network exceeding 30%, perhaps attaining around 34–35%,” he said, adding that the department is proposing a few new protected areas, totalling about 165,000 ha. With much of Sabah’s permanent forest estate now degraded, restoration “is a key activity in forestry in Sabah today,” added Ong.

Asked whether this would mean no more deforestation for oil palm, he responded: “Oil palm expansion has virtually stopped. Any planting of oil

palm will likely be replanting activities, or conversion of other crops to oil palm. This does not include the clearing of native forests.”

Risch agrees that the main oil palm extending era is over “because there’s not much space left”. However, in Sabah there are still a few hundred thousand hectares of state and private land with forest cover potentially left to be converted. “There’s still active clearing going on here and there but on smaller scales,” he says, adding that he witnessed signs of clearing for oil palm during a field trip in November.

This opportunistic clearing tends to be by individuals or smallholders and is frequently done illegally. “That’s why it’s important to have a project on the ground taking care of an area. Otherwise, they just sneak in and start clearing,” he adds.

Model for growth?

Although RFF’s reforestation projects in east Sabah are small in scale, one of the ambitions for the project is to provide a model for how to convert oil palm back to natural forest.

“We want to motivate and inspire others to do the same. We want to spread the know-how. We have already learnt a lot about what to do and what to avoid. We will regard this project as a blueprint for the future that can be used by other NGOs and oil palm companies going green,” he adds.

One key learning is not to fell oil palm trees initially, but to plant a diverse range of native trees in the shade of the existing canopy while seedlings establish. “From our experience, it’s very hard to bring the forest back when it’s just open area without any shade because there is competing vegetation,” he says.

A good place to start restoration work is within riparian buffer zones, which already belong to the state. In Sabah, there should be a minimum 20-metre



Training local people how to plant seedlings on the former oil palm plantation. At least 36 native species of tree have been planted. (Image: RFF)

buffer zone of forested area on either side of the riverbanks to prevent erosion and pollution, “but all along the rivers, the banks are planted with oil palm wherever possible”, says Risch.

The NGO has identified about 200 km of degraded riverbanks in east Sabah that could be gazetted by law and restored if sufficient funding was available, including parts of the Segama River that connect Tabin with the Heart of Borneo conservation region, he adds.

The importance of riparian buffer zones in preventing biodiversity decline in tropical landscapes dominated by oil palm was highlighted in research published last May.

“Buffer width was the main predictor of species numbers and wildlife abundance,” according to the paper published in the journal *Frontiers in Ecology and the Environment*.



Tree planters measure the distance between seedlings; a ring of five is planted in a circle around every fourth oil palm (Image: RFF)

“The bigger the buffer zone, the better,” says Dr Matthew Struebig, a conservation scientist at the University of Kent’s Durrell Institute of Conservation and Ecology, and one of the study’s contributing authors.

“Our research showed that doubling the buffer zone width from 20 to 40 metres (on both banks) has a disproportionate gain for species, but it can’t protect them all. That’s why you need wider areas in some places,” he says, adding that sunbears and orangutans “do use these riparian areas, not necessarily living in these areas, but they do use them to get from A to B”.

Currently, the policies for wildlife corridors and riparian buffer zones are separate, and the rules on buffer zones “can be quite confusing and open to misinterpretation”, says Struebig, who was part of a consultation last year that included Sabah agencies on riparian buffer zone management.

At the end of the consultation, there was strong motivation to widen the




Our research showed that doubling the buffer zone width from 20 to 40 metres (on both banks) has a disproportionate gain for species, but it can’t protect them all. That’s why you need wider areas in some places

