LAND MATRIX

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IMPLEMENTING CARBON OFFSET PROJECTS IN INDONESIA'S RAINFORESTS: A WIN-WIN FOR CLIMATE AND LOCAL COMMUNITIES?

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WHAT IS THE LAND MATRIX?

The Land Matrix is an independent global land monitoring initiative that promotes transparency and accountability in evidence-based decisions over large-scale land acquisitions (LSLAs) in low- and middle-income countries across the world.

Deal narratives are investigations of specific LSLAs by our regional and global partners that provide an in-depth and detailed analysis of single deals in addition to our global database. This deal narrative focuses on Land Matrix deals 10906 and 10888. By making this information available, the Land Matrix aims to support broad engagement and information exchange, facilitating the continuous improvement of the data. The information on the deals is based on both secondary research and in-depth field research in the region involving the relevant stakeholders.

Find out more at www.landmatrix.org.

Although land-intensive investment projects have shaped economies and societies for centuries in low- and middle-income countries (LMICs), renewed global attention surfaced in the 2000s due to surges in investments in agriculture. Placing even more pressure on land in these regions over the last two decades, global climate change mitigation efforts have seen a deluge of land-intensive projects — including those for reforestation/afforestation and avoided-deforestation (often subsumed under the term "nature-based solutions") — drive up land acquisitions financed through the voluntary carbon market (VCM) across the globe. While these projects undoubtedly have the potential to deliver climate benefits and create economic opportunities for local communities, it often remains unclear whether they live up to their promises in practice.

State agencies and non-governmental organisations (NGOs) have a long history of implementing conservation and reforestation projects in LMICs, with many in the VCM following similar models focusing on local communities as integral partners to foster ownership and regional development. However, the financial incentives of the VCM have also set off a trend of private sector actors who establish large-scale carbon offset projects on land acquired through concessions, leases, or outright purchases – accompanied by substantial new risks for an inclusive and equitable climate transition, particularly for communities in the Global South with limited recognition of their land rights and little leverage to ensure adequate consultation and benefit-sharing.

Tracking emerging pressure on land from climate action and the increasing importance of the VCM, the Land Matrix Initiative has already registered nine million hectares (ha) of concluded land acquisitions for carbon offsetting, with multiple hotspots across the globe.[1] Naturally, the associated risks are greatest in the countries in which these deals are highly concentrated, such as Indonesia, the top hotspot, where many large-scale projects access land through the country's well-established concession system. This deal narrative, based on research supported by the Lincoln Institute for Land Policy, investigates two land deals (10906 and 10888) that are emblematic of the land-intensive carbon offsetting system in Indonesia's forest sector.

GOING FOR POLE POSITION: LARGE-SCALE LAND ACQUISITION FOR CARBON OFFSETTING IN INDONESIA

Upon reviewing the most important carbon offset registries[2], we found 20 large-scale land-based carbon offset projects in Indonesia, covering just over one million ha in total (see Figure 1). This means that around 0.5% of Indonesia's total land area is already set aside for carbon offsetting. The projects are listed in only two registries: Verra's Verified Carbon Standard (VCS), which dominates with about one million ha; and Plan Vivo, which covers only 30,000 ha. While Plan Vivo's projects were registered between 2011 and 2016, the larger projects in the VCS were only registered in 2020 and 2021.

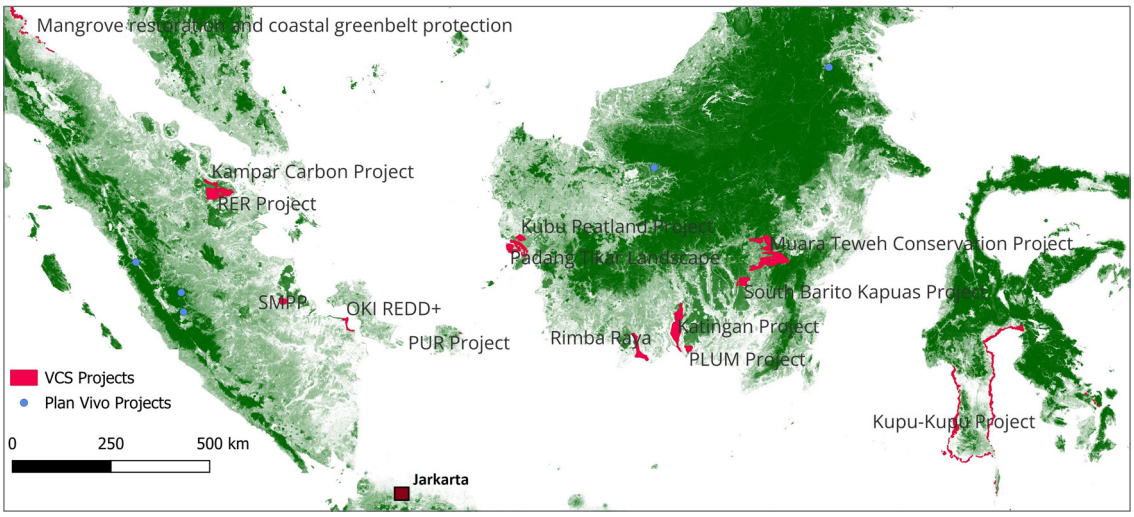

Figure 1. Map of selected carbon offset projects.
Notes: Map shows carbon projects on the islands of Sumatra, Borneo, and Sulawesi. Base layer is tree canopy height in 2020 from GLAD.

1 See https://landmatrix.org/. Filters: Carbon sequestration/REDD was selected (filter section: intention of investment). Outright purchases, leases, or concessions were selected (filter section: nature of the deal).
2 These included ARC, Cercarbono, Global Carbon Council, CAR, Gold Standard, Isometric, Plan Vivo Foundation, Puro.earth, Riverse, Social Carbon, Wilder Carbon, and VCS (as of February 2025).

In addition, the country has been an early adopter of the REDD+ (Reducing Emissions from Deforestation and Forest Degradation), a climate change mitigation approach developed by the United Nations Framework Convention on Climate Change (UNFCCC), starting with the Ulu Masen, which was the first REDD project to be validated under the Climate Community and Biodiversity Standards globally. This pattern is also evident in the VCM data (see Figure 1). For example, pure avoided deforestation projects (using REDD+ methodologies) or projects mixing avoided deforestation methodologies, such as wetland restoration, cover 674,000 ha, more than double the size of other projects (370,000 ha) that include afforestation and reforestation, wetland restoration, and improved forest management.

However, many of the newer project applications no longer rely on REDD+ methodologies, instead focusing on afforestation/reforestation or wetland restoration. This shift appears to be influenced by market trends, as prices for many REDD+ credits have dropped significantly – from over $10 at the beginning of 2023 to around $5 by the end of 2024 – as a result of severe allegations concerning the methodological integrity of REDD+ projects.[3] Nevertheless, even though market demand has declined in general, projects currently under application cover 650,000 ha (compared to just 400,000 ha covered by registered projects), suggesting an increasing supply of carbon credits in the future.

These large land areas listed in registries have primarily been accessed through concessions (see Figure 2), which account for nearly half of the total area designated for the reviewed carbon offset projects, totalling 730,000 ha (with 474,000 ha acquired after the year 2000). A small fraction (30,000 ha) relies on collaborations with communities, while the remainder is either based on state land or a mix of land ownership types. Across Asia (excluding China), the Land Matrix Initiative has only recorded one million ha of large-scale land acquisitions (LSLAs) so far (including concessions) since 2000 that can be linked to carbon offsetting, of which those in Indonesia account for more than half alone. However, given these sizes and the historical criticism LSLAs for agriculture in Indonesia have received for their negative impacts on local communities,[4] the need for research that takes a closer look at carbon offset projects that also involve the acquisition of large tracts of land is crucial.

Figure 2. Aggregated sizes of carbon offset projects by different characteristics

Given the sizes and historical criticism LSLAs for agriculture in Indonesia have received for their negative impacts on local communities, the need for research that takes a closer look at carbon offset projects that also involve the acquisition of large tracts of land is crucial.

3 *VCM 2024 Review & Emerging Trends for 2025 (https://alliedoffsets.com/reports/) [accessed on 01.04.2025]*
4 *https://landmatrix.org/resources/land-matrix-analytical-report-iii-taking-stock-of-the-global-land-rush/ [accessed on 02.04.2025]*

Sign for mangrove sapling from PT TAP (in Japanese) (© API)

On paper, both projects are similar in size, located in the same province, and involve comparable land-based mitigation activities. However, they differ significantly in terms of community engagement and benefit sharing.