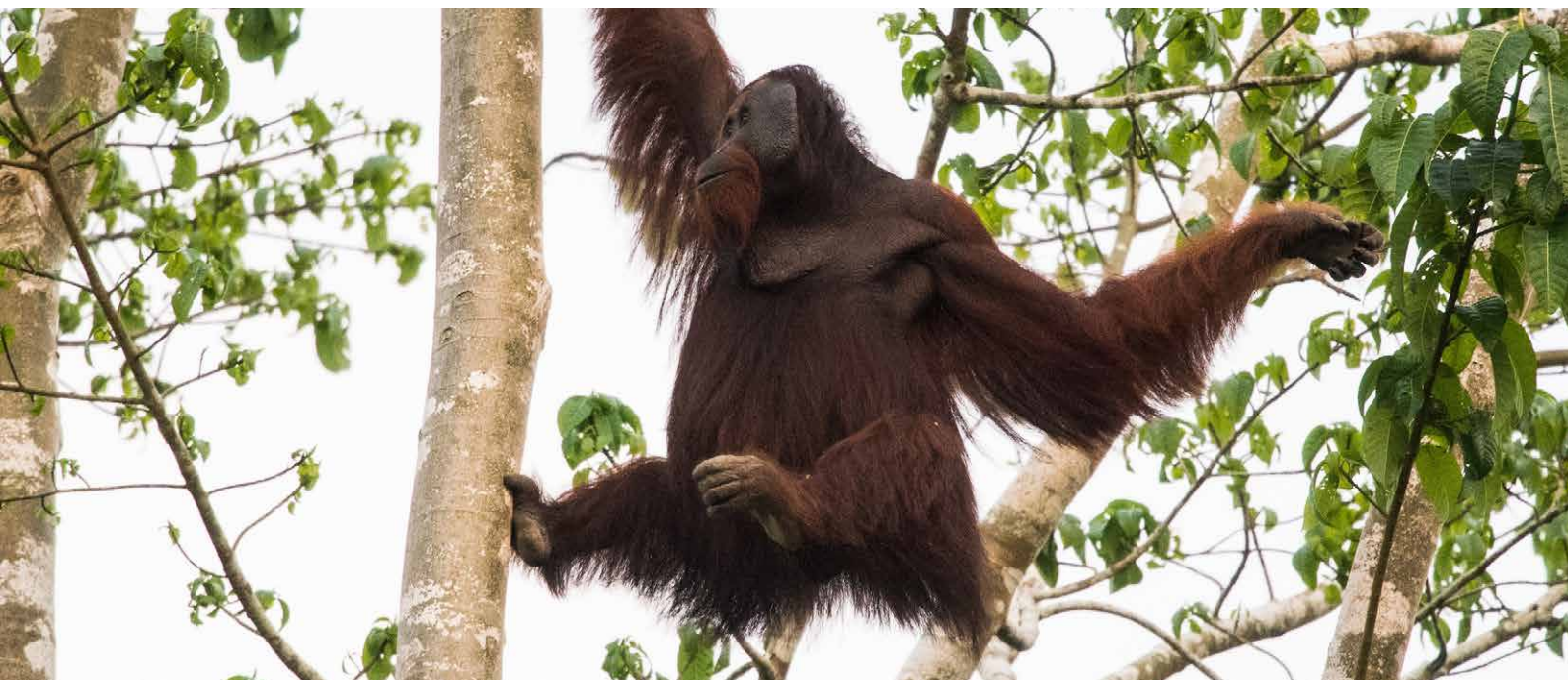
Robert Risch
Rhino and Forest Fund

minimum buffer zone required, but also recognition that there is a need for larger wildlife corridors, he says.

This would marry the conservation efforts of practitioners, such as RFF, other NGOs, and oil palm companies, with a formal recognition that there would be a subset of usually larger rivers which would need to have much wider areas set aside for wildlife and in places these would need to be restored.

“Many of the decision-makers we worked with support widening, but they want to see evidence of the importance to wildlife. There needs to be justification to restore for connectivity. It’s trying to bring mostly ad hoc connectivity thinking by NGOs, into accepted area targets and make it more systematic and embedded in the right legislation,” Struebig adds.

This shift could fit well with RFF’s ambitions. “The big plan is to connect all of these lowland areas in east Sabah. If we can do that, we can preserve nearly all the lowland species,” says Risch. 