THE SUMATERA MERANG PEATLAND PROJECT AND OKI REDD+: SIMILAR DESIGN, DIVERGENT IMPLEMENTATION

For this deal narrative, two concession-based carbon offset projects were selected for in-depth research (see Figure 1). The first, the Sumatera Merang Peatland Project (SMPP), aims to restore 22,922 ha within the Merang biodiversity zone – one of South Sumatra's largest and deepest peat swamp ecosystems – which has been degraded through the historical impacts of logging, canal construction, and fires. Restoration activities include reforestation, rewetting the peatland, fire prevention, and forest monitoring. In addition, the project aims to prevent a significant area of the peatland from being converted into fast-growing Acacia plantations for the pulp and paper industry (VM0007 Methodology). The SMPP was officially launched in 2016 and registered with Verra's VCS in 2020. The ground operations are run by PT Global Alam Lestari (PT GAL), an Indonesian company that also holds the concession license (IUP PAN/RAP) for the utilisation of carbon sequestration and/or sinks in production forests. PT GAL collaborates with Forest Carbon, a consulting firm based in Jakarta, to manage the project's capital, which is funded by Athelia Climate Fund (Mirova), based in Luxembourg. In 2017, the fund invested EUR 5.1 million in the project, highlighting the financial sector's growing interest in market-driven conservation solutions. Additional stakeholders included in the project description are traditional fishermen and farmers from the villages of Muara Muang and Kepayang.

The second project, OKI-REDD+, is a forest conservation initiative located in the Ogan Komering Ilir (OKI) Regency of South Sumatra. It was launched in August 2016, following the acquisition of a 30-year concession of 23,500 ha in 2013 (IUPJL-HL) and is well advanced in the Verra's VCS registration process. With approximately 65% of the area deforested and degraded due to prior illegal logging, development of aquaculture ponds, and forest fires, the project activities include field patrol to prevent illegal deforestation and fires, tree planting activities in bare and degraded areas, removal of earth and sand to restore hydrology, and introduction of silvofishery practices on the sites of former aquaculture ponds (VM0007, AR-AM0014, and AR-ACM0003 Methodology). The Japan Asia Group Ltd. (JAG), a Japanese holding company, co-developed the OKI REDD+ project with YL Forest Co., Ltd. (YLF), an environmental conservation specialist. JAG acts as an investor and manages project funding, while YLF is responsible for project development, operations, and overall management. PT. Tiara Asia Permai (PT. TAP), an Indonesian company that is most closely associated with the project among the stakeholders, holds the business license and implements project activities in coordination with YLF. Another entity involved with the project is Mitsui O.S.K. Lines, Ltd. (MOL), a Japanese shipping company. In 2022, MOL invested in the project to offset its emissions and achieve its net-zero corporate target. As with the SMPP, the OKI REDD+ project also identifies several other key stakeholders in its project description, including residents of Sungai Batang and Sungai Sugihan villages, both located within 10 kilometres of the project boundaries.

On paper, both projects are similar in size, located in the same province, and involve comparable land-based mitigation activities. However, as we argue in the following section, the two projects differ significantly in terms of community engagement and benefit sharing. Our assessment is based on interviews with stakeholders identified by the projects, including local officials, NGOs, company workers, and around 20 households in the two villages affected by the carbon offset projects. The first village, Kepayang, is located near the SMPP and has around 2,000 residents – most of which work in nearby commercial plantations, while some also raise livestock for their livelihoods. The second village, Sungai Batang, is located in the buffer zone of the OKI REDD+ Project, with approximately 1,300 inhabitants who primarily rely on fishing.

SIMILAR PROJECTS, DIFFERENT COMMUNITY BENEFITS

The interviews, conducted in January 2025, reveal that although both projects share common issues, they also exhibit major differences. The SMPP, for example, has demonstrated a more inclusive and community-oriented approach compared to the OKI REDD+ project. For instance, the residents in nearby Kepayang have received a range of tangible benefits, including infrastructure development such as rainwater collection systems, educational support through scholarships, health and food assistance, and donations to support village events on religious and national holidays. While not the majority, several households reported that the project had also improved their access to essential services, and nearly a quarter of the households interviewed had participated in non-work-related training. This positive view is also supported by local officials.

In contrast, in Sungai Batang, only one person reported receiving any benefits from the OKI REDD+ project, and community engagement has been minimal. Indeed, the benefits from the project are primarily ecological, such as mangrove conservation to prevent coastal erosion and enhance biodiversity. Despite the significance of these environmental benefits being noted by the local fishermen who rely on thriving fish and mangrove crab populations for their livelihoods, there are few, if any, other direct social or economic gains for the rest of the villagers. Infrastructure improvements in Sungai Batang, such as road upgrades and mosque renovations, have been, for instance, provided by other concession-holding companies operating in the area and not by PT. TAP. Moreover, recruitment under the PT. TAP-managed concession is based on kinship ties, further excluding the broader community.

In terms of general awareness, respondents in both villages showed limited understanding of carbon offset initiatives. Most were unable to distinguish between a standard conservation project and one specifically tied to carbon offsetting. In Sungai Batang, for example, respondents commonly referred to the OKI REDD+ initiative simply as the 'mangrove project', focusing on its ecological aspects. No respondent mentioned carbon offsetting or its potential benefits. This lack of clarity around the nature and purpose of the project may influence how community members perceive its value, potentially contributing to the sense that they are not entitled to receive any major benefits.

MEETING GLOBAL FRAMEWORK STANDARDS ON PAPER, BUT NOT IN PRACTICE

While the type and degree of benefit sharing is different for both villages, projects also share some common features when comparing the documented interviews against the applicable offset standards, project descriptions, and global frameworks that are of relevance for land-intensive carbon offset projects. For example, both the SMPP and OKI REDD+ project assert compliance with two sections in their respective project descriptions for the applicable carbon offset standard, the VCS (v. 4.7).[5] These sections, Stakeholder Engagement (3.18) and Safeguards (3.19), highlight the importance of community involvement and risk communication in carbon offset projects. Specifically, the Stakeholder Engagement section requires that project proponents consult stakeholders during project design and implementation, including Free, Prior, and Informed Consent (FPIC) before project initiation, stating that "the project proponent shall demonstrate to the validation/verification body what action it has taken in respect of the stakeholder consultation as part of validation, and in respect of ongoing communications as part of each subsequent verification." The Safeguards section, on the other hand, requires that any identified risks to stakeholders and the environment are communicated effectively.

In the case of the OKI REDD+ initiative, extensive consultations with local stakeholders were reported by the project, including those in Sungai Batang, starting in 2015, with a commitment to FPIC upheld through outreach

The fishing village of Sungai Batang (© API)

5 https://verra.org/programs/verified-carbon-standard/ *[accessed on 15.03.2025]*

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activities and the establishment of a grievance redress mechanism. Similarly, SMPP reports formal consultations and informational meetings since 2016, with plans for ongoing engagement. It also claims that grievance procedures were effectively communicated in Kepayang and that relevant information and documents were made accessible at a designated location within the project area. Both projects also reportedly established either formal or semi-formal office sites near the project area.

However, interviews suggest a gap between intention and practice. For instance, when respondents were asked where they could obtain information about the projects, most indicated they did not know and also did not refer to these offices as sources of information. The findings from the interviews also suggest a partial disconnect between the claims and the experiences of local stakeholders in both projects with respect to consultation. In relation to FPIC, when asked whether the project sought consent from villagers before starting or informed them about potential negative impacts, the majority answered no. Likewise, most respondents in both villages said they did not participate in consultations after the projects started. Finally, the interviews indicate a general lack of awareness in both villages on how to navigate grievance procedures. For example, consultation and communication regarding the OKI REDD+ grievance redress mechanism, as mentioned in the carbon offset standards and project descriptions, appear to have fallen short, as evidenced by the majority of respondents in Sungai Batang, who expressed unawareness when asked about this topic. Similarly, although a higher number of residents in Kepayang indicated awareness of how to file grievances related to the project, their responses typically referred to reporting issues directly to the village head rather than using the formal grievance mechanisms established by the company.

It is important to note that both carbon projects, while citing adherence to FPIC and stakeholder engagement processes, fall short in terms of meaningful, ongoing dialogue with affected communities. This is illustrated, for instance, in the narrow interpretation of FPIC, which was conducted as a one-time information dissemination activity, reaching often only a small fraction of the village, rather than a continuous, iterative engagement process. According to the Association of Southeast Asian Nations (ASEAN) Regional FPIC Handbook, which was adopted by ASEAN ministers in 2024, meaningful consultation requires that affected communities not only be informed but are able to influence project decisions throughout the project lifecycle. This includes ensuring clarity about tenure rights, as outlined in the Voluntary Guidelines on the Responsible Governance of Tenure (VGGT) Article 7.3, and upholding transparency and accountability mechanisms.

This issue is not merely procedural. Failing to recognise customary and informal land rights, but also other claims to resources – especially in sparsely populated yet communally used areas – risks marginalising voices that may not be represented by official village leadership alone. The more inclusive approach in Kepayang shows how these challenges can be partially mitigated, but it remains a piecemeal success, and not a systematic outcome of the FPIC framework itself. Even though the interviews indicate that there are currently no significant risks or conflicts that would necessitate immediate action by the project developers under the Safeguards (3.19) section and land conflicts appear minimal, with local households, officials, and NGOs reporting no major disputes, such outcomes cannot be assumed for all carbon projects. Nor can it be guaranteed that they will be sustained throughout a project's lifespan. Lastly, the importance of robust FPIC and consultation processes cannot be viewed solely through the lens of conflict mitigation.