*An orangutan in the wild near Kinabatangan River in Sabah, Malaysia
(Image © Claire Donner / Greenpeace)*

Regrowing Borneo's precious rainforests

A local conservationist talks about restoring the once-rich ecosystem of the lower Kinabatangan River, damaged by decades of logging and oil palm planting

Chen Yih Wen | March 30, 2023

The Kinabatangan is the longest river in the Malaysian state of Sabah. Running for 560km through diverse habitats on the island of Borneo, it is home to thousands of species of plants and animals, including the endangered Bornean orangutan and pygmy elephant.

For the past few decades, however, this rich ecosystem has been under threat as the forests surrounding the river have been cleared for timber and oil palm plantations. The floodplains of the Kinabatangan's lower reaches have suffered some of the worst degradation – the area has lost as much as three-quarters of its native forest since the 1980s.

Efforts are now underway to reverse the damage, by conserving what remains of the rainforest and also through restoration. One such project is Regrow Borneo, a partnership between the UK's Cardiff University, the Danau Girang Field Centre in the Lower Kinabatangan Wildlife Sanctuary, and community cooperative KOPEL. Working together with local people, the project is planting native trees in degraded areas of riverine and swamp forest. It aims to not only enhance biodiversity by linking up fragmented habitats, but also to help mitigate climate change by removing CO2 from the atmosphere.

Keen to learn more about Regrow Borneo, I met project manager Amaziasizamoria Jumail, better known as Maz. One of the most important parts of her work is measuring how much



Filmed and edited by Chen Yih Wen
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Scan the QR code to watch on your phone or click the screenshot to watch on computer

carbon is being captured by the project's newly planted trees. Maz and her team measure trees and collect grass, soil and root samples from their five reforested plots. Initial results from this work have been positive – two sites removed an average of six to seven tonnes of carbon per hectare over the course of a year.


During my five days with the team, I followed Maz and her fellow researchers as they carried out this and other fieldwork. The conditions were hot and humid, and we had to trek through dense forest and tall grasses to reach some of the sites. Twice Maz had to “rescue” me when my shirt got caught on thorns, though there was nothing she could do to stop the swarming mosquitos while I tried to steady my camera.

Back at the Danau Girang Field Centre, electricity was only available for a few hours a day. We spent the nights in pitch black listening to the sounds of the forest outside.

Despite these arduous conditions, the sight of the sun glistening through the giant trees every morning made it all seem worthwhile. Then there was the

wildlife living around the centre: the proboscis monkeys, the hornbills. And then, of course, there was the majestic Kinabatangan River itself. Travelling to the research sites every day by boat was a truly amazing experience.

Although deforestation remains a threat to the ecosystem of the Kinabatangan basin, projects like Regrow Borneo are a beacon of hope. Maz and her team have so far rehabilitated about 18 hectares of forest, and they aim to restore an additional 12 hectares each year going forward. In addition, by working with community group KOPEL, the project is demonstrating how scientific research and expertise can align with the knowledge and experience of local people. It also provides local people with an alternative source of income in an area dominated by oil palm agriculture.

For Maz herself, the local focus of Regrow Borneo is especially significant. Born and raised in Sabah and now studying for a PhD as part of her work with the project, she aspires to be part of a new generation of local scientists, dedicated to restoring the precious ecosystem of the local area. 

Smallholders weigh their oil palm fruit before selling it to a middleman in Aceh, Indonesia
(Image: Evan Bowen-Jones / Alamy)

Smallholders are key to EU's deforestation law

The final law must make sure small-scale farmers earn the full value of producing sustainable palm oil

Kyle Saukas, Aida Greenbury

| March 8, 2023

The soft commodities market is on the edge of a revolution with the impending implementation of the EU Deforestation Law. Due to come into effect later this year, the law aims to prevent commodities grown on deforested land being imported into Europe.

It will cover cattle, soy, palm oil, coffee, cocoa, timber and rubber – as well as derived products like beef and chocolate. US and UK variants of the law are also under consideration.

The key to achieving the EU's goal of ending its contribution to deforestation for commodities lies in how the bloc incorporates smallholders' needs in the final design of the law.

Supporters of the EU law say it will secure major victories on deforestation,

climate change and biodiversity loss, and may provide smallholder farmers with better prices for their palm oil. But opponents claim it is too burdensome for smallholders and could harm them economically.