INCREASED MONITORING OF CARBON OFFSET PROJECTS IS NON-NEGOTIABLE

Carbon offset projects in Indonesia's forests are no longer marginal initiatives. Now spanning over one million hectares and predominantly implemented through large-scale concessions rather than community ownership, a deeper understanding of their interactions with adjacent local communities is essential to assess their contribution to a just climate transition. It is good news that neither community reported any immediate adverse impacts, interviews suggest, however that their overall perception of projects were largely shaped by the provision of infrastructure that improved access to essential services, as well as the role of hired workers in the community, such as with SMPP, where the hiring of well-integrated local community members facilitated information exchange. In contrast, the OKI REDD+ project's hiring process was seen as exclusive, and the project showed clear limitations in terms of engagement and information-sharing. In addition, it was largely perceived as a conservation initiative that delivered environmental benefits but remained otherwise disconnected from the local community. Moreover, transparency around financial flows and benefit-sharing mechanisms is lacking, with neither community having clear insights into how revenue from carbon credits translates into local benefits.

The interviews also suggest that projects' interpretation of what is required by global standards and what constitutes adherence is often interpreted in a very narrow sense.

Indeed, both projects reveal gaps with regard to delivering on specific commitments regarding consultations, information access and grievance redress mechanisms outlined in project descriptions, offset standards, and global frameworks compared to actual practices. This demonstrates that without independent monitoring and civil society oversight, vague compliance claims can mask weak implementation on the ground. Efforts to address these gaps should prioritise the capacity building of community-based organisations and local civil society groups. These actors can serve as intermediaries, translating complex carbon finance terms and frameworks into accessible information and ensuring that grievance redress mechanisms are not only in place, but also genuinely functional. However, this is a challenging task. First, carbon markets are inherently complex, and business models are not always easily accessible. Second, the communities affected by these projects are often remote, which poses logistical barriers. To overcome these challenges, enhancing the capacity of local organisations to monitor this complex sector and engage with distant communities will require targeted investments and increased collaboration with experts on carbon markets. Individual company representatives can also help bridge the gap between project commitments and on-the-ground realities to some extent, but the dependency on individual persons rather than organisations and procedures is far from ideal.

While the active involvement of civil society and community-based organisations is essential to ensure that promises are upheld and monitoring and enforcement are improved, governments must also play a stronger role in forest management and oversight of large-scale concessions. When governments fail to perform proper oversight and regulatory functions, companies tend to water down the implementation of essential frameworks such as FPIC and the VGGT. Without active state involvement, the burden of accountability falls disproportionately on civil society, while companies may comply only superficially with these standards. Overall, in the current state of VCM, the meaningful implementation of global frameworks and standards cannot rely solely on project proponents and third-party validators; it must be embedded within national systems of governance and regulation supported by an active role of community-based organisations and local civil society groups. This is an essential action to ensure that local communities are not sidelined in global climate mitigation efforts, particularly those involving land-intensive, private sector-led carbon offset projects.

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Sumatera Merang Peatland Project (SMPP) Deal #10888	
Project proponent	PT. Global Alam Lestari (GAL) & Forest Carbon (Equator Group Pte Ltd)
Location and size	Musi Banyu Asin District, South Sumatera, 22,922 ha
Project crediting period	01-01-2016 to 31-12-2062
Standard	VCS
Methodology	VM0007
Scope and type	AFOLU: Afforestation, Reforestation, and Revegetation (ARR) and Wetlands Restoration and Conservation (WRC)
Ownership	PT Global Alam Lestari holds a 25-year concession under the IUP PAN/RAP license

Organ Komering Ilir (OKI) REDD+ Project Deal #10906	
Project proponent	Japan Asia Group Ltd.
Location and size	Organ Komering Irir District, South Sumatra, 23,500 ha
Project crediting period	05-08-2016 to 04-08-2046
Standard	VCS
Methodology	AM0014, VM0007, AR-ACM0003
Scope and type	AFOLU: Afforestation, Reforestation, and Revegetation (ARR) and REDD project activity
Ownership	PT. Tiara Asia Permai holds a 30-year concession under IUPJL-HL license

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AFA, the Regional Focal Point for the Land Matrix in Asia, is an alliance of 24 national farmer organisations in 16 countries in the region, composed of small-scale women and men family farmers, fishers, indigenous peoples, forest users, herders, and pastoralists. AFA's goal is to strengthen the capacities of the leaders and technical staff of national farmer organisations, leading to the eradication of poverty and hunger and increased resilience and sense of well-being of family farmers.

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