The importance of smallholders

Since the first oil palms were brought to Indonesia in 1848 and plantations developed in 1911, the Indonesian industry has remained under the tight control of colonialists, large companies or the federal government.

In 2021, the estimated total productive area of oil palm plantation

Indonesia's oil palm plantations by concession type (2021)

Million hectares

Private estates

7.26

Smallholder plantations

4.83

State plantations

0.51

Source: [Katadata Media Network](#) • Figures approximate

areas reached 12.59 million hectares, with the majority (57%) owned by large private plantations. Meanwhile, independent smallholder plantations covered over 4.8 million hectares and provided nearly 40% of Indonesia's palm oil.

Despite their share in owning plantations and producing palm oil, smallholders have historically been excluded from deciding their own fate. Land allocations for plantations have often been decided by the government and have so far favoured large corporations. This situation has allowed the more powerful interests to use persuasion or violence against Indigenous and local communities, and even to operate plantations within protected forests.

Investigations by Rainforest Action Network show that large-scale commercial oil palm plantations are still expanding and the majority have no commitment to end their role in deforestation. Expansion continues via new concessions or the creation of new enterprises, and fruit from these operations is still making its way into the supply chain of global multinationals.

Often, the best course of action for Indonesians has been to farm oil palm themselves, which improves their economic standing and protects against encroachment from large companies. However, promises of economic gain made by government or plantation firms often go unfulfilled, and oil palm smallholders are further impoverished by unfair treatment. Analysis by Chain Reaction Research published in 2021 showed that smallholders generate nearly US\$17 billion in value across the global palm oil supply chain – 6% of the total – but their share in profits is close to zero.

The new EU law could change this dynamic by providing an opportunity for smallholders to help shape policy so as to support their wellbeing and reduce nature loss. A few smallholder

Segregated palm oil

Under a segregated model, palm oil (or any other commodity) is separated from other volumes at all stages of the supply chain. The goal is for all actors in the supply chain, especially the end user, to be able to trace the supply back to its original location or producer.

organisations have recognised this and have already shared statements of support for the EU law, generating some success in influencing the EU parliament to adopt stronger requirements.

These include references to promoting a living income for smallholders, securing sufficient resources for smallholders to comply with the requirements of the law, and establishing credible traceability systems that empower smallholders to collect sustainability premiums. In addition, the current version of the legislation requires due diligence systems to be designed to facilitate smallholder producer participation and establish segregated supply chains that enable smallholder access to the market.

But these actions likely aren't enough to ensure that smallholders can feasibly participate and earn the full value of palm oil they produce sustainably. Smallholder farmers will need support from all levels of government and companies in the palm oil value chain to make this work. Also needed is financial support from import country governments and the private sector to finance the investments needed for smallholders to transition to sustainable practices and learn to participate in these due diligence systems. Without this support, smallholders may face challenges selling into the EU and other markets.

Ongoing government aid programmes and private sector efforts to support

Indonesia's smallholder farmers exist, but these must recognise that the EU law provides a new opportunity to support smallholders' transition to sustainable palm oil production. Fortunately, the foundations for assisting smallholders in becoming compliant with the EU law have already been laid.

The Indonesian Oil Palm Smallholder Union (SPKS) has worked closely with the High Carbon Stock Approach (HCSA) in the development of an Incentives and Benefit Mechanism for Smallholders in Indonesia. The mechanism drafted by SPKS is designed to act as a "flow-through" platform to provide funds to help smallholders farm more sustainably with agreement and input from local communities. SPKS is currently working to finalise the mechanism trials together with HCSA and other local experts.

If efforts like SPKS's are taken seriously by EU lawmakers, then the EU law's supporters could find their greatest allies in making sure the new regulation is successful among the smallholder community by capitalising on opportunities to provide additional support through policies and finance.

Despite what some claim, the EU law isn't a threat to Indonesia's palm oil smallholders. It, and its US and UK variants, can benefit smallholder farmers if a network to support their fair participation in the evolving market is established. Designing additional policies and securing finance that puts smallholders in a leading role is the best way to ensure everyone wins. 🌱

